HILLSBOROUGH RIVER STATE PARK

UNIT MANAGEMENT PLAN

APPROVED

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

December 7, 2004

Department of Environmental Protection

Jeb Bush
Governor

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard, MS 140
Tallahassee, Florida 32399-3000
Phone: (850) 245-2784 Fax: (850) 245-2786

Colleen Castille
Secretary

December 7, 2004

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

Re: Hillsborough River State Park **Lease # 3623**

Ms. White:

On October 15, 2004, the Acquisition and Restoration Council recommended approval of the Hillsborough River State Park management plan.

On **December 7, 2004**, the Office of Environmental Services, acting as agent for the Board of Trustees of the Internal Improvement Trust Fund, approved the management plan for the Hillsborough River State Park. Pursuant to Section 253.034, Florida Statutes, and Chapter 18-2, Florida Administrative Code this plan's ten-year update will be due on **December 7, 2014**.

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

Sincerely,

Paula L. Allen
Office of Environmental Services
Division of State Lands
Department of Environmental Protection

TABLE OF CONTENTS

RESOURCE MANAGEMENT COMPONENT

LAND USE COMPONENT

TABLE

LIST OF ADDENDA

ADDENDUM 4

ADDENDUM 5

ADDENDUM 6

ADDENDUM 7

MAPS

INTRODUCTION

Hillsborough River State Park is situated astride the Hillsborough River, in Hillsborough County (see Vicinity Map) about seven miles south of the town of Zephyrhills. Access to the park is from U.S. Highway 301. The vicinity map also reflects significant land and water resources existing near the park.

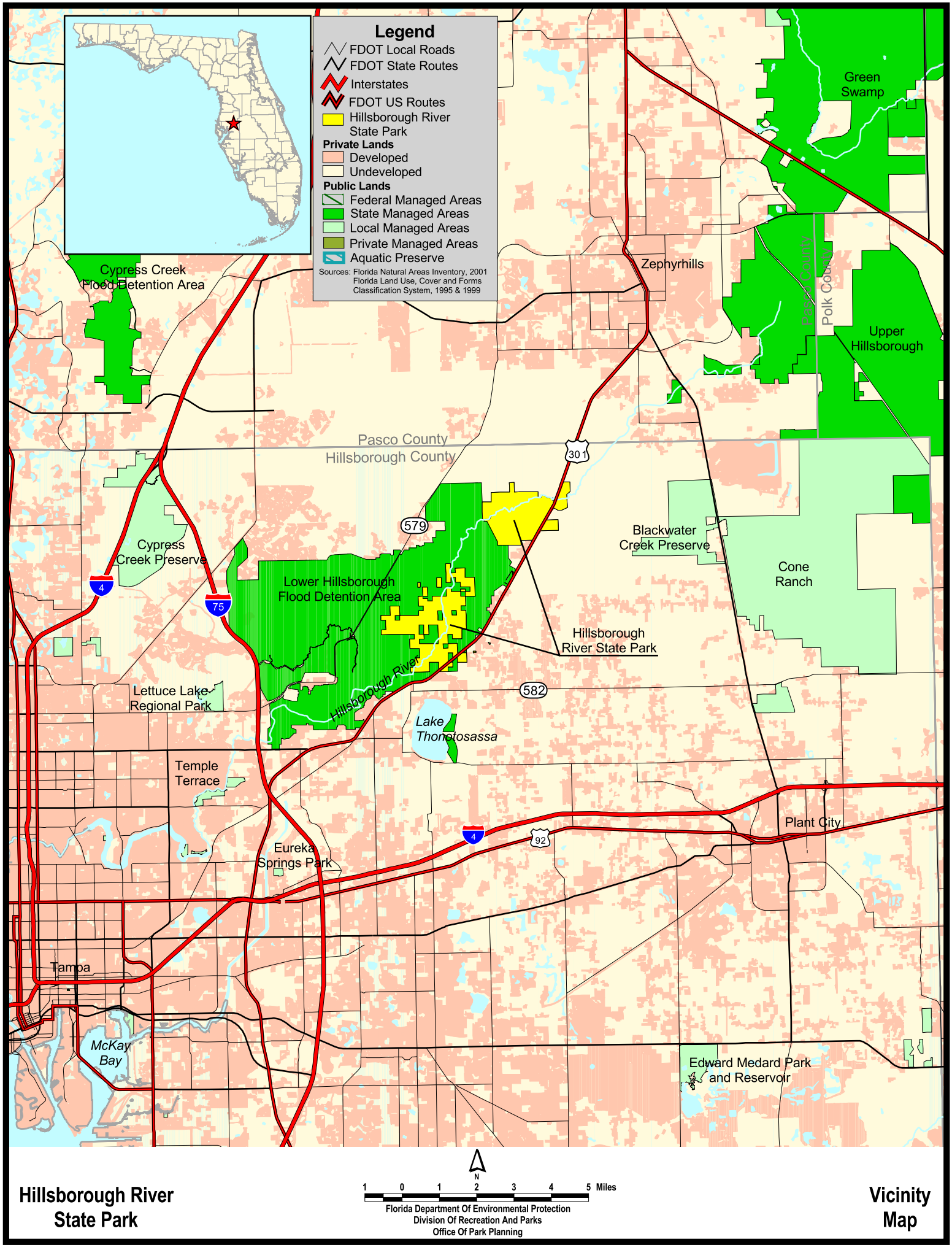
Hillsborough River State Park is significant in the twentieth century history of Florida as one of 9 elements of the New Deal-inspired Florida state park system and as one of the physical expressions of early-twentieth century recreation planning. In 1933, the Civilian Conservation Corps (CCC) was the first New Deal agency to begin operations in Florida. From 1933 to 1942, the CCC and the Works Progress Administration (WPA) programs constructed an impressive collection of facilities throughout Florida. A considerable portion of the public recreation facilities created by these programs is preserved in the state park system's New Deal era parks: Florida Caverns State Park, Torreya State Park, Fort Clinch State Park, O'Leno State Park, Gold Head Branch State Park, Ravine State Gardens, Hillsborough River State Park, Highlands Hammock State Park and Myakka River State Park.

Land acquisition for Hillsborough River State Park began in 1934, and the park officially became part of the Florida state park system in 1935. The CCC began work at Hillsborough River State Park in 1934, when Company 1418 was transferred from Sebring to the small community of Sulphur Springs, northeast of Tampa. CCC Camp SP-71 served primarily as a forestry unit, erecting fire towers, planting seedlings and constructing fire lanes throughout Hillsborough County. In 1934, a detachment of 60 CCC enrollees was sent from the camp to develop Hillsborough River State Park, under the supervision of the National Park Service. The state park was largely complete by July 1938, when Camp SP-71 at Sulphur Springs was evacuated. The caretaker's cottage, support buildings and the fire tower at Hillsborough River State Park were constructed between 1934 and 1936. Most of the park's recreational facilities (including five overnight cabins that were subsequently removed) were constructed between 1935 and 1938. Additional wood frame and native stone residences were constructed between 1939 and 1941 from NPS plans, probably by the Florida Park Service or its contractors.

For this plan, park acreage has been calculated based on the composition of natural communities, in addition to ruderal and developed areas. Currently the park contains approximately 3,345 acres. The park is separated into two disjunct properties. Approximately 900 acres were enclosed with a fence during the CCC era and developed for access and recreational use.

A mile or more to the southwest of this fenced parcel is a larger, disjunct tract of park property, which is itself within a very large swamp along the lower Hillsborough River. It has a complex boundary configuration that is unsurveyed and has never been actively administered by the Florida Park Service. Today it is embedded in the Lower Hillsborough Flood Detention Area (LHFDA) a 16,000-acre management unit, owned fee simple by the Southwest Florida Water Management District (SWFWMD). Thus situated, this southern portion of the state park will function as part of the LHFDA.

In 1992, County property adjacent to the 900-acre fenced portion of the park was leased by the state to be managed as part of the park. This 372-acre county property had formerly been a dairy farm. It is referred to in this plan as the Model Dairy Property. Much of this property shows up as ruderal land on the natural community map.



Hillsborough River State Park

Vicinity Map

At Hillsborough River State Park, public outdoor recreation and conservation is the designated single use of the property. There are no legislative or executive directives that constrain the use of this property. The park was acquired in June 1934 using state funds (see Addendum 1).

PURPOSE AND SCOPE OF THE PLAN

This plan serves as the basic statement of policy and direction for the management of Hillsborough River State Park as a unit of Florida's state park system. It identifies the objectives, criteria and standards that guide each aspect of park administration, and sets forth the specific measures that will be implemented to meet management objectives. The plan is intended to meet the requirements of Sections 253.034 and 259.032, Florida Statutes, Chapter 18-2, Florida Administrative Code, and intended to be consistent with the State Lands Management Plan. With approval, this management plan will replace the March 26, 1999, 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.

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 and should be discouraged.

The potential for generating revenue to enhance management was also analyzed. Visitor fees and charges are the principal source of revenue generated by the park. It was determined that timber management would be appropriate at this park as an additional source of revenue for land management since it is compatible with the park’s primary purpose of resource-based outdoor recreation and conservation.

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

MANAGEMENT PROGRAM OVERVIEW

Management Authority and Responsibility

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

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

The Trustees have also granted management authority of certain sovereign submerged lands to the Division under Management Agreement MA 68-086 (as amended January 19, 1988). The management area includes a 400-foot zone from the edge of mean high water where a park boundary borders sovereign submerged lands fronting beaches, bays, estuarine areas, rivers or streams. Where emergent wetland vegetation exists, the zone extends waterward 400 feet beyond the vegetation. The agreement is intended to provide additional protection to resources of the park and near shore 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's Operations Procedures Manual (OPM) that covers 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 Hillsborough River State Park, a balance is sought between the goals of preserving 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 reasonable balance, that are both convenient and safe. Program emphasis is on interpretation of the park's natural, aesthetic, and educational attributes.

Park Goals and Objectives

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

Estimates are developed for the funding and staff resources needed to implement the management plan based on these goals, objectives and priority management activities. Funding priorities for all state park management and development activities are reviewed each year as part of the Division 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. Survey park boundaries where needed.
   - **A.** Survey western park boundary north of the river, where existing boundary fence appears to deviate significantly from the boundary line.

2. Restore selected mesic flatwoods.
   - **A.** Identify and map restoration sites.
   - **B.** Clean up old dumpsites.
   - **C.** Evaluate the need for roller chopping and estimate costs.
   - **D.** Girdle large hardwood trees.
   - **E.** Make a list of species to reintroduce and identify methods and means of collecting seeds, propagation and planting.
   - **F.** Apply frequent prescribed burns.

3. Restore depression marshes.
   - **A.** Girdle or herbicide encroaching hardwood trees.
   - **B.** Apply prescribed fire where and when feasible.
   - **C.** Conduct a hydrological survey to determine restoration needs.

4. Restore dome swamps.
   - **A.** Apply prescribed fire if feasible.
   - **B.** Conduct a hydrological survey to determine restoration needs.

5. Census and monitor gopher tortoises.

6. Control feral hogs.
   - **A.** Continue control measures as stipulated by park policy.

7. Control exotic plants.

8. Manage Model Dairy Property to improve ruderal habitat.
   - **A.** Meet with representatives of Hillsborough County to discuss management options.
   - B. Conduct a hydrological survey to determine restoration needs.

9. Preserve the park's New Deal Era cultural resources by restoring and maintaining the historic structures to their original condition and appearance, to the extent possible.
   - **A.** Create and implement cyclical maintenance programs for all New Deal Era resources through collaboration between park management, Bureau of Design and Recreation Services, Bureau of Natural and Cultural Resources and DHR Bureau of Historic Preservation.
   - **B.** Manage the environs of the replica of Fort Foster to recreate as nearly as practicable the scene of 1837, while maintaining the view from the replica fort free of all signs of modernity.
   - **C.** Consider treatment of the park as a cultural landscape.
   - **D.** Acquire funding for restoration and rehabilitation design studies of all New Deal Era resources in the park.

E. Conduct architectural and/or engineering evaluations of the historic structures.
F. Produce design drawings and budget estimates to accomplish restoration or adaptive rehabilitation projects, including necessary modifications to provide universal accessibility, where feasible. Assure that all work on the historic buildings complies with the Secretary of the Interior's Standards for the Treatment of Historic Properties.
G. Acquire funding for restoration and rehabilitation and undertake the necessary work.

10. Recognize and publicize the unique nature of the New Deal Era parks.
A. Develop a nomination for Florida's New Deal Era parks to the National Register of Historic Places as a historic district.
B. Promote public visitation to New Deal Era parks as visits to a family-oriented past.
C. Develop interpretive programs that explain the origin of the New Deal Era parks, relating these earliest public conservation and stewardship efforts in Florida to current environmental concerns and land use or land management issues.
D. Develop technical curricula for historic preservation training in cooperation with the Florida Trust for Historic Preservation, state and federal agencies, local educators and local trades.

Recreational Goals

11. Continue to provide quality resource based outdoor recreational and interpretive programs and facilities at the state park.
A. Develop a cyclical trail maintenance program and increase the amount of interpretive signage located along the parks trail system.
B. Increase the quantity and quality of interpretive experiences throughout the park.

12. Seek funding to expand recreational and interpretive opportunities through the improvement of programs and the development of new use areas and facilities, as outlined in this management plan.
A. Develop a natural history interpretive center within the old park concession building.
B. Pursue the development of a trailhead and equestrian camping area on the Model Dairy property.

Park Administration/Operations

13. Encourage and promote volunteer activities within the park.
A. Continue to collaborate with the park Citizens Support Organization (CSO).
B. Provide park and community recognition and support for volunteers.

14. Pursue acquisition of equipment necessary to manage park resources.
A. Acquire needed equipment for prescribed burning and exotics control.

15. Provide for the protection of park boundaries and resources.
A. Maintain posted boundary signs.
B. Request boundary surveys where necessary to define the park boundary.

16. Promote the park locally and statewide.
A. Expand special events to be held within the park.
B. Provide frequent public service announcements to local and state media contacts.
C. Maintain contacts with adjacent landowners and local residents.
D. Expand and maintain accurate web site.

Management Coordination

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

this plan.

The Department of Agriculture and Consumer Services, Division of Forestry (DOF), assists Division staff in the development of wildfire emergency plans and provides the authorization required for prescribed burning. The Florida Fish and Wildlife Conservation Commission (FFWCC), assists staff in the enforcement of state laws pertaining to wildlife, freshwater fish and other aquatic life existing within park boundaries. In addition, the FFWCC aids the Division with wildlife management programs, including the development and management of Watchable Wildlife programs. The Department of State, Division of Historical Resources (DHR) assists staff to assure protection of archaeological and historical sites. The Department of Environmental Protection (DEP), Office of Coastal and Aquatic Managed Areas (CAMA) aids staff in aquatic preserves management programs. The DEP, Bureau of Beaches and Wetland Resources aids staff in planning and construction activities seaward of the Coastal Construction Line. In addition, the Bureau of Beaches and Wetland Resources aid the staff in the development of erosion control projects. Emphasis is placed on protection of existing resources as well as the promotion of compatible outdoor recreational uses.

Current ongoing management coordination activities at Hillsborough River State Park include coordination with the Southwest Florida Water Management District on monitoring wells in the park and management of adjacent District land, and collaboration with the Hillsborough County Parks, Recreation and Conservation Department and the Tampa Bay Water authority on management of the Model Dairy property and monitoring of mitigation wetland areas, respectively.

Public Participation

The Division provided an opportunity for public input by conducting a public workshop and an advisory group meeting. A public workshop was held on May 19, 2004. The purpose of this meeting was to present this draft management plan to the public. A DEP Advisory Group meeting was held on May 20, 2004. The purpose of this meeting was to provide the Advisory Group members the opportunity to discuss this draft management plan.

Other Designations

Hillsborough River State Park is not within 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 the unit have been designated as Outstanding Florida Waters, pursuant to Chapter 62-302 Florida Administrative Code. Surface waters in this unit are also classified as Class III waters by DEP. This unit is not adjacent to an aquatic preserve as designated under the Florida Aquatic Preserve Act of 1975 (section 258.35, Florida Statutes).

RESOURCE MANAGEMENT COMPONENT

INTRODUCTION

The Division of Recreation and Parks has implemented resource management programs for preserving for all time the representative examples of natural and cultural resources of statewide significance under its administration. This component of the unit plan describes the natural and cultural resources of the park and identifies the methods that will be used to manage them. The stated management measures in this plan are consistent with the Department's overall mission in ecosystem management. Cited references are contained in Addendum 2.

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

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

Because park units are often components of larger ecosystems, their proper management is often affected by conditions and occurrences beyond park boundaries. Ecosystem management is implemented through a resource management evaluation program (to assess resource conditions, evaluate management activities, and refine management actions), review of local comprehensive plans, and review of permit applications for park/ecosystem impacts.

RESOURCE DESCRIPTION AND ASSESSMENT

Natural Resources

Topography

In terms of Florida geomorphology, the park is situated at the western edge of the Zephyrhills Gap, named for the town of that name which lies in the gap, and named a gap because it is at the lower end of a valley, elongated north to south (named the Western Valley), through which the Hillsborough River attains egress to the sea, flowing between the Brooksville Ridge to the north and another elevated landform to the south (named the Polk Upland). Gap, valley and uplands are of course too subtle to be noticed, and have been revealed only through large-scale study of the land surface.

In the park, elevations range from almost 50 feet mean sea level (msl) at the northern boundary of the upper unit, to less than 35 feet msl at the river's edge. The lower unit is swampy terrain. Most of it is below the 30-foot isometric line. The riverbanks in the upper unit are commonly elevated in contrast to the low-lying land behind them. These natural levees apparently formed as the river periodically overflowed, leaving water-born sediment to settle along the shore. The natural topography has been altered somewhat by drainage ditches, most of them shallow.

Geology

The underlying geologic formations include the Tampa Member of the Arcadia Formation, Hawthorne Group (Lower Oligocene); and the Arcadia Formation, Hawthorne Group (Lower Miocene); and the Suwannee Limestone (Upper Oligocene). The Suwannee Limestone is a granular, thin-bedded, soft, highly fossiliferous limestone whereas the Tampa generally contains more sand, clay and fewer visible fossils. Unconsolidated surficial sediments of variable thickness overlie these carbonate units except where the limestone base has been exposed through natural erosion by the river.

Soils

The park contains 10 soil types (see Soils Map). Addendum 3 contains the soil descriptions for this unit. The only incidents of soil erosion at Hillsborough River State Park have been at sites on steep slopes along the Hillsborough River, which have frequently attracted visitors to the water's edge. Boardwalks and overlooks have been installed at these sites to protect the slopes. Management measures will continue to follow generally accepted best management practices to prevent soil erosion and conserve soil and water resources on site.

Minerals

There are no known minerals of commercial value located in the park.

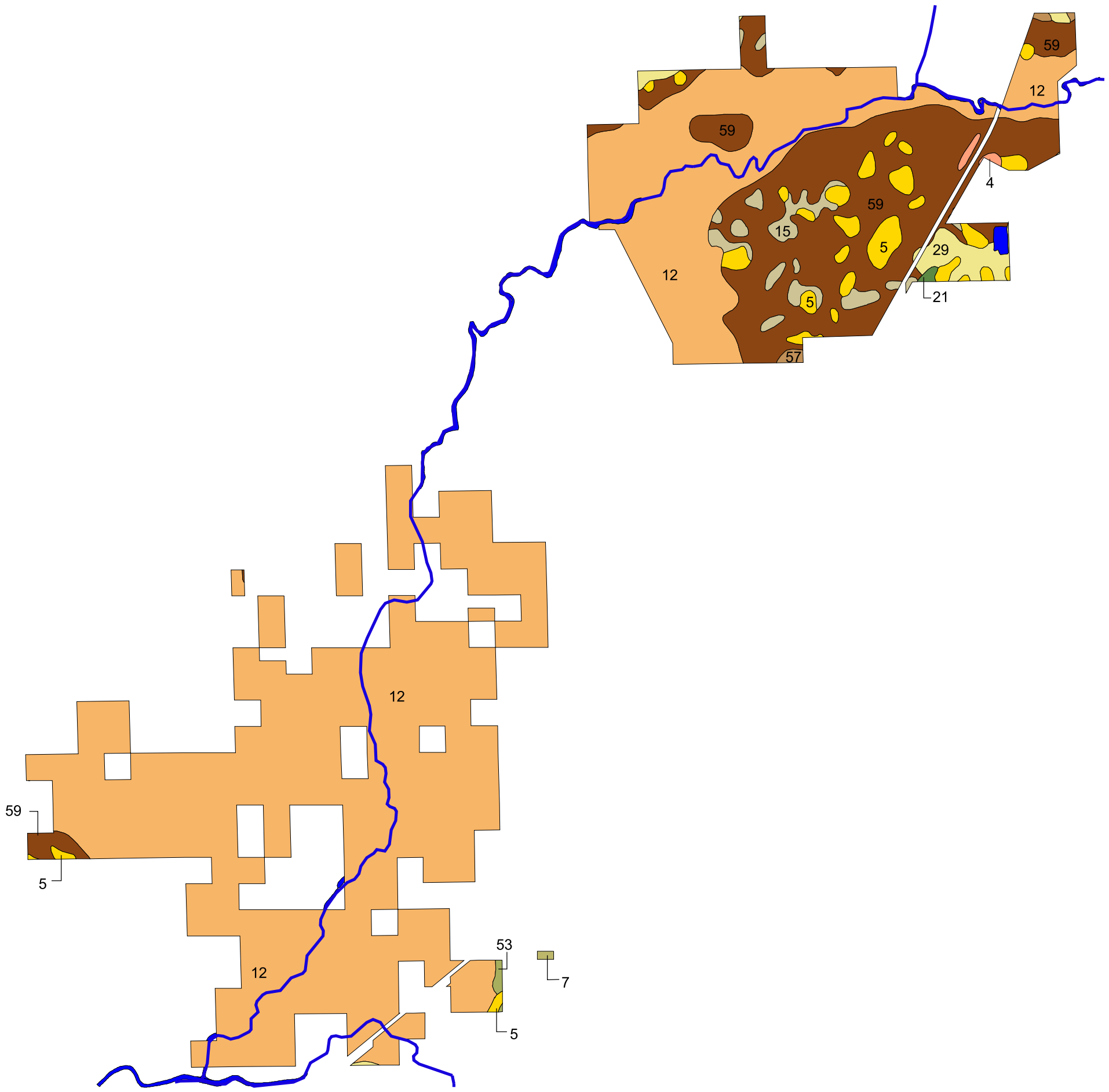
Hydrology

The region averages 56 inches of rainfall per year, with an average evapotranspiration rate of 39 to 40 inches. Most rainfall is removed by surface runoff, but some aquifer recharge is experienced under normal or wetter than normal conditions.

The Hillsborough River, which is the central natural feature of the park, flowing through both the upper and the lower unit, is fed from two primary sources. Crystal Springs, the artesian upwelling a few miles to the north, contributes a steady 40 million gallons of clear water each day, which during the dry season is the principal source of water in the river. A greater volume is produced in the Green Swamp during the season of rain. This surface discharge is stained brown by the tannin found in dead leaves. It darkens the water as it rises, obscuring the river bottom, which can be clearly seen through the pellucid current during the dry season. Overflow from the main channel is accepted by the bordering river swamp and adjacent hydric hammock, and released when the river surface declines in the dry months. The lower unit of the park lies entirely in the river floodplain and it is encompassed by the 16,000-acre Lower Hillsborough Flood Detention Area, purchased by the Southwest Florida Water Management District to temporarily store floodwaters and thus prevent damage to urban land bordering the river in Tampa.

Following the discovery by county authorities of unsafe levels of coliform bacteria in the Hillsborough River in the 1970s, swimming was prohibited, and a large wading pool was constructed in the park for use by visitors. In recent years, water quality has improved and prohibitive levels of coliform bacteria are typically not found in the river. The possibility of opening the river again to swimming needs to be re-evaluated in the light of recent water quality data and laws regulating public swimming areas in the county.

Ground water in this region has been severely drawn down in some locales, such as Pasco



LEGEND

- 4 - Arents, nearly level
- 5 - Basinger, Holopaw and Samsula soils, depressional
- 7 - Candler fine sand, 0 to 5 percent slopes
- 12 - Chobee sandy loam, frequently flooded
- 15 - Felda fine sand
- 21 - Immokalee fine sand
- 29 - Myakka fine sand
- 53 - Tavares-Millhopper fine sands, 0 to 5 percent slopes
- 57 - Wabasso fine sand
- 59 - Winder fine sand
- Water

N

2000 0 2000 4000 Feet

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

HILLSBOROUGH RIVER STATE PARK

SOILS MAP

County, causing wetlands to experience extreme reductions in hydroperiod. Such an impact would be undesirable in the park, and it is a concern given the growing increase in population. The SWFMD is currently monitoring water levels and vegetation in a depression marsh and a dome community within the park, a project that should give warning if present ground water levels decline. The SWFMD initiated the project out of concern for possible drawdowns in the Morris Bridge Wellfield, five miles southwest of the park, which provides water to Tampa. The monitoring sites were selected in the park because they were comparable to wetlands in the wellfield, but beyond the wellfield's expected zone of influence. The park sites will serve as controls to assess the effect of withdrawing water five miles downstream. Surface water in the depression marsh is measured at least monthly, while in the dome community daily measurements are made with an automated water level recorder. Vegetation in the two wetlands is surveyed twice a year. Companion wells are used to monitor water levels in the underlying aquifer. Monitoring began in 1977. The SWFMD's assessment is that both wetlands display characteristics of water levels and vegetation consistent with other natural systems in the region. This is not to say the characteristics are consistent with primeval conditions, only that deviations from the norms of today have not been detected.

The Civilian Conservation Corps (CCC), in keeping with the practices of the day, drained surface water from wetlands in the interior of the park. Several of the swamps have shallow drainage ditches connecting them and leading ultimately to an outfall at the Hillsborough River. It is believed some additional ditches of this kind were excavated in the 1950s and 1960s. There are four outfalls altogether. Ditch blocks might be useful in restoring hydroperiods at some of these sites.

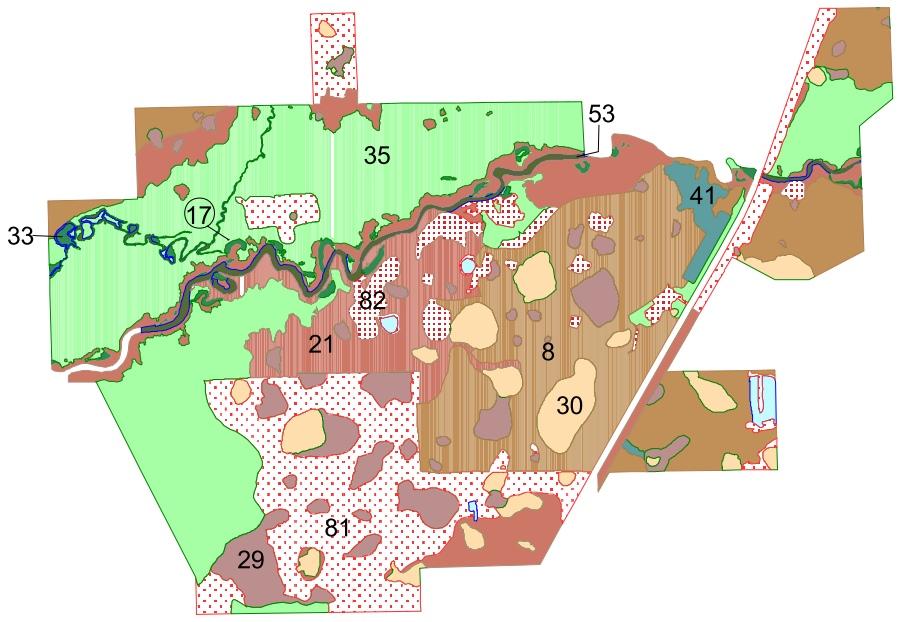
Management will comply with best management practices to maintain or improve the existing water quality on site and will take measures to prevent soil erosion or other impacts to water resources.

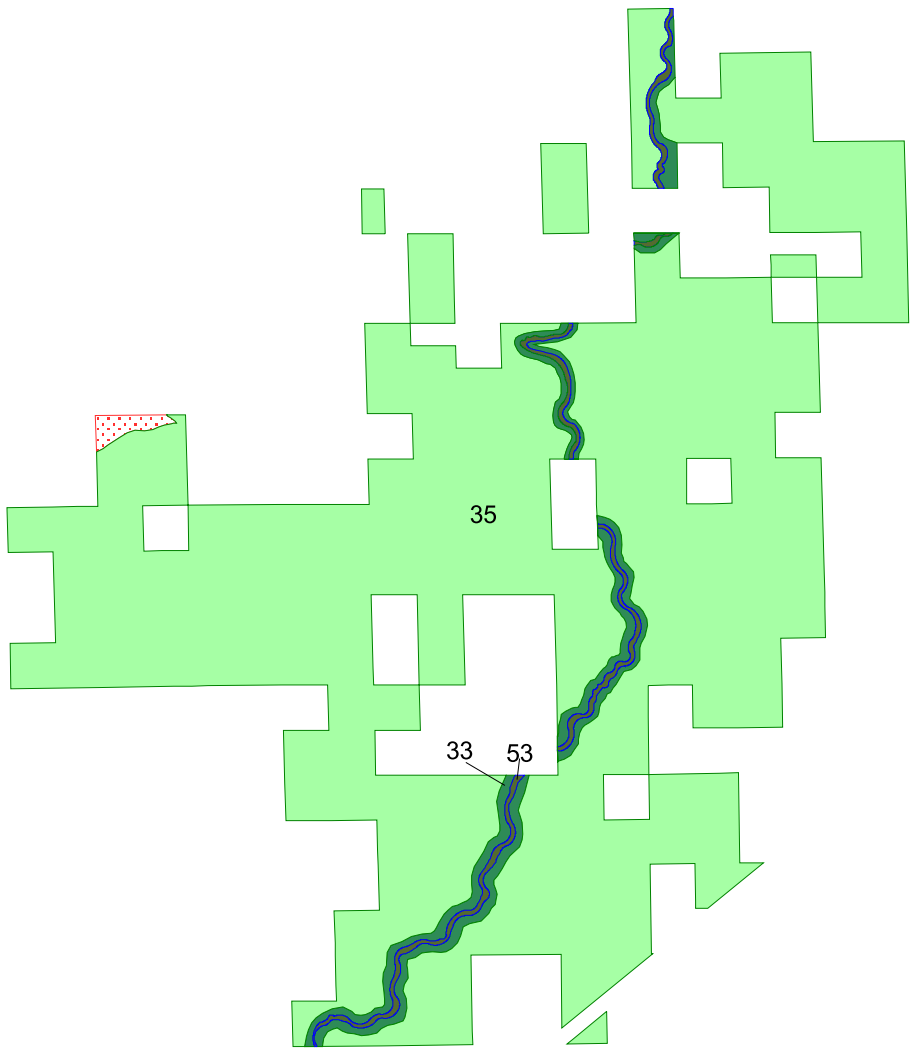
Natural Communities

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

The park contains nine distinct natural communities (see Natural Communities Map) in addition to ruderal and developed areas. Park specific assessments of the existing natural communities are provided in the narrative below. A list of plants and animals occurring in the unit is contained in Addendum 4.

Mesic flatwoods. From the park beginnings in the 1930s, until the early 1970s, an official policy of fire exclusion was in place. In the absence of fire, hardwoods invaded the flatwoods, displacing most native vegetation save in peripheral locations where unwanted fires occurred at





LEGEND

- 8 - Mesic Flatwoods-322.93 ac.
- 17 - Sinkhole-.01 ac.
- 21 - Upland Mixed Forest-226.27 ac.
- 29 - Depression Marsh-104.28 ac.
- 30 - Dome-81.84 ac.
- 33 - Floodplain Swamp-89.59 ac.
- 35 - Hydric Hammock-2171.39 ac.
- 41 - Wet Flatwoods-17.09 ac.
- 53 - Blackwater Stream-54.03 ac.
- 81 - Ruderal-233.09 ac.
- 82 - Developed-44.95 ac.
- Water-7.69 ac.

