MYAKKA 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: Myakka River State Park Lease # 3636

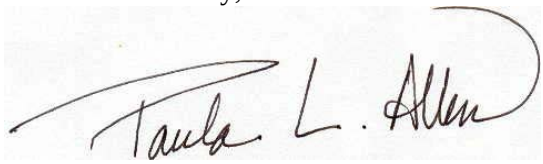
Ms. White:

On October 15, 2004, the Acquisition and Restoration Council recommended approval of theMyakka 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 Myakka 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

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Myakka River State Park is located in Sarasota and Manatee counties (see Vicinity Map), nine miles east of Interstate Highway 75 and State Road 72. Access to the south park entrance is from State Road 72 (Clark Road), and to the north entrance from County Road 780 (Fruitville/Myakka Road). The Vicinity Map also reflects significant land and water resources existing near the park.

Myakka River State Park currently contains 37,198.89 acres. For this plan, park acreage is calculated on the composition of natural communities, in addition to ruderal and developed areas. Lands managed as part of the park include those parcels held in fee simple title by the Trustees in addition to the Myakka Prairie or Ringling MacArthur Tract. A management agreement between the Division of Recreation and Parks and Southwest Florida Water Management District was executed for the latter area in 1997. Myakka Prairie comprises approximately 8,249 acres south of State Road 72.

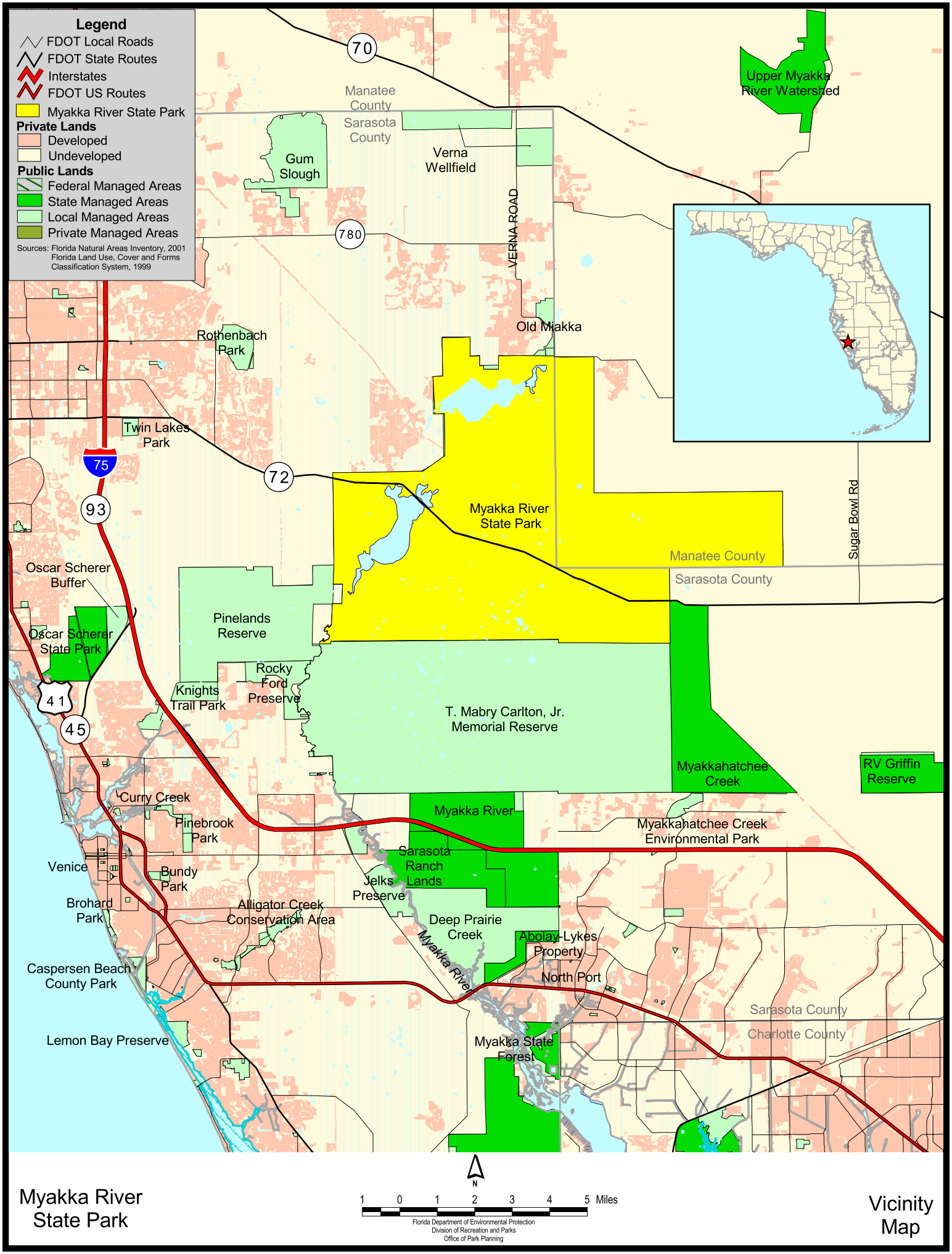
At Myakka River State Park, public outdoor recreation and conservation is the designated single use of the property. There are no legislative or executive directives that constrain the use of this property. Acquisition of the park began in 1934 during the Great Depression using “Old Money” (see Addendum 1).

Myakka River State Park contains cultural resources that span Florida’s history from prehistoric times through the period of the original development of a state park system in Florida, during the Depression Era. These cultural resources include aboriginal sites and a significant example of early Florida cattle ranching in the Meadow Sweet Pastures area. The park’s best-known cultural resources stem from its development as one of the New Deal Era parks in the Florida state park system.

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 Gardens State Park, Hillsborough River State Park, Highlands Hammock State Park and Myakka River State Park.

The first Civilian Conservation Corps enrollees were transferred to Sarasota County from Green Cove Springs to begin development of the park in 1934. With numerous delays in construction, the park was officially completed by 1941. This site is particularly significant as an element in the history of Florida’s African American population, since Myakka River State Park was developed primarily by black CCC enrollees, during a time of strong prejudice and institutional segregation.

An estimated 80 percent of the materials for construction of this park were taken from the site. The unique palm log cabins located at the park epitomize the CCC planning and design philosophy that park structures should blend with the environment. An interesting note is that construction of those original cabins was estimated at about $285.00 each. Land reclamation activities at Myakka River State Park by the CCC were extensive, although the planting of pine seedlings throughout the dry prairie natural communities of the park and a few other resource management endeavors (ditching, installing dikes and weir, seining the river for “trash“ fish, etc.) are now recognized as a mistaken direction in land management.


Legend
FDOT Local Roads
FDOT State Routes
Interstates
FDOT US Routes
Myakka River State Park
Private Lands
Developed
Undeveloped
Public Lands
Federal Managed Areas
State Managed Areas
Local Managed Areas
Private Managed Areas
Sources: Florida Natural Areas Inventory, 2001
Florida Land Use, Cover and Forms
Classification System, 1999
70
780
75
72
93
41
45
Manatee County
Sarasota County
Gum Slough
Verna Wellfield
VERNA ROAD
Upper Myakka River Watershed
Old Miakka
Rothenbach Park
Twin Lakes Park
Myakka River State Park
Sugar Bowl Rd
Manatee County
Sarasota County
Oscar Scherer Buffer
Oscar Scherer State Park
Pinelands Reserve
Rocky Ford Preserve
Knights Trail Park
T. Mabry Carlton, Jr. Memorial Reserve
Myakkahatchee Creek
RV Griffin Reserve
Curry Creek
Pinebrook Park
Myakka River
Myakkahatchee Creek Environmental Park
Venice
Bundy Park
Sarasota Ranch Lands
Jelks Preserve
Brohard Park
Alligator Creek Conservation Area
Deep Prairie Creek
Abolay-Lykes Property
Myakka River
North Port
Caspersen Beach County Park
Sarasota County
Charlotte County
Lemon Bay Preserve
Myakka State Forest
N
1 0 1 2 3 4 5 Miles
Florida Department of Environmental Protection
Division of Recreation and Parks
Office of Park Planning
Myakka River State Park
Vicinity Map