N

2000 0 2000 4000 Feet

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

HILLSBOROUGH RIVER STATE PARK

NATURAL COMMUNITIES MAP

irregular intervals. At some sites, replacement of pine trees by hardwoods -- primarily laurel oaks and water oaks -- is complete. The past existence of the previous community at these sites can only be discerned by the presence of saw palmettos, which persist long after other flatwoods plants have disappeared, and by examining soils maps.

Today the flatwoods bearing the closest vegetative resemblance to those of the pre-fire exclusion period are at sites that burned most frequently. The abundance or scarcity of wiregrass is an easily recognizable indicator of the extent of successional change. As encroaching hardwoods increased in height and density, the shade produced gradually eliminated wiregrass and other species, which require full sunlight. Only the flatwoods community in burn zone HR-6 has an appreciable amount of wiregrass. Elsewhere in the park, in other flatwoods, where prescribed burning and hardwood removal have been in progress for nearly 30 years, a superficial resemblance to the pre-disturbance regime has been attained in the form of mature pines and the retention of saw palmettos in the understory, but many of the original species are missing.

Sinkhole. A small sinkhole occurs within the hydric hammock community north of the Hillsborough River. It is located about 100 meters southwest of the site of a former pine plantation, and is connected by a drainage to a floodplain swamp nearer the river. The vegetation is similar to that of the surrounding hydric hammock.

Upland mixed forests. This designation covers three variants, the first being the above-mentioned former mesic flatwoods which have made the transition to hardwood domination.

The second variant is the hammock dominated by live oaks, cabbage palms, southern magnolias and mockernut hickories. This community was here before the park was established. It is found in proximity to the river, growing on natural levees built of sediment, deposited along the banks by repeated floods.

The third variant occurs on the former dairy farm. The uplands were cleared for pasture except for certain sites where hardwoods were allowed to grow. The sites have developed into hammock.

Depression marsh. Numerous depression marshes, usually circular in shape, are scattered throughout the park. The marshes are threatened with conversion to swamps by the many red maple trees, which are growing up in them.

On the model dairy property, which was added to the park, the depression marshes in the pasture, now a ruderal community, were planted with a variety of aquatic trees, so that although they contain native vegetation they no longer constitute a natural community.

Dome. There are other, usually larger, circular depressions in the park, filled with cypress trees. Trees near the center are tallest, declining in height near the periphery, thus giving the rounded forest the shape of a dome. When the park was developed during the 1930s, ditches were dug to connect several dome communities and to convey water from them to the Hillsborough River. The dome communities are reported to have a dense clay substratum, which aids in the retention of surface water. During the 1960s, at least one of these dome communities was used as a roost for wading birds.

Floodplain swamp. This community is found in scattered overflow depressions along the Hillsborough River. These elongated depressions are aligned parallel to the river and are usually situated behind the natural levees, which are interposed along the bank. As the river rises, water enters the depressions through openings in the levee and remains for extended periods. Due to the prolonged flooding, vegetative ground cover is sparse or absent altogether. Tall cypress trees with great-buttressed trunks are conspicuous. Other tall trees are swamp tupelo, red maple and American elm. Smaller trees and shrubs are pop ash and buttonbush. Except where an occasional flat-topped stump reveals that a bald cypress tree was felled by a sawyer, long ago this community presents a primeval aspect.

Hydric hammock. This is the most extensive natural community in the park. It occupies a broad zone behind the narrow hammocks and floodplain swamps that border the river. The hydric hammock is in excellent condition with most of it exhibiting no trace of human influence and most appearing to be a pristine forest. The tree species are similar in composition to those of the upland mixed forests but usually lacking hickory and magnolia trees, and having more elm and red maple, and with blue beech being conspicuously abundant in the understory. Bluestem palmetto is a frequent shrub. Hydric hammock differs from upland mixed forest in the scarcity of understory shrubs but often has a lush graminoid ground cover.

Wet flatwoods. This community is localized at the western end of the park, just south of the river. It is a mesic flatwoods characterized by abundant cabbage palms and an absence of saw palmetto. The original understory vegetation is uncertain. Hardwood trees have become established, providing shade, and there is a heavy infestation of caesar weed.

Blackwater stream. The Hillsborough River is a blackwater stream, with approximately three miles of the river within the park boundaries. Typical of Florida's blackwater streams, submerged vegetation is sparse and the bottom sandy. A distinctive characteristic of the Hillsborough River is an abundance of mostly submerged and often large limestone outcroppings that render the river difficult for boating.

Unsafe levels of fecal coliform bacteria have been documented particularly following periods of rain that increase these pollutants through runoff. Exotic plants, particularly wild taro or "elephant-ear" *(Colocasia esculentum),* introduced from upstream sources, grow along the banks.

Ruderal. In the 1992 edition of the Unit Management Plan, ruderal acreage was given as eight acres. Since that time, the Model Dairy property has been added to the park. Much of the dairy was improved pasture. However, on the former Model Dairy pasture, natural succession will be allowed, and in fact abetted, to transform it into an upland mixed forest. Pioneer species such as sweetgum and persimmon are already making an appearance.

Developed. Approximately 45 acres have been developed to provide services to visitors and to accommodate their vehicles.

Designated Species

Designated species are those that are listed by the Florida Natural Areas Inventory (FNAI), U.S. Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FFWCC), and the Florida Department of Agriculture and Consumer Services (FDA) as

endangered, threatened or of special concern. Addendum 5 contains a list of the designated species and their designated status for this park. Management measures will be addressed later in this plan.

Eighteen records of listed plants species and thirty-seven records of vertebrates have been enumerated in this resource management component. The hand fern record is sustained by only one record and the species has not been seen in many years. There are five reports of panthers and one of a black bear in the district database, but these are questionable and not included. In composing the vertebrate lists for Addenda 4 and *5*, all other species observed in the park were included; some of which were recorded by Mr. Oscar E. Baynard in 1942, but have not been recorded since. Records of vertebrates seen many years ago, but not recently, are retained in the interest of documenting changes in species composition.

Special Natural Features

The rapids in the Hillsborough River, formed where water flows over outcroppings of Suwannee limestone, are a special natural feature. Rapids are unexpected at such a southerly latitude. A geological peculiarity, they are a scenic attraction as well.

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.

Hillsborough River State Park has not been comprehensively surveyed for cultural resources; nevertheless, 21 resources are listed in the Florida Master Site file. The area of the present park contains abundant opportunities for hunter - gatherers. Early Floridians probably used the Hillsborough River floodplain extensively for subsistence on at least a seasonal basis. Although park development may have obliterated some evidence of this activity, a comprehensive survey of the original park and the Model Dairy property would likely reveal additional evidence of human habitation and use.

The recorded cultural resources at Hillsborough River State Park include 8Hi 4028, an aboriginal midden or mound whose cultural affiliation has not been determined. The site of Forts Alabama and Foster is designated 8HI 112. Those fortifications were erected in the same location during the Second Seminole War (1835-1842) to defend a bridge that carried the Fort King Military Road across the Hillsborough River. Fort Alabama was established in March 1836 and was abandoned a few months later. It was destroyed when Seminoles apparently tripped a booby trap left by departing troops. Fort Foster was established in the winter of 1836, again to safeguard the bridge, rebuilt after its burning by Seminoles. The fort was abandoned in 1838. The location was unhealthy, and sickness occasionally threatened to render the fort indefensible. The site was listed on the National Register of Historic Places in 1972. A replica of Fort Foster has been built

and is located at the approximate site. It serves as an interpretive resource by park staff and volunteers. The Fort King Military Road passes through the park. The largest cultural resource, both in term of acreage and number of components, is the park itself, which has been open for public recreation and enjoyment since 1936-1937. Hillsborough River State Park is significant in the twentieth century history of Florida as one of nine elements of the New Deal-inspired Florida state park system and as one of the physical expressions of early twentieth century recreation planning. Until the 1930s the State of Florida sponsored, owned, or operated parks as monuments or memorial facilities. The components of the system of state parks begun during the 1930s were the physical expression of the idea that Floridians, increasingly members of an urban population, needed and indeed possessed a right to communion with Nature. That idea, one of the intellectual underpinnings of the conservation movement of the Progressive Era (1890-1920), realized its most widespread expression during the administrations of Franklin Delano Roosevelt prior to the country's entry into World War II (1941).

The ideas of conservationists were made real as the Great Depression (1929-1941) brought widespread unemployment and near economic collapse. Floridians had already suffered nearly five years of unrelieved economic disasters, with Mediterranean fruit fly infestations, hurricanes, and the collapse of the land boom bubble. The Wall Street Crash of 1929 only confirmed that the whole nation faced hard times. The resulting Depression seemed to overwhelm Americans. Ending it seemed beyond the abilities of ordinary people, and programs to aid persons in serious want took the place of economic development in many areas of the country, Florida among them.

Problem-solving programs in which people could play a part while contributing to the end of hard times gained popularity. Among those problems were two of particular importance: lack of employment opportunities for young men and the degradation of the land. The problem of unemployed young men was often described in terms of their inability to contribute to the support of their families. Equally important was the riddle of what to do with an army of idle, unskilled young men without prospects or hope. Their expanding presence among the unemployed threatened to slow or stall economic recovery.

The land, too, had fallen upon hard times. Although a Dust Bowl like that of the Great Plains never afflicted most of the rest of the country, almost all sections had experienced massive land and topsoil degradation. The South was particularly beset with the consequences of strip mining, timber exploitation, tenancy, single crop agriculture, and poor farming practices: sterilized landscapes, river floods, enormous erosion gullies, and farm families forced to abandon a treasured way of life.

Among the New Deal programs organized to address aspects of the problems of youth unemployment, the Civilian Conservation Corps, or CCC, may have had the most emotionally profound effect. This agency hired the unskilled and unemployable young, put them to work under military administration, and employed skilled local men--hitherto unemployed--to transmit the rudimentary skills required to do a job. In Florida, the CCC took on two jobs, usually at the same time. The first was improving or restoring the degraded landscape, the second developing public recreation facilities according to professionally drawn plans. An impressive collection of facilities was constructed throughout Florida, and many continue in daily use. Their builders, the young men of the 1930s, visit and revisit their creations regularly. They and many other park visitors consider the rustic appearance of CCC buildings as "real" park architecture.

The following CCC structures and buildings (a building is a habitable structure) survive within Hillsborough River State Park. Most are in daily use; two are in the process of being returned to use.

8HI 3890 is a steel girder fire tower. It is the property of the Division of Forestry, Department of Agriculture and Consumer Services.
8HI 3891 is a park maintenance building.
8HI 3892 is a park storage building.
8HI 3893 is the park administrative office. It was constructed as a staff residence.
8HI 3894 is the park interpretive center. It was originally the entrance, or contact, station.
8HI 3895 is the trailside shelter on the Rapids Trail.
8HI 3896I s a picnic shelter or pavilion.
8HI 3897 is the Cypress Picnic Pavilion.
8HI 3898 are family picnic shelters; these, and the Cypress Picnic Pavilion (8HI 3897), are the most architecturally unusual structures in the park's built environment.
8HI 3899 is the park's suspension bridge across the Hillsborough River.
8HI 3900 is a picnic shelter.
8HI 3901 houses watercraft rental operations, while **8HI** 3902 is a storage shed associated with those operations.
8HI 3903 and **8HI 3904** are picnic shelters.
8HI 3905 is a staff residence.
8HI 3906 is a picnic shelter.
8HI 3907 is the main picnic area restroom or latrine.
8HI 3908 is a campground recreation structure at Cedar Landing. This structure is unique in having one end enclosed in artificial stone concrete block. The enclosed end was recently used for offices; they were subject to flooding and were vacated.

Additionally, at least one structure is thought to be the last remaining (of an original five) overnight cabins. Local tradition has it that the cabin was moved and adaptively modified for reuse at some time after World War II.

With the previously noted exception of 8HI 3890 (the fire tower) and the partial exception of 8HI 3908, all resources are constructed from wood, with wood framing systems--either braced timber or balloon frame--and wood weatherboard or vertical board and batten siding on all enclosed buildings. Surviving original windows are wood casements. Most if not all resources had wood shingle or shake roofs when erected; only the interpretive center and the administrative office building have such a roof now. Foundations are generally stone masonry or stone veneer over poured concrete, except picnic pavilions, where they are entirely of poured concrete. Pavilions' foundations were apparently poured in phases, probably initially to provide footings for vertical timbers, then as reinforcement, then as infill flooring where thought necessary. The order of these alterations is currently unknown. Where chimneys and fireplaces exist--as in the interpretive center, the park administrative office, staff residence, and several picnic shelters--they are of apparent Limestone masonry or are finished in limestone veneer. All nineteen structures were recorded during History Property Associates' 1989 Cultural Resource Survey of New Deal Resources in Nine Florida State Parks. The cultural resource surveyors worked according to appearance and general plan and did not differentiate between structures erected by the CCC or those planned under the CCC but executed afterward. They also did not differentiate between park structures and the Division of Forestry tower.

The park maintains a small collection of artifacts, on loan from the Division of Historical Resources, for use in cased exhibits within the interpretive center.

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 Divisions 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 during the next revision of this management plan.

Additional Considerations

The Model Dairy is a 372-acre parcel located on the south boundary of Hillsborough River State Park. The site is west of U.S. Highway 301, north of Hillsborough County Wilderness Park, and the northwest corner comes within 100 feet of the Hillsborough River (Section 17 and 18, Range 21E, Township 27S). The land was bought by Hillsborough County in 1989 under its Environmental Lands Acquisition and Protection Program (ELAPP) and is leased to the Florida Department of Environmental Protection, Division of Recreation and Parks for management. In August and September of 1992, the West Coast Regional Water Supply Authority (WCRWSA) sought and received consent and easement from Hillsborough County, as the property owners, and approval of the DEP as the land management agency, to utilize the land as a wetland mitigation site by restoring wetland sites to pre-1938 conditions as interpreted by soil survey maps. Appropriate sites have now been replanted with native vegetation.

The management agreement with Hillsborough County stipulates that the state must prepare a management plan specifically for the Model Dairy Property. This plan was completed, and the management considerations are the same as for any state park. Most upland soil is winder fine sand, indicating former occupation by mesic flatwoods, however restoration in this case is not practical. The uplands were converted to improved pasture long ago. No trace of the original vegetation remains, and years of nutrient enrichment may have altered the soil. The management objective for these uplands is to create an upland mixed forest. Pioneer species like sweetgum and persimmon are already appearing. Additional native species will be planted as circumstances allow. Staff will meet with Hillsborough County to discuss all management options and explore opportunities for cooperative management.

There is at least one abandoned well on the property that will need to be plugged, and there are several drainage ditches that could be blocked. A hydrological restoration plan will be prepared to address these needs. There are serious exotic plant problems in the form of soda apple, skunk vine, air potato, Chinese tallow tree and Old World climbing fern.

Another special management consideration along the river is a concrete retaining wall. It was installed during the 1970s to thwart the erosive power of the river current at a locale where the retreating bank was approaching a park structure in the campground. A portion of the retaining wall collapsed, having failed to hold the river at bay. The fallen portion was removed in 1997, using FEMA funds. An alternate engineering solution that might prove more durable will be explored. All alternatives would be expensive, and any method of armoring the riverbank at this place -- which is on the outside of a bend, where the erosive force is strongest -- will probably fail in the long term.

Along the western boundary of the park, north of the river, the boundary fence appears to deviate significantly from the boundary line, conceding several acres to the adjacent property owner. A survey is needed to clarify ownership. In addition, north of the river, and west of U.S. Highway 301, the north-south leg of the boundary should be surveyed and the fence, which has fallen down, should be reestablished. This private property, adjacent to the highway is very desirable as an addition to the park and should be acquired if there is ever an opportunity.

Management Needs and Problems

Challenging and demanding are words that come to mind when contemplating management of the varied natural and cultural resources at Hillsborough River State Park. The structure and functioning of some natural communities remain impaired due to 35 years of fire-exclusion policy prior to 1970, despite years of prescribed burning. The impact of drainage ditches requires further evaluation, and they may need to be plugged (and filled in if possible). Exotic plant species, some of which are strongly resistant to control, promise years of persistent and costly work to eradicate despite years of progress in exotic removal. Feral hogs continue to be a disturbance in natural communities and contribute to the spread of certain plants such as caesarweed. A replica Indian war fort imposes a set of particular requirements to ensure that it is protected, maintained and interpreted properly. These are the broad considerations of resource management.

With a few exceptions, cultural resources in Hillsborough River State Park are in fair condition. The fort site(s) (8HI 112) are subject to wear and soil compaction from visitor traffic and interpretive activities; therefore, programs of inspection and maintenance should be carried out with the aim of lessening soil compaction and preserving the integrity of undisturbed archeological features. The mound site (8HI 4028), likewise, should be considered as fair until a regular program of patrol and inspection is established to monitor the site. Photo points should also be established at the site.

Almost all structures, with the exception of the interpretive center, 8HI 3894, and the maintenance and storage buildings (8HI 3891 and 8HI 3892) are in fair condition. The interpretive center is in good condition, having been re-roofed recently. The maintenance and storage buildings are in poor condition and have been in peril of disintegration. Roofs of both structures are unsound, and both structures have suffered physical damage from contact with vehicles or falling tree debris. The siding fabric of both has been soaked by water, resulting from

water being brought toward, rather than away from the foundations or because grass and shrubbery foliage have been left untrimmed and have established an extremely humid microclimate along the lower siding areas. These conditions can be reversed by regarding foundation elements to carry water away and by trimming foliage to allow air circulation along the sides and roofs of the buildings. Repairing physical damage to framing, siding, and roof fabric will reestablish stability and contribute to at least a fair condition rating.

As is the case in the structures noted above, water retained or trapped along foundations is a potential cause of rapid damage, even in structures in fair condition; therefore, as cyclical maintenance plans are put into operation, foundation grading and inspection of foundation elements will be key elements. The bases of picnic shelter posts in resources like 8HI 3896 and 8HI 3897, among others, are particularly at risk in such cases. They appear to be made from young cypress trees, and their loss and consequent replacement by substitute materials would be aesthetically intolerable. The suspension bridge, 8HI 3899, should always be regarded as being in no better than fair condition. It should be inspected regularly by professionals with the appropriate expertise or certification. Collection objects maintained in the park are generally in fair condition.

Management Objectives

The resources administered by the Division are divided into two principal categories: natural resources and cultural resources. The Division 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.

An immediate management objective is to produce a resource map of the upper unit of Hillsborough River State Park to facilitate resource management planning and operations. The objective will be to complete the resource map as soon as possible. District biologists will cooperate with the park manager and with cartographers. In addition to utilities, facilities and structures, the map should include all wetlands, drainage ditches, jeep trails, and fire lanes, as well as former old fields, the pine plantation, and the old borrow pit along U.S. Highway 301. The full length of the historic Fort King Road within the park boundaries will be indicated.

Several invasive exotic plants have gained a foothold in the park. They are reviewed below in a sequence reflecting the degree of menace each species poses and the priority for removal it should be given by the park manager.

Tropical soda apple is the exotic plant species with the greatest potential for explosive growth. The rate of spread in terrestrial situations can be compared with the spread of water hyacinths over open water. It was once localized in former improved pastures on the Model Dairy property. Recently it was found near the recreation hall and the chemical supply building. It will quickly cover large acreages if left unchecked, threatening not only park habitats but adjacent pastures on private land. The management objective is to eliminate the current infestations before the end of calendar year 2005, after which sites of occurrence will be inspected monthly so that emerging plants can be treated. Treatment will continue until eradication is complete.

The next most threatening species are two vines: air potato and skunk vine. Air potato arrived in

the park around 1980 and rapidly spread along the park drive. Since the mid-1980s, vigorous and persistent attacks by the staff have reduced the area it once occupied. Unfortunately, air potato is stubbornly resistant to eradication, continuously resprouting from tubers, every one of which must be rooted out. If allowed a short period of growth it soon climbs into trees and produces numerous tubers "potatoes" which fall to earth and generate new plants. Constant attention over several years is required to be rid of it. Skunk vine is a more recent arrival. It seems to spread perhaps even more rapidly than the above-mentioned species, climbing into trees to smother the foliage. It also forms a dense ground cover. This is another extremely dangerous plant. Severing the climbing portions of skunk vine from the ground portion, and then treating the latter with herbicides would seem to be a promising method of control.

The next species is cogon grass, which is growing on the abandoned railroad grade east of U.S. Highway 301. It will spread if not eliminated. Elimination will demand twice-a-year treatments. It rapidly gains ground if regular treatments are not forthcoming.

Chinese tallow is growing on the Model Dairy property. This tree, sometimes called the melaleuca of North Florida, is potentially dangerous, but only a few individuals are present. It will be easily eradicated if dealt with soon.

Caesar weed, showy rattlebox and a few other exotics are widespread in the park's natural landscape, but can be regarded as a nuisance rather than a menace. They can be dealt with after limited resources have been allocated to control the more threatening species. The same goes for wild taro that grows in the river. Plants like the last three mentioned may never be eliminated. The objective will be a regular maintenance program of removal to keep their numbers in check. Coral ardisia has been found on a trail along the river just east of the rapids. The staff removed the plants by hand pulling. However, this site should continue to be closely checked to ensure that this invasive plant does not return. In addition, certain ornamental plants at park residences are starting to spread and should be eliminated. Details on the ornamentals can be found in the most recent resource management audit. Finally, Old World climbing fern has been mapped at several locations in the park and requires aggressive control and monitoring.

Feral hogs have long had an impact on natural communities in the park. Hogs are removed as required by park policy. Management will continue to keep hog numbers at the lowest possible level.

The goal of natural community restoration is defined by division policy and in the park will be directed at mesic flatwoods, depression marshes and domes, as it is these three which land use changes since the 1930s have obviously altered.

Domes show the least impact. No longer subject to frequent fires, cypress trees now share their aquatic habitat with shrubs and aquatic hardwood trees to a greater degree than in previous times. Fires applied more frequently offer the best restorative prospects.

A number of depression marshes have been transformed by the entry of aquatic hardwoods even as the mesic flatwoods around them were being altered by the encroachment of upland hardwoods. Eliminating the aquatic hardwoods from the marshes poses no undue difficulty. The objective is to maintain the marshes free of trees, excepting those so large that natural fires rarely penetrated to the center, where moist conditions persisted during times of drought, thereby

allowing shrubs and sometimes trees to develop on a central island.

The hydrological management objective will be to plug or fill all drainage ditches to the extent feasible, for restoring the hydrological regime in cypress dome and depression marshes and to reduce the volume of water vented into the river from these ditches. The park is working on a multi-year grant from SFWMD to research and fund hydrological restoration.

The restoration of selected mesic flatwoods sites promises to cost more and take much longer than domes or depression marshes. When the Florida Park Service began prescribed burning in the early 1970s, after decades of fire-suppression, it was thought that the succession of mesic flatwoods to hammock could be undone by prescribed burning; that the application of fire would not only eliminate encroaching hardwoods but would restore the vegetation that prevailed prior to fire-suppression policy.

The assumption has not proven true. Fire will kill hardwoods, fuel being favorable, and hardwood mortality can be enhanced when fire is applied during the growing season. During the 1980s, burning doctrine shifted to growing season burns. But Hillsborough River State park is a good place to observe that 20-plus years of burning has not restored mesic flatwoods except in the most superficial sense: the hardwoods are gone (or retreating), revealing a pleasing vista of saw palmettos and scattered pines. Wiregrass the principal, primeval carrier of flames has nearly vanished from the park, the only exception being in burn zone 6 and a few straggling clumps surviving in burn zone HR13 and perhaps elsewhere. The grasses that have replaced wiregrass appear to be disturbance species whose presence would have probably been ephemeral and sporadic in the flatwoods of old. In the worse cases, the replacement vegetation is a dense exotic growth -- Caesar weed for example. There are also places where the longleaf pines and south Florida slash pines have been replaced by planted pines from north Florida.

The extent of mesic flatwoods can be seen clearly in 1938 aerial photography, a time when park facilities had been developed, but when the natural community structure was still intact. The flatwoods corresponded closely to the distribution of winder fine sand that can be seen on the soils map. The exclusion of fire caused a drastic community transformation, mitigated only where unwanted fires checked encroaching hardwoods. The least changed mesic flatwoods is in burn zone HR-6 (comprised of subzones A and B). Here are found numerous species of plants common in the historic landscape, which can aid in identifying the vegetative goal of restoration. Another place to see what species were once present is on private ranch lands north of the park opposite burn zone HR-13. However, this property has been subject to grazing and a winter burn regime for many years, a pattern of land use that constitutes a modern impact that mandates caution in interpreting data on the composition of plants. The management objective is to restore mesic flatwoods, as nearly as practicable, to its pre-historic condition. Years of grazing and winter burning have selected for native plant species that thrive under those specific activities.

Specific management measures needed are:

1. Delineate on a map the mesic flatwoods that should be restored.
2. Calculate the acreage and cost of roller chopping sites where the height and density of saw palmetto must be reduced.
3. Eliminate hardwoods in these sites through girdling. Maintain the sites free of hardwoods by burning, employing roller chopping if necessary.

4. Identify species that need to be reintroduced and identify methods of collecting seeds, producing seedlings, and planting.
5. Prepare a plan for phasing out planted pines and replacing them with appropriate species.

A level I survey of cultural resources of Hillsborough River State Park is warranted. The condition of all cultural resources should be monitored and documented through a program of regular inspections and comparisons of periodically taken photographs.

The New Deal Era resources of the park should be managed according to a program of cyclical maintenance. Extensive structural maintenance, refurbishment, or restoration of the New Deal Era structures should take into account their original uses and their architectural kinship to similar resources in other New Deal Era Parks. A structure's uniqueness in the state park system or among the publicly owned or managed inventory of recreational resources within the state must also be taken into account. The park's natural resource management programs near New Deal Era cultural resources should be managed according to the planners' original intent unless deviation is necessary to preserve species, eliminate invasive exotic plants or to accomplish other high priority objectives. Specific management objectives for the Hillsborough River State Park New Deal Era resources are to reestablish water resistance for all structures, and to ensure the historic integrity and the structural stability of the historic bridges.

Management Measures for Natural Resources

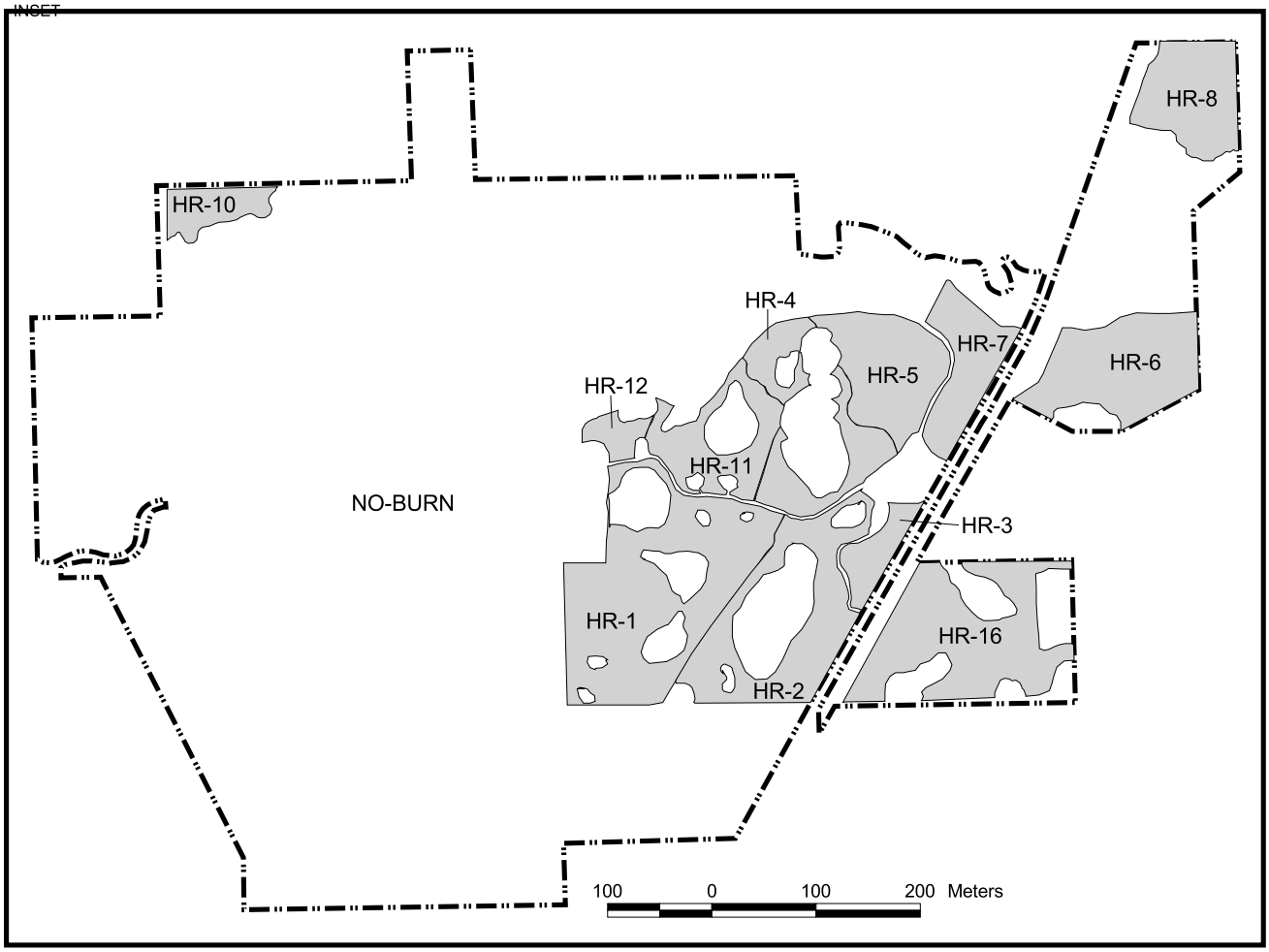
The park is in the initial stages of securing a multi-year grant from SWFMD to identify, survey, and restore hydrological disruptions of the past.

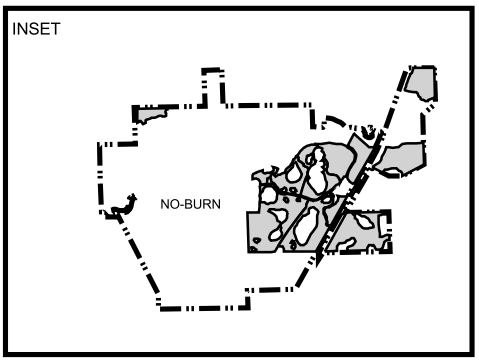
Prescribed Burning

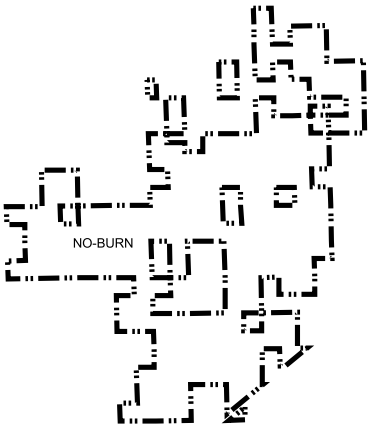
The objectives of prescribed burning are to create those conditions that are most natural for a particular community, and to maintain ecological diversity within the unit's natural communities. To meet these objectives, the park is partitioned into burn zones, and burn prescriptions are implemented for 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.

Prescribed burning is applied in Florida's state parks to maintain natural communities by employing a force that once occurred naturally. At Hillsborough River State Park, it will be used in depression marshes, dome communities and mesic flatwoods -- three communities that show the effects of long years of fire exclusion.

In depression marshes and domes, hardwood trees and shrubs have encroached. In the marshes, they threaten to displace the fire regime species: grasses and sedges. In marshes girdling may be needed to eliminate the larger hardwoods. (This does not apply to mitigation wetlands on the Model Dairy addition.) Reintroducing fire to these two communities for vegetative maintenance may be problematic because wetlands, being wet, have an inherent resistance to fire, usually burning best under the very dry conditions that today can be hazardous and perhaps prohibitive for prescribed burning. Trying to determine the conditions that will enable the use of fire in the marshes will be one of the challenges faced by management. Management measures in the marsh communities shall await the development of a resource map, after which a biologist will visit each marsh assigning it a number and documenting vegetative conditions. This step will







LEGEND
Burn Zones
Park Boundary

N

300 0 300 600 Meters

HILLSBOROUGH RIVER STATE PARK

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

BURN ZONES MAP

facilitate the systematic monitoring of these communities hereafter. Mitigated wetlands on the Model Dairy property will be managed for the vegetation that has been planted. This property is not within a designated burn zone. Additional hardwood plantings, characteristic of an upland mixed forest, will be discussed with representatives of Hillsborough County, which has support staff and a native plant nursery.