PURPOSE AND SCOPE OF THE PLAN

This plan serves as the basic statement of policy and direction for the management of Myakka 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 July 29, 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 timber management could be accommodated in a manner that would be compatible and not interfere with the primary purpose of resource-based outdoor recreation and conservation. This compatible secondary management purpose is addressed in the Resource Management Component of the plan. Uses such as water resource development projects, water supply projects, stormwater management projects, linear facilities and sustainable agriculture and forestry (other than those forest management activities specifically identified in this plan) are not consistent with this plan or the management purposes of park, with an exception on Myakka Prairie. The District may construct, operate and maintain water management facilities consistent with Section 373.59, Florida Statutes, as amended, on Myakka Prairie (Management Agreement 1997).

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 nearshore areas and to provide authority to manage activities that could adversely impact public recreational uses.

Many operating procedures are standard system wide and are set by policy. These procedures are outlined in the Division’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 Myakka River State Park, a balance is sought between the goals of maintaining and enhancing natural conditions and providing various recreational opportunities. Natural resource management activities are aimed at management of natural systems. Development in the park is directed toward providing public access to and within the park, and to providing recreational facilities, in a reasonable balance, that are both convenient and safe. Program emphasis is on interpretation on the park's natural, aesthetic and educational attributes.

Park Goals and Objectives

The following park goals and objectives express the Division 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. Restore the mesic flatwoods and dry prairie, an imperiled natural community, to its pre-fire exclusion condition, where possible.
- **A.** Coordinate mechanical roller chopping of a minimum of 750 acres per year for the next ten years.
- **B.** Maintain a single map of all areas within the park that have been roller chopped.
- **C.** Coordinate mowing of approximately 75 acres per year for the next ten years of heavy palmetto and shrub growth too high to operate a roller chopper safely.
- **D.** Continue preparation of approximately 50 miles of fire lane and fuel bed for proper application of fire at intervals required to sustain dry prairie.
- **E.** Maintain approximately 50 miles of fire lane and fuel bed for proper application of fire at intervals required to sustain dry prairie.
- **F.** Continue treating approximately 8,000 to 12,000 burnable acres per year with prescribed burning at appropriate fire frequency.
- **G.** Restore areas invaded by non-constituent hardwoods that have persisted despite frequent burns (e.g. Bee Island cattle pen).
- **H.** Continue to install fencing along State Road 72 in coordination with Florida Department of Transportation's clearing of right-of-way to provide public view of dry prairie.
- **I.** Continue to seek funds to assist in upland restoration.

2. Control invasive exotics
- **A.** Control exotic plants and animals in a manner consistent with Division policies.
- **B.** Continue to seek funds to assist in invasive exotic control.

3. Sustain a population of Florida Scrub-Jays in northeastern Sarasota County.
- **A.** Maintain suitable habitat within the park for 3-4 territories.
- **B.** Coordinate with other agencies and private landowners to maintain, and increase if possible, the number of territories near the park.
- **C.** Reappraise the status of scrub habitat and Florida Scrub-Jays within the vicinity of the park at least once during the period of this plan.

4. Restore, to the degree practicable, the hydrological regime within the park.
- **A.** Enhance and maintain the 5.5 miles of reduced elevation on the old railroad grade.
- **B.** Establish a map, by burn zone, of possible fire plow lines, drainage ditches and associated spoil, and incised roads to be restored.
- **C.** Dechannelize Clay Gully to reestablish historic flow of the river and anastomosing pattern of Clay Gully as it enters the Upper Myakka Lake marsh.
- **D.** Minimize banking of water along the paved park road and reestablish the historic river/upland water flow rate.

E. Coordinate with appropriate agencies to explore the feasibility of removing the weir/dike below Upper Myakka Lake to reestablish seasonal fluctuation.

F. Continue seeking funds to assist in hydrological restoration.

5. Preserve the park's cultural resources by restoring and maintaining the historic structures to their original condition and appearance, to the extent possible.