Some of the mesic flatwoods in the park have been so drastically altered through succession that they have become upland mixed forests and restoration is impractical. However, in those identified for restoration, fire will be one of the tools used to advance the project. Measures already taken include periodic burning, girdling large hardwoods and using a mechanical tree cutter to chop smaller hardwoods off at ground level. This work must continue where needed. Burn zone HR-13 has been treated by roller chopping. Other zones, where saw palmettos have become too high and dense, shall be identified for the same. A quick-cut brush master or a mechanical tree-cutter may be needed to treat saw palmettos in advance of roller chopping. Finally, plant species displaced by shading must be reintroduced. Prescribed burning must be continued as restoration progresses, and used with maximum frequency. Burning as often as the fuel will carry the flame is the practice to stall the momentum of rooted hardwoods, which resprout and grow rapidly after each fire. Growing season burns are recommended for best results, but opportunities at other seasons should not be neglected, and this is especially important during the phase of restoration. Once the desired community structure and mix of species have been attained, growing season burns will primarily be relied upon for maintenance and can be carried through with greater ease and minimal risk.

Mesic flatwoods occurring onsite have succeeded to varying stages of hardwood predominance. This occurrence is primarily due to fire exclusion beginning in the 1930s. Since 1970, portions of the mesic flatwoods have been subjected to periodic prescribed burns along with other management treatments including girdling of hardwoods, bushhogging and roller chopping to restore and maintain the fire-climax plant community. Other areas of mesic flatwoods have continued to succeed to a hardwood-dominated plant community. These areas will continue to be managed as such to provide for a diversity of habitat types. The restored mesic flatwoods will be a showcase example of what was once widespread in the region surrounding the park but will be too small, isolated and fragmented to function as a flatwoods ecosystem in the broad sense of the term. Viable populations of community - dependent species such as gopher tortoises will not survive there unassisted.

Fourteen burn zones and subzones are currently designated as HR-1A, 1B, 2, 3, 4, 5, 6A, 6B, 7, 8, 11, 13, 16, and 17 (see Burn Zones Map).

Designated Species Protection

The welfare of designated species is an important concern of the Division. In many cases, these species will benefit most from proper management of their natural communities. At times, however, additional management measures are needed because of the poor condition of some communities, or because of unusual circumstances that aggravate the particular problems of a species. To avoid duplication of efforts and conserve staff resources, the Division will consult and coordinate with appropriate federal, state and local agencies for management of designated species. Specifically, data collected by the FFWCC and USFWS as part of their ongoing research and monitoring programs will be reviewed periodically to inform management of decisions that may have an impact on designated species at the park.

A few gopher tortoises survive in the park, but not enough for a minimum viable population. A census is needed to determine numbers and distribution. Individuals can probably be sustained in the park with careful monitoring and perhaps by an occasional reintroduction from populations relocated from development sites. However, no action should be taken until an official assessment by the biology staff is completed. The reintroduction of gopher tortoises requires a permit from the FFWCC.

For other listed species, no additional measures have been identified at this time. Most habitats in the park (aside from mesic flatwoods and its wetland components) will be part of a continuum of forest preserved above and below the park by other land (and water) conservation programs. That bodes well for mitigating threats to plants and animals that might otherwise be threatened with extirpation due to isolation from the park.

Exotic Species Control

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

The University of Florida Cooperative Extension Service recommends the following control measures (1993):

Solanum viarum (Tropical soda apple)
Treatment: Spot treatment (spraying individual
plants) for control in wooded areas or open pastures has been successful (95-100 percent) with Weedone CB (Thone-Poulenc Ag Company), a 3 percent Roundup solution (Monsanto Corp.), or a 1 percent Remedy solution.

Comments: Roundup will kill the weed and some adjacent pasture grass leaving a 1 to 3-foot dead spot resulting in the germination of new plants. To avoid spot spraying the same plant twice, or not spraying a plant at all, add a colored dye to the herbicide solution prior to spraying. Wooded areas infested must be targeted for control; otherwise, seed from these areas will be spread (deer, raccoons, hogs, and cattle) to adjacent land areas.

Dioscorea bulbifera (Air-potato; Air yam)
Treatment: A basal stem application of Garlon 4 recommended although cut-stem treatments with *50 percent* Garlon 3A or 10 percent Garlon 4 are also effective. If bulbils are present on vines, a basal bark treatment should be used because it will translocate into the bulbils. Collect bulbils from the ground and remove from site. Apply 10 percent Garlon 4 to stems emerging from tubers. Hand pulling followed by treatment of resprouts has also been effective.

Comments: Monocot with heart-shaped leaves; dies back to tubers in winter in response to shortened day length, resprouts in spring from tubers; all three species produce aerial bulbils in late summer, early fall.

Paederiafoetida (Skunk vine)
Treatment: Limited information available. Foliar application of 3 percent **(**4 oz/gal) Brush-B-

Gone or 1-2 percent Roundup has been effective. Preliminary data suggests successful control with fire when invading a pyric community.

Comments: Extremely aggressive, draping, foul smelling vine. Common in West Central Florida and expanding its range.

Imperata cylindrica (Cogongrass)
Treatment: 3-4 qt. Roundup Pro, 2-3 qt. Arsenal, or *0.5* qt Fusulade per acre. Herbicides should be used in combination with burning or tillage for optimum control. See IFAS Publication SS-AGR-52 for additional information.

Comments: If not controlled, cogongrass will spread along roadways and into pastures, mining areas, forest land, parks, and other recreation areas. Extensive rhizomes must be eliminated for long-term control.

> **Note:** The DOT method of eliminating cogon grass from highway road-shoulders is to treat in October with a one percent solution of Round-Up (glyphosate) -- one gallon of herbicide to 100 gallons of water. The grass leaves are drenched with the solution. The one percent mixture is critical; that proportion works slowly allowing the herbicide to penetrate to the roots. If more than one percent is used, the aboveground portion of the plant dies too quickly to allow the roots to be affected. After the treated vegetation has turned brown, it should be mowed (or burned if feasible). As the cogon grass leaves begin to resprout, usually in spring, they should be re-treated when they reach a height of between six and twelve inches. At that height, the root system will be in its most weakened state. The park (and county) should subsequently re-treat as needed in fall and spring, again when the leaves are at six to twelve inches above the ground. If done properly, three treatments will usually eliminate cogon grass. Thereafter the sites should be monitored for re-entrants.

Sapium sebiferum (Chinese tallow; Popcorn tree)
Treatment: Cut stump treatment of 20 percent Garlon 4; or basal bark application of *15 percent* Garlon 4 to trees <10 in dbh or 20 percent Garlon 4 to trees >10 in dbh (non-aquatic sites only). Experimental cut stump and frill applications of 2-3 percent Arsenal have proven effective in aquatic sites and an application has been made to add to the label.

Comments: Use basal bark method when seeds are present on tree to reduce seed spread, apply to run-off. Seedlings up to 10 in. tall can be hand pulled. Caesar's weed, wild taro and ardesia can be hand pulled.

Problem Species

Problem species are defined as native species whose habits create specific management problems or concerns. Occasionally, problem species are also a designated species, such as alligators. The Division will consult and coordinate with appropriate federal, state and local agencies for management of designated species that are considered a threat or problem.

Problem species are limited to the American alligator, raccoon, and gray squirrel. Alligators only become a problem when they occur in areas of heavy visitor use. The inclination of many visitors to feed them causes a loss of fear in the alligator thereby posing a danger to visitors. People may misinterpret the alligator's lack of fear for tameness. On rare occasions, assistance has been sought from the FFWCC to remove problem alligators. Signs have been posted in those locations where cases of feeding have been observed. Public education with signage and staff contact with visitors are the measures used to discourage feeding.

Both the raccoon and gray squirrel have become problem species because of their abundance in use areas of the park. Feeding these mammals has made them bold and unafraid of visitors. The result has been numerous squirrel bites suffered by visitors from hand feeding, while the raccoon typically steals food and sometimes disrupts the camping experience by breaking into tents and trailers to get food. Continued emphasis on public education and enforcement of regulations regarding the feeding of animals are the tools being used to minimize this problem.

Management Measures for Cultural Resources

The management of cultural resources is often complicated because these resources are irreplaceable and extremely vulnerable to disturbances. The advice of historical and archaeological experts is required in this effort. Approval from Department of State, Division of Historical Resources (DHR) must be obtained before taking any actions, such as development or site improvements that could affect or disturb the cultural resources on state lands (see DHR Cultural Management Statement).

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

The environs of the replica of Fort Foster must be managed to recreate as nearly as practicable the scene of 1837, while maintaining the view from the replica fort, free of all signs of modernity.

The park has an established schedule of regular inspections, and will establish photo points for all cultural resources. Comparison of periodic inspection reports and photographs will be used to determine general maintenance priorities and trigger requests for sufficient project funding.

Park management and the Bureau of Natural and Cultural Resources will cooperatively expand the comprehensive knowledge base of New Deal Era resources on publicly owned or managed recreational lands. The park and the Bureau of Natural and Cultural Resources will develop and adopt a Scope of Collections Statement, per Chapter 16, Operations Procedures Manual.

Park staff will follow a cyclical maintenance program for all New Deal Era structures. While that program is being developed, park staff will continue to repair physical damage to framing, siding and roof fabric to reestablish building envelopes, whenever necessary. Staff will routinely trim closely growing foliage away from roofs and siding, and will grade foundation areas to reestablish the water resistance of structures. Regular professional inspections of the historic bridges in the park will be conducted.

Research Needs

Natural Resources

Any research or other activity that involves the collection of plant or animal species on park property 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 as an adjunct to mesic flatwoods restoration would be useful. A list of species needed for replanting must be drawn up. Similar projects elsewhere should be reviewed for lessons learned to date about seed collection, propagation and planting. In addition, restoration work should be monitored to enhance learning as the project advances.

Cultural Resources

Research about the CCC and other New Deal Era program origins of the resources at Hillsborough River State Park should be undertaken and completed. Such research should include compilation of a CCC survivor list, interview of willing survivors, as well as cooperative research about Hillsborough River State Park with other public and private bodies and organizations.

Specific research about the CCC enrollees who built the park should be undertaken in order to document these resources to the most complete extent possible. The results should be made available to the public and interested scholars and incorporated into the interpretive programs of the park.

Research into moved CCC buildings or surviving foundations of absent buildings is needed, and documentation of such structures should be compiled and made available to park visitors. Historical research, site analysis and the evaluation of the Hillsborough River State Park CCC-era site's integrity and significance needs to be undertaken to determine if the park (including the landscape changes undertaken by the Florida Park Service) should be considered a cultural landscape. If appropriate, further research and action plans will be developed.

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 (see Addendum 6).

Land Management Review

Section 259.036, Florida Statutes, established land management review teams to determine whether conservation, preservation, and recreation lands titled in the name of the Board of Trustees of the Internal Improvement Trust Fund (board) are being managed for the purposes for which they were acquired and in accordance with a land management plan adopted pursuant to s. 259.032, the board of trustees, acting through the Department of Environmental Protection (department). The managing agency shall consider the findings and recommendations of the land management review team in finalizing the required update of its management plan.

Hillsborough River State Park was subject to a land management review on July 24, 2002. The review team made the following determinations:

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

LAND USE COMPONENT

INTRODUCTION

Land use planning and park development decisions for the state park system are based on the dual responsibilities of the 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 park interaction with other facilities.

Hillsborough River State Park is located within Hillsborough County, about seven miles south of the town of Zephyrhills, in the southwestern part of the state. The populations of Hillsborough and the adjacent Pasco counties have grown 21 percent since 1990, and are projected to grow an additional 17 percent by 2010 (BEBR, University of Florida, 2002). As of 2000, 19 percent of residents in these counties were in the 0-14 age group, 39 percent in the 15-44 age group, 23 percent in the 45-64 age group, and 19 percent were aged 65 and over, which reflects the state average for these groupings (BEBR, University of Florida, 2002). Nearly 3,500,000 people reside within 50 miles of the park, which includes the cities of Tampa, St Petersburg, Clearwater, and Zephyrhills (Census, 2000).

Hillsborough River State Park recorded 156,156 visitors in FY 2002-2003. This represents a net increase over the last five years. By Division estimates, these visitors contributed over $5.4 million in direct economic impact and the equivalent of 108 jobs to the local economy (Florida Department of Environmental Protection, 2003).

Existing Use of Adjacent Lands

Lands adjacent to Hillsborough River State Park to the north and east are part of a large ranching operation. This area is currently used as pasture with some sections of hydric hammock, upland mixed forest and planted pine. Ownership of the land south of the developed area of the park and west of U.S. Highway 301 is shared between Hillsborough

County, and the Southwest Florida Water Management District, with privately owned land located along U.S. Highway 301. The public land is used as a water conservation and flood control area, and day use recreation facilities are provided by the County at John B. Sargeant, Sr. Memorial Park (land leased to the county by the SWFWMD) and at Dead River Park, located southwest and west of the state park, respectively.

Several other significant land and water resources exist within a short distance of the park. They include the Lower Hillsborough Flood Detention Area, a SWFWMD tract of nearly 16,000 acres, which abuts the western edge of the park's upper unit and wholly encompasses the park's southern unit. The 120,000 acre Green Swamp, the Upper Hillsborough Tract and the Alston Tract (all administered by SWFWMD), and the Cone Ranch (purchased by Hillsborough County) are large, contiguous properties east and north of the park acquired to safeguard regional hydrology. In terms of recreation, significant lands including the Ybor City Museum State Park, Withlacoochee State Forest, John B. Sargeant, Sr. Memorial County Park and Dead River Park all exist within a short drive of the park. These lands provide numerous opportunities for hiking, picnicking, camping, horseback riding, and historical interpretation.

Planned Use of Adjacent Lands

In time, increased residential and attendant commercial development should be anticipated in the privately owned areas surrounding the state park. Hillsborough County is planning the development and management of the Old Fort King Trail, a 6.5-mile paved and natural surface recreational trail to connect John B. Sargeant, Sr. County Park through intervening SWFWMD land to the state park. Acquisition and development of the abandoned railroad right-of-way south of the state park and east of U.S. Highway 301 is now being pursued by Hillsborough County as an addition to the proposed trail. The Hillsborough County Metropolitan Planning Organization's 2025 Long Range Transportation Plan suggests that US Highway 301 be expanded from a two lane undivided highway to a four lane divided highway. This possible expansion has the potential of impacting the park significantly through an increase in traffic, noise, congestion and air and water quality problems.

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

Hillsborough River State Park consists of 3,419 acres. Wetlands comprise approximately 2,280 acres or 67 percent of the park. These areas are generally not amenable to recreational development due to difficulties of access and resource sensitivity. Upland communities within the park, however, provide a range of opportunities for recreational use. The developed use areas within Hillsborough River State Park contain less than five percent of the park land and

are located primarily in the upland mixed forest community adjacent to the Hillsborough River.

Water Area

The Hillsborough River traces a path approximately three miles long through the park. Unusual outcroppings of limestone in the riverbed create rapids when the river is flowing at a normal level. These rapids are an unusual and interesting feature. The developed recreation area of the park utilizes about 2,700 linear feet of the river to provide canoe access, picnic areas and nature trails. A suspension bridge was constructed by the CCC across the river to provide trail access on the north side of the river.

Shoreline

The unit contains approximately 6 miles of shoreline on the Hillsborough River. The large numbers of visitors attracted to the developed area along this shoreline create visible impacts due to foot traffic on the slopes of the river's edge. Bulkheads in the canoe rental area and at Cedar Landing are in poor condition. The latter site presents a significant safety hazard and engineering studies are needed to determine what course of action may be required to repair or renovate these structures.

Natural Scenery

The Hillsborough River is the primary visual resource of this unit. Bridges and overlooks provide visitors with access to view this scenic area. The original CCC structures in the riverside picnic area are also visually attractive. Of the natural communities represented in the park, the upland mixed forest and the floodplain forest are probably the most scenic.

Significant Wildlife Habitat

As mentioned in the resource management component, 55 designated species of plants and animals can be found at Hillsborough River State Park. The blackwater stream, hydric hammocks, floodplain swamps and other wetland communities should be most carefully protected from development and visitor impacts, since these communities are more delicate and less widely represented in the state than the other communities of the park.

Natural Features

The most notable natural feature of the unit is the Hillsborough River, especially where the water rushing over the exposed limestone creates rapids at normal river stages.

Archaeological and Historical Features

Hillsborough River State Park has not been comprehensively surveyed for cultural resources; nevertheless, 21 resources are listed in the Florida Master Site file. The area of the present park contains abundant opportunities for hunter – gatherers. Early Floridians probably used the Hillsborough River floodplain extensively for subsistence on at least a seasonal basis. Although park development may have obliterated some evidence of this activity, a comprehensive survey of the original park and the Model Dairy property would likely reveal additional evidence of human habitation and use.

The recorded cultural resources at Hillsborough River State Park include 8HI 4028, an aboriginal midden or mound whose cultural affiliation has not been determined. The site of Forts Alabama and Foster is designated 8HI 112. Those fortifications were erected in the same location during the Second Seminole War (1835-1842) to defend a bridge that carried the Fort King Military Road across the Hillsborough River. Fort Alabama was established in March 1836 and was abandoned a few months later. It was destroyed when Seminoles

apparently tripped a booby trap left by departing troops. Fort Foster was established in the winter of 1836, again to safeguard the bridge, rebuilt after its burning by Seminoles. The fort was abandoned in 1838. The location was unhealthy, and sickness occasionally threatened to render the fort indefensible. The site was listed on the National Register of Historic Places in 1972**.** A replica of Fort Foster has been built and is located at the approximate site. It serves as an interpretive resource by park staff and volunteers. The Fort King Military Road passes through the park.

The largest cultural resource, both in term of acreage and number of components, is the park itself, which has been open for public recreation and enjoyment since 1936-1937. Hillsborough River State Park is significant in the twentieth century history of Florida as one of nine elements of the New Deal-inspired Florida state park system and as one of the physical expressions of early twentieth century recreation planning. Many of the resources listed in the Florida Master Site File include facilities constructed during the CCC Era. A comprehensive plan for preservation of the historic structures of the park is needed. Interpretation of the CCC Era and of the evolution of the state park since its construction in the 1930s should be a feature of the park's interpretive programs.

Assessment of Use

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

Past Uses

As discussed in the resource management component, the U.S. military used this site during the 1830s. There is evidence that the property was used for turpentine extraction during the early 1900s. The unit has been operated as a state park since the 1930s.

Recreational Uses

Swimming, fishing, canoeing, camping, historic site visitation, hiking, nature study, picnicking, and scenery appreciation are the activities provided at this unit.

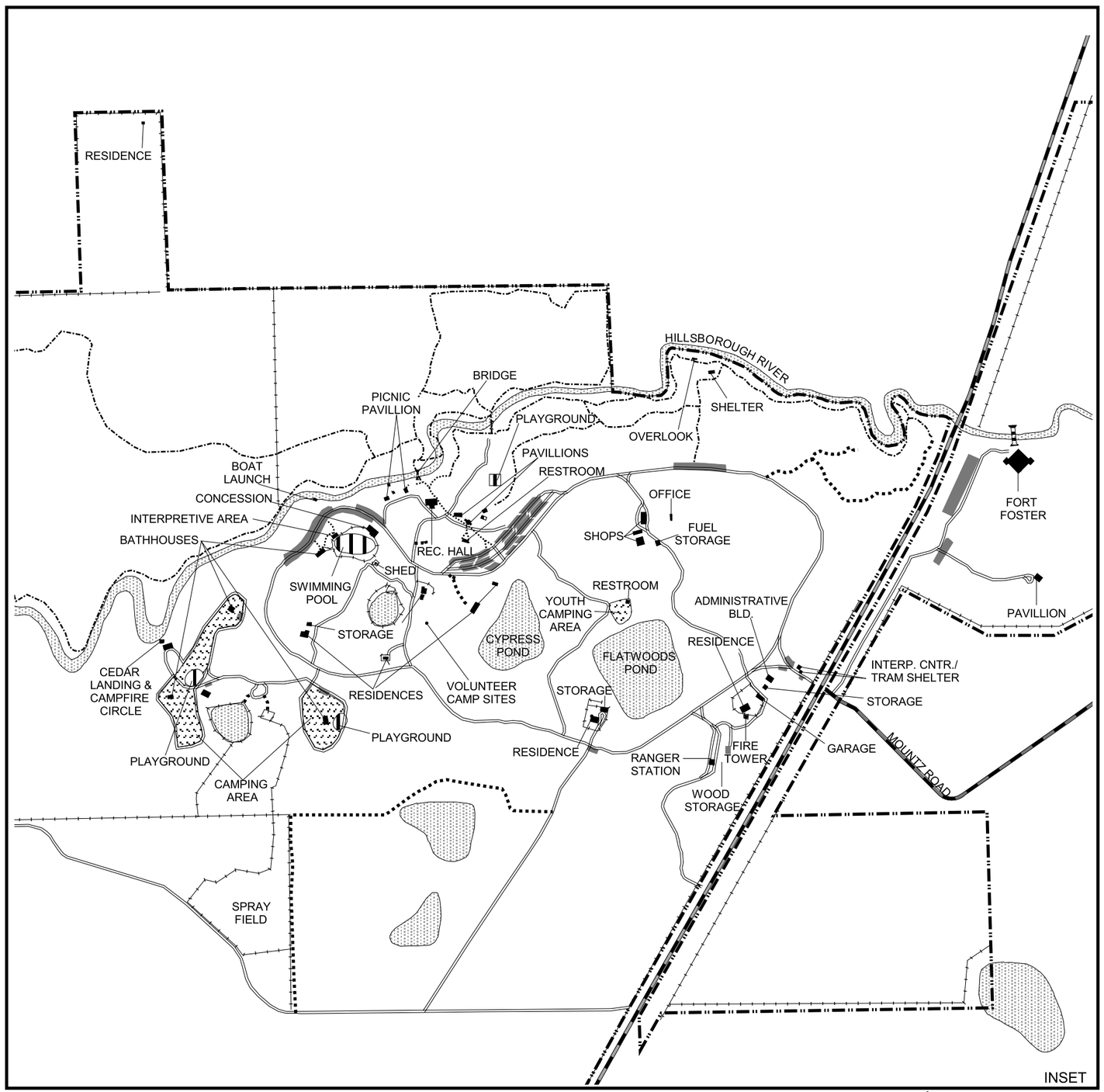
Protected Zones

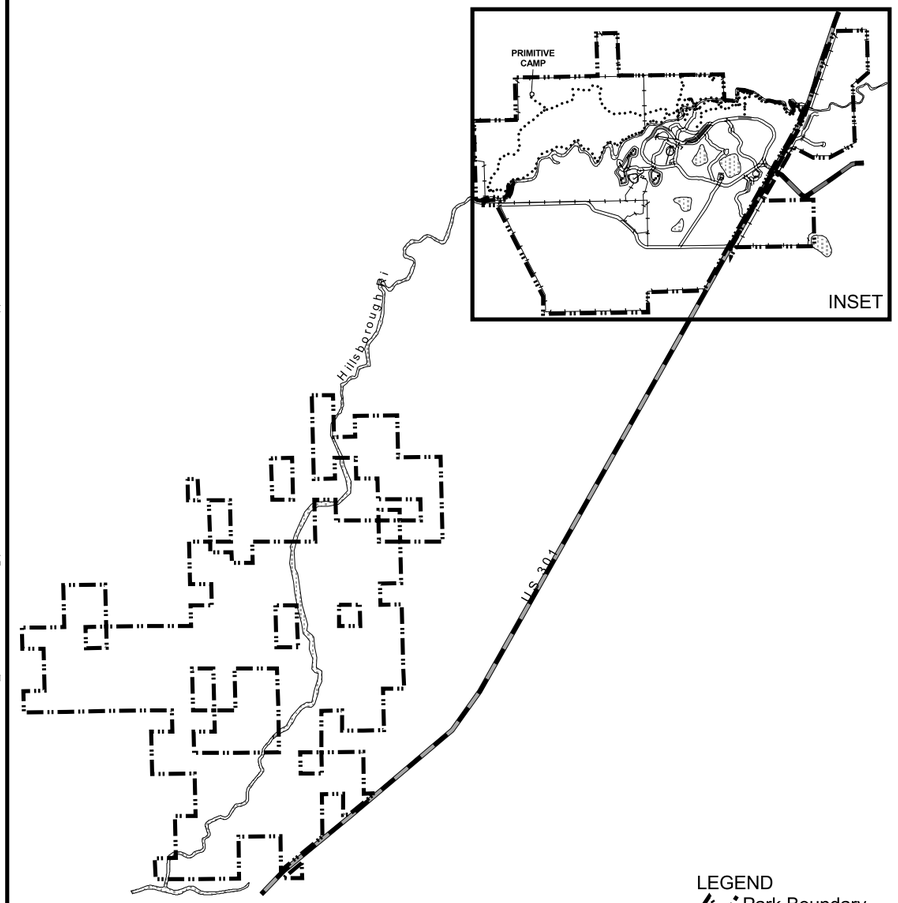
A protected zone is an area of high sensitivity or outstanding character from which most types of development are excluded as a protective measure. Generally, facilities requiring extensive land alteration or resulting in intensive resource use, such as parking lots, camping areas, shops or maintenance 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 Hillsborough River State Park, all wetland communities, the portion of the park lying north of the Hillsborough River and the historic sites of Fort Foster and the Fort King military road have been designated as protected zones.

Existing Facilities

Boating/River picnic area
Playgrounds (2)
Canoe rental concession
Shelter (River Rapids)
Boat launch (1)
Restrooms (2)
Pavilions/cooking shelters (5)
Barbecue pit/shelter (1)
Concession building/gift shop
Suspended bridge





LEGEND
- Park Boundary
- Hiking Trail
- Walkway
- County Road
- Park Road Paved
- Park Road Unpaved
- US Highway
- Fences
- Structures
- Bridges
- Special use areas
- Camping Sites
- Parking Lots
- Water Bodies

HILLSBOROUGH RIVER STATE PARK

600 0 N 600 1200 Feet

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

BASE MAP

Stationary bridge
Picnic tables

West camping area
Campsites (79)
Shelter (Cedar Landing)
Bathhouses (2)
Laundry area
Hand-portage boat launch (1)
Campfire Circle

Youth Camp
Campsites (4)
Restroom

East Camping Area
Campsites (33)
Bathhouse
Playground
Recycling center
Laundry
Pet walk

Swimming Area
Swimming pool
Bathhouse
Picnic tables
Playground
Concession building

Fort Foster
Fort structure
Waiting shelter
Interpretive center
Bridge

Trails
Baynard nature trail (1.1 miles)
River rapids nature trail (1.2 miles)
Florida trail (3.4 miles)
Wetlands restoration nature trail (1.6 miles)

Interpretive Gardens
Wildlife garden
Butterfly garden

Support Facilities

Ranger station
Shop
Park office/administration bldg
Equipment shed
Fire tower
Trailer residence
Permanent residences (4)
Chlorinator building
Storage buildings (4)
Sewage treatment plants (2)
Tram shelter
Greenhouse
Dump station
Parking (4 areas)

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 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

4500 0 4500 Feet

N

OVERALL VIEW

FLORIDA TRAIL IMPROVEMENTS

MAINTENANCE AREA IMPROVEMENTS

FT KING EXHIBIT AREA

HILLSBOROUGH RIVER

CAMPING AREA RENOVATIONS

OLD FORT KING TRAILHEAD/ EQUESTRIAN CAMPING AREA

U.S. 301

LEGEND

- Proposed Facilities
- Trails
- Protected Zone
- Park Boundary

HILLSBOROUGH RIVER STATE PARK

2000 0 N 2000 4000 Feet

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

CONCEPTUAL LAND USE PLAN

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

Many of the structures at Hillsborough River State Park are in need of rehabilitation and replacement. Some structures are suitable for remodeling or renovation. Other facilities, such as the camping area bathhouses and the maintenance shop/support area are in poor condition. These facilities are recommended for replacement. New facilities are proposed by this plan to integrate the route of the Old Fort King Trail with the state park.

Camping area renovations. Two of the camping area bathhouses (buildings 25 and 35) are outdated and need to be replaced in order to bring them up to Division standards. The electrical service within the two camping areas also needs to be upgraded from 30 amp to 50 amp service.

CCC study. All the CCC facilities located at Hillsborough River are in need of restoration. An architectural and engineering study should be conducted by a historic preservationist in order to thoroughly evaluate the condition of these historic structures and develop a list of necessary repairs. It is recommended that any repairs to CCC structures be done in the CCC style using heavy timbers, cedar shake roofing and/or siding, and other similar materials.

CCC repairs. The suspension bridge built by the CCC needs rehabilitation work. The suspension bridge decking and supports need to be examined and replaced where necessary. The only remaining CCC cabin at the park needs to be restored based upon the original plans and used as an additional CCC interpretive exhibit.

Trail maintenance. The Florida Trail on the north side of the Hillsborough River needs to be rehabilitated to alleviate erosion problems and to correct safety hazards. The Baynard Nature Trail and the River Rapids trail have recently been renovated, however, these trails, along with the Florida Trail, are among the oldest in the Florida Park Service and need to be placed on a cyclical maintenance cycle to keep them in top shape. Interpretive signage is also needed along the three trails.

Concession building alteration. The old concession building is outdated. It is recommended that the building be turned into a natural history interpretation area. A new concession building has been built.

Model Dairy property improvements. The Division manages 372 acres of land owned by Hillsborough County, located immediately south of the original state park boundary (the "Model Dairy Property"). New facilities are proposed for the northeastern corner of that area to provide a trailhead and equestrian camping facilities in conjunction with the County's Old Fort King Trail project. Shared use natural-surface trails for hikers, equestrians and bicyclists, and a trail rest shelter are recommended within the County-owned area, and a connection for hikers and bicyclists is proposed from the trailhead to the developed facilities of the state park. This link will be aligned to pass by the state park ranger station to facilitate collection of user fees and provide a visitor contact and control point, and will parallel the park road, crossing it at one point.

Equestrian access to the state park has not been provided in the past because of the limited size of the park and the large amount of wetland areas it contains. The provision of access via horse from the proposed Old Fort King Trail to the original developed areas of the state park

was considered during development of this plan. Since a large volume of visitors and congested conditions frequently occur at the state park, there is concern regarding the potential for visitor conflicts and safety problems if horses are allowed into these highly active recreation areas. Therefore, the recommendation of this plan is that equestrian access at the state park be limited to the "Model Dairy" property.

Equestrian camping area. An equestrian camping area is proposed for development on the Model Dairy property. Under an agreement with the county, the Division will build the equestrian camping area while the county will build the Old Fort King trailhead facilities. The proposed equestrian camping area should include a small bathhouse, pitcher pumps, tie-outs, and designated sites for up to 10 truck and trailer rigs.

Interpretive exhibits. Interpretation is a major focus of the Florida State Park system. Interpretive displays and exhibit upgrades are needed throughout the park including at each trailhead, at designated points along the trails, picnic areas, camping areas, and Fort Foster. Potential interpretive themes for Hillsborough River State Park include rare and endangered species, the natural and cultural history of the Hillsborough River region, the Second Seminole War, wetlands ecology, and Leave-No-Trace ethics.

Fort King military road exhibit area. A Seminole War memorial exhibit should be developed in the area around the Fort King military road. The park CSO is willing to work on the funding for this exhibit.

Support Facilities

Old Fort King trailhead development. The Old Fort King Trail trailhead will be constructed by Hillsborough County. Parking for up to 30 autos and separate equestrian parking for up to 10 trucks with trailers is recommended. A restroom facility and several picnic shelters and tables are also recommended for the trailhead. Additional hydrologic and site design studies will precede design and development projects on the County owned property. Division staff will work to ensure protection of resources and integration of the improvements with the ongoing wetlands restoration projects. The Environmental Lands Acquisition and Protection Program (ELAPP) staff in the Hillsborough County Parks and Recreation Department will be consulted by Division staff for input when the next steps of planning and design for the County land commence.

Maintenance area improvements. A new three bay equipment shelter and flammable storage are needed in the maintenance area. The old shelter needs to be restored to its historic use as a pole barn.

Shoreline enhancements. Concrete rip-rap that has been placed along the river shoreline should be removed and replaced with materials that are more aesthetically appropriate to the naturalistic setting of the park. The concrete bulkhead at Cedar Point continues to deteriorate. Engineering studies and remedial actions are needed prior to a full rehabilitation of the structure. In the interim, fencing along that portion of the river shoreline is recommended to protect visitor safety.

Parking lot resurfacing. The parking lots need to be resurfaced. This project needs to be coordinated with the hydrological study that is currently underway at the park so that any runoff into the Hillsborough River is minimized and water drainage and retention areas are improved.

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

Camping area renovations
CCC historic preservation study
Suspension bridge repairs
CCC cabin relocation and renovation
Trail maintenance
Model Dairy property improvements
Equestrian camping area
Fort King military road exhibit area

Support Facilities

Old Fort King trailhead development
Maintenance area additions
Shoreline enhancements
Parking lot resurfacing

Existing Use and Optimum Carrying Capacity

Carrying capacity is an estimate of the number of users a recreation resource or facility can accommodate and still provide a high quality recreational experience and preserve the natural values of the site. The carrying capacity of a unit is determined by identifying the land and water requirements for each recreation activity at the unit, and then applying these requirements to the unit's land and water base. Next, guidelines are applied which estimate the physical capacity of the unit's natural communities to withstand recreational uses without significant degradation. This analysis identifies a range within which the carrying capacity most appropriate to the specific activity, the activity site and the unit's classification is selected (see Table 1).

The optimum carrying capacity for this park is a preliminary estimate of the number of users the unit could accommodate after the current conceptual development program has been implemented. When developed, the proposed new facilities would approximately increase the unit's carrying capacity as shown in Table 1.

Optimum Boundary

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

Identification of lands on the optimum boundary map is solely for planning purposes and not for regulatory purposes. A property’s identification on the optimum boundary map is not 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 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

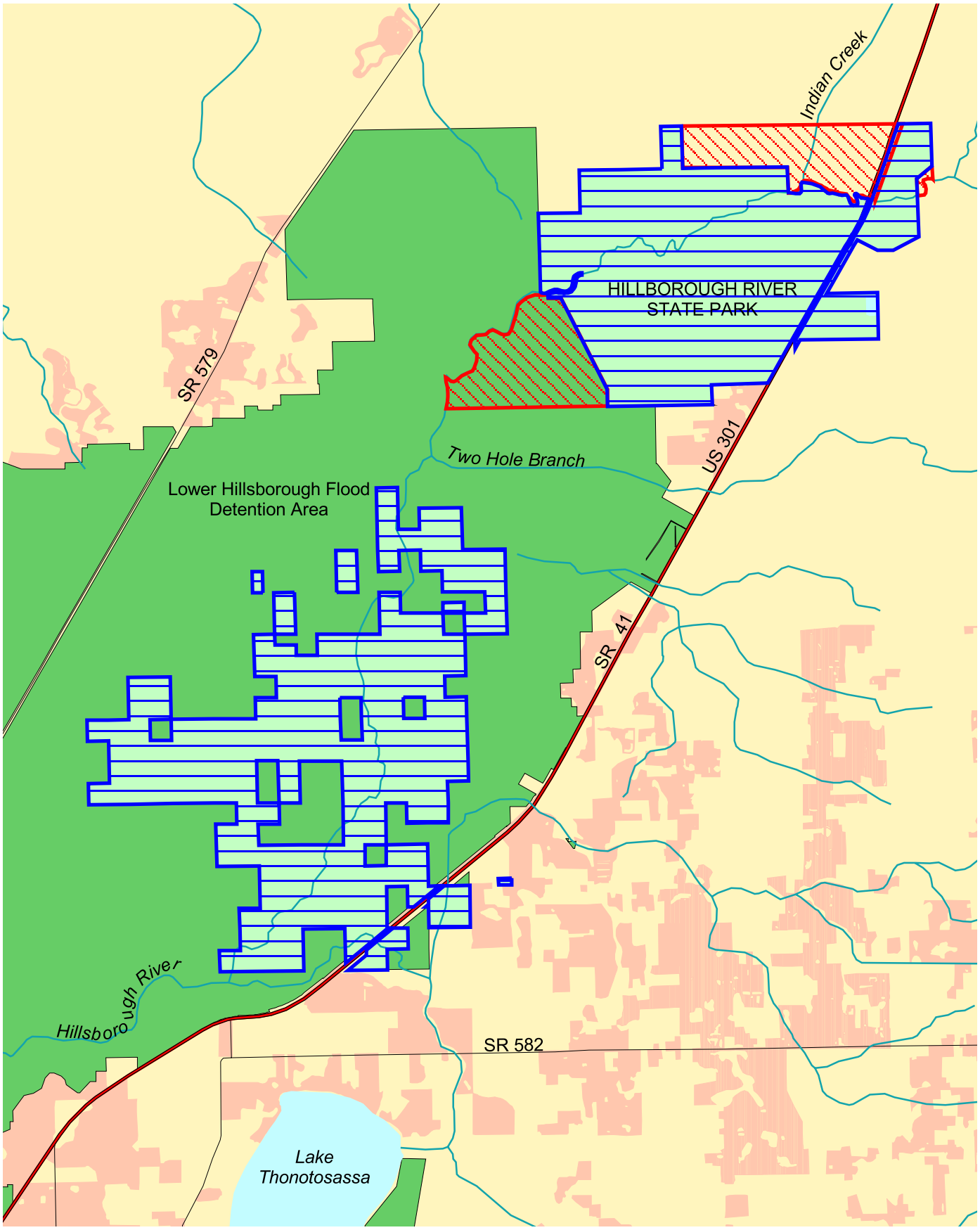
Table 1
Existing Use And Optimum Carrying Capacity

	Existing Capacity		Proposed Additional Capacity		Estimated Optimum Capacity	
Activity/Facility	**One Time**	**Daily**	**One Time**	**Daily**	**One Time**	**Daily**
Trails						
Hiking	31	62			31	62
Nature	60	240			60	240
Shared Use	20	40	60	120	80	160
Picnicking/Swimming	1,125	2,850			1,125	2,850
Fishing	20	40			20	40
Camping						
Standard	436	436			436	436
Youth camp	60	60			60	60
Equestrian			30	30	30	30
Boating						
Canoeing	60	120			60	120
Swimming	225	450			225	450
TOTAL	**2,037**	**4,298**	**90**	**150**	**2,127**	**4,448**

protection, and/or allow for future expansion of recreational activities. At this time, no lands are considered surplus to the needs of the park.

Three parcels of land that total approximately 540 acres have been identified to complete the optimum boundary of the park (see Optimum Boundary Map). The parcels contain floodplain forest, hydric hammock and mesic flatwoods communities and frontage on the Hillsborough River. The purpose of these acquisitions is to consolidate the Division's management of the river shoreline and water-based recreation and protect the natural communities adjacent to the river north of the park from potential land use changes.

A portage is needed to allow canoeists on the Hillsborough River a way around the rapids located adjacent to the park. The State's ownership includes only the southern shoreline along the rapids, and the steepness of that shoreline makes the portage impossible. Acquisition of the northern shoreline of the river from the right-of-way of U.S. Highway 301 to westward to the existing park boundary would provide a more suitable location for this needed facility.



HILLSBOROUGH RIVER
STATE PARK

2000 0 N 2000 4000 Feet

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

LEGEND
Park Boundary
Optimum Boundary

OPTIMUM BOUNDARY MAP

Addendum 1—Acquisition History

Purpose and Sequence of Acquisition

The Florida Board of Forestry (FBF), acquired Hillsborough River State Park to manage the property in such a way as to protect and restore the natural and cultural values of the property and provide the greatest benefit to the citizens of the state.

On June 10, 1936, the FBF purchased the property that constituted the initial area of Hillsborough River State Park. The purchase was funded with "Old Money." Since this initial purchase, the FBF and successor agencies have acquired several individual parcels under LATF and P2000/CARL programs and added them to Hillsborough River State Park.

Title Interest

The Board of Trustees of the Internal Improvement Trust Fund (Trustees) and Hillsborough County hold fee simple title of Hillsborough River State Park.

Lease Agreements

On September 28, 1967, the FBPHM transferred its title interest in Hillsborough River State Park to the Trustees. On January 23, 1968, the Trustees granted management authority of the park to the Division of Recreation and Parks (Division), under Lease No. 2324. Lease Number 2324 is for a period of ninety-nine (99) years, which will expire on January 22, 2067. In 1988, the Trustees assigned a new lease number, Lease No. 3623, to Hillsborough River State Park, without changing the terms and conditions of Lease No. 2324. According to Lease No. 3623, the Division manages Hillsborough River State Park to develop, operate, maintain, and use the property for outdoor recreational, park, conservation, historic and related purposes.

On April 1, 1992, the Division leased a 372-acre property from Hillsborough County for a period of thirty (30) years and added this property to Hillsborough River State Park. The Division uses this property as a passive recreational facility for the preservation and restoration of the property.

Special Conditions On Use.

Hillsborough River State Park is designated single-use to provide resource-based public outdoor recreation and other park related uses. Uses such as, water resource development projects, water supply projects, 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.

Outstanding Reservations.

Following is a list of outstanding rights, reservations, and encumbrances that apply to Hillsborough River State Park.

Instrument:	Lease
Instrument Holder:	Hillsborough County
Beginning Date:	April 1, 1992
Ending Date:	For a period of 30 years.
Outstanding Rights, Uses, Etc.:	The lease is subject to easements to Tampa Electric Company for utility purposes and a cattle lease assigned to Richard Feaster.

Instrument:	Deed
Instrument Holder:	Seaboard Coast Line Railroad Company
Beginning Date:	September 31, 1979
Ending Date:	No specific period is given
Outstanding Rights, Uses, Etc.:	The deed is subject to lien of the consolidated mortgage of Seaboard Coast Line Railroad Company dated March15, 1971.

Instrument:	Easement
Instrument Holder:	Trustees
Beginning Date:	December 30, 1970
Ending Date:	No specific date is given.
Outstanding Rights, Uses, Etc.:	If said lands are not used for public road purposes by Florida Department of Transportation, they will revert to Trustees.

Instrument:	Revocable Use Permit
Instrument Holder:	FBPHM
Beginning Date:	April 24, 1950
Ending Date:	No specific date is given.
Outstanding Rights, Uses, Etc.:	The use permit allows the Florida Board of Forestry to erect and maintain a fire lookout tower and the right of ingress to and egress from the property.

Instrument:	Deed
Instrument Holder:	Trustees
Beginning Date:	September 12, 1946
Ending Date:	Forever
Outstanding Rights, Uses, Etc.:	If the subject lands are not used for state park purposes, they will revert to the Trustees.

Hillsborough River State Park

List of Advisory Group Members

The Honorable Thomas Scott, Chairman
County Commissioner
Hillsborough County Board of
County Commissioners
Post Office Box 1110
Tampa, Florida 33601

Mr. Paul Allen, Assistant Park Manager
Hillsborough River State Park
15402 US 301 North
Thonotosassa, Florida 33592

Ms. Colleen Kruk
Southwest Florida Water Management
District
2379 Broad Street
Brooksville, Florida 34604-6899

Mr. Hugh Gramling, Chair
Hillsborough Soil and Water Conservation
District
1311 S. Parsons Avenue
Seffner, Florida 33584

Mark Hebb
Florida Division of Forestry, Lakeland
District Office
5745 S. Florida Avenue
Lakeland, Florida 33813

Jeff McGrady, Regional Biologist
Florida Fish and Wildlife
Conservation Commission
3900 Drane Field Road
Lakeland, Florida 33811-1299

Laura DeLise
Hillsborough River Greenways Task Force
PO Box 21405
Tampa, FL 33622

Mr. Karl Stevens, President
Tampa Audubon Society
16313 N. Dale Mabry Highway
Tampa, Florida 33618

Mr. David Roset, Chair
Tampa Bay Sierra Club
P.O. Box 1948
Tampa, Florida 33601-1948

Mr. Stu Martin
Suncoast Conservancy
6309 113th Ave
Temple Terrace, Fl 33617

Ms. Virginia Edwards, Chapter Chair
Florida Trail Association, Suncoast
Chapter
6147 Beachwood Drive
Ridge Manor, Florida 33523

Mr. Jim Watkins, President
Triple B Riding Club
Post Office Box 1944
Lakeland, Florida 33802

Ms. Jean Faulk
Canoe Escape
9335 East Fowler Avenue
Thonotosassa, FL 33592

Mr. George Wiehle, Vice President
Hillsborough River CSO
1319 Bogie Drive
Tampa, Fl. 33612-7323

Mr. Robert Thomas
40 Ranch Rd
Thonotosassa, FL 33592

The Advisory Group appointed to review the proposed land management plan for Hillsborough River State Park was held at the park's Recreation Hall on May 20, 2004. Ms. Sheryl Bowman represented The Honorable Thomas Scott, Mr. Delany Fairchild represented Ms. Colleen Kruk, Mr. Kevin Main represented Mr. Jeff McGrady, Ms. Gina Miller represented Ms. Laura DeLise, Mr. John Bangos represented Ms. Virginia Edwards, Mr. Bill Blommel represented Mr. Jim Watkins, and Mr. Bernie Dodge, Mrs. Rita Dodge, and Mr. Joseph Kessler represented Mr. George Wiehle. Mr. Hugh Gramling, Mr. Karl Stevens, Mr. David Roset, Mr. Stu Martin, and Ms. Jean Faulk did not attend. All other appointed Advisory Group members were present. Attending staff were Robert Wilhelm, Paul Allen, Greg Toppin, Terry Hingtgen, Kim Tennille, and KC Bloom.

Ms. Bloom began the meeting by explaining the purpose of the advisory group and reviewing the meeting agenda. She also provided a brief overview of the Division's planning process and summarized public comments received during the previous evening's public workshop. Ms. Bloom stated that a few changes in the land use component of the plan had occurred since the plan was last reviewed. These changes include: the administration building not being replaced because the new park management feels that it is sufficient and the old shelter in the maintenance area will be restored to its historic use as a pole barn rather than being demolished. She then asked each member of the advisory group to express his or her comments on the plan.

Summary Of Advisory Group Comments

Sheryl Bowman asked for clarification on how the staff puts together the priority schedule and cost estimate. **Ms. Bloom** described the process by which the Division determines the priority schedule and cost estimate along with how it fits into the budgetary process**. Ms. Bowman** then asked if the park would consider partnering with the county to restore some of the ruderal areas if possible. **Ms. Bloom** stated that the Division would always consider working with a partner to lower costs and get additional work done. **Ms. Bowman** then asked that the park consider doing additional exotic plant surveys because the county has been finding new exotics on some of their properties. **Mr. Hingtgen** replied that surveys have been recently completed on the park and additional mapping has been done. He continued that the Division has a fairly regular process by which they survey the parks for exotic species. **Ms. Bowman** then asked if the park had considered using a biological agent on tropical soda apple. **Mr. Hingtgen** responded that remedy has been the traditional agent but that the Division could consider the biological agent with additional information. **Ms. Bowman** then suggested that instead of mowing flatwoods, that the Division could use roller chopping. **Mr. Hingtgen** agreed that the Division would not use mowing in place of roller chopping. **Ms. Bowman** then asked that the spray field on the model dairy property be shown on the base map and stated that the equestrian camping area may need to be moved because it is in a low, wet area. **Mr. Wilhelm** stated that the proposed equestrian camping area is located on the edge of the model dairy property and will not be developed in the hammock. He also stated that the plan is conceptual at this time and that a location will be decided upon once funding for the project becomes available. Ms. Bloom replied that the spray field can be added to the base map.

Mr. John Bangos expressed his support for the plan.

Mr. Patrick Keogh expressed his support for the plan and stated that the text in the prescribed burning section of the plan needed revising to match the map. **Mr. Hingtgen** stated

that the plan would be revised.

Mr. Bill Blommel stated his support for the plan and asked if a tour of the park might be arranged. **Mr. Toppin** replied that he would be happy to give a tour to Mr. Blommel or any of the advisory group members at any time.

Mr. Robert Thomas stated that he saw great improvements in the plans for the park over the last plan. He continued that the park staff does an excellent job in maintaining and improving the park. **Mr. Wilhelm** thanked him for his comment. **Mr. Thomas** stated that he thought the visitation data mentioned in the plan seemed low. **Ms. Bloom** explained the process for determining park visitation. **Mr. Wilhelm** also stated that the visitation might seem low because previously the park was part of a GEO-park (several parks under one main management structure) and that now it was a stand-alone park. **Mr. Thomas** stated that the park plan should look at the possibility of US 301 being expanded to 4 lanes as well. **Ms. Bloom** stated that she would look into the FDOT 5-year plan and expand the park plan as needed. **Mr. Wilhelm** stated that such an expansion would also affect the Ft. King Trail.

Mr. Kevin Main asked about the ditch blocks mentioned on page 12 of the plan. **Mr. Hingtgen** responded that the Division would conduct a thorough hydrological survey prior to going forward with any ditch blocks. **Mr. Main** also stated that there was a typo with the Fish & Wildlife Conservation Commission's name on pages 25 & 28.

Ms. Gina Miller stated that she had no comments at this time but would follow up at a later date.

Mr. Delaney Fairchild asked if the trails have been mapped on the model dairy property? **Ms. Bloom** responded that the trails had not yet been mapped. **Mr. Fairchild** asked how much equestrian traffic was expected along with the model dairy improvements? **Mr. Wilhelm** replied that the model dairy property improvements are being done in conjunction with the county's Fort King Trail project and that at this time the Division is planning to build up to 10 equestrian camping sites. **Mr. Wilhelm** continued that the plan is to also connect through SWFMD's property to Sargent Park. **Mr. Fairchild** stated his concerns about the equestrian camping area because SWFMD is looking at developing a camping area on the lower hill's property and would be concerned about a duplication of services in fairly close proximity to one another. **Mr. Wilhelm** responded that the equestrian camping area is not a mandatory facility; however, it would provide the county with another area for equestrians.

Mr. Bernie Dodge and **Mrs. Rita Dodge** had no comment but invited the advisory group members to join the Hillsborough River State Park Citizen's Support Organization.

Mr. Joseph Kessler had no comment.

The meeting was then adjourned.

Staff Recommendations

Staff recommends approval of the proposed management plan for Hillsborough River State Park as presented with the following recommendations:

Prescribed Burning. The text in this section and the burn zone map both need to be revised. The burn zones have changed since the development of this management plan and need to be updated.

Base Map. The spray field on the model dairy property will be added to the base map.

Planned Use of Adjacent Lands. This section will be revised to state that the Hillsborough County Metropolitan Planning Organization's 2025 Long Range Transportation Plan suggests that US Highway 301 be expanded from a two lane undivided highway to a four lane divided highway. This possible expansion could impact the park significantly through an increase in traffic, noise, congestion and air and water quality problems.

Addendum 2—References Cited

Bureau of Economic and Business Research (BEBR), University of Florida. 2002. Florida Statistical Abstract 2002. Gainesville, Florida.

Florida Department of Environmental Protection. 2002. Florida State Park System Economic Impact Assessment for Fiscal Year 2001/2002. Tallahassee, Florida.

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

Florida Department of Natural Resources. 1992. *Approved Hillsborough River State Park Unit Management Plan*.

Florida Department of Natural Resources. 1999-89. *Cultural Resource Survey, New Deal Era Resources In Nine Florida State Parks.* Historic Property Associates, Inc; St Augustine, Florida. DNR 276-88/89.

Langeland K.A., Stocker R.K. 1997. *Control of Non-native Plants in Natural Areas of Florida*, SP242; University of Florida Cooperative Extension Service, IFAS.

Schene, Michael G. 1980. *Fort Alabama: A Temporary Wood Fort on the Hillsborough River*. Bureau of Historic Sites and Properties, Bulletin No.6, Division of Archives, History, and Records Management, Florida Department of State, Tallahassee, Florida.

U. S. Department of Agriculture, Soil Conservation Service. 1989. *Soil Survey of Hillsborough County, Florida*.

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

White, William A. 1970. *The Geomorphology of the Florida Peninsula*. Geological Bulletin No. 51; Bureau of Geology, State of Florida Department of Natural Resources, Tallahassee, Florida.

Addendum 3—Soil Descriptions

4 - Arents, nearly level - Arents consist of nearly level, heterogeneous soil material. This material has been excavated, reworked, and reshaped by earthmoving equipment. Arents are near urban centers, phosphate-mining operations, major highways and sanitary landfills.

Arents do not have an orderly sequence of soil layers. This map unit is not associated with or confined to a particular kind of soil. Arents are variable and contain discontinuous lenses, pockets, or streaks of black, gray, grayish brown, brown, or yellowish brown sandy or loamy fill material. The thickness of the fill material ranges from 30 to 80 inches or more.

Included in this map unit are areas used as sanitary landfills. Refuse consists of concrete, glass, metal, plastic, wood, and other materials and ranges in thickness from 2 to 10 feet. It is generally stratified with layers of soil material that were used as daily cover. These areas are identified on soil maps by the words “sanitary landfill.” Also included are small areas of soil that has slope that ranges from 0 to 5 percent.

Most soil properties are variable. The depth to the seasonal high water table varies with the amount of fill material and artificial drainage. Permeability and the available water capacity vary widely from one area to another.

5 - Basinger, Holopaw and Samsula soils, depressional - The soils in this map unit are nearly level and very poorly drained. They are in swamps and depressions on the flatwoods. Generally, Basinger soil is along the exterior of swamps or in shallow depressions. Holopaw and Samsula soils are in the interior areas of the swamps or in deeper depressions. Undrained areas are frequently ponded for very long periods. The slope is 0 to percent.

In 90 percent of the areas of this map unit, Basinger, Holopaw and Samsula soils, depressional, and similar soils make up 78 to 96 percent of the mapped areas, and dissimilar soils make up about 4 to 22 percent of the mapped areas. Generally, the mapped areas consist of about 35 percent Basinger soil and similar soils, 31 percent Holopaw soil and similar soils, and 18 percent Samsula soil and similar soils. The individual soils are generally in large enough areas to be mapped may be suited to the production of cypress and hardwoods through natural regeneration.

If these soils are used for building site development or for onsite waste disposal, ponding is the main limitation. Drainage is needed to lower the water table, and fill material is needed in most areas. While surface drainage helps to control ponding, the seasonal high water table is continuing limitation.

The soils in this map unit are in capability subclass VIIw. Basinger and Holopaw soils are in woodland group 2W. Samsula soil has not been assigned to a woodland group. This soils in this map unit are in the Freshwater Marshes and Ponds range.

7 - Candler fine sand, 0 to 5 percent slopes - This soil is nearly level to gently sloping and excessively drained. It is on the uplands.

In 95 percent of the areas mapped as Candler fine sand, 0 to 5 percent slopes, the Candler soil and similar soils make up 82 to 96 percent of the mapped areas. Dissimilar soils make up 4 to 18 percent of the mapped areas.

Typically, this soil has a surface layer of dark gray fine sand about 6 inches thick. The upper part of the subsurface layer, to a depth of about 35 inches, is light yellowish brown fine sand. The middle part, to a depth of about 72 inches, is very pale brown fine sand. The lower part to

a depth of about 80 inches is a mixture of very pale brown fine sand and strong brown loamy sand lamellae that are about one-sixteenth to one-quarter of an inch thick and 2 to 6 inches long. In some places, similar soils included in the mapped areas do not have lamellae in the lower part of the subsurface layer. Other similar soils, in some areas, have a subsurface layer that consists of 5 to 10 percent silt and clay; and some similar soils also included in mapping, in some of the lower parts of the landscape, are well drained.

Dissimilar soils included in mapping are Kendrick and Millhopper soils in small areas. Kendrick soils are well drained, and Millhopper soils are moderately well drained. Also included are areas of unnamed soils on upper side slopes that are well drained and have a sandy clay loam subsoil within 40 to 80 inches of the surface.

A seasonal high water table is at a depth of more than 80 inches. Permeability is rapid. The available water capacity is very low.

The natural vegetation consists of bluejack oak, Chapman oak, scrub live oak, and turkey oak. The understory includes indiangrass, hairy panicum, panicum, and running oak. In most areas, this Candler soil is used for citrus crops. In a few areas, it is used for pasture or for homesite or urban development.

12 - Chobee sandy loam, frequently flooded - The soil is nearly level and very poorly drained. It is on bottom lands mainly along the Hillsborough River and Blackwater Creek. This soil is flooded for very long periods following prolonged intense rain. The slope is dominantly less than 1 percent.

In 90 percent of the areas mapped as Chobee sandy loam, frequently flooded, the Chobee soil and similar soils make up 78 to 99 percent of the mapped areas. Dissimilar soils make up 1 to 22 percent of the mapped areas.

Typically, this soil has a surface layer of clack sandy loam about 15 inches thick. The subsoil extends to a depth of about 60 inches. The upper part is very dark gray, mottled sandy clay loam. The lower part is gray mottled sandy clay loam. The substratum to a depth of about 80 inches is light gray, mottled loamy sand. In some areas, similar soils included in mapping have a surface layer of mucky fine sand, fine sand, or loamy fine sand. Other similar soils have a thinner surface layer than Chobee soil, and in places, some similar soils have thin, discontinuous strata of limestone in the underlying material.

Dissimilar soils included in mapping are Felda and Wabasso soils in small areas. These soils are poorly drained.

A seasonal high water table fluctuates from the soil surface to a depth of about 1 inches. Permeability is moderately rapid in the surface layer, slow or very slow in the subsoil, and very slow to moderately rapid in the substratum. The available water capacity is high.

In most areas, this Chobee soil has been left in the natural vegetation. In a few areas, it is used for pasture. The natural vegetation consists of baldcypress, Coastal Plain willow, red maple, cabbage palm, and sweetgum. The understory includes buttonbush, maidencane, sawgrass, smartweed, and sedges.

In its natural state, this soil is generally not suited to cultivated crops. If a water control system, such as dikes, ditches, and pumps, is established and maintained, this soil is suited to cultivated crops, citrus crops, and pasture.

This soil is generally not suited to the production of pine trees because of flooding or extended wetness. It may be suited to the production of cypress and hardwoods through natural regeneration.

If this soil is used for building site development or for onsite waste disposal, flooding is the main hazard. Major flood control structures and extensive local drainage systems are needed to control flooding.

This Chobee soil is in capability subclass Vw, in woodland group 6W, and in the Freshwater marshes and Ponds range site.

15 - Felda fine sand - This soil is nearly level and poorly drained. It is on broad sloughs on the flatwoods. The slope is 0 t 2 percent.

In 95 percent of the areas mapped as Felda fine sand, the Felda soil and similar soils make up 90 to 99 percent of the mapped areas. Dissimilar soils make up 1 to 10 percent of the mapped areas.

Typically, this soil has a surface layer of very dark gray fine sand about 5 inches thick. The upper part of the subsurface layer, to a depth of about 18 inches, is dark gray, mottled fine sand. The lower part, to a depth of about 22 inches, is dark grayish brown, mottled fine sand. The subsoil to a depth of about 45 inches, is light brownish gray, mottled sandy clay loam. The substratum to a depth of about 80 inches is light fray loamy sand that contains many shell fragments. Similar soils included in mapping have a subsoil at a depth of more than 40 inches of the surface.

Dissimilar soils included in mapping are Pinellas and Wabasso soils in small areas. Pinellas soils are calcareous in the upper part of the subsoil. Wabasso soils have a sandy subsoil above a loamy subsoil.

A seasonal high water table fluctuates from the soil surface to a depth of about 10 inches for 2 to 6 months I most years. Permeability is rapid in the surface and subsurface layers and is moderate In the subsoil. The available water capacity is moderate.

In most areas, this Felda soil is used for pasture. In a few areas, it is used for cultivated crops or for homesite or urban development or it has been left idle in natural vegetation. The natural vegetation consists of cabbage palm and slash pine. The understory includes saw palmetto, pineland threeawn, and waxmyrtle.

If a water control system is established and maintained and soil-improving measures applied, this soil is well suited to most cultivated crops. If suitable outlets are available, lateral ditches and tile drains can be used to lower the water table. Returning all crop residue to the soils and using a cropping system that includes grasses, legumes, or a grass-legume mixture help to maintain fertility.

This soil is suited to pasture. Wetness limits the choice of plants that can be grown and restricts grazing during rotation, and timely deferment of grazing help keep the pasture in good condition.

The potential of this soil for the production of slash pines is moderately high. The main management concern for producing and harvesting timber is seedling mortality. Water-tolerant trees should be planted. Planting and harvesting operations should be scheduled

during dry periods. Bedding of rows helps to minimize the excessive wetness limitation.

If this soil is used for building site development, the main management concern is excessive wetness. Population growth has resulted in increased construction of houses on this soil. Drainage is needed to lower the high water table, and fill material is needed in most areas. Septic tank absorption fields need to be moved in most areas.

This Felda soil is in capability subclass, IIIw, in woodland group 10W, and in the Slough range site.

21 - Immokalee fine sand - This soil is nearly level and poorly drained. It is on broad plains on the flatwoods. The slope is 0 to 2 percent.

In 80 percent of the areas mapped as Immokalee fine sand, the Immokalee soil and similar soils make up 77 to 99 percent of the mapped areas. Dissimilar soils make up 1 to 23 percent of the mapped areas.

Typically, this soil has a surface layer of very dark gray fine sand about 8 inches thick. The subsurface layer, to a depth of 36 inches, is light gray fine sand. The upper part of the subsoil, to a depth of about 46 inches, is black fine sand. The middle part, to a depth of about 52 inches, is dark reddish brown fine sand. The lower part to a depth of about 80 inches is dark brown fine sand. Similar soils included in mapping have a subsoil that is at a depth of more than 50 inches. Other similar soils, in some areas, have a subsoil within 30 inches of the surface. Also, some included similar soils, in places, have a subsoil that is brown or dark brown.

Dissimilar soils included in mapping are Ona and Wabasso soils in small areas. Ona soils do not have a subsurface layer. Wabasso soils have a sandy subsoil above a loamy subsoil.

In most years, a seasonal high water table fluctuates from the soil surface to a depth of 10 inches for more than 2 months and recedes to a depth of 10 to 40 inches for 8 months or more. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. The available water capacity is low.

The natural vegetation consists of longleaf pine and slash pine. The understory includes creeping bluestem, chalky bluestem, lopsided indiangrass, saw palmetto, pineland threeawn, and waxmyrtle. In most areas, this Immokalee soil is used for native pasture. In a few areas, it is used for cultivated crops, improved pasture, or citrus crops or for homesite or urban development.

29 - Myakka fine sand - This soil is nearly level and poorly drained. It is on broad plains on the flatwoods. The slope is 0 to 2 percent.

In 95 percent of the areas mapped as Myakka fine sand, the Myakka soil and similar soils make up 84 to 93 percent of the mapped areas. Dissimilar soils make up 7 to 16 percent of the mapped areas.

Typically, this soil has a surface layer of very dark gray fine sand about 5 inches thick. The subsurface layer, to a depth of about 20 inches, is gray fine sand. The upper part of the subsoil, to a depth of about 25 inches, is black fine sand. The middle part, to a depth of 30 inches, is dark reddish brown fine sand. The lower park to a depth of about 38 inches, is brownish yellow fine sand. The upper part of the substratum, to a depth of about 55 inches, is

very pale brown sand. The lower part to depth of about 80 inches is dark grayish brown fine sand. Similar soils included in mapping, in some areas, have a surface layer that is more than 8 inches thick. Other similar soils, in some planes, have a subsoil within 20 inches of the surface, and some included similar soils have a subsoil at a depth of more than 30 inches or have a brown or dark brown subsoil, or both.

Dissimilar soils included in mapping are Basinger and Wabasso soils in small areas. Basinger soils are very poorly drained. Wabasso soils have a loamy subsoil below a sandy subsoil. In most years a seasonal high water table fluctuates from the soil surface to a depth of 10 inches for 1 to 4 months and recedes to a depth of 40 inches during prolonged dry periods. Permeability is rapid in the surface and subsurface layers, moderate or moderately rapid in the subsoil, and rapid in the substratum. The available water capacity is low.

In most areas, this Myakka soil is used for native pasture or cultivated crops. In a few areas, it is used for improved pasture or citrus crops, or it is used for homesite or urban development. The natural vegetation consists of longleaf pine and slash pine. The understory includes gallberry, running oak, saw palmetto, pineland threeawn, and waxmyrtle.