A. Conduct a comprehensive cultural and archaeological resource survey of Myakka River State Park.

B. Conduct architectural and/or engineering evaluations of the historic structures.

C. 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.

D. Produce design drawings and budget estimates to accomplish restoration or adaptive rehabilitation projects, including necessary modifications to provide universal accessibility, where possible.

E. Consider treatment of the park as a cultural landscape.

F. Acquire funding for restoration, rehabilitation and design studies of all New Deal Era resources in the park.

Recreation

6. Continue to provide quality resource based outdoor recreational and interpretive programs and facilities at the state park.

A. Maintain opportunities for extended stays at the park for individuals, families and groups through primitive and developed camping and cabin options.

B. Maintain a network of trails that allow exploration of park lands by hiking, biking and horseback riding.

C. Maintain access to the Myakka River for boating, fishing and wildlife observation.

D. Enhance interpretation and public access through the provision of boardwalks and elevated observation points.

E. Provide up-to-date, diverse interpretive opportunities through staff-led programs, multi-media and static interpretive displays.

F. Provide ample picnic facilities and areas to support group functions.

7. 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. Improve park concession operations by constructing a new concession facility.

B. Improve the camping experience by developing a new campground that meets current state park standards and reducing and reconfiguring sites within existing campgrounds.

C. Evaluate primitive canoe-in camping opportunities along the Myakka River and establish at least one site if deemed compatible with operational and resource concerns.

D. Improve access to Upper Myakka Lake by upgrading the existing boat ramp.

E. Enhance public access to dry prairie by developing an interpretive nature trail.

F. Enhance views of Upper Myakka Lake by constructing an observation platform at the Birdwalk.

G. Evaluate options and implement actions designed to improve public safety at the Myakka River bridge.

H. Upgrade and expand Visitor Center interpretive exhibits.

8. Seek funding to improve support and administrative functions through the development of new and/or replacement of existing facilities as outlined in this management plan.

A. Replace non-historic public restroom facilities as needed.

B. Improve parking efficiency at existing roadside parking areas.

C. Replace four staff residences with structures that meet current state park standards.

Park Administration/Operations

9. Pursue funding, training and partnership opportunities to enhance park programming, operations, and resource management.
- **A.** Meet staffing needs associated with routine maintenance, cleaning and other work to support visitor use and recreation.
- **B.** Pursue partners to convert the former STOP Camp into a training and education facility.
- **C.** Recruit and maintain a cadre of volunteers to assist with management and interpretation of the park.
- **D.** Enhance ecotourism programs through partnerships and park concession operations.

10. Maintain high standards of quality for park facilities and programs.
- **A.** Provide staff with appropriate training opportunities in visitor services, resource management, park operations and interpretation.
- **B.** Conduct routine safety and maintenance inspections of facilities and public areas and correct deficiencies as needed. Assure compliance with state and federal safety guidelines.
- **C.** Continue to improve universal access to park facilities in compliance with the Americans with Disabilities Act.

11. Support land use planning policies, regulations and acquisition initiatives that serve to enhance management and protection of park resources.
- **A.** Network with other land and water management and regulatory entities to coordinate and enhance regional resource management and protection efforts.
- **B.** Coordinate resource management activities on Myakka Prairie with the Southwest Florida Water Management District (SWFWMD) and Sarasota County.
- **C.** Monitor proposed land use changes outside the park that may impact resource integrity, and engage in the land use planning process, when necessary, to advance the long-term interests of the park.
- **D.** Pursue acquisition of areas deemed important to be managed as part of the park through the Division Acquisition and Inholdings Program.

Education and Stewardship

12. Instill in the public an understanding and appreciation of Florida's natural and cultural resources while creating a sense of stewardship.
- **A.** Participate in the development of technical curricula for historic preservation training in cooperation with the Florida Trust for Historic Preservation, state and federal agencies, local educators and local trades.
- **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.** Enhance public awareness, understanding and appreciation for the Myakka River ecosystem and the natural processes on which it depends through staff-visitor interactions, park programs, exhibits, handouts, public outreach programs and media contacts.
- **E.** Use park volunteers, students, civic groups, and community service organizations in resource management work projects to promote an understanding of natural systems management concepts and pride of stewardship of their state lands.
- **F.** Encourage and assist the Friends of the Myakka River in nurturing an informed support group for the Myakka River ecosystem while fostering ambassadors for community outreach.