If a water control system is established and maintained and soil-improving measures applied, this soil is suited to most cultivated crops, citrus crops, and pasture. Proper arrangement and bedding of tree rows, lateral ditches or tile drains, and well constructed outlets will help lower the water table. Returning all crop residue to the soil and using a cropping system that includes grasses, legumes, or a grass-legume mixture help to maintain fertility. Frequent applications of fertilizer and lime are generally needed to improve soil quality.

If a water control system is established and maintained, this soil is well suited to pasture. Wetness limits the choice of plants that can be frown and restricts grazing during periods of excessive wetness. Proper stocking, pasture rotation, and restricted grazing during wet periods help keep the pasture and the soil in good condition. Fertilizer and lime are needed for optimum growth of grasses and legumes.

The potential of this soil for the production of slash pines is moderate. The main management concerns for producing and harvesting timber are the equipment use limitations and seedling mortality. Equipment use limitations are a concern if the soil is not properly drained. Water-tolerant trees should be planted. Planting and harvesting operations should be scheduled during dry periods. Bedding of rows helps to minimize the excessive wetness limitation.

If this soil is used for building site development, the main management concerns are excessive wetness, possible contamination of the ground water, and instability of cutbanks. Population growth has resulted in increased construction of houses on this soil. Drainage is needed to lower the high water table, and fill material is needed in most areas. Septic tank absorption fields need to be mounded in most areas. If the density of housing is moderate to high, a community sewage system can help to prevent contamination of water supplies by seepage. Cutbanks are not stable and are subject to slumping.

This Myakka soil is in capability subclass IVw, in woodland group 8W, and in the South Florida Flatwoods range site.

53 - Tavares-Millhopper fine sands, 0 to 5 percent slopes - The soils in this map unit are nearly level to gently sloping and moderately well drained. They are in low-lying areas on the uplands and on low ridges on the flatwoods.

In 95 percent of the areas of this map unit, Tavares-Millhopper fine sands, 0 to 5 percent slopes, and similar soils make up 87 to 99 percent of the mapped area, and dissimilar soils make up 1 to 13 percent of the mapped areas. Generally, the mapped areas consist of about 63 percent Tavares soil and similar soils and 26 percent Millhopper soil and similar soils.

Typically, the surface layer of the Tavares soil is dark grayish brown fine sand about 6 inches thick. The upper part of the underlying material, to a depth of about 32 inches, is pale brown fine sand. The middle part, to a depth of about 40 inches, is very pale brown fine sand. The lower part to a depth of about 80 inches is light gray fine sand. Similar soils included in mapping, in some areas, have a brown or dark brown layer in the lower part of the underlying material. Other similar soils, in some of the lower parts of the landscape, are somewhat poorly drained.

Typically, the surface layer of the Millhopper soil is dark gray fine sand about 4 inches thick. The upper part of the subsurface layer, to a depth of about 9 inches, is brown fine sand. The next layer, to a depth of about 25 inches, is light yellowish brown fine sand. The next layer, to a depth of about 48 inches, is light gray, mottled fine sand. The lower part, to a depth of about 57 inches, is light gray fine sand. The upper part of the subsoil, to a depth of about 62 inches, is very pale brown, mottled sandy clay loam. The lower part to a depth of about 80 inches is gray, mottled sandy clay loam. Similar soils included in mapping, in some areas, have a dark surface layer more than 10 inches thick.

Dissimilar soils which are included in this map unit are Candler, Myakka, and Smyrna soils in small areas. Candler soils are excessively drained. Myakka and Smyrba soils are poorly drained.

Tavares soil has a seasonal high water table at a depth of 40 to 80 inches for more than 6 months, and it recedes to a depth of more than 80 inches during prolonged dry periods. Millhopper soil has a seasonal high water table at a depth of 40 to 60 inches for 1 to 4 months, and it recedes to a depth of 60 to 72 inches for 2 to 4 months. Permeability of Tavares soil is rapid. Permeability of Millhopper soil is rapid in the surface and subsurface layers and moderate in the subsoil. The available water capacity is very low in Tavares soil and low in Millhopper soil.

The natural vegetation consists of bluejack oak, turkey oak, live oak, and longleaf pine. The understory includes creeping bluestem, lopsided indiangrass, panicum, and pineland threeawn. In most areas, the soils in this map unit are used for pastures associated with homesites and urban development. In a few areas, they are used for cultivated crops or citrus crops or are left in natural vegetation.

57 - Wabasso fine sand - This soil is nearly level and poorly rained. It is on plains on the flatwoods. The slope is 0 to 2 percent.

In 95 percent of the areas mapped as Wabasso fine sand, the Wabasso soil and similar soils make up 85 to 99 percent of the mapped areas. Dissimilar soils make up 1 to 15 percent of the mapped areas.

Typically, the soil has a surface layer of very dark gray find sand about 7 inches thick. The subsurface layer, to a depth of about 29 inches, is gray fine sand. The upper part of the subsoil, to a depth of about 32 inches, is black fine sand. The next layer, to a depth of about

38 inches, is dark brown fine sand. The next layer, to a depth of about 46 inches, is light gray sandy clay loam. The lower part, to a depth of about 60 inches, is light greenish gray, mottled sandy clay loam. The substratum to a depth of about 80 inches is gray loamy sand. Similar soils included in mapping, in some areas, have a subsoil at a depth of more than 30 inches. Other similar soils, in some places, have a subsoil at a depth of more than 40 inches, or have a very strong acid subsoil, or have both. Other similar soils, in some areas, have subsoil that is brown or dark yellowish brown; and in some places, the similar soils have thin discontinuous strata of limestone fragments in the underlying material.

Dissimilar soils included in mapping are Myakka and Pinellas soils in small areas. Myakka soils do not have a loamy subsoil below the sandy subsoil. Pinellas soils have a calcareous layer above the subsoil.

In most years, a seasonal high water table fluctuates from the soil surface to a depth of 10 inches for 2 months and recedes to a depth of 40 inches during prolonged dry periods. Permeability is rapid in the surface and subsurface layers. It Is moderate in the upper part of the subsoil and slow in the lower parts, and it is rapid in the substratum. The available water capacity is low or moderate.

In most areas, this Wabasso soil is used as native pasture. In a few areas, it is used for cultivated crops, improved pasture, citrus corps, or homesite or urban development. The natural vegetation consists of longleaf pine and slash pine. The understory includes lopsided indiangrass, gallberry, saw palmetto, pineland threeawn, and waxmyrtle.

If a water control system is established and maintained and soil-improving measures applied, this soil is well suited to most cultivated crops and pasture. If drained, this soil is moderately suited to citrus crops in areas, that are relatively free of freezing temperatures. Proper arrangement and bedding of tree rows, lateral ditches or tile drains, and well constructed outlets will remove excess surface water and will help lower the water table. Droughtiness, a result of the low to moderate available water capacity, is a management concern, especially during extended dry periods. This soil is suited to most irrigation systems. Returning all crop residue to the soil and using a cropping system that includes grasses, legumes, or a grass-legume mixture help to maintain fertility. Frequent applications of fertilizer and lime are generally needed to improve crop production.

If a water control system is established and maintained, this soil is well suited to pasture. Wetness limits the choice of plants that can be grown and restricts grazing during periods of excessive wetness. Proper stocking, pasture rotation, and restricted grazing during wet periods help to keep the pasture and the soil in good condition. Fertilizer and lime are needed for optimum growth of grasses and legumes.

The potential of this soil for the production of slash pines is moderately high. Equipment use limitations and seedling mortality are the main limitations. Equipment use limitation is a concern if the soil is not properly drained. Water-tolerant trees should be planted. Planting and harvesting operations should be scheduled during dry periods. Bedding or rows helps to minimize the excessive wetness limitations.

If this soil is used for building site development, the main management concerns are excessive wetness and slow permeability of the lower subsoil. Population growth has resulted in increased construction of houses on this soil. Drainage is needed to lower the high water table,

and fill material is needed in most areas. The slow permeability of lower subsoil and the high water table increase the possibility that the septic tank absorption fields will not function properly. The slow permeability limitation can be minimized by increasing the size of the absorption field.

This Wabasso soil is in capability subclass IIIw, in woodland group 10W, and in South Florida Flatwoods range site.

59 - Winder fine sand - This soil is nearly level and poorly drained. It is on broad, low-lying sloughs on the flatwoods. The slope is 0 to 2 percent.

In 95 percent of the areas, mapped as Winder fine sand, the Winder soil and similar soils make up 88 to 99 percent of the mapped areas. Dissimilar soils make up 1 to 12 percent of the mapped areas.

Typically, this soil has a surface layer of very dark gray fine sand about 4 inches thick. The subsurface layer, to a depth of about 10 inches, is grayish brown fine sand. The upper part of the subsoil, to a depth of about 14 inches, is dark grayish brown, mottled sandy loam and gray fine sand. The lower part of the subsoil, to a depth of about 30 inches, is gray sandy clay loam. The upper part of the substratum, to a depth of about 58 inches, is light gray, mottled sandy clay loam. The lower part to a depth of about 80 inches is gray sandy loam. Similar soils included in mapping, in some areas, have subsoil at a depth of more than 20 inches. Other similar soils, in some areas, have a thin discontinuous strata of fragmented limestone in the upper part of the subsoil.

Dissimilar soils included in mapping are Basinger, Myakka, and Wabasso soils in small areas. Basinger soils are very poorly drained. Myakka soils have a dark color sandy subsoil Wabasso soils have a dark color sandy subsoil above a loamy subsoil.

In most years, a seasonal high water table fluctuates from the soil surface to a depth of about 10 inches for 2 to 6 moths. Permeability is rapid in the surface and subsurface layers. It is slow or very slow in the subsoil and in the substratum. The available water capacity is moderate.

In most areas, this Winder soil is used as pasture. In a few areas, it is used for cultivated crops or for homesite or urban development. The natural vegetation consists of live oak, cabbage palm, and slash pine. The understory includes saw palmetto, pineland threeawn, and waxmyrtle.

If a water control system is established and maintained and soil-improving measures applied, this soil is well suited to most cultivated crops. If suitable outlets are available, lateral ditches and tile drains can be used to lower the water table. Returning all crop residue to the soil and using a cropping system that includes grasses, legumes, or a grass-legume mixture help to maintain fertility. Frequent applications of fertilizer and lime are generally needed to improve crop production.

This soil is suited to pasture. Wetness limits the choice of plants that can be grown and restricts grazing during periods of excessive wetness. Proper stocking, pasture rotation , and timely deferment of grazing help keep the pasture in good condition.

The potential of this soil for the production of slash pines is high. This soil has few limitations for woodland use and management. Equipment use limitation is a concern if the soil is not

properly drained. Water-tolerant trees should be planted. Planting and harvesting operations should be scheduled during dry periods.

If this soil is used for building site development, the main management concerns are excessive wetness and slow to very slow permeability of the subsoil and substratum. Population growth has resulted in increased construction of homes on this soil. The slow or very slow permeability of the subsoil and substratum and the high water table increase the possibility that the septic tank absorption fields will not function properly. The slow or very slow permeability limitation can be minimized by increasing the size of the absorption field. Drainage is needed to lower the high water table, and fill material is needed in most areas.

This Winder soil is in capability subclass IIIw, in woodland group 11W, and in the Cabbage Palm Hammocks range site.

Addendum 4—Plant And Animal List

Hillsborough River State Park

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
	PTERIDOPHYTES	
Giant leather fern	*Acrostichum danaeifolium*	
Auricled spleenwort	*Asplenium erosum*	
Toothed mid-sorus fern	*Blechnum serrulatum*	
Southern grape-fern	*Botrychium biternatum*	
Rattlesnake fern	*Botrychium virginianum*	
Strap fern	*Campyloneurum phyllitidis*	
Watersprite	*Ceratopteris thalictroide*	
Florida quillwort	*Isoetes flaccida*	
Japanese climbing fern *	*Lygodium japonicum*	
Tuberous sword fern	*Nephrolepis cordifolia*	
Boston sword fern	*Nephrolepis exaltata*	
Asian sword fern *	*Nephrolepis multiflora*	
Hand fern	*Ophioglossum palmatum*	35
Cinnamon fern	*Osmunda cinnamomea*	
Royal fern	*Osmunda regalis* var. *spectabilis*	
Widespread polypody	*Pecluma dispersa*	33,35
Plumy polypody	*Pecluma plumula*	33,35
Comb polypody	*Pecluma ptilidon* var. *caespitosa*	33,35
Golden polypody	*Phlebodium aureum*	
Resurrection fern	*Pleopeltis polypodioides* var. *michauxianum*	
Christmas fern	*Polystichum achrostichoides*	
Bracken	*Pteridium aquilinum*	
Water spangles	*Salvinia minima*	
Downy maiden fern	*Thelypteris dentata*	
Widespread maiden fern	*Thelypteris kunthii*	
Marsh fern	*Thelypteris palustris*	
Maiden fern	*Thelypteris serrata*	
Shoestring fern	*Vittaria lineata*	
Netted chain fern	*Woodwardia areolata*	
Virginia chain fern	*Woodwardia virginica*	
	GYMNOSPERMS	
Red cedar	*Juniperus virginiana*	
Sand pine	*Pinus clausa*	
Slash pine	*Pinus elliottii*	
Spruce pine	*Pinus glabra*	
Pond-cypress**	*Taxodium ascendens*	
Bald-cypress	*Taxodium distichum*	
Coontie**	*Zamia pumila*	
	MONOCOTS	
Yellow colic-root	*Aletris lutea*	
Blue maidencane	*Amphicarpum muhlenbergianum*	
Florida bluestem	*Andropogon floridanus*	
Bushy bluestem	*Andropogon glomeratus* var. *pumilus*	

* Non-native Species

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Bluestem	*Andropogon gyrans*	
Broomsedge	*Andropogon virginicus*	
Little chalky bluestem	*Andropogon virginicus* var. *glaucus*	
Jack-in-the-pulpit	*Arisaema triphyllum*	
Big chalky beardgrass	*Andropogon glomeratus* var. *glaucopsis*	
Bushy beardgrass	*Andropogon glomeratus* var. *pumilus*	
Beardgrass	*Andropogon gyrans*	
Splitbeard bluestem	*Andropogon tenarius*	
Broomgrass	*Andropogon virginicus* var. *glaucus*	
Green silkyscale	*Anthaenantia villosa*	
Nodding nixie	*Aptera aphylla*	
Green dragon	*Arisaema dracontium*	
Bottlebrush threeawn	*Aristida spiciformis*	
Wiregrass	*Aristida stricta* var. *beyrichiana*	
Sprenger's asparagus-fern *	*Asparagus aethiopicus*	
Common asparagus-fern *	*Asparagus setaceus*	
Common carpetgrass	*Axonopus fissifolius*	
Big carpetgrass	*Axonopus furcatus*	
Southern bluethreads	*Burmannia capitata*	
Roseling	*Callisia graminea*	
Florida scrub roseling	*Callisia ornata*	
Tuberous grass-pink	*Calopogon tuberosus*	
Common canna *	*Canna xgeneralis*	
Giant sedge	*Carex gigantea*	
Eastern narrow-leaf sedge	*Carex godfreyi*	
Long's sedge	*Carex longii*	
Hop sedge	*Carex lupulina*	
Shallow sedge	*Carex lurida*	
Warty sedge	*Carex verrucosa*	
Florida hammock sedge	*Carex vexans*	
Southern sandspur	*Cenchrus echinatus*	
Coast sandspur	*Cenchrus spinifex*	
Spike chasmanthium	*Chasmanthium laxum*	
Shiny chasmanthium	*Chasmanthium nitidum*	
Sawgrass	*Cladium jamaicense*	
Wild taro; elephant's-ear *	*Colocasia esculentum*	
Day-flower	*Commelina diffusa*	
Erect day-flower	*Commelina erecta*	
Spring coralroot	*Corallorhiza wisteriana*	
String-lily	*Crinum americanum*	
Sago palm *	*Cycas revoluta*	
Bermudagrass *	*Cynodon dactylon*	
Baldwin's flatsedge	*Cyperus croceus*	
Yellow nutgrass *	*Cyperus esculentus*	
Sheathed flatsedge	*Cyperus haspan*	

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Rusty flatsedge	*Cyperus odoratus*	
Flat-leaf flatsedge	*Cyperus planifolius*	
Many-spike flatsedge	*Cyperus polystachyos*	
Low flatsedge	*Cyperus pumilus*	
Pine-barren flatsedge	*Cyperus retrorsus*	
Purple flatsedge	*Cyperus rotundus*	
Tropical flatsedge	*Cyperus surinamensis*	
Four-angle flatsedge	*Cyperus tetragonus*	
Green flatsedge	*Cyperus virens*	
Crowfootgrass *	*Dactyloctenium aegyptium*	
Witchgrass	*Dichanthelium boscii*	
Variable witchgrass	*Dichanthelium commutatum*	
Witchgrass	*Dichanthelium ensifolium*	
Witchgrass	*Dichanthelium ensifolium* var. *breve*	
Witchgrass	*Dichanthelium ensifolium* var. *unciphyllum*	
Erect-leaf witchgrass	*Dichanthelium erectifolium*	
Lax-flower witchgrass	*Dichanthelium laxiflorum*	
Egg-leaf witchgrass	*Dichanthelium ovale*	
Hemlock witchgrass	*Dichanthelium portoricense*	
Rough-hair witchgrass	*Dichanthelium strigosum*	
Southern crabgrass	*Digitaria ciliaris*	
Air potato *	*Dioscorea bulbifera*	
Small barnyardgrass	*Echinochloa colona*	
Large barnyardgrass	*Echinochloa crusgalli*	
Coast cockspur	*Echinochloa walteri*	
Common water hyacinth *	*Eichhornia crassipes*	
Road-grass	*Eleocharis baldwinii*	
Small-flower spikerush	*Eleocharis nigrescens*	
Goosegrass *	*Eleusine indica*	
Tampa butterfly orchid	*Encyclia tampensis*	
Green-fly orchid	*Epidendrum conopseum*	
Feather lovegrass	*Eragrostis amabilis*	
Thalia lovegrass	*Eragrostis atrovirens*	
Gophertail lovegrass	*Eragrostis ciliaris*	
Elliott lovegrass	*Eragrostis elliottii*	
Purple lovegrass	*Eragrostis spectabilis*	
Coastal lovegrass	*Eragrostis virginica*	
Flattened pipewort	*Eriocaulon compressum*	
Ten-angled pipewort	*Eriocaulon decangulare*	
Saltmarsh fingergrass	*Eustachys glauca*	
Pinewoods fingergrass	*Eustachys petraea*	
Slender fimbry	*Fimbristylis autumnalis*	
Hurricanegrass *	*Fimbristylis cymosa*	
Tall fimbry	*Fimbristylis dichotoma*	
Hairy fimbry	*Fimbristylis puberula*	

* **Non-native Species**

Hillsborough River State Park

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Tooth-petal false rein orchid	*Habenaria floribunda*	
Long-horn false rein orchid	*Habenaria quinqueseta*	
Threadroot orchid	*Harrisella porrecta*	33
Day-lily *	*Hemerocallis fulva*	
Hydrilla *	*Hydrilla verticillata*	
Alligator-lily	*Hymenocallis palmeri*	
Yellowstar-grass	*Hypoxis curtissii*	
Fringed yellow star-grass	*Hypoxis juncea*	
Cogongrass *	*Imperata cylindrica*	
Prairie iris	*Iris hexagona*	
Forked rush	*Juncus dichotomus*	
Soft rush	*Juncus effusus* subsp. *solutus*	
Bog rush	*Juncus elliottii*	
Grass-leaf rush	*Juncus marginatus*	
Many-head rush	*Juncus polycephalus*	
Needle-pod rush	*Juncus scirpoides*	
Short-leaf flatsedge	*Kyllinga brevifolia*	
Dwarf umbrellasedge	*Kyllinga pumila*	
Redroot	*Lachnanthes caroliana*	
White-head bog-buttons	*Lachnocaulon anceps*	
Dotted water-flaxseed	*Landoltia punctata*	
Southern cutgrass	*Leersia hexandra*	
Lesser duckweed	*Lemna aequinoctialis*	
Little water duckweed	*Lemna obscura*	
Pine lily	*Lilium catesbaei*	8
Pantropical wide-lip orchid	*Liparis nervosa*	33, 35
Ryegrass *	*Lolium perenne*	
Florida adder's-mouth orchid	*Malaxis spicata*	33, 35
Banana *	*Musa x paradisiaca*	
Short-leaf basketgrass	*Oplismenus hirtellus*	
Goldenclub	*Orontium aquaticum*	
Beaked panicum	*Panicum anceps*	
Fall panicum	*Panicum dichotomiflorum*	
Maidencane	*Panicum hemitomon*	
Gaping panicum	*Panicum hians*	
Guineagrass	*Panicum maximum*	
Redtop panicum	*Panicum rigidulum*	
Warty panicum	*Panicum verrucosum*	
Switchgrass	*Panicum virgatum*	
Bull paspalum	*Paspalum boscianum*	
Sour paspalum	*Paspalum conjugatum*	
Florida paspalum	*Paspalum floridanum*	
Field paspalum	*Paspalum laeve*	
Bahiagrass *	*Paspalum notatum* var. *saurae*	
Water paspalum	*Paspalum repens*	

*** Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Thin paspalum	*Paspalum setaceum*	
Vaseygrass *	*Paspalum urvillei*	
Green arum	*Peltandra virginica*	
Savannah panicum	*Phanopyrum gymnocarpon*	
Water-lettuce *	*Pistia stratiotes*	
Gypsy-spikes	*Platanthera flava*	33
Pickerelweed	*Pontederia cordata*	
Illinois pondweed	*Potamogeton illinoensis*	
Needle palm	*Rhapidophyllum hystrix*	
Red Natalgrass *	*Rhynchelytrum repens*	
Falling beaksedge	*Rhynchospora caduca*	
Star rush	*Rhynchospora colorata*	
Short-bristle horned beaksedge	*Rhynchospora corniculata*	
Spreading beaksedge	*Rhynchospora divergens*	
Elliott's beaksedge	*Rhynchospora elliottii*	
Fasciculate beaksedge	*Rhynchospora fascicularis*	
Narrow-fruit horned beaksedge	*Rhynchospora inundata*	
Sand-swamp white-top	*Rhynchospora latifolia*	
Sandy-field beaksedge	*Rhynchospora megalocarpa*	
Southern beaksedge	*Rhynchospora microcarpa*	
Tracy's beaksedge	*Rhynchospora tracyi*	
Dwarf palmetto	*Sabal minor*	
Cabbage palm	*Sabal palmetto*	
Sugarcane plumegrass	*Saccharum giganteum*	
Leafless beaked ladies'-tresses	*Sacoila lanceolata*	8
Grass-leaf arrowhead	*Sagittaria graminea*	
Bull-tongue arrowhead	*Sagittaria lancifolia*	
Duck-potato	*Sagittaria latifolia*	
African bowstring hemp	*Sansevieria hyacinthoides*	
Little false bluestem	*Schizachyrium scoparium*	
Giant bulrush	*Scirpus californicus*	
Few-flower nutrush	*Scleria ciliata* var. *pauciflora*	
Netted nutrush	*Scleria reticularis*	
Tall nutgrass	*Scleria triglomerata*	
Saw palmetto	*Serenoa repens*	
Knotroot foxtail	*Setaria parviflora*	
Ear-leaf greenbrier	*Smilax auriculata*	
Saw greenbrier	*Smilax bona-nox*	
Glaucous-leaf greenbrier	*Smilax glauca*	
Laurel-leaf greenbrier	*Smilax laurifolia*	
Woolly greenbrier	*Smilax pumila*	
Lanceleaf greenbrier	*Smilax smallii*	
Lopsided indiangrass	*Sorghastrum secundum*	
Johnsongrass	*Sorghum halepense*	
Sand cordgrass	*Spartina bakeri*	

*** Non-native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Lace-lip ladies'-tresses	*Spiranthes laciniata*	33
Little ladies'-tresses	*Spiranthes tuberosa*	8
Coral dropseed	*Sporobolus domingensis*	
Smutgrass *	*Sporobolus indicus* var. *pyramidalis*	
Pineywoods dropseed	*Sporobolus junceus*	
Osceola's plume	*Stenanthium densum*	
St. Augustinegrass *	*Stenotaphrum secundatum*	
Yellow hatpins	*Syngonanthus flavidulus*	
Bartram's air plant	*Tillandsia bartramii*	
Small ball-moss	*Tillandsia recurvata*	
Southern needleleaf air plant	*Tillandsia setacea*	
Air plant	*Tillandsia simulata*	
Spanish moss	*Tillandsia usneoides*	
Spreading air plant	*Tillandsia utriculata*	
Florida giant air plant	*Tillandsia x floridana*	
Bluejacket	*Tradescantia ohiensis*	
Purpletop	*Tridens flavus*	
Eastern gamagrass	*Tripsacum dactyloides*	
Common cattail	*Typha latifolia*	
Tropical signalgrass *	*Urochloa distachya*	
Paragrass *	*Urochloa mutica*	
Creeping signalgrass *	*Urochloa plantaginea*	
Washington palm *	*Washingtonia robusta*	
Arrow-leaf elephant's-ear *	*Xanthosoma sagittifolium*	
Coastal plain yellow-eyed grass	*Xyris ambigua*	
Carolina yellow-eyed grass	*Xyris caroliniana*	
Elliott's yellow-eyed grass	*Xyris elliottii*	
Fringed yellow-eyed grass	*Xyris fimbriata*	
Richard's yellow-eyed grass	*Xyris jupicai*	
Tall yellow-eyed grass	*Xyris platylepis*	
Spanish dagger	*Yucca aloifolia*	
Adam's needle	*Yucca filamentosa*	
Atamasco-lily	*Zephyranthes atamasca*	8, 31, 32, 33
Rain-lily	*Zephyranthes simpsonii*	8, 31, 32, 33
Lawn orchid; Soldier's orchid *	*Zeuxine strateumatica*	
	DICOTS	
Rosary pea *	*Abrus precatorius*	
Slender copperleaf	*Acalypha gracilens*	
Paraguay bur *	*Acanthospermum australe*	
Southern red maple	*Acer rubrum*	
Creeping spotflower	*Acmella oppositifolia* var. *repens*	
Shyleaf	*Aeschynomene americana*	
Sticky joint-vetch	*Aeschynomene viscidula*	
Flax-leaf false-foxglove	*Agalinis linifolia*	
Wild hoarhound	*Ageratina aromatica*	

* Non-native Species

Hillsborough River State Park

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Hammock thoroughwort	*Ageratina jucunda*	
Mexican whiteweed *	*Ageratum houstonianum*	
Mimosa tree *	*Albizia julibrissin*	
Golden-trumpet *	*Allamanda cathartica*	
Alligator-weed *	*Alternanthera philoxeroides*	
Slender amaranth	*Amaranthus viridis*	
Common ragweed	*Ambrosia artemisiifolia*	
Pepper-vine	*Ampelopsis arborea*	
Groundnut	*Apios americana*	
Coralberry *	*Ardisia crenata*	
Long-leaf milkweed	*Asclepias longifolia*	
Aquatic milkweed	*Asclepias perennis*	
Butterfly-weed	*Asclepias tuberosa*	
Whorled milkweed	*Asclepias verticillata*	
Slim-leaf pawpaw	*Asimina angustifolia*	
Small-flowered pawpaw	*Asimina parviflora*	
Netted pawpaw	*Asimina reticulata*	
Silverling	*Baccharis glomeruliflora*	
Saltbush	*Baccharis halimifolia*	
Blue water-hyssop	*Bacopa caroliniana*	
Coastal water-hyssop	*Bacopa monnieri*	
Gopherweed	*Baptisia lanceolata*	
Tarflower	*Bejaria racemosa*	
Rattan-vine	*Berchemia scandens*	
Florida greeneyes	*Berlandiera subacaulis*	
Beggar-ticks	*Bidens alba* var. *radiata*	
Pineland rayless-goldenrod	*Bigelowia nudata* subsp. *australis*	
Green shrimp-plant *	*Blechum brownei*	
Small-spike false-nettle	*Boehmeria cylindrica*	
Red spiderling	*Boerhavia diffusa*	
False-aster	*Boltonia diffusa*	
Paper mulberry *	*Broussonetia papyrifera*	
American blueheart	*Buchnera americana*	
American beautyberry	*Callicarpa americana*	
Florida bellflower	*Campanula floridana*	
Trumpet-creeper	*Campsis radicans*	
Hairy bitter-cress	*Cardamine hirsuta*	
Quaker bitter-cress	*Cardamine pensylvanica*	
Florida paintbrush	*Carphephorus corymbosus*	
Vanilla-plant	*Carphephorus odoratissimus*	
Hairy chaffhead	*Carphephorus paniculatus*	
American hornbeam	*Carpinus caroliniana*	
Pignut hickory	*Carya glabra*	
Southern catalpa	*Catalpa bignonioides*	
Hackberry; sugarberry	*Celtis laevigata*	

* Non-native Species

Common Name	***Scientific Name***	**Primary Habitat Codes (for designated species)**
Coinwort	*Centella asiatica*	
Spurred butterfly-pea	*Centrosema virginianum*	
Buttonbush	*Cephalanthus occidentalis*	
Rosemary	*Ceratiola ericoides*	
Partridge pea	*Chamaecrista fasciculata*	
Wild sensitive-plant	*Chamaecrista nictitans* var. *aspera*	
Blodgett's sandmat	*Chamaesyce blodgettii*	
Pill-pod sandmat	*Chamaesyce hirta*	
Tropical sandmat	*Chamaesyce hypericifolia*	
Hyssop-leaf sandmat	*Chamaesyce hyssopifolia*	
Spotted sandmat	*Chamaesyce maculata*	
Woolly sunbonnets	*Chaptalia tomentosa*	
Mexican tea	*Chenopodium ambrosioides*	
White fringe-tree	*Chionanthus virginicus*	
Maryland goldenaster	*Chrysopsis mariana*	
Coastal plain goldenaster	*Chrysopsis scabrella*	
Spotted water hemlock	*Cicuta maculata*	
Camphor-tree *	*Cinnamomum camphora*	
Yellow thistle	*Cirsium horridulum*	
Nuttall's thistle	*Cirsium nuttallii*	
Sorrelvine; marinevine	*Cissus trifoliata*	
Tangerine *	*Citrus reticulata*	
Sweet orange, Sour orange, grapefruit*		*Citrus xaurantium*
Pine-hyacinth	*Clematis baldwinii*	
Swamp leatherflower	*Clematis crispa*	
Virgin's-bower	*Clematis virginiana*	
Turk’s Turban *	*Clerodendrum indicum*	
Tread-softly	*Cnidoscolus stimulosus*	
Blue mistflower	*Conoclinium coelestinum*	
Dwarf horseweed	*Conyza canadensis* var. *pusilla*	
Coastal plain tickseed	*Coreopsis gladiata*	
Leavenworth's tickseed	*Coreopsis leavenworthii*	
Swamp dogwood	*Cornus foemina*	
Parsley hawthorn	*Crataegus marshallii*	
Lance-leaf rattlebox	*Crotalaria lanceolata*	
Smooth rattlebox *	*Crotalaria pallida* var. *obovata*	
Rabbit-bells	*Crotalaria rotundifolia*	
Showy rattlebox *	*Crotalaria spectabilis*	
Tropical croton	*Croton glandulosus*	
Narrow-leaf rushfoil	*Croton michauxii*	
Compact dodder	*Cuscuta compacta*	
Leafless swallow-wort	*Cynanchum scoparium*	
Whitetassels	*Dalea carnea*	
Summer-farewell	*Dalea pinnata*	
Cowitch-vine	*Decumaria barbara*	

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Western tansy-mustard	*Descurainia pinnata*	
Florida tick-trefoil	*Desmodium floridanum*	
Beggar-tick, Zarzabacoa comun	*Desmodium incanum*	
Sand tick-trefoil	*Desmodium lineatum*	
Slim-leaf tick-trefoil	*Desmodium tenuifolium*	
Dixie tick-trefoil *	*Desmodium tortuosum*	
Three-flower tick-trefoil *	*Desmodium triflorum*	
Carolina pony-foot	*Dichondra carolinensis*	
Virginia buttonweed	*Diodia virginiana*	
Persimmon	*Diospyros virginiana*	
Dwarf sundew	*Drosera brevifolia*	
Pink sundew	*Drosera capillaris*	
West Indian chickweed	*Drymaria cordata*	
Swamp snakeherb	*Dyschoriste humistrata*	
Twinflower	*Dyschoriste oblongifolia*	
False-daisy	*Eclipta prostrata*	
Carolina elephant's-foot	*Elephantopus carolinianus*	
Florida elephant's-foot	*Elephantopus elatus*	
Narrowleaf Carolina scalystem	*Elytraria carolinensis* var. *angustifolia*	
Florida tasselflower	*Emilia fosbergii*	
Earpod tree *	*Enterolobium contortisiliquum*	
Fireweed	*Erechtites hieraciifolium*	
Oakleaf fleabane	*Erigeron quercifolius*	
Prairie fleabane	*Erigeron strigosus*	
Early white-top fleabane	*Erigeron vernus*	
Dog's-tongue; wild-buckwheat	*Eriogonum tomentosum*	
Corn snakeroot	*Eryngium aquaticum*	
Baldwin's eryngium	*Eryngium baldwinii*	
Rattlesnake-master	*Eryngium yuccifolium*	
Southeastern coralbean	*Erythrina herbacea*	
American strawberry-bush	*Euonymus americana*	
Dogfennel	*Eupatorium capillifolium*	
Yankeeweed	*Eupatorium compositifolium*	
False-fennel	*Eupatorium leptophyllum*	
Mohr's thoroughwort	*Eupatorium mohrii*	
Fake-hoarhound	*Eupatorium rotundifolium*	
Flat-topped goldenrod	*Euthamia caroliniana*	
Silver dwarf morning-glory	*Evolvulus sericeus*	
Pop ash	*Fraxinus caroliniana*	
Cottonweed	*Froelichia floridana*	
Elliott's milk-pea	*Galactia elliottii*	
Florida milk-pea	*Galactia regularis*	
Downy milk-pea	*Galactia volubilis*	
Coastal bedstraw	*Galium hispidulum*	
Hairy bedstraw	*Galium pilosum*	

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Stiff marsh bedstraw	*Galium tinctorium*	
Narrow-leaf purple everlasting	*Gamochaeta falcata*	
Pennsylvania everlasting	*Gamochaeta pensylvanica*	
Spoon-leaf purple everlasting	*Gamochaeta purpurea*	
Southern gaura	*Gaura angustifolia*	
Dwarf huckleberry	*Gaylussacia dumosa*	
Creeping huckleberry	*Gaylussacia nana*	
Yellow jessamine	*Gelsemium sempervirens*	
Wild geranium	*Geranium carolinianum*	
Water-locust	*Gleditsia aquatica*	
Globe amaranth *	*Gomphrena serrata*	
Loblolly-bay	*Gordonia lasianthus*	
Rough hedge-hyssop	*Gratiola hispida*	
Shaggy hedge-hyssop	*Gratiola pilosa*	
Branched hedge-hyssop	*Gratiola ramosa*	
Fire bush	*Hamelia patens*	
Spanish daisy	*Helenium amarum*	
Pine-barren frostweed	*Helianthemum corymbosum*	
Swamp sunflower	*Helianthus angustifolius*	
Florida sunflower	*Helianthus floridanus*	
Rayless sunflower	*Helianthus radula*	
Seaside heliotrope	*Heliotropium curassavicum*	
Camphorweed	*Heterotheca subaxillaris*	
Hawkweed	*Hieracium gronovii*	
Round-leaf bluet	*Houstonia procumbens*	
Water pennywort	*Hydrocotyle bonariensis*	
Many-flower marsh pennywort	*Hydrocotyle umbellata*	
Whorled pennywort	*Hydrocotyle verticillata*	
Skyflower	*Hydrolea corymbosum*	
Round-pod St. John's-wort	*Hypericum cistifolium*	
Peel-bark St. John's-wort	*Hypericum fasciculatum*	
Bedstraw St. John's-wort	*Hypericum galioides*	
Pineweed	*Hypericum gentianoides*	
St. Andrew's-cross	*Hypericum hypericoides*	
Dwarf St. John's-wort	*Hypericum mutilum*	
Myrtle-leaf St. John's-wort	*Hypericum myrtifolium*	
Atlantic St. John's-wort	*Hypericum reductum*	
Four-petal St. John's-wort	*Hypericum tetrapetalum*	
Musky mint	*Hyptis alata*	
Bittermint *	*Hyptis mutabilis*	
John Charles bittermint *	*Hyptis verticillata*	
Dahoon holly	*Ilex cassine*	
Winterberry	*Ilex decidua*	
Gallberry	*Ilex glabra*	
Yaupon holly	*Ilex vomitoria*	

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Patient plant *	*Impatiens walleriana*	
Rough hairy indigo *	*Indigofera hirsuta*	
Trailing indigo *	*Indigofera spicata*	
Moonflower	*Ipomoea alba*	
Tievine	*Ipomoea cordatotriloba*	
Cypress-vine *	*Ipomoea quamoclit*	
Glade morning-glory	*Ipomoea sagittata*	
Virginia-willow	*Itea virginica*	
Piedmont marsh-elder	*Iva microcephala*	
Pineland water-willow	*Justicia angusta*	
Water-willow	*Justicia ovata*	
Big caltrop	*Kallstroemia maxima*	
Virginia dwarf dandelion	*Krigia virginica*	
Woodland lettuce	*Lactuca floridana*	
Grass-leaf lettuce	*Lactuca graminifolia*	
Shrub verbena *	*Lantana camara*	
Poorman's-pepper	*Lepidium virginicum*	
White leadtree *	*Leucaena leucocephala*	
Slender blazing-star	*Liatris gracilis*	
Grass-leaf blazing-star	*Liatris graminifolia*	
Shortleaf blazing-star	*Liatris tenuifolia*	
Gopher-apple	*Licania michauxii*	
Blue toadflax	*Linaria canadensis*	
Malaysian false-pimpernel *	*Lindernia crustacea*	
Savannah false-pimpernel	*Lindernia grandiflora*	
Florida yellowflax	*Linum floridanum*	
Stiff yellowflax	*Linum medium* var. *texanum*	
Sweetgum	*Liquidambar styraciflua*	
Bay lobelia	*Lobelia feayana*	
Glade lobelia	*Lobelia glandulosa*	
Pineland lobelia	*Lobelia homophylla*	
White lobelia	*Lobelia paludosa*	
Coral honeysuckle	*Lonicera sempervirens*	
Winged primrose-willow	*Ludwigia alata*	
Yerba de jicotea	*Ludwigia erecta*	
River primrose-willow	*Ludwigia leptocarpa*	
Southeastern primrose-willow	*Ludwigia linifolia*	
Seaside primrose-willow	*Ludwigia maritima*	
Small-fruit primrose-willow	*Ludwigia microcarpa*	
Mexican primrose-willow	*Ludwigia octovalvis*	
Peruvian primrose-willow	*Ludwigia peruviana*	
Hairy primrose-willow	*Ludwigia pilosa*	
Creeping primrose-willow	*Ludwigia repens*	
Shrubby primrose-willow	*Ludwigia suffruticosa*	
Savannah primrose-willow	*Ludwigia virgata*	

* Non-native Species

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Sky-blue lupine	*Lupinus diffusus*	
Taper-leaf water-hoarhound	*Lycopus rubellus*	
Roserush	*Lygodesmia aphylla*	
Rusty lyonia	*Lyonia ferruginea*	
Coastal plain staggerbush	*Lyonia fruticosa*	
Fetterbush	*Lyonia lucida*	
Wing-angle loosestrife	*Lythrum alatum* var. *lanceolatum*	
Southern magnolia	*Magnolia grandiflora*	
Sweetbay	*Magnolia virginiana*	
Texas wax-mallow *	*Malvaviscus penduliflorus*	
Angular-fruit milkvine	*Matelea gonocarpa*	
Axil-flower	*Mecardonia acuminata*	
Black medic *	*Medicago lupulina*	
White sweet-clover *	*Melilotus albus*	
Creeping cucumber	*Melothria pendula*	
Manatee mudflower	*Micranthemum glomeratum*	
Shade mudflower	*Micranthemum umbrosum*	
Browne's savory	*Micromeria brownei* var. *pilosiuscula*	
Florida Key hempvine	*Mikania cordifolia*	
Climbing hempvine	*Mikania scandens*	
Sensitive-briar	*Mimosa quadrivalvis* var. *angustata*	
American partridgeberry	*Mitchella repens*	
Lax hornpod	*Mitreola petiolata*	
Indian chickweed *	*Mollugo verticillata*	
Wild balsam-apple *	*Momordica charantia*	
Horsemint	*Monarda punctata*	
Latex plant *	*Morrenia odorata*	
Red mulberry	*Morus rubra*	
Naked-stem dewflower	*Murdannia nudiflora*	
Wax myrtle	*Myrica cerifera*	
Parrot's-feather *	*Myriophyllum aquaticum*	
Spatterdock	*Nuphar advena*	
Fragrant white waterlily	*Nymphaea odorata*	
Big floating-hearts	*Nymphoides aquatica*	
Swamp tupelo	*Nyssa sylvatica* var. *biflora*	
Pine barren white-topped aster	*Oclemena reticulata*	
Cut-leaved evening-primrose	*Oenothera laciniata*	
Flat-top bluet	*Oldenlandia corymbosa*	
Clustered bluet	*Oldenlandia uniflora*	
Prickly-pear cactus	*Opuntia humifusa*	
Devilwood	*Osmanthus americanus*	
Yellow wood-sorrel	*Oxalis corniculata*	
Violet wood-sorrel	*Oxalis debilis* var. *corymbosa*	
Water dropwort	*Oxypolis filiformis*	
Golden ragwort	*Packera glabella*	

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Skunk-vine *	*Paederia foetida*	
Feay's palafoxia	*Palafoxia feayi*	
Florida pellitory-of-the-wall	*Parietaria floridana*	
Virginia creeper	*Parthenocissus quinquefolia*	
Purple passionflower	*Passiflora incarnata*	
Yellow passionflower	*Passiflora lutea*	
Corky-stemmed passionflower	*Passiflora suberosa*	
Eustis Lake beardtongue	*Penstemon australis*	
Many-flowerd beardtongue	*Penstemon multiflorus*	
Red bay	*Persea borbonia*	
Swamp bay	*Persea palustris*	
Oak mistletoe	*Phoradendron leucarpum*	
Carpetweed	*Phyla nodiflora*	
Carolina leaf-flower	*Phyllanthus carolinensis*	
Mascarene Islands leaf-flower *	*Phyllanthus tenellus*	
Chamber-bitter *	*Phyllanthus urinaria*	
Out-leaf ground-cherry	*Physalis angulata*	
Cypress-head ground-cherry	*Physalis arenicola*	
Low hairy ground-cherry	*Physalis pubescens*	
Starry-hair ground-cherry	*Physalis walteri*	
Slender-leaf false dragonhead	*Physostegia leptophylla*	
False dragonhead	*Physostegia virginiana*	
Pokeberry	*Phytolacca americana*	
Artillery plant	*Pilea microphylla*	
Wild pennyroyal	*Piloblephis rigida*	
Yellow butterwort	*Pinguicula lutea*	
Small butterwort	*Pinguicula pumila*	
Carolina stripeseed	*Piriqueta caroliniana*	
Grass-leaved goldenaster	*Pityopsis graminifolia*	
Plantain	*Plantago aristata*	
English plantain	*Plantago lanceolata*	
Southern plantain	*Plantago virginica*	
Stinking camphorweed	*Pluchea foetida*	
Shrubby camphorweed	*Pluchea odorata*	
Rosy camphorweed	*Pluchea rosea*	
Showy milkwort	*Polygala grandiflora*	
Orange milkwort	*Polygala lutea*	
Yellow milkwort	*Polygala nana*	
Jointweed	*Polygonella polygama*	
Swamp smartweed	*Polygonum hydropiperoides*	
Dotted smartweed	*Polygonum punctatum*	
Rustweed	*Polypremum procumbens*	
Purslane	*Portulaca oleracea*	
Pink purslane	*Portulaca pilosa*	
Marsh mermaid-weed	*Proserpinaca palustris*	

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Comb-leaf mermaid-weed	*Proserpinaca pectinata*	
Chickasaw plum	*Prunus angustifolia*	
Carolina laurel-cherry	*Prunus caroliniana*	
Black cherry	*Prunus serotina*	
False elephant's-foot	*Pseudoelephantopus spicatus*	
Sweet everlasting	*Pseudognaphalium obtusifolium*	
Wild coffee	*Psychotria nervosa*	
Sulzner's wild coffee	*Psychotria sulzneri*	
Coastal blackroot	*Pterocaulon pycnostachyum*	
Hairlike mock Bishop's-weed	*Ptilimnium capillaceum*	
Carolina false dandelion	*Pyrrhopappus carolinianus*	
Chapman's oak	*Quercus chapmanii*	
Running oak	*Quercus elliottii*	
Sand live oak	*Quercus geminata*	
Turkey oak	*Quercus laevis*	
Laurel oak; Diamond oak	*Quercus laurifolia*	
Dwarf live oak	*Quercus minima*	
Myrtle oak	*Quercus myrtifolia*	
Water oak	*Quercus nigra*	
Live oak	*Quercus virginiana*	
Carolina buckthorn	*Rhamnus caroliniana*	
Rall meadow-beauty	*Rhexia alifanus*	
West Indies meadow-beauty	*Rhexia cubensis*	
Pale meadow-beauty	*Rhexia mariana*	
Formosa azalea *	*Rhododendron indicum "cv. formosum"*	
Swamp honeysuckle	*Rhododendron viscosum*	
Winged sumac	*Rhus copallina*	
Dollarleaf	*Rhynchosia reniformis*	
Tropical Mexican-clover *	*Richardia brasiliensis*	
Rough Mexican-clover *	*Richardia scabra*	
Bloodberry	*Rivina humilis*	
Southern marsh yellowcress	*Rorippa teres*	
Swamp rose	*Rosa palustris*	
Serrate-leaf blackberry	*Rubus argutus*	
Sand blackberry	*Rubus cuneifolius*	
Southern dewberry	*Rubus trivialis*	
Slackeyed Susan	*Rudbeckia hirta*	
Carolina wild petunia	*Ruellia caroliniensis*	
Curled dock *	*Rumex crispus*	
Hastate-leaved dock	*Rumex hastatulus*	
Fiddle dock *	*Rumex pulcher*	
Swamp dock	*Rumex verticillatus*	
Short-leaf marsh pink	*Sabatia brevifolia*	
Coastal marsh pink	*Sabatia calycina*	
Ten-petal marsh pink	*Sabatia dodecandra*	

* Non-native Species

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Small-flower mock-buckthorn	*Sageretia minutiflora*	
Carolina willow	*Salix caroliniana*	
Herbaceous blue sage	*Salvia azurea*	
Tropical sage	*Salvia coccinea*	
Lyre-leaf sage	*Salvia lyrata*	
River sage; Florida Key sage	*Salvia riparia*	
Elderberry	*Sambucus nigra* subsp. *canadensis*	
Pineland pimpernel	*Samolus valerandi* var. *parviflorus*	
Canadian black snakeroot	*Sanicula canadensis*	
Lizard's-tail	*Saururus cernuus*	
Sweetbroom; licorice-weed	*Scoparia dulcis*	
Skullcap	*Scutellaria ambigua*	
Rough skullcap	*Scutellaria integrifolia*	
Coffeeweed	*Senna obtusifolia*	
White-topped aster	*Sericocarpus tortifolius*	
Bladderpod	*Sesbania vesicaria*	
Senna seymeria	*Seymeria cassioides*	
Broomweed	*Sida acuta*	
Pantropical fanpetal *	*Sida cordifolia*	
Milk-buckthorn	*Sideroxylon reclinatum*	
Starry rosinweed	*Silphium asteriscus*	
Common nightshade	*Solanum americanum*	
Soda-apple	*Solanum capsicoides*	
Carolina horse-nettle	*Solanum carolinense*	
Black nightshade	*Solanum chenopodioides*	
Two-leaf nightshade *	*Solanum diphyllum*	
Tropical soda-apple *	*Solanum viarum*	
Pine barren goldenrod	*Solidago fistulosa*	
Late goldenrod	*Solidago gigantea*	
Chapman's goldenrod	*Solidago odora* var. *chapmanii*	
Seaside goldenrod	*Solidago sempervirens*	
Wand goldenrod	*Solidago stricta*	
Spiny leaved cow-thistle *	*Sonchus asper*	
Common sow-thistle *	*Sonchus oleraceus*	
Woodland false-buttonweed	*Spermacoce assurgens*	
Prostrate false buttonweed	*Spermacoce prostrata*	
False-buttonweed	*Spermacoce verticillata*	
Rough-fruit scaleseed	*Spermolepis divaricata*	
Prairie wedgescale	*Sphenopholis obtusata*	
Florida hedge-nettle	*Stachys floridana*	
Common chickweed	*Stellaria media*	
Sweet shaggytuft	*Stenandrium dulce* var. *floridana*	
Queen's-delight	*Stillingia sylvatica*	
Sand bean	*Strophostyles umbellata*	
Storax	*Styrax americana*	

* Non-native Species

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Scale-leaf aster	*Symphyotrichum adnatum*	
Climbing aster	*Symphyotrichum carolinianum*	
Rice-button aster	*Symphyotrichum dumosum*	
Annual saltmarsh aster	*Symphyotrichum subulatum*	
Arrowhead vine *	*Syngonium podophyllum*	
Common dandelion *	*Taraxacum officinale*	
Scurf hoary-pea	*Tephrosia chrysophylla*	
Spreading hoary-pea	*Tephrosia hispidula*	
Spiked hoary-pea	*Tephrosia spicata*	
Wood sage	*Teucrium canadense*	
Eastern poison ivy	*Toxicodendron radicans*	
Virginia marsh St. John's-wort	*Triadenum virginicum*	
Forked bluecurls	*Trichostema dichotomum*	
White clover	*Trifolium repens*	
American elm	*Ulmus americana*	
Caesarweed *	*Urena lobata* (origin controversial, treated as exotic)	
Horned bladderwort	*Utricularia cornuta*	
Florida yellow bladderwort	*Utricularia floridana*	
Cone-spur bladderwort	*Utricularia gibba*	
Floating bladderwort	*Utricularia inflata*	
Eastern purple bladderwort	*Utricularia purpurea*	
Tiny bladderwort	*Utricularia subulata*	
Tree sparkleberry	*Vaccinium arboreum*	
Darrow's blueberry	*Vaccinium darrowii*	
Shiny blueberry	*Vaccinium myrsinites*	
Deerberry	*Vaccinium stamineum*	
South American vervain *	*Verbena bonariensis*	
Brazilian vervain *	*Verbena brasiliensis*	
Harsh verbena	*Verbena scabra*	
White crownbeard	*Verbesina virginica*	
Tall ironweed	*Vernonia angustifolia*	
Giant ironweed	*Vernonia gigantea*	
Possum-haw	*Viburnum nudum*	
Small viburnum	*Viburnum obovatum*	
Four-leaf vetch	*Vicia acutifolia*	
Florida vetch	*Vicia floridana*	
Piedmont cow-pea	*Vigna luteola*	
Long-leaf violet	*Viola lanceolata*	
Southern coastal violet	*Viola palmata*	
Primrose-leaved violet	*Viola primulifolia*	
Florida violet	*Viola sororia*	
Summer grape	*Vitis aestivalis*	
Southern fox grape	*Vitis rotundifolia*	
Calusa grape	*Vitis shuttleworthii*	
Tallowwood; Hog-plum	*Ximenia americana*	

*** Non-native Species**

Hillsborough River State Park

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Oriental hawk's-beard *	*Youngia japonica*	
Ginger *	*Zingiber zerumbet*	

*** Non-native Species**

Hillsborough River State Park

Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
	FISH	
Golden shiner	*Notemigonus crysoleucas*	53
Sailfin shiner	*Notropis hypselopterus*	53
Coastal shiner	*Notropis petersoni*	53
Tadpole madtom	*Noturus gyrinus*	53
Vermiculated sailfin catfish *	*Pterygoplichthys disjunctivus*	53
Bluefin killifish	*Lucania goodei*	53
Golden topminnow	*Fundulus chrysotus*	53
Flagfish	*Jordanella floridae*	53
Eastern mosquitofish	*Gambusia holbrooki*	53
Amazon molly	*Poecilia formosa*	53
Least killifish	*Heterandria formosa*	53
Brook silverside	*Labidesthes sicculus*	53
Common snook	*Centropomus undecimalis*	53
Everglades pygmy sunfish	*Elassoma evergladei*	53
Bluespotted sunfish	*Enneacanthus gloriosus*	53
Warmouth	*Lepomis gulosus*	53
Spotted sunfish	*Lepomis punctatus*	53
Dollar sunfish	*Lepomis marginatus*	53
Bluegill	*Lepomis macrochirus*	53
Smallmouth bass	*Micropterus dolomieu*	53
Largemouth bass	*Micropterus salmoides*	53
Swamp darter	*Etheostoma fusiforme*	53
	AMPHIBIANS	
Southern toad	*Bufo terrestris*	29
Oak toad	*Bufo quercicus*	8
Pinewoods treefrog	*Hyla femoralis*	8
Green treefrog	*Hyla cinerea*	35
Cuban treefrog*	*Osteopilus septentrionalis*	MTC
Bullfrog	*Rana catesbeiana*	53
Eastern narrowmouth toad	*Gastrophryne carolinensis*	35
	REPTILES	
American alligator	*Alligator mississippiensis*	53
Florida snapping turtle	*Chelydra serpentina osceola*	53
Alligator snapping turtle	*Macroclemys temmincki*	53
Stinkpot	*Sternotherus odoratus*	53
Striped mud turtle	*Kinosternon bauri palmarum*	53
Box turtle	*Terrapene carolina*	MTC
Florida box turtle	*Terrapene carolina bauri*	MTC
Peninsula cooter	*Pseudemys floridana peninsularis*	53
Florida red-bellied turtle	*Pseudemys nelsoni*	53
Florida chicken turtle	*Deirochelys reticularia chrysea*	53
Gopher tortoise	*Gopherus polyphemus*	8

*** Non-native Species**

Hillsborough River State Park

Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Florida softshell	*Trionyx ferox*	53
Mediterranean gecko*	*Hemidactylus turcicus turcicus*	82
Eastern glass lizard	*Ophisaurus ventralis*	8
Five-lined skink	*Eumeces fasciatus*	20
Brown water snake	*Nerodia taxispilota*	53
Banded water snake	*Nerodia fasciata fasciata*	53
Florida water snake	*Nerodia fasciata pictiventris*	53
Florida red-bellied snake	*Storeria occipitomaculata obscura*	53
Eastern garter snake	*Thamnophis sirtalis sirtalis*	MTC
Eastern ribbon snake	*Thamnophis sauritus sauritus*	35
Blue-striped ribbon snake	*Thamnophis sauritus nitae*	35
Peninsula ribbon snake	*Thamnophis sauritus sackeni*	35
Pine woods snake	*Rhadinaea flavilata*	8
Southern ringneck snake	*Diadophis punctatus punctatus*	MTC
Eastern mud snake	*Farancia abacura abacura*	33
Southern black racer	*Coluber constrictor priapus*	MTC
Eastern coachwhip	*Masticophis flagellum flagellum*	8
Eastern indigo snake	*Drymarchon corais couperi*	MTC
Corn snake	*Elaphe guttata guttata*	20
Yellow rat snake	*Elaphe obsoleta quadrivittata*	8
Florida pine snake	*Pituophis melanoleucus mugitus*	8
Common kingsnake	*Lampropeltis getulus*	MTC
Eastern kingsnake	*Lampropeltis getulus getulus*	MTC
Scarlet kingsnake	*Lampropeltis triangulum elapsoides*	35
Eastern hognose snake	*Heterodon platyrhinos*	8
Eastern coral snake	*Micrurus fulvius fulvius*	8
Eastern cottonmouth	*Agkistrodon piscivorus piscivorus*	53
Florida cottonmouth	*Agkistrodon piscivorus conanti*	53
Dusky pigmy rattlesnake	*Sistrurus miliarius barbouri*	29
Eastern diamondback rattlesnake	*Crotalus adamanteus*	MTC
	BIRDS	
Pied-billed grebe	*Podilymbus podiceps*	53
Eastern brown pelican	*Pelecanus occidentalis carolinensis*	OF
Double-crested cormorant	*Phalacrocorax auritus*	53
Anhinga	*Anhinga anhinga*	53
Magnificent frigatebird	*Fregata magnificens*	OF
Great blue heron	*Ardea herodias*	MTC
Green heron	*Butorides virescens*	MTC
Cattle egret	*Bubulcus ibis*	81
Little blue heron	*Egretta caerulea*	MTC
Great egret	*Ardea alba*	MTC
Snowy egret	*Egretta thula*	MTC
Tricolored heron	*Egretta tricolor*	MTC
Black-crowned night heron	*Nycticorax nycticorax*	53

* Non-native Species

Hillsborough River State Park

Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Yellow-crowned night heron	*Nycticorax violaceus*	53
Least bittern	*Ixobrychus exilis*	29
American bittern	*Botaurus lentiginosus*	29
Wood stork	*Mycteria americana*	OF
Glossy ibis	*Plegadis falcinellus*	29
White ibis	*Eudocimus albus*	29
Canada goose	*Branta canadensis*	OF
Mallard	*Anas platyrhynchos*	53
Mottled duck	*Anas fulvigula*	53
Northern pintail	*Anas acuta*	29
Green-winged teal	*Anas crecca*	53
Blue-winged teal	*Anas discors*	53
American wigeon	*Anas americana*	53
Northern shoveler	*Anas clypeata*	53
Wood duck	*Aix sponsa*	33
Ring-necked duck	*Aythya collaris*	53
Canvasback	*Aythya valisineria*	53
Lesser scaup	*Aythya affinis*	53
Turkey vulture	*Cathartes aura*	8
Black vulture	*Coragyps atratus*	8
White-tailed kite	*Elanus leucurus*	OF
Swallow-tailed kite	*Elanoides forficatus*	8
Sharp-shinned hawk	*Accipiter striatus*	8
Cooper's hawk	*Accipiter cooperii*	8
Red-tailed hawk	*Buteo jamaicensis*	8
Red-shouldered hawk	*Buteo lineatus*	35
Broad-winged hawk	*Buteo platypterus*	35
Southern bald eagle	*Haliaeetus leucocephalus*	OF
Northern harrier	*Circus cyaneus*	81
Osprey	*Pandion haliaetus*	OF
Crested caracara	*Caracara plancus*	OF
Peregrine falcon	*Falco peregrinus tundrius*	OF
Merlin	*Falco columbarius*	35
American kestrel	*Falco sparverius*	81
Northern bobwhite	*Colinus virginianus*	8
Wild turkey	*Meleagris gallopavo*	MTC
Sandhill crane	*Grus canadensis*	OF
Florida sandhill crane	*Grus canadensis pratensis*	OF
Limpkin	*Aramus guarauna*	53
King rail	*Rallus elegans*	29
Virginia rail	*Rallus limicola*	29
Sora	*Porzana carolina*	29
Purple gallinule	*Porphyrula martinica*	29
Common moorhen	*Gallinula chloropus*	29
American coot	*Fulica americana*	53

*** Non-native Species**

Hillsborough River State Park

Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Killdeer	*Charadrius vociferus*	81
American woodcock	*Scolopax minor*	35
Common snipe	*Gallinago gallinago*	29
Upland sandpiper	*Bartramia longicauda*	29
Spotted sandpiper	*Actitis macularia*	53
Solitary sandpiper	*Tringa solitaria*	29
Greater yellowlegs	*Tringa melanoleuca*	29
Lesser yellowlegs	*Tringa flavipes*	29
Least sandpiper	*Calidris minutilla*	29
Black-necked stilt	*Himantopus mexicanus*	29
Herring gull	*Larus argentatus*	OF
Laughing gull	*Larus atricilla*	OF
Least tern	*Sterna antillarum*	OF
Black tern	*Chlidonias niger*	53
Mourning dove	*Zenaida macroura*	MTC
Common ground-dove	*Columbina passerina*	8
Budgerigar*	*Melopsittacus undulatus*	OF
Yellow-billed cuckoo	*Coccyzus americanus*	35
Black-billed cuckoo	*Coccyzus erythropthalmus*	35
Barn owl	*Tyto alba*	35
Eastern screech-owl	*Otus asio*	8
Great horned owl	*Bubo virginianus*	8
Barred owl	*Strix varia*	35
Short-eared owl	*Asio flammeus*	MTC
Chuck-will's-widow	*Caprimulgus carolinensis*	8
Whip-poor-will	*Caprimulgus vociferus*	8
Common nighthawk	*Chordeiles minor*	8
Chimney swift	*Chaetura pelagica*	OF
Ruby-throated hummingbird	*Archilochus colubris*	MTC
Belted kingfisher	*Ceryle alcyon*	MTC
Northern flicker	*Colaptes auratus*	8
Pileated woodpecker	*Dryocopus pileatus*	35
Red-bellied woodpecker	*Melanerpes carolinus*	MTC
Red-headed woodpecker	*Melanerpes erythrocephalus*	8
Yellow-bellied sapsucker	*Sphyrapicus varius*	35
Southern hairy woodpecker	*Picoides villosus audubonii*	8
Downy woodpecker	*Picoides pubescens*	MTC
Red-cockaded woodpecker	*Picoides borealis*	8
Ivory-billed woodpecker	*Campephilus principalis*	35
Eastern kingbird	*Tyrannus tyrannus*	8
Scissor-tailed flycatcher	*Tyrannus forficatus*	MTC
Great crested flycatcher	*Myiarchus crinitus*	35
Eastern phoebe	*Sayornis phoebe*	MTC
Acadian flycatcher	*Empidonax virescens*	20
Eastern wood-pewee	*Contopus virens*	20

* Non-native Species

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Tree swallow	*Tachycineta bicolor*	OF
Bank swallow	*Riparia riparia*	OF
Northern rough-winged swallow	*Stelgidopteryx serripennis*	OF
Barn swallow	*Hirundo rustica*	OF
Cliff swallow	*Hirundo pyrrhonota*	OF
Purple martin	*Progne subis*	OF
Blue jay	*Cyanocitta cristata*	MTC
Florida scrub-jay	*Aphelocoma coerulescens*	OF
American crow	*Corvus brachyrhynchos*	MTC
Fish crow	*Corvus ossifragus*	MTC
Carolina chickadee	*Parus carolinensis*	8
Tufted titmouse	*Parus bicolor*	MTC
Brown-headed nuthatch	*Sitta pusilla*	8
Brown creeper	*Certhia americana*	8
House wren	*Troglodytes aedon*	MTC
Winter wren	*Troglodytes troglodytes*	MTC
Bewick's wren	*Thryomanes bewickii*	MTC
Carolina wren	*Thryothorus ludovicianus*	MTC
Marsh wren	*Cistothorus palustris*	29
Northern mockingbird	*Mimus polyglottos*	MTC
Gray catbird	*Dumetella carolinensis*	MTC
Brown thrasher	*Toxostoma rufum*	MTC
American robin	*Turdus migratorius*	35
Wood thrush	*Hylocichla mustelina*	35
Hermit thrush	*Catharus guttatus*	35
Swainson's thrush	*Catharus ustulatus*	35
Veery	*Catharus fuscescens*	35
Eastern bluebird	*Sialia sialis*	8
Blue-gray gnatcatcher	*Polioptila caerulea*	MTC
Golden-crowned kinglet	*Regulus satrapa*	MTC
Ruby-crowned kinglet	*Regulus calendula*	MTC
American pipit	*Anthus rubescens*	81
Cedar waxwing	*Bombycilla cedrorum*	35
Loggerhead shrike	*Lanius ludovicianus*	81
White-eyed vireo	*Vireo griseus*	MTC
Yellow-throated vireo	*Vireo flavifrons*	MTC
Blue-headed vireo	*Vireo solitarius*	MTC
Red-eyed vireo	*Vireo olivaceus*	35
Black and white warbler	*Mniotilta varia*	MTC
Prothonotary warbler	*Protonotaria citrea*	33
Worm-eating warbler	*Helmitheros vermivorus*	MTC
Bachman's warbler	*Vermivora bachmanii*	MTC
Tennessee warbler	*Vermivora peregrina*	MTC
Orange-crowned warbler	*Vermivora celata*	MTC
Northern parula	*Parula americana*	MTC