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.

Many state and local agencies have made contributions specific to Myakka River State Park. Sarasota County assists park staff in monitoring water levels and vegetation on the wilderness preserve and Myakka Prairie. In addition, the county is available to assist on prescribed burns along the southern boundary of the park and Myakka Prairie. The Southwest Florida Water Management District (SWFWMD) provides aquatic control of invasive exotics along the river and Upper and Lower Myakka Lakes and on Myakka Prairie. SWFWMD also assists in mechanical treatment for restoration benefit on the Myakka Prairie parcel. The DEP, Bureau of Invasive Plant Management (BIPM) has provided funding to the park for invasive exotic plant removal projects. Florida Fish and Wildlife Conservation Commission (FFWCC) assists with aerial prescribed burns, conducts animal surveys, and is responsible for the nuisance alligator removal within the park. The Florida Division of Forestry (FDOF) coordinates timber sales. Natural Resource Conservation Service (NRCS) assists with restoration projects through their expertise and funding. United States Forest Service (USFS) is conducting a fire surrogate research project within the park. State and private schools conduct research projects within the park.

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 26, 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 27, 2004. The purpose of this meeting was to provide the Advisory Group members the opportunity to discuss this draft management plan.

Other Designations

Myakka 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 this unit have been designated as Outstanding Florida Waters, pursuant to Chapter 62-302 Florida Administrative Code. The Myakka River is classified as Class I (potable water supplies) and all other surface waters are classified as Class III (recreation, propagation,

and maintenance of a healthy, well-balanced population of fish and wildlife) by DEP. This park is not within or adjacent to an aquatic preserve as designated under the Florida Aquatic Preserve Act of 1975 (section 258.35, Florida Statutes).

The Florida legislature designated the Myakka River from County Road 780 south to the Sarasota/Charlotte County line a Florida Wild and Scenic River in 1985. The Myakka River Wild and Scenic Designation and Preservation Act (Section 258.501, Florida Statutes) provided for the permanent preservation, management and administration of the designated segment of the Myakka River. A management plan for the wild and scenic river was completed in 1990 with input from applicable state agencies, Southwest Florida Water Management District, Tampa Bay and Southwest Florida Regional Planning Councils, affected local governments, agricultural, environmental and landowner interest groups and the public (Florida Department of Natural Resources, 1990). The entire river portion flowing through Myakka River State Park is included in this wild and scenic river designation.

RESOURCE MANAGEMENT COMPONENT

INTRODUCTION

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

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

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

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

RESOURCE DESCRIPTION AND ASSESSMENT

Natural Resources

Topography

The general topography of Myakka River State Park has been highly influenced in the past by marine processes and solution of underlying limestones. During the Pleistocene epoch (10,000 -1 million years ago) and during previous epochs, marine sands were deposited in the form of dune ridges and basins. Solution of permeable limestone has caused the formation of shallow sinks and solution troughs. These sinks and troughs form what are commonly referred to as depression marshes and sloughs, respectively. Solution processes are also largely responsible for the formation of Upper Myakka and Lower Myakka lakes.

From its origin near Myakka City, the Myakka River generally flows from northeast to southwest. Dune ridges are found on both sides of the river. From elevations of 14-15 feet above mean sea level (msl) along the river, these ridges rise gradually to elevations of 25-45 feet. The rise is more precipitous westward to eastward. Between these dune lines are the major sloughs and the numerous depression marshes, many of which will eventually become sloughs due to solution processes. Like the river, which is directed by the orientation of dune ridges, these sloughs and marshes tend to have a northeast to southwest orientation.

Geology

Myakka River State Park lies within two of the state's prominent physiographic regions: the Gulf Coastal Lowlands and the DeSoto Plain, both recently emerged submarine plains (Radisson and Jones 1997). Most of the park lies in the Gulf Coastal Lowlands and ascends the slight incline to the DeSoto Plain only at its eastern side (Geraghty and Miller, Inc. 1981). Karst topography accounts for the multitude of shallow sinks (depression marshes) and solution troughs (sloughs). Only one major sinkhole is known to exist in the park. Known as "Deep Hole," this sink is approximately 300 feet wide and at its deepest 180 feet deep. The upper and lower lakes and the wide marshes between them also lie in basins that are solution features. Fissures in the underlying limestone have created numerous short creeks known as blind gullies. These features may be as deep as 10 feet yet no wider than 3 feet. Most are short in length, varying from one hundred yards to one mile. These gullies are common in flatwoods and dry prairie areas within the park.

Beneath the surface, several distinct geologic formations are present. Layers of clastic sedimentary deposits extend just below the surface to depths of 80 to 120 feet. These clastic layers are composed of sands and clays with interbedded layers of sandy, dolomitic limestones. Collectively, they form the surficial aquifer and the underlying upper confining deposits. Further down, extending to depths of about 250 feet, limestones, dolostones and sands associated with the Hawthorn formation comprise the secondary artesian aquifer. Clay lenses, which serve to separate various productive zones within the secondary artesian aquifer, are present in certain areas. Below 250 feet, impermeable layers of limestone, dolostones, sandstones, clays and sands are present, associated with the Tampa formation. These layers form the lower confining deposits that separate the secondary artesian aquifer from the underlying Floridian aquifer. The Floridian aquifer occurs just above the Suwannee limestone, at a depth generally greater than 400 feet (Geraghty and Miller, Inc. 1981).

Soils

Dune development is most noticeable on the west side of the Myakka River, from the north end of Upper Myakka Lake to the upper end of Lower Myakka Lake. This dune ridge and other minor dune ridges consist of fine white sand that is characteristically a very sterile environment. An organic "hardpan" under soils in the lower elevations and clays within five to ten feet of the surface at higher elevations create poor drainage throughout the unit.

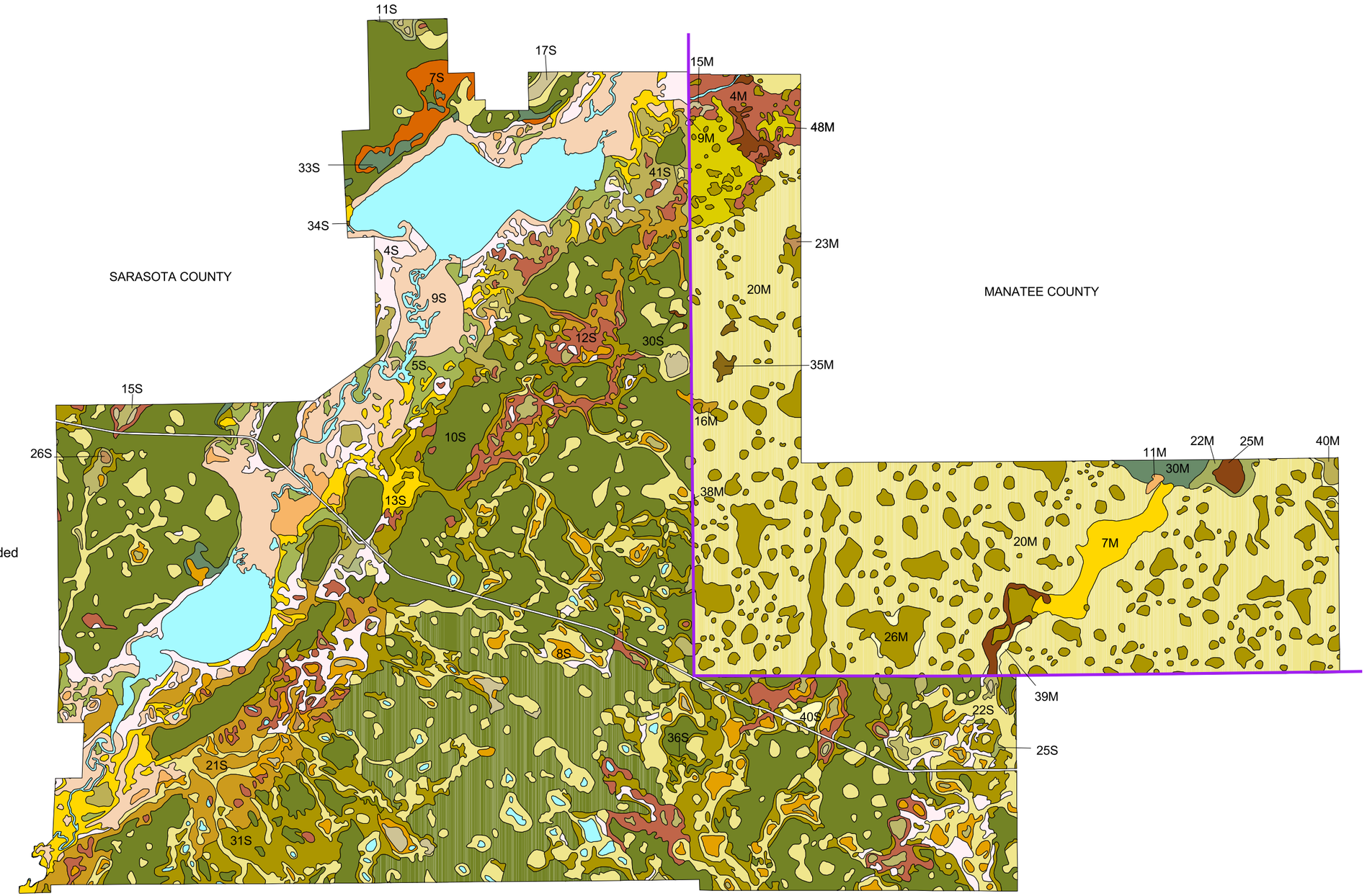
Owing to Myakka River's limited length and low energy for transporting sediment or organic load from upstream sources, there is relatively little muck development in the river-associated marshes and lakes. Annual flooding also serves to flush most detritus downstream giving the lake, river, and marshes a firm sandy bottom. Many of the park's marshes are in fact coalesced doline sinkholes. Deep muck soils have developed in the center of some of these dolines, giving the large marshes a unique character. Some areas of Lower Myakka Lake and the river itself have exposed limestone as a bottom.