*** Non-native Species**

Hillsborough River State Park

Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Yellow warbler	*Dendroica petechia*	MTC
Magnolia warbler	*Dendroica magnolia*	MTC
Cape May warbler	*Dendroica tigrina*	MTC
Black-throated blue warbler	*Dendroica caerulescens*	MTC
Yellow-rumped warbler	*Dendroica coronata*	MTC
Black-throated green warbler	*Dendroica virens*	MTC
Cerulean warbler	*Dendroica cerulea*	MTC
Blackburnian warbler	*Dendroica fusca*	MTC
Yellow-throated warbler	*Dendroica dominica*	MTC
Bay-breasted warbler	*Dendroica castanea*	MTC
Blackpoll warbler	*Dendroica striata*	MTC
Pine warbler	*Dendroica pinus*	8
Kirtland's warbler	*Dendroica kirtlandii*	MTC
Prairie warbler	*Dendroica discolor*	MTC
Palm warbler	*Dendroica palmarum*	MTC
Ovenbird	*Seiurus aurocapillus*	20
Northern waterthrush	*Seiurus noveboracensis*	53
Louisiana waterthrush	*Seiurus motacilla*	53
Kentucky warbler	*Oporornis formosus*	MTC
Connecticut warbler	*Oporornis agilis*	MTC
Common yellowthroat	*Geothlypis trichas*	MTC
Yellow-breasted chat	*Icteria virens*	MTC
Hooded warbler	*Wilsonia citrina*	MTC
Canada warbler	*Wilsonia canadensis*	MTC
American redstart	*Setophaga ruticilla ruticilla*	MTC
Bobolink	*Dolichonyx oryzivorus*	29
Eastern meadowlark	*Sturnella magna*	81
Red-winged blackbird	*Agelaius phoeniceus*	29
Orchard oriole	*Icterus spurius*	MTC
Baltimore oriole	*Icterus galbula*	MTC
Rusty blackbird	*Euphagus carolinus*	30
Boat-tailed grackle	*Quiscalus major*	MTC
Common grackle	*Quiscalus quiscula*	MTC
Brown-headed cowbird	*Molothrus ater*	MTC
Scarlet tanager	*Piranga olivacea*	MTC
Summer tanager	*Piranga rubra*	MTC
Northern cardinal	*Cardinalis cardinalis*	MTC
Rose-breasted grosbeak	*Pheucticus ludovicianus*	MTC
Blue grosbeak	*Guiraca caerulea*	MTC
Indigo bunting	*Passerina cyanea*	MTC
Painted bunting	*Passerina ciris*	MTC
Eastern towhee	*Pipilo erythrophthalmus*	8
Savannah sparrow	*Passerculus sandwichensis*	81
Grasshopper sparrow	*Ammodramus savannarum*	81
Henslow's sparrow	*Ammodramus henslowii*	81

*** Non-native Species**

Hillsborough River State Park

Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
LeConte's sparrow	*Ammodramus leconteii*	81
Bachman's sparrow	*Aimophila aestivalis*	8
Chipping sparrow	*Spizella passerina*	MTC
Field sparrow	*Spizella pusilla*	8
White-throated sparrow	*Zonotrichia albicollis*	MTC
Fox sparrow	*Passerella iliaca*	MTC
Swamp sparrow	*Melospiza georgiana*	29
Song sparrow	*Melospiza melodia*	29
Pine siskin	*Carduelis pinus*	8
American goldfinch	*Carduelis tristis*	MTC
	MAMMALS	
Virginia opossum	*Didelphis virginiana*	MTC
Evening bat	*Nycticeius humeralis*	OF
Nine-banded armadillo*	*Dasypus novemcinctus*	MTC
Marsh rabbit	*Sylvilagus palustris*	MTC
Eastern cottontail	*Sylvilagus floridanus*	MTC
Gray squirrel	*Sciurus carolinensis*	MTC
Sherman's fox squirrel	*Sciurus niger shermani*	8
Cotton mouse	*Peromyscus gossypinus gossypinus*	8
Hispid cotton rat	*Sigmodon hispidus*	8
Norway rat	*Rattus norvegicus*	82
Red fox	*Vulpes vulpes*	MTC
Gray fox	*Urocyon cinereoargenteus*	MTC
Florida black bear**	*Ursus americanus floridanus*	MTC
Raccoon	*Procyon lotor*	MTC
River otter	*Lutra canadensis*	53
Eastern spotted skunk	*Spilogale putorius*	MTC
Florida panther**	*Felis concolor coryi*	MTC
Bobcat	*Felis rufus*	MTC
Wild pig	*Sus scrofa*	MTC
White-tailed deer	*Odocoileus virginianus*	MTC

* **Non-native Species**

TERRESTRIAL

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

PALUSTRINE

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

LACUSTRINE

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

LACUSTRINE—Continued

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

RIVERINE

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

ESTUARINE

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

MARINE

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

SUBTERRANEAN

79. Aquatic Cave
80. Terrestral Cave

MISCELLANEOUS

81. Ruderal
82. Developed

MTC Many Types Of Communities

OF Overflying

Addendum 5—Designated Species List

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

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

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

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

FNAI GLOBAL RANK DEFINITIONS

G1	=	Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
G2	=	Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
G3	=	Either very rare and local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction of other factors.
G4	=	apparently secure globally (may be rare in parts of range)
G5	=	demonstrably secure globally
GH	=	of historical occurrence throughout its range,may be rediscovered (e.g.,ivory-billed woodpecker)
GX	=	believed to be extinct throughout range
GXC	=	extirpated from the wild but still known from captivity or cultivation
G#?	=	tentative rank (e.g.,G2?)
G#G#	=	range of rank; insufficient data to assign specific global rank (e.g.,G2G3)
G#T#	=	rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definition as above (e.g.,G3T1)
G#Q	=	rank of questionable species - ranked as species but questionable whether it is species or subspecies; numbers have same definition as above (e.g.,G2Q)
G#T#Q	=	same as above,but validity as subspecies or variety is questioned.
GU	=	due to lack of information,no rank or range can be assigned (e.g.,GUT2).
G?	=	not yet ranked (temporary)
S1	=	Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
S2	=	Imperiled in Florida because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
S3	=	Either very rare and local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction of other factors.
S4	=	apparently secure in Florida (may be rare in parts of range)
S5	=	demonstrably secure in Florida
SH	=	of historical occurrence throughout its range,may be rediscovered (e.g.,ivory-billed woodpecker)
SX	=	believed to be extinct throughout range
SA	=	accidental in Florida,i.e.,not part of the established biota
SE	=	an exotic species established in Florida may be native elsewhere in North America
SN	=	regularly occurring,but widely and unreliably distributed; sites for conservation hard to determine
SU	=	due to lack of information,no rank or range can be assigned (e.g.,SUT2).
S?	=	not yet ranked (temporary)

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

LEGAL STATUS

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

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

LE = Listed as Endangered Species in the List of Endangered and Threatened Wildlife and Plants under the provisions of the Endangered Species Act. Defined as any species that is in danger of extinction throughout all or a significant portion of its range.

PE = Proposed for addition to the List of Endangered and Threatened Wildlife and Plants as Endangered Species.

LT = Listed as Threatened Species. Defined as any species that is likely to become an endangered species within the near future throughout all or a significant portion of its range.

PT = Proposed for listing as Threatened Species.

C = Candidate Species for addition to the list of Endangered and Threatened Wildlife and Plants. Defined as those species for which the USFWS currently has on file sufficient information on biological vulnerability and threats to support proposing to list the species as endangered or threatened.

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

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

STATE

Animals **(Listed by the Florida Fish and Wildlife Conservation Commission - FFWCC)**

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

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

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

Plants **(Listed by the Florida Department of Agriculture and Consumer Services - FDACS)**

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

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

Hillsborough River State Park

Designated Species

Plants

Common Name/ *Scientific Name*	**Designated Species Status** FDA	USFWS	FNAI
Hand fern			
Ophioglossum palmatum	LE		G4,S2
Threadroot orchid			
Harrisella porrecta	LT		
Pine lily			
Lilium catesbaei	LT		
Pantropical wide-lip orchid			
Liparis nervosa	LE		
Widespread polypody			
Pecluma dispersa	LE		G5,S2
Plumy polypody			
Pecluma plumula	LE		G5,S2
Comb polypody			
Pecluma ptilodon var. *caespitosa*	LE		G5?,S2
Gypsy-spikes			
Platanthera flava	LT		
Leafless beaked ladies'-tresses			
Sacoila lanceolata	LT		
Lace-lip ladies'-tresses			
Spiranthes laciniata	LT		
Little ladies'-tresses			
Spiranthes tuberosa	LT		
Atamasco lily			
Zephyranthes atamasca	LT		
Rain lily			
Zephyranthes simpsonii	LT		G2G3,S2S3

Hillsborough River State Park

Designated Species

Animals

Common Name/ *Scientific Name*	Designated Species Status FFWCC	USFWS	FNAI
REPTILES			
American alligator *Alligator mississippiensis*	LS	T(S/A)	G5,S4
Eastern indigo snake *Drymarchon corais cooperi*	LT	LT	G4T3,S3
Gopher tortoise *Gopherus polyphemus*	LS		G3,S3
Florida pine snake *Pituophis melanoleucus mugitus*	LS		G5T3?,S3
BIRDS			
Cooper's hawk *Accipiter cooperii*			G5,S3
Bachman's sparrow *Aimophila aestivalis*			G3,S3
Florida scrub-jay *Aphelocoma coerulescens*	LT	LT	G2,S2
Limpkin *Aramus guarauna*	LS		G5,S3
Great egret *Ardea alba*			G5,S4
Ivory-billed woodpecker *Campephlius principalis*	LE	LE	GH,SH
Kirtland's warbler *Dendroica kirtland*	LE	LE	G1,S1
Little blue heron *Egretta caerulea*	LS		G5,S4
Snowy egret *Egretta thula*	LS		G5,S3
Tricolored heron *Egretta tricolor*	LS		G5,S4
White-tailed kite *Elanus leucurus*			G5,S1
White ibis *Eudocimus albus*	LS		G5,S4
Merlin *Falco columbarius*			G5,S2
Peregrine falcon *Falco peregrinus*	LE		G4,S2
Magnificent frigatebird *Fregata magnificens*	LT	LT	G4,S3
Florida sandhill crane *Grus canadensis*	LT	LT	G5T2T3,S2S3

Hillsborough River State Park

Designated Species

Animals

Common Name/ *Scientific Name*	**Designated Species Status** FFWCC	USFWS	FNAI
Southern bald eagle *Haliaeetus leucocephalus*	LT	LT	G4,S3
Worm-eating warbler *Helmitheros vermivorus*			G5,S1
Least bittern *Ixobrychus exilis*			G5,S4
Wood stork *Mycteria americana*	LE	LE	G4,S2
Black-crowned night heron *Nycticorax nycticorax*			G5,S3
Yellow-crowned night heron *Nycticorax violacea*			G5,S3
Osprey *Pandion haliaetus*	LS*		G5,S3S4
Eastern brown pelican *Pelecanus occidentalis*	LS		G4,S3
Red-cockaded woodpecker *Picoides borealis*	LT	LE	G3,S2
Southern hairy woodpecker *Picoides villosus*			G5,S3
Glossy ibis *Pleqadis falcinellus*			G5,S3
Crested caracara *Polyborus plancus*			G5,S2
Louisana waterthrush *Seiurus motacilla*			G5,S2
American redstart *Setophaga ruticilla*			G5,S2
Least tern *Sterna antillarum*	LT		G4,S3
Bachman's warbler *Vermivora bachman*	LE	LE	GH,SH
MAMMALS			
Sherman's fox squirrel *Sciurus niger shermani*	LS		G5T3,S3

Addendum 6—Priority Schedule And Cost Estimates

Hillsborough River State Park

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.

Resource Management

A. Mechanical mowing to restore overgrown flatwoods by reducing dense thickets of saw palmetto.

Estimated Cost Over Ten Years: $7,500 per year to maintain mower tractor and fuel costs. Subtotal $75,000.

B. **Tree Girdling** of large hardwoods that have encroached in depression marshes and dome swamps.

Estimated Cost Over Ten Years: Removal of hardwoods that have encroached on wetland depressions due to absence of fire over an estimated 45 marsh wetland acres, outside of mitigated wetlands, for $220.00/acre. Subtotal $9,900

C. **Exotic Plant Removal** throughout Hillsborough River State Park, including the Model Dairy Property with the goal of restoring the specific communities to pre-1938 conditions (individual plant subtotals below.)

Subtotal $78,000

Exotic removal of plant life includes:

Tropical Soda Apple on 25 acres, using chemical means of eradication costing $500 in chemicals and $6400 in manpower. Six treatments to ensure success $6,900

Cogon grass on 30 acres, using chemical means of eradication costing $600 in chemicals and $10,000 in manpower. These man-hours include application of herbicides and the recommended mowing. $10,600

Air potato, which resides in the majority of the zones, will be manually pulled more often than herbicided. Cost for removal is estimated at $30,000 for manual labor and $500.00 for herbicides over ten years. $30,500

Skunkvine, which is widespread in the park, will be herbicided with Garlon 3A and/or Plateau (manual removal is ineffective) at $2000.00 for herbicides over ten years with manpower for application cost of $2000.00 $4,000

Caesarweed, showy rattlebox, Japanese climbing fern, and the miscellaneous exotic plants growing around the park residences will be removed manually at a cost of $15,000 $15,000

Chinese tallow, loquat, and citrus will be removed chemically at a cost of $1000.00 and $10,000 for man hours over ten years $11,000

*** Categories of the uniform cost accounting system not reflected in this addendum, have no schedule or cost associated with them.**

D. Survey east and west boundary. Subtotal $15,000

TOTAL ESTIMATED COST: **$370,686.**

*** Categories of the uniform cost accounting system not reflected in this addendum, have no schedule or cost associated with them.**

Hillsborough River State Park

New Facility Construction/Facilities Maintenance

Item	Quantity	Unit	Unit Price	Multiplier	Amount
Recreation Facilities					
CCC Cabin Relocation/ Restoration	1.000	LS	$100,000.00	1.25	$125,000.00
CCC Restoration Study	1.000	LS	$25,000.00	1.25	$31,250.00
CCC Suspension Bridge Repairs	1.000	LS	$30,000.00	1.25	$37,500.00
Equestrian Campground	1.000	ea.	$150,000.00	1.25	$187,500.00
Equestrian Trailhead	1.000	ea.	$35,000.00	1.25	$43,750.00
Interpretive Exhibit Upgrades and Displays	1.000	LS	$35,000.00	1.25	$43,750.00
Medium Bathhouse	2.000	ea.	$135,000.00	1.25	$337,500.00
Trail Rehabilitation	1.000	LS	$5,000.00	1.25	$6,250.00
Support Facilities					
3 Bay Equipment Shelter	1.000	ea.	$125,000.00	1.25	$156,250.00
Administrative Office	1.000	ea.	$190,000.00	1.25	$237,500.00
Demolish Equipment Shelter	1.000	LS	$20,000.00	1.25	$25,000.00
Flammable/Small Storage Building	1.000	ea.	$9,600.00	1.25	$12,000.00
New Paved Parking (10 Car)	3.000	per 10	$16,000.00	1.25	$60,000.00
Repaved Parking (10 Car)	25.000	per 10	$8,000.00	1.25	$250,000.00
Shoreline Enhancements	1.000	LS	$50,000.00	1.25	$62,500.00
Stabilized Parking (10 Car)	1.000	per 10	$2,500.00	1.25	$3,125.00
			Sub-Total		$1,743,875.00
			20 Percent Contingency Fee		$348,775.00
			Total		**$1,967,650.00**

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

Addendum 7—Additional Information

FNAI Descriptions

DHR Cultural Management Statement

And

Land Management Review Report

Descriptions Of Natural Communities Developed By FNAI

This summary presents the hierarchical classification and brief descriptions of 82 Natural Communities developed by Florida Natural Areas Inventory and identified as collectively constituting the original, natural biological associations of Florida.

A Natural Community is defined as a distinct and recurring assemblage of populations of plants, animals, fungi and microorganisms naturally associated with each other and their physical environment. For more complete descriptions, see Guide to the Natural Communities of Florida, available from Florida Department of Natural Resources.

The levels of the hierarchy are:

Natural Community Category - defined by hydrology and vegetation.

Natural Community Groups - defined by landform, substrate, and vegetation.

Natural Community Type - defined by landform and substrate; soil moisture condition; climate; fire; and characteristic vegetation.

TERRESTRIAL - Upland habitats dominated by plants which are not adapted to anaerobic soil conditions imposed by saturation or inundation for more than 10% of the growing season.

XERIC UPLANDS - very dry, deep, well-drained hills of sand with xeric-adapted vegetation.

Sandhill - upland with deep sand substrate; xeric; temperate; frequent fire (2-5 years); longleaf pine and/or turkey oak with wiregrass understory.

Scrub - old dune with deep fine sand substrate; xeric; temperate or subtropical; occasional or rare fire (20 - 80 years); sand pine and/or scrub oaks and/or rosemary and lichens.

Xeric Hammock - upland with deep sand substrate; xeric-mesic; temperate or subtropical; rare or no fire; live oak and/or sand live oak and/or laurel oak and/or other oaks, sparkleberry, saw palmetto.

COASTAL UPLANDS - substrate and vegetation influenced primarily by such coastal (maritime) processes as erosion, deposition, salt spray, and storms.

Beach Dune - active coastal dune with sand substrate; xeric; temperate or subtropical; occasional or rare fire; sea oats and/or mixed salt-spray tolerant grasses and herbs.

Coastal Berm - old bar or storm debris with sand/shell substrate; xeric-mesic; subtropical or temperate; rare or no fire; buttonwood, mangroves, and/or mixed halophytic herbs and/or shrubs and trees.

Coastal Grassland - coastal flatland with sand substrate; xeric-mesic; subtropical or temperate; occasional fire; grasses, herbs, and shrubs with or without slash pine and/or cabbage palm.

Coastal Rock Barren - flatland with exposed limestone substrate; xeric; subtropical; no fire; algae, mixed halophytic herbs and grasses, and/or cacti and stunted shrubs and trees.

Coastal Strand - stabilized coastal dune with sand substrate; xeric; subtropical or temperate; occasional or rare fire; dense saw palmetto and/or seagrape and/or mixed stunted shrubs, yucca, and cacti.

Maritime Hammock - stabilized coastal dune with sand substrate; xeric-mesic; subtropical or temperate; rare or no fire; mixed hardwoods and/or live oak.

Shell Mound - Indian midden with shell substrate; xeric-mesic; subtropical or temperate; rare or no fire; mixed hardwoods.

MESIC UPLANDS - dry to moist hills of sand with varying amounts of clay, silt or organic material; diverse mixture of broadleaved and needleleaved temperate woody species.

Bluff - steep slope with rock, sand, and/or clay substrate; hydric-xeric; temperate; sparse grasses, herbs and shrubs.

Slope Forest - steep slope on bluff or in sheltered ravine; sand/clay substrate; mesic-hydric; temperate; rare or no fire; magnolia, beech, spruce pine, Shumard oak, Florida maple, mixed hardwoods.

Upland Glade - upland with calcareous rock and/or clay substrate; hydric-xeric; temperate; sparse mixed grasses and herbs with occasional stunted trees and shrubs, e.g., eastern red cedar.

Upland Hardwood Forest - upland with sand/clay and/or calcareous substrate; mesic; temperate; rare or no fire; spruce pine, magnolia, beech, pignut hickory, white oak, and mixed hardwoods.

Upland Mixed Forest - upland with sand/clay substrate; mesic; temperate; rare or no fire; loblolly pine and/or shortleaf pine and/or laurel oak and/or magnolia and spruce pine and/or mixed hardwoods.

Upland Pine Forest - upland with sand/clay substrate; mesic-xeric; temperate; frequent or occasional fire; longleaf pine and/or loblolly pine and/or shortleaf pine, southern red oak, wiregrass.

ROCKLANDS - low, generally flat limestone outcrops with tropical vegetation; or limestone exposed through karst activities with tropical or temperate vegetation.

Pine Rockland - flatland with exposed limestone substrate; mesic-xeric; subtropical; frequent fire; south Florida slash pine, palms and/or hardwoods, and mixed grasses and herbs.

Rockland Hammock - flatland with limestone substrate; mesic; subtropical; rare or no fire; mixed tropical hardwoods, often with live oak.

Sinkhole - karst feature with steep limestone walls; mesic-hydric; subtropical or temperate; no fire; ferns, herbs, shrubs, and hardwoods.

MESIC FLATLANDS - flat, moderately well-drained sandy substrates with admixture of organic material, often with a hard pan.

Dry Prairie - flatland with sand substrate; mesic-xeric; subtropical or temperate; annual or frequent fire; wiregrass, saw palmetto, and mixed grasses and herbs.

Mesic Flatwoods - flatland with sand substrate; mesic; subtropical or temperate; frequent fire; slash

pine and/or longleaf pine with saw palmetto, gallberry and/or wiregrass or cutthroat grass understory.

Prairie Hammock - flatland with sand/organic soil over marl or limestone substrate; mesic; subtropical; occasional or rare fire; live oak and/or cabbage palm.

Scrubby Flatwoods - flatland with sand substrate; xeric-mesic; subtropical or temperate; occasional fire; longleaf pine or slash pine with scrub oaks and wiregrass understory.

PALUSTRINE - Wetlands dominated by plants adapted to anaerobic substrate conditions imposed by substrate saturation or inundation during 10% or more of the growing season. Includes non-tidal wetlands; tidal wetlands with ocean derived salinities less than 0.5 ppt and dominance by salt-intolerant species; small (less than 8 ha), shallow (less than 2 m deep at low water) water bodies without wave-formed or bedrock shoreline; and inland brackish or saline wetlands.

WET FLATLANDS - flat, poorly drained sand, marl or limestone substrates.

Hydric Hammock - lowland with sand/clay/organic soil, often over limestone; mesic-hydric; subtropical or temperate; rare or no fire; water oak, cabbage palm, red cedar, red maple, bays, hackberry, hornbeam, blackgum, needle palm, and mixed hardwoods.

Marl Prairie - flatland with marl over limestone substrate; seasonally inundated; tropical; frequent to no fire; sawgrass, spikerush, and/or mixed grasses, sometimes with dwarf cypress.

Wet Flatwoods - flatland with sand substrate; seasonally inundated; subtropical or temperate; frequent fire; vegetation characterized by slash pine or pond pine and/or cabbage palm with mixed grasses and herbs.

Wet Prairie - flatland with sand substrate; seasonally inundated; subtropical or temperate; annual or frequent fire; maidencane, beakrush, spikerush, wiregrass, pitcher plants, St. John's wort, mixed herbs.

SEEPAGE WETLANDS - sloped or flat sands or peat with high moisture levels maintained by downslope seepage; wetland and mesic woody and/or herbaceous vegetation.

Baygall - wetland with peat substrate at base of slope; maintained by downslope seepage, usually saturated and occasionally inundated; subtropical or temperate; rare or no fire; bays and/or dahoon holly and/or red maple and/or mixed hardwoods.

Seepage Slope - wetland on or at base of slope with organic/sand substrate; maintained by downslope seepage, usually saturated but rarely inundated; subtropical or temperate; frequent or occasional fire; sphagnum moss, mixed grasses and herbs or mixed hydrophytic shrubs.

FLOODPLAIN WETLANDS - flat, alluvial sand or peat substrates associated with flowing water courses and subjected to flooding but not permanent inundation; wetland or mesic woody and herbaceous vegetation.

Bottomland Forest - flatland with sand/clay/organic substrate; occasionally inundated; temperate; rare or no fire; water oak, red maple, beech, magnolia, tuliptree, sweetgum, bays, cabbage palm, and mixed hardwoods.

Floodplain Forest - floodplain with alluvial substrate of sand, silt, clay or organic soil; seasonally inundated; temperate; rare or no fire; diamondleaf oak, overcup oak, water oak, swamp chestnut oak, blue palmetto, cane, and mixed hardwoods.

Floodplain Marsh - floodplain with organic/sand/alluvial substrate; seasonally inundated; subtropical; frequent or occasional fire; maidencane, pickerelweed, sagittaria spp., buttonbush, and mixed emergents.

Floodplain Swamp - floodplain with organic/alluvial substrate; usually inundated; subtropical or temperate; rare or no fire; vegetation characterized by cypress, tupelo, black gum, and/or pop ash.

Freshwater Tidal Swamp - river mouth wetland, organic soil with extensive root mat; inundated with freshwater in response to tidal cycles; rare or no fire; cypress, bays, cabbage palm, gums and/or cedars.

Slough - broad, shallow channel with peat over mineral substrate; seasonally inundated, flowing water; subtropical; occasional or rare fire; pop ash and/or pond apple or water lily.

Strand Swamp - broad, shallow channel with peat over mineral substrate; seasonally inundated, flowing water; subtropical; occasional or rare fire; cypress and/or willow.

Swale - broad, shallow channel with sand/peat substrate; seasonally inundated, flowing water; subtropical or temperate; frequent or occasional fire; sawgrass, maidencane, pickerelweed, and/or mixed emergents.

BASIN WETLANDS - shallow, closed basin with outlet usually only in time of high water; peat or sand substrate, usually inundated; wetland woody and/or herbaceous vegetation.

Basin Marsh - large basin with peat substrate; seasonally inundated; temperate or subtropical; frequent fire; sawgrass and/or cattail and/or buttonbush and/or mixed emergents.

Basin Swamp - large basin with peat substrate; seasonally inundated, still water; subtropical or temperate; occasional or rare fire; vegetation characterized by cypress, blackgum, bays and/or mixed hardwoods.

Bog - wetland on deep peat substrate; moisture held by sphagnum mosses, soil usually saturated, occasionally inundated; subtropical or temperate; rare fire; sphagnum moss and titi and/or bays and/or dahoon holly, and/or mixed hydrophytic shrubs.

Coastal Interdunal Swale - long narrow depression wetlands in sand/peat-sand substrate; seasonally inundated, fresh to brackish, still water; temperate; rare fire; graminoids and mixed wetland forbs.

Depression Marsh - small rounded depression in sand substrate with peat accumulating toward center; seasonally inundated, still water; subtropical or temperate; frequent or occasional fire; maidencane, fire flag, pickerelweed, and mixed emergents, may be in concentric bands.

Dome Swamp - rounded depression in sand/limestone substrate with peat accumulating toward center; seasonally inundated, still water; subtropical or temperate; occasional or rare fire; cypress, blackgum, or bays, often tallest in center.

LACUSTRINE - Non-flowing wetlands of natural depressions lacking persistent emergent vegetation except around the perimeter.

Clastic Upland Lake - generally irregular basin in clay uplands; predominantly with inflows, frequently without surface outflow; clay or organic substrate; colored, acidic, soft water with low mineral content (sodium, chloride, sulfate); oligo-mesotrophic to eutrophic.

Coastal Dune Lake - basin or lagoon influenced by recent coastal processes; predominantly sand substrate with some organic matter; salinity variable among and within lakes, and subject to saltwater intrusion and storm surges; slightly acidic, hard water with high mineral content (sodium, chloride).

Coastal Rockland Lake - shallow basin influence by recent coastal processes; predominantly barren oolitic or Miami limestone substrate; salinity variable among and within lakes, and subject to saltwater intrusion, storm surges and evaporation (because of shallowness); slightly alkaline, hard water with

high mineral content (sodium, chloride).

Flatwoods/Prairie Lake - generally shallow basin in flatlands with high water table; frequently with a broad littoral zone; still water or flow-through; sand or peat substrate; variable water chemistry, but characteristically colored to clear, acidic to slightly alkaline, soft to moderately hard water with moderate mineral content (sodium, chloride, sulfate); oligo-mesotrophic to eutrophic.

Marsh lake - generally shallow, open water area within wide expanses of freshwater marsh; still water or flow-through; peat, sand or clay substrate; occurs in most physiographic regions; variable water chemistry, but characteristically highly colored, acidic, soft water with moderate mineral content (sodium, chloride, sulfate); oligo-mesotrophic to eutrophic.

River Floodplain Lake - meander scar, backwater, or larger flow-through body within major river floodplains; sand, alluvial or organic substrate; colored, alkaline or slightly acidic, hard or moderately hard water with high mineral content (sulfate, sodium, chloride, calcium, magnesium); mesotrophic to eutrophic.

Sandhill Upland Lake - generally rounded solution depression in deep sandy uplands or sandy uplands shallowly underlain by limestone; predominantly without surface inflows/outflows; typically sand substrate with organic accumulations toward middle; clear, acidic moderately soft water with varying mineral content; ultra-oligotrophic to mesotrophic.

Sinkhole Lake - typically deep, funnel-shaped depression in limestone base; occurs in most physiographic regions; predominantly without surface inflows/outflows, but frequently with connection to the aquifer; clear, alkaline, hard water with high mineral content (calcium, bicarbonate, magnesium).

Swamp Lake - generally shallow, open water area within basin swamps; still water or flow-through; peat, sand or clay substrate; occurs in most physiographic regions; variable water chemistry, but characteristically highly colored, acidic, soft water with moderate mineral content (sodium, chloride, sulfate); oligo-mesotrophic to eutrophic.

RIVERINE - Natural, flowing waters from their source to the downstream limits of tidal influence and bounded by channel banks.

Alluvial Stream - lower perennial or intermittent/seasonal watercourse characterized by turbid water with suspended silt, clay, sand and small gravel; generally with a distinct, sediment-derived (alluvial) floodplain and a sandy, elevated natural levee just inland from the bank.

Blackwater Stream - perennial or intermittent/seasonal watercourse characterized by tea-colored water with a high content of particulate and dissolved organic matter derived from drainage through swamps and marshes; generally lacking an alluvial floodplain.

Seepage Stream - upper perennial or intermittent/seasonal watercourse characterized by clear to lightly colored water derived from shallow groundwater seepage.

Spring-run Stream - perennial watercourse with deep aquifer headwaters and characterized by clear water, circumneutral pH and, frequently, a solid limestone bottom.

SUBTERRANEAN - Twilight, middle and deep zones of natural chambers overlain by the earth's crust and characterized by climatic stability and assemblages of trogloxenic, troglophilic, and troglobitic organisms.

Aquatic Cave - cavernicolous area permanently or periodically submerged; often characterized by troglobitic crustaceans and salamanders; includes high energy systems which receive large quantities

of organic detritus and low energy systems.

Terrestrial Cave - cavernicolous area lacking standing water; often characterized by bats, such as Myotis spp., and other terrestrial vertebrates and invertebrates; includes interstitial areas above standing water such as fissures in the ceiling of caves.

MARINE/ESTUARINE (The distinction between the Marine and Estuarine Natural Communities is often subtle, and the natural communities types found under these two community categories have the same descriptions. For these reasons they have been grouped together.) - Subtidal, intertidal and supratidal zones of the sea, landward to the point at which seawater becomes significantly diluted with freshwater inflow from the land.

Consolidated Substrate - expansive subtidal, intertidal and supratidal area composed primarily of nonliving compacted or coherent and relatively hard, naturally formed mass of mineral matter (e.g., coquina limerock and relic reefs); octocorals, sponges, stony corals, nondrift macrophytic algae, blue-green mat-forming algae and seagrasses sparse, if present.

Unconsolidated Substrate - expansive subtidal, intertidal and supratidal area composed primarily of loose mineral matter (e.g., coralgal, gravel, marl, mud, sand and shell); octocorals, sponges, stony corals, nondrift macrophytic algae, blue-green mat-forming algae and seagrasses sparse, if present.

Octocoral Bed - expansive subtidal area occupied primarily by living sessile organisms of the Class Anthozoa, Subclass Octocorallia (e.g., soft corals, horny corals, sea fans, sea whips, and sea pens); sponges, stony corals, nondrift macrophytic algae and seagrasses spares, if present.

Sponge Bed - expansive subtidal area occupied primarily by living sessile organisms of the Phylum Porifera (e.g., sheepswool sponge, Florida loggerhead sponge and branching candle sponge); octocorals, stony corals, nondrift macrophytic algae and seagrasses sparse, if present.