Thirty-four different soil types occur on this unit (see Soils Map) according to the USDA Soil Conservation Service Soil Survey for Sarasota County (1991) and Manatee County (1983). Detailed soil descriptions are listed in Addendum 3. Soils on this unit associated with the river floodplain include Bradenton fine sand (frequently flooded), Delray and Astor soils (frequently flooded), Felda and Pompano fine sands (frequently flooded), and Floridana and Gator soils (frequently flooded).

Soils associated with dry prairie and mesic flatwoods on this unit include EauGallie fine sand,

Soils

- 4M-Bradenton fine sand
- 7M-Canova, Anclote, and Okeelanta soils
- 9M-Canaveral sand, filled
- 11M-Cassia fine sand
- 15M-Delray mucky, loamy fine sand
- 16M-Delray complex
- 20M-EauGallie fine sand
- 22M-Felda fine sand
- 23M-Felda-Palmetto complex
- 25M-Floridana fine sand
- 26M-Floridana-Immokalee-Okeelanta association
- 30M-Myakka fine sand, 0 to 2 percent slopes
- 35M-Ona fine sand, ortstein substratum
- 38M-Palmetto sand
- 39M-Parkwood Variant complex
- 40M-Pinellas fine sand
- 48M-Wabasso fine sand
- Water
- 4S-Bradenton fine sand
- 5S-Bradenton fine sand, frequently flooded
- 7S-Cassia fine sand
- 8S-Delray fine sand, frequently flooded
- 9S-Delray and Astor soils, frequently flooded
- 10S-EauGallie and Myakka fine sands
- 11S-Felda fine sand
- 12S-Felda fine sand, depressional
- 13S-Felda and Pompano fine sands, frequently flooded
- 15S-Floridana and Gator muck, depressional
- 16S-Floridana and Gator soils, frequently flooded
- 17S-Gator muck
- 21S-Ft. Green fine sand
- 22S-Holopaw fine sand, depressional
- 25S-Malabar fine sand
- 26S-Manatee loamy fine sand, depressional
- 30S-Ona fine sand
- 31S-Pineda fine sand
- 33S-Pomello fine sand
- 34S-Pompano fine sand, depressional
- 36S-Pople fine sand
- 40S-Tavares fine sand
- 41S-Wabasso fine sand
- Water



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MYAKKA RIVER
STATE PARK

SOILS MAP

EauGallie and Myakka fine sands, Ft. Green fine sand, Myakka fine sand, Ona fine sand, Palmetto sand, Pineda fine sand, Pinellas fine sand, and Wabasso fine sand.