Coral Reef - expansive subtidal area with elevational gradient or relief and occupied primarily by living sessile organisms of the Class Hydrozoa (e.g., fire corals and hydrocorals) and Class Anthozoa, Subclass Zoantharia (e.g., stony corals and black corals); includes deepwater bank reefs, fringing barrier reefs, outer bank reefs and patch reefs, some of which may contain distinct zones of assorted macrophytes, octocorals, & sponges.

Mollusk Reef - substantial subtidal or intertidal area with relief from concentrations of sessile organisms of the Phylum Mollusca, Class Bivalvia (e.g., molluscs, oysters, & worm shells); octocorals, sponges, stony corals, macrophytic algae and seagrasses sparse, if present.

Worm Reef - substantial subtidal or intertidal area with relief from concentrations of sessile, tubicolous organisms of the Phylum Annelida, Class Polychaeta (e.g., chaetopterids and sabellarids); octocorals, sponges, stony corals, macrophytic algae and seagrasses sparse, if present.

Algal Bed - expansive subtidal, intertidal or supratidal area, occupied primarily by attached thallophytic or mat-forming prokaryotic algae (e.g, halimeda, blue-green algae); octocorals, sponges, stony corals and seagrasses sparse, if present.

Grass Bed - expansive subtidal or intertidal area, occupied primarily by rooted vascular macrophytes, (e.g., shoal grass, halophila, widgeon grass, manatee grass and turtle grass); may include various epiphytes and epifauna; octocorals, sponges, stony corals, and attached macrophytic algae sparse, if present.

Composite Substrate - expansive subtidal, intertidal, or supratidal area, occupied primarily by Natural Community elements from more than one Natural Community category (e.g., Grass Bed and Algal Bed species; Octocoral and Algal Bed species); includes both patchy and evenly distributed occurrences.

Tidal Marsh - expansive intertidal or supratidal area occupied primarily by rooted, emergent vascular macrophytes (e.g., cord grass, needlerush, saw grass, saltwort, saltgrass and glasswort); may include various epiphytes and epifauna.

Tidal Swamp - expansive intertidal and supratidal area occupied primarily by woody vascular macrophytes (e.g., black mangrove, buttonwood, red mangrove, and white mangrove); may include various epiphytes and epifauna.

DEFINITIONS OF TERMS Terrestrial and Palustrine Natural Communities

Physiography

Upland - high area in region with significant topographic relief; generally undulating
Lowland - low area in region with or without significant topographic relief; generally flat to gently sloping
Flatland - generally level area in region without significant topographic relief; flat to gently sloping
Basin - large, relatively level lowland with slopes confined to the perimeter or isolated interior locations
Depression - small depression with sloping sides, deepest in center and progressively shallower towards the perimeter
Floodplain - lowland adjacent to a stream; topography influenced by recent fluvial processes
Bottomland - lowland not on active floodplain; sand/clay/organic substrate

Hydrology

occasionally inundated - surface water present only after heavy rains and/or during flood stages
seasonally inundated - surface water present during wet season and flood periods
usually inundated - surface water present except during droughts

Climatic Affinity of the Flora

tropical - community generally occurs in practically frost-free areas
subtropical - community generally occurs in areas that experience occasional frost, but where freezing temperatures are not frequent enough to cause true winter dormancy
temperate - community generally occurs in areas that freeze often enough that vegetation goes into winter dormancy

Fire

annual fire - burns about every 1-2 years
frequent fire - burns about every 3-7 years
occasional fire - burns about every 8-25 years
rare fire - burns about every 26-100 years
no fire - community develops only when site goes more than 100 years without burning

LATIN NAMES OF PLANTS MENTIONED IN NATURAL COMMUNITY DESCRIPTIONS

anise - *Illicium floridanum*
bays:
  swamp bay -*Persea palustris*
  gordonia -*Gordonia lasianthus*
  sweetbay -*Magnolia virgiana*
beakrush - *Rhynchospora* spp.
beech - *Fagus grandifolia*
blackgum - *Nyssa biflora*
blue palmetto - *Sabal minor*
bluestem - *Andropogon* spp.
buttonbush - *Cephalanthus occidentalis*
cabbage palm - *Sabal palmetto*
cacti - *Opuntia* and *Harrisia* spp.,
  predominantly *stricta* and *pentagonus*
cane - *Arundinaria gigantea* or *A. tecta*
cattail - *Typha* spp.
cedars:
  red cedar - *Juniperus silicicola*
  white cedar - *Chamaecyparis thyoides* or *C. henryi*
cladonia - *Cladonia* spp.
cypress - *Taxodium distichum*
dahoon holly - *Ilex cassine*
diamondleaf oak - *Quercus laurifolia*
fire flag - *Thalia geniculata*
Florida maple - *Acer barbatum*
gallberry - *Ilex glabra*
gums:
  tupelo - *Nyssa aquatica*
  blackgum - *Nyssa biflora*
  Ogeechee gum - *Nyssa ogeche*
hackberry - *Celtis laevigata*
hornbeam - *Carpinus caroliniana*
laurel oak - *Quercus hemisphaerica*
live oak - *Quercus virginiana*
loblolly pine - *Pinus taeda*
longleaf pine - *Pinus palustris*
magnolia - *Magnolia grandiflora*
maidencane - *Panicum hemitomon*
needle palm - *Rhapidophyllum hystrix*
overcup oak - *Quercus lyrata*
pickerel weed - *Pontederia cordata* or *P. lanceolata*
pignut hickory - *Carya glabra*
pop ash - *Fraxinus caroliniana*
pond apple - *Annona glabra*
pond pine - *Pinus serotina*
pyramid magnolia - *Magnolia pyramidata*
railroad vine - *Ipomoea pes-caprae*
red cedar - *Juniperus silicicola*
red maple - *Acer rubrum*
red oak - *Quercus falcata*
rosemary - *Ceratiola ericoides*
sagittaria - *Sagittaria lancifolia*
sand pine - *Pinus clausa*
saw palmetto - *Serenoa repens*
sawgrass - *Cladium jamaicensis*
scrub oaks - *Quercus geminata, Q. chapmanii, Q. myrtifolia,Q. inopina*
sea oats - *Uniola paniculata*
seagrape - *Coccoloba uvifera*
shortleaf pine - *Pinus echinata*
Shumard oak - *Quercus shumardii*
slash pine - *Pinus elliottii*
sphagnum moss - *Sphagnum* spp.
spikerush - *Eleocharis* spp.
spruce pine - *Pinus glabra*
St. John's wort - *Hypericum* spp.
swamp chestnut oak - *Quercus prinus*
sweetgum - *Liquidambar styraciflua*
titi - *Cyrilla racemiflora*, and *Cliftonia monophylla*
tuliptree - *Liriodendron tulipfera*
tupelo - *Nyssa aquatica*
turkey oak - *Quercus laevis*
water oak - *Quercus nigra*
waterlily - *Nymphaea odorata*
white cedar - *Chamaecyparis thyoides*
white oak - *Quercus alba*
willow - *Salix caroliniana*
yucca - *Yucca aloifolia*

A. GENERAL DISCUSSION

Archaeological and historic sites are defined collectively in 267.021(3), F.S., as "historic properties" or "historic resources." They have several essential characteristics that must be recognized in a management program.

First of all, they are a finite and non-renewable resource. Once destroyed, presently existing resources, including buildings, other structures, shipwreck remains, archaeological sites and other objects of antiquity, cannot be renewed or revived. Today, sites in the State of Florida are being destroyed by all kinds of land development, inappropriate land management practices, erosion, looting, and to a minor extent even by well-intentioned professional scientific research (e.g., archaeological excavation). Measures must be taken to ensure that some of these resources will be preserved for future study and appreciation.

Secondly, sites are unique because individually they represent the tangible remains of events that occurred at a specific time and place.

Thirdly, while sites uniquely reflect localized events, these events and the origin of particular sites are related to conditions and events in other times and places. Sites can be understood properly only in relation to their natural surroundings and the activities of inhabitants of other sites. Managers must be aware of this "systemic" character of historic and archaeological sites. Also, it should be recognized that archaeological sites are time capsules for more than cultural history; they preserve traces of past biotic communities, climate, and other elements of the environment that may be of interest to other scientific disciplines.

Finally, the significance of sites, particularly archaeological ones, derives not only from the individual artifacts within them, but equally from the spatial arrangement of those artifacts in both horizontal and vertical planes. When archaeologists excavate, they recover, not merely objects, but also a record of the positions of these objects in relation to one another and their containing matrix (e.g., soil strata). Much information is sacrificed if the so-called "context" of archaeological objects is destroyed or not recovered, and this is what archaeologists are most concerned about when a site is threatened with destruction or damage. The artifacts themselves can be recovered even after a site is heavily disturbed, but the context -- the vertical and horizontal relationships -- cannot. Historic structures also contain a wealth of cultural (socio-economic) data that can be lost if historically sensitive maintenance, restoration or rehabilitation procedures are not implemented, or if they are demolished or extensively altered without appropriate documentation. Lastly, it should not be forgotten that historic structures often have associated potentially significant historic archaeological features that must be considered in land management decisions.

B. STATUTORY AUTHORITY

Chapter 253, Florida Statutes ("State Lands") directs the preparation of "single-use" or "multiple-use" land management plans for all state-owned lands and state-owned sovereignty submerged lands. In this document, 253.034(4), F.S., specifically requires that "all management plans, whether for single-use or multiple-use properties, shall specifically describe how the managing agency plans to identify, locate, protect and preserve, or otherwise use fragile non-renewable resources, such as archaeological and historic sites, as well as other fragile resources..."

Chapter 267, Florida Statutes is the primary historic preservation authority of the state. The importance of protecting and interpreting archaeological and historic sites is recognized in 267.061(1)(a), F.S.:The rich and unique heritage of historic properties in this state, representing more than 10,000 years of human presence, is an important legacy to be valued and conserved for present and future generations. The destruction of these nonrenewable historic resources will engender a significant loss to the state's quality of life, economy, and cultural environment. It is therefore declared to be state policy to:

1. Provide leadership in the preservation of the state's historic resources; [and]
2. Administer state-owned or state-controlled historic resources in a spirit of stewardship and trusteeship;...

Responsibilities of the Division of Historical Resources in the Department of State pursuant to 267.061(3), F.S., include the following:

1. Cooperate with federal and state agencies, local Governments, and private organizations and individuals to direct and conduct a comprehensive statewide survey of historic resources and to maintain an inventory of such responses.
2. Develop a comprehensive statewide historic preservation plan.
3. Identify and nominate eligible properties to the National Register of Historic Places and otherwise administer applications for listing properties in the National Register of Historic Places.
4. Cooperate with federal and state agencies, local governments, and organizations and individuals to ensure that historic resources are taken into consideration at all levels of planning and development.
5. Advise and assist, as appropriate, federal and state agencies and local governments in carrying out their historic preservation responsibilities and programs.
6. Carry out on behalf of the state the programs of the National Historic Preservation Act of 1966, as amended, and to establish, maintain, and administer a state historic preservation program meeting the requirements of an approved program and fulfilling the responsibilities of state historic preservation programs as provided in subsection 101(b) of that act.
7. Take such other actions necessary or appropriate to locate, acquire, protect, preserve, operate, interpret, and promote the location, acquisition, protection, preservation, operation, and interpretation of historic resources to foster an appreciation of Florida history and culture. Prior to the acquisition, preservation, interpretation, or operation of a historic property by a state agency, the Division shall be provided a reasonable opportunity to review and comment on the proposed undertaking and shall determine that there exists historic authenticity and a feasible means of providing for the preservation, interpretation and operation of such property.
8. Establish professional standards for the preservation, exclusive of acquisition, of historic resources in state ownership or control.
9. Establish guidelines for state agency responsibilities under subsection (2).

Responsibilities of other state agencies of the executive branch, pursuant to 267.061(2), F.S., include:

1. Each state agency of the executive branch having direct or indirect jurisdiction over a proposed state or state-assisted undertaking shall, in accordance with state policy and prior to the approval of expenditure of any state funds on the undertaking, consider the effect of the undertaking on any historic property that is included in, or eligible for inclusion in, the National Register of Historic Places. Each such agency shall afford the division a reasonable opportunity to comment with regard to such an undertaking.
2. Each state agency of the executive branch shall initiate measures in consultation with the division to assure that where, as a result of state action or assistance carried out by such agency, a historic property is to be demolished or substantially altered in a way that adversely affects the character, form, integrity, or other qualities that contribute to [the] historical, architectural, or archaeological value of the property, timely steps are taken to determine that no feasible and prudent alternative to the proposed demolition or alteration exists, and, where no such alternative is determined to exist, to assure that timely steps are taken either to avoid or mitigate the adverse effects, or to undertake an appropriate archaeological salvage excavation or other recovery action to document the property as it existed prior to demolition or alteration.
3. In consultation with the division [of Historical Resources], each state agency of the executive branch shall establish a program to locate, inventory, and evaluate all historic properties under the agency's ownership or control that appear to qualify for the National Register. Each such agency shall exercise caution to assure that any such historic property is not inadvertently

transferred, sold, demolished, substantially altered, or allowed to deteriorate significantly.

4. Each state agency of the executive branch shall assume responsibility for the preservation of historic resources that are owned or controlled by such agency. Prior to acquiring, constructing, or leasing buildings for the purpose of carrying out agency responsibilities, the agency shall use, to the maximum extent feasible, historic properties available to the agency. Each agency shall undertake, consistent with preservation of such properties, the mission of the agency, and the professional standards established pursuant to paragraph (3)(k), any preservation actions necessary to carry out the intent of this paragraph.
5. Each state agency of the executive branch, in seeking to acquire additional space through new construction or lease, shall give preference to the acquisition or use of historic properties when such acquisition or use is determined to be feasible and prudent compared with available alternatives. The acquisition or use of historic properties is considered feasible and prudent if the cost of purchase or lease, the cost of rehabilitation, remodeling, or altering the building to meet compliance standards and the agency's needs, and the projected costs of maintaining the building and providing utilities and other services is less than or equal to the same costs for available alternatives. The agency shall request the division to assist in determining if the acquisition or use of a historic property is feasible and prudent. Within 60 days after making a determination that additional space is needed, the agency shall request the division to assist in identifying buildings within the appropriate geographic area that are historic properties suitable for acquisition or lease by the agency, whether or not such properties are in need of repair, alteration, or addition.
6. Consistent with the agency's mission and authority, all state agencies of the executive branch shall carry out agency programs and projects, including those under which any state assistance is provided, in a manner which is generally sensitive to the preservation of historic properties and shall give consideration to programs and projects which will further the purposes of this section.

Section 267.12 authorizes the Division to establish procedures for the granting of research permits for archaeological and historic site survey or excavation on state-owned or controlled lands, while Section 267.13 establishes penalties for the conduct of such work without first obtaining written permission from the Division of Historical Resources. The Rules of the Department of State, Division of Historical Resources, for research permits for archaeological sites of significance are contained in Chapter 1A-32, F.A.C.

Another Florida Statute affecting land management decisions is Chapter 872, F.S. Section 872.02, F.S., pertains to marked grave sites, regardless of age. Many state-owned properties contain old family and other cemeteries with tombstones, crypts, etc. Section 872.05, F.S., pertains to unmarked human burial sites, including prehistoric and historic Indian burial sites. Unauthorized disturbance of both marked and unmarked human burial site is a felony.

C. MANAGEMENT POLICY

The choice of a management policy for archaeological and historic sites within state-owned or controlled land obviously depends upon a detailed evaluation of the characteristics and conditions of the individual sites and groups of sites within those tracts. This includes an interpretation of the significance (or potential significance) of these sites, in terms of social and political factors, as well as environmental factors. Furthermore, for historic structures architectural significance must be considered, as well as any associated historic landscapes.

Sites on privately owned lands are especially vulnerable to destruction, since often times the economic incentives for preservation are low compared to other uses of the land areas involved. Hence, sites in public ownership have a magnified importance, since they are the ones with the best chance of survival over the long run. This is particularly true of sites that are state-owned or controlled, where the basis of management is to provide for land uses that are minimally destructive of resource values.

It should be noted that while many archaeological and historical sites are already recorded within state--owned or controlled--lands, the majority of the uplands areas and nearly all of the inundated areas have not been surveyed to locate and assess the significance of such resources. The known sites are, thus, only an incomplete sample of the actual resources - i.e., the number, density, distribution, age, character and condition of archaeological and historic sites - on these tracts. Unfortunately, the lack of specific knowledge of the actual resources prevents formulation of any sort of detailed management or use plan involving decisions about the relative historic value of individual sites. For this reason, a generalized policy of conservation is recommended until the resources have been better addressed.

The generalized management policy recommended by the Division of Historical Resources includes the following:

1. State land managers shall coordinate all planned activities involving known archaeological or historic sites or potential site areas closely with the Division of Historical Resources in order to prevent any kind of disturbance to significant archaeological or historic sites that may exist on the tract. Under 267.061(1)(b), F.S., the Division of Historical Resources is vested with title to archaeological and historic resources abandoned on state lands and is responsible for administration and protection of such resources. The Division will cooperate with the land manager in the management of these resources. Furthermore, provisions of 267.061(2) and 267.13, F.S., combined with those in 267.061(3) and 253.034(4), F.S., require that other managing (or permitting) agencies coordinate their plans with the Division of Historical Resources at a sufficiently early stage to preclude inadvertent damage or destruction to known or potentially occurring, presently unknown archaeological and historic sites. The provisions pertaining to human burial sites must also be followed by state land managers when such remains are known or suspected to be present (see 872.02 and 872.05, F.S., and 1A-44, F.A.C.)

2. Since the actual resources are so poorly known, the potential impact of the managing agency's activities on historic archaeological sites may not be immediately apparent. Special field survey for such sites may be required to identify the potential endangerment as a result of particular management or permitting activities. The Division may perform surveys, as its resources permit, to aid the planning of other state agencies in their management activities, but outside archaeological consultants may have to be retained by the managing agency. This would be especially necessary in the cases of activities contemplating ground disturbance over large areas and unexpected occurrences. It should be noted, however, that in most instances Division staff's knowledge of known and expected site distribution is such that actual field surveys may not be necessary, and the project may be reviewed by submitting a project location map (preferably a 7.5 minute U.S.G.S. Quadrangle map or portion thereof) and project descriptive data, including detailed construction plans. To avoid delays, Division staff should be contacted to discuss specific project documentation review needs.

3. In the case of known significant sites, which may be affected by proposed project activities, the managing agency will generally be expected to alter proposed management or development plans, as necessary, or else make special provisions to minimize or mitigate damage to such sites.

4. If in the course of management activities, or as a result of development or the permitting of dredge activities (see 403.918(2)(6)a, F.S.), it is determined that valuable historic or archaeological sites will be damaged or destroyed, the Division reserves the right, pursuant to 267.061(1)(b), F.S., to require salvage measures to mitigate the destructive impact of such activities to such sites. Such salvage measures would be accomplished before the Division would grant permission for destruction of the affected site areas. The funding needed to implement salvage measures would be the responsibility of the managing agency planning the site destructive activity. Mitigation of historic structures at a minimum involves the preparation of measured drawings and documentary photographs. Mitigation of archaeological resources involves the excavation, analysis and reporting of the project findings and must be planned to

occur sufficiently in advance to avoid project construction delays. If these services are to be contracted by the state agency, the selected consultant will need to obtain an Archaeological Research Permit from the Division of Historical Resources, Bureau of Archaeological Research (see 267.12, F.S. and Rules 1A-32 and 1A-46 F.A.C.).

5. For the near future, excavation of non-endangered (i.e., sites not being lost to erosion or development) archaeological site is discouraged. There are many endangered sites in Florida (on both private and public lands) in need of excavation because of the threat of development or other factors. Those within state-owned or controlled lands should be left undisturbed for the present - with particular attention devoted to preventing site looting by "treasure hunters". On the other hand, the archaeological and historic survey of these tracts is encouraged in order to build an inventory of the resources present, and to assess their scientific research potential and historic or architectural significance.

6. The cooperation of land managers in reporting sites to the Division that their field personnel may discover is encouraged. The Division will help inform field personnel from other resource managing agencies about the characteristics and appearance of sites. The Division has initiated a cultural resource management training program to help accomplish this. Upon request the Division will also provide to other agencies archaeological and historical summaries of the known and potentially occurring resources so that information may be incorporated into management plans and public awareness programs (See Management Implementation).

7. Any discovery of instances of looting or unauthorized destruction of sites must be reported to the agent for the Board of Trustees of the Internal Improvement Trust Fund and the Division so that appropriate action may be initiated. When human burial sites are involved, the provisions of 872.02 and 872.05, F. S. and Rule 1A-44, F.A.C., as applicable, must also be followed. Any state agent with law enforcement authority observing individuals or groups clearly and incontrovertibly vandalizing, looting or destroying archaeological or historic sites within state-owned or controlled lands without demonstrable permission from the Division will make arrests and detain those individuals or groups under the provisions of 267.13, 901.15, and 901.21, F.S., and related statutory authority pertaining to such illegal activities on state-owned or controlled lands. County Sheriffs' officers are urged to assist in efforts to stop and/or prevent site looting and destruction.

In addition to the above management policy for archaeological and historic sites on state-owned land, special attention shall be given to those properties listed in the National Register of Historic Places and other significant buildings. The Division recommends that the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (Revised 1990) be followed for such sites.

The following general standards apply to all treatments undertaken on historically significant properties.

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.

2. The historic character of a property shall be retained and preserved. The removal of historic materials or alterations of features and spaces that characterize a property shall be avoided.

3. Each property shall be recognized as a physical record of its time, place and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.

4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.

5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.

6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of

missing features shall be substantiated by documentary, physical, or pictorial evidence.

7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.

8. Significant archaeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.

9. New additions, exterior alterations, or related new construction shall not destroy materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired. (see Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings [Revised 1990]).

Divisions of Historical Resources staff are available for technical assistance for any of the above listed topics. It is encouraged that such assistance be sought as early as possible in the project planning.

D. MANAGEMENT IMPLEMENTATION

As noted earlier, 253.034(4), F.S., states that "all management plans, whether for single-use or multiple-use properties, shall specifically describe how the managing agency plans to identify, locate, protect and preserve, or otherwise use fragile non-renewable resources, such as archaeological and historic sites..." The following guidelines should help to fulfill that requirement.

1. All land managing agencies should contact the Division and send U.S.G.S. 7.5 minute quadrangle maps outlining the boundaries of their various properties.

2. The Division will in turn identify site locations on those maps and provide descriptions for known archaeological and historical sites to the managing agency.

3. Further, the Division may also identify on the maps areas of high archaeological and historic site location probability within the subject tract. These are only probability zones, and sites may be found outside of these areas. Therefore, actual ground inspections of project areas may still be necessary.

4. The Division will send archaeological field recording forms and historic structure field recording forms to representatives of the agency to facilitate the recording of information on such resources.

5. Land managers will update information on recorded sites and properties.

6. Land managers will supply the Division with new information as it becomes available on previously unrecorded sites that their staff locate. The following details the kind of information the Division wishes to obtain for any new sites or structures that the land managers may report:

A. Historic Sites

(1) Type of structure (dwelling, church, factory, etc.).

(2) Known or estimated age or construction date for each structure and addition.

(3) Location of building (identify location on a map of the property, and building placement, i.e., detached, row, etc.).

(4) General Characteristics: (include photographs if possible) overall shape of plan (rectangle, "L" "T" "H" "U", etc.); number of stories; number of vertical divisions of bays; construction materials (brick, frame, stone, etc.); wall finish (kind of bond, coursing, shingle, etc.); roof shape.

(5) Specific features including location, number and appearance of:

(a) Important decorative elements;

(b) Interior features contributing to the character of the building;

(c) Number, type, and location of outbuildings, as well as date(s) of construction;
(d) Notation if property has been moved;
(e) Notation of known alterations to building.

B. Archaeological Sites

(1) Site location (written narrative and mapped location).
(2) Cultural affiliation and period.
(3) Site type (midden, burial mound, artifact scatter, building rubble, etc.).
(4) Threats to site (deterioration, vandalism, etc.).
(5) Site size (acreage, square meters, etc.).
(6) Artifacts observed on ground surface (pottery, bone, glass, etc.).
(7) Description of surrounding environment.

7. No land disturbing activities should be undertaken in areas of known archaeological or historic sites or areas of high site probability without prior review by the Division early in the project planning.

8. Ground disturbing activities may proceed elsewhere but land managers should stop disturbance in the immediate vicinity of artifact finds and notifies the Division if previously unknown archaeological or historic remains are uncovered. The provisions of Chapter 872, F.S., must be followed when human remains are encountered.

9. Excavation and collection of archaeological and historic sites on state lands without a permit from the Division are a violation of state law and shall be reported to a law enforcement officer. The use of metal detectors to search for historic artifacts shall be prohibited on state lands except when authorized in a 1A-32, F.A.C., research permit from the Division.

10. Interpretation and visitation which will increase public understanding and enjoyment of archaeological and historic sites without site destruction or vandalism is strongly encouraged.

11. Development of interpretive programs including trails, signage, kiosks, and exhibits is encouraged and should be coordinated with the Division.

12. Artifacts found or collected on state lands are by law the property of the Division. Land managers shall contact the Division whenever such material is found so that arrangements may be made for recording and conservation. This material, if taken to Tallahassee, can be returned for public display on a long term loan.

E. ADMINISTERING AGENCY

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

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

Contact Person: **Susan M. Harp**
Historic Preservation Planner
Telephone (850) 245-6333
Suncom 205-6333
FAX (850) 245-6437

Land Management Review of Hillsborough River State Park
Hillsborough County (Lease No. 3623): July 24, 2002

Prepared by Division of State Lands Staff

William Howell, OMC Manager
Ginny Morris, Administrative Assistant

For
Hillsborough River State Park Review Team

Final: September 11, 2002

Land Manager:	DRP
Area:	3,383 Acres
County:	Hillsborough County
Mngt. Plan Revised:	3/26/1998
Mngt. Plan Update Due:	3/26/2003

Management Review Team Members

Agency Represented	Team member Appointed	Team member In attendance
DEP/DRP	Ken Alvarez	Ken Alvarez
DEP	Judy Ashton	Judy Ashton
DACS/DOF	Mike Perry	Mike Perry
FWCC	Victor Echaves	Victor Echaves
Soil and Water Conservation	Bruce Healy	
County Commission	Skip Denham	Skip Denham
Conservation Organization	Terri Wolfe	Terri Wolfe
Private Land Manager	Pat Simms	Pat Simms

Process for Implementing Regional Management Review Teams

Legislative Intent and Guidance:

Chapter 259.036, F. S. was enacted in 1997 to determine whether conservation, preservation, and recreation lands owned by the state Board of Trustees of the Internal Improvement Trust Fund (Board) are being managed properly. It directs the Department of Environmental Protection (DEP) to establish land management review teams to evaluate the extent to which the existing management plan provides sufficient protection to threatened or endangered species, unique or important natural or physical features, geological or hydrological functions, and archaeological features. The teams also evaluate the extent to which the land is being managed for the purposes for which it was acquired and the degree to which actual management practices, including public access, are in compliance with the adopted management plan. If a land management plan has not been adopted, the review shall consider the extent to which the land is being managed for the purposes for which it was acquired and the degree to which actual management practices are in compliance with the management policy statement and management prospectus for that property. If the land management review team determines that reviewed lands are not being managed for the purposes for which they were acquired or in compliance with the adopted land management plan, management policy statement, or management prospectus, DEP shall provide the review findings to the Board, and the managing agency must report to the Board its reasons for managing the lands as it has. A report of the review findings are given to the managing agency under review, the Acquisition and Restoration Council, and to the Division of State Lands. Also, DEP shall report the annual review findings of its land management review teams to the Board no later than the second board meeting in October of each year.

Review Site

The management review of Anastasia State Park considered approximately 3,383 acres in Hillsborough County that are managed by the Division of Recreation and Parks. The team evaluated the extent to which current management actions are sufficient, whether the land is being managed for the purpose for which it was acquired, and whether actual management practices, including public access, are in compliance with the management plan. The DRP revised the management plan on March 26, 1998, and the management plan update is due on March 26, 2003.

Review Team Determination

1. *Is the land being managed for the purpose for which it was acquired?*

All team members agreed that Hillsborough River State Park is being managed for the purpose for which it was acquired.

2. *Are actual management practices, including public access, in compliance with the management plan?*

All team members agreed that actual management practices, including public access, were in compliance with the management plan for this site.

Commendations to the Managing Agency

The Team commends the manager and staff for their outstanding efforts maintaining and interpreting the fort, and for the outstanding environmental outreach program, particularly with children. (7+, 0-)

The Team commends the manager and staff for their outstanding prescribed burning and exotic removal efforts, and for their use of volunteers to meet their resource management goals. (7+, 0-)

Exceptional Management Actions

The following items received high scores on the review team checklist, which indicates that management actions exceeded expectations.

- Management and protection the mesic flatwoods, upland mixed forest, depression marsh, dome, floodplain swamp, hydric hammock, and blackwater stream communities.
- Protection and preservation of listed animals and plants.
- Protection, preservation of the cultural resources.
- Area, frequency and quality of prescribed burns.
- Excellent job of restoring the mesic flatwoods and wetlands/dome community.
- Excellent control of non-native animals and plants.
- Testing for ground water quality.
- Expanding development as an adjacent property concern.
- Excellent recreational opportunities and environmental education/outreach.
- Waste disposal

Recommendations and Checklist Findings

The management plan must include responses to the recommendations and checklist items that are identified below.

Recommendations

The following recommendations resulted from a discussion and vote of review team members.

1. The team recommends that the DRP energetically pursue acquisition of the north bank of the Hillsborough River, using the 37-acre parcel to the east as an exchange parcel if possible. (VOTE: 7+, 0-)

Manager's Response: Disagree. This recommendation is not something that should be considered in the LMR process. Optimum boundaries are established in the Unit Management Plan (UMP) development process based upon input from staff and others involved including the public. The area on the north side is already included as part of the optimum boundary. Acquisition of this property depends on funding, DRP priorities, and the cooperation of the land owner.

2. The team recommends that the DRP improve the canoe landing/launching area to improve access for non-motorized boats. (VOTE: 7+, 0-)

Manager's Response: Agree. The UMP already addresses this matter. Efforts will be taken to improve the landing/launching area in order to enhance recreational use and reduce bank erosion. Funding and permits will be required in order to develop any new facilities on the river.

3. The team recommends that the DRP continue pursuing planning and construction of an environmental education center located on the old Model dairy property. (VOTE: 7+, 0-)

Manager's Response: Disagree. This recommendation is not something that should be considered in the LMR process. However, we will review the need for an environmental education center during the process of developing the next updated UMP. If this facility is included, funding will have to be secured.

4. The team recommends that funding be provided to restore the historical structures and survey the cultural sites. (VOTE: 7+, 0-**)**

Manager's Response: Agree. The current UMP addresses the need to preserve several CCC structures and survey cultural sites. A survey is critical to determine structural preservation needs and funding is a priority given the condition of some of the CCC structures.

Checklist findings

The following items received low scores on the review team checklist which indicates that management actions, in the field, were insufficient (*f*) or that the issue was not sufficiently addressed in the management plan (*p*). These items need to be further addressed in the management plan update.

1. Discussion in the management plan of desired inholdings/additions. (p,f).

Manager's Response: Agree. As stated above, the optimum boundaries are reviewed in the UMP development process. The desirability of including any new areas, such as the Dead River, and the possibility of suggesting lands which could be used to swap for other park lands will be considered when developing the next updated UMP.

2. Inadequate condition of the roads (p)(f) and parking areas. (p)

Manager's Response: Agree. The park drive and parking areas definitely need to be resurfaced. The funding required to do this work has not yet been obtained. However, we have obtained funding to pave the campground roads. The amount of existing parking will be reviewed and any additional needs will be addressed in the land use component of the next updated UMP.

3. Inadequate access for canoes and kayaks to the river. (p)(f).

Manager's Response: Agree. (See comments above) Although this matter is addressed in the current UMP, the funding required to do this work has not yet been obtained.

4. Inadequate buildings for staff (f).

Manager's Response: Agree. Although this matter is addressed in the current UMP, the funding required to construct the facilities has not yet been obtained. These needs will also be addressed in the next updated UMP.

5. Inadequate staff (f).

Manager's Response: Agree. As the park continues to provide more programs for the visitor, additional funds are needed for special OPS help to support the programs and maintenance needs.