Soils on this unit commonly associated with scrubby flatwoods include Cassia fine sand and Pomello fine sand.

Soils typical of basin and depression marshes on this unit include Delray complex, Delray fine sand (depressional), Felda fine sand (depressional), Floridana fine sand, Floridana and Gator soils (depressional), Floridana-Immokalee-Okeelanta association, Holopaw fine sand (depressional), and Manatee loamy fine sand (depressional).

Soils commonly associated with baygall, hammocks and sloughs on this unit include Bradenton fine sand, Canova, Anclote and Okeelanta soils, Delray mucky loam fine sand, Felda fine sand, Felda-Palmetto complex, Gator muck, Parkwood Variant complex, and Pople fine sand.

Plant communities associated with a given soil type may vary, depending upon other environmental factors, such as fire, hydrology and disturbances (either natural or man-made). Plant communities identified by soil types are meant only as a guideline and may not necessarily be present, as described above. Currently, there are no critical soil conservation or erosion issues at this park.

Minerals

No information is available on minerals in this park.

Hydrology

Atmospheric water. Atmospheric water either exists as precipitation or as water vapor produced by evaporation/transpiration. Approximately 57 inches of rain falls annually on the park with a range over the last 50 years between 38.15 inches (1956) to 82.31 inches (1995), based on data collected from the shop rain gauge. About 60 percent of this total is the result of convectional showers or thunderstorms that typically occur almost daily during the rainy season (June through September). During the remainder of the year, rainfall events are typically associated with frontal passages that generally occur over a large area. Six rainfall gauges are monitored daily by staff at the park.

Atmospheric water is replenished by both evaporation and evapotranspiration. Evaporation is the loss of moisture from surface-water bodies. Evapotranspiration is the loss of moisture from vegetation as well as from soil surfaces. While no rates have been calculated on Myakka River State Park proper, on the Myakka Prairie the annual rates calculated for some areas equal about 52 inches for evaporation and 40 inches for evapotranspiration (Geraghty and Miller, Inc. 1981).

Surface water. This park lies within the Myakka River watershed that drains an area of approximately 550 square miles (Drummond 1978). Four major depressions, or natural water detention areas, occur in the watershed. They are Flatford Swamp, Tatum Sawgrass, Upper Myakka Lake and Lower Myakka Lake. Tatum Sawgrass, a 4,300-acre depression marsh north of the park, is extremely important as a holding basin during times of heavy rainfall. This marsh has the capacity to store an equivalent of 1.8 inches of rainfall, four times that of Upper and Lower Myakka Lakes combined, and serves to modify peak flow volumes and velocities (Florida Department of Natural Resources 1986).

Seven subbasins are found within the park: Myakka River (including Vanderipe Slough and Big Flats), Clay Gully, Mossy Island Slough, Shiney Town Slough, Deer Prairie Slough, Mud Lake

Slough, and Big Slough Canal. Howard Creek discharges into the western tip of Upper Myakka Lake. More than 90 percent of Howard Creek has been drained and cleared. Upper and Lower Myakka Lakes have a combined surface area of 1,380 acres, giving them a storage capacity equivalent to 0.44 inches of rainfall over the upper watershed.

The principal human alterations to the park's hydrology include the Clay Gully diversion, the earthen dike separating Upper Myakka Lake from Vanderipe Slough, a concrete weir constructed by the Civilian Conservation Corps where the Myakka River flows out of Upper Myakka Lake, State Road 72, the railroad grade, and the earthen dike on Deer Prairie Slough.

The Clay Gully diversion was constructed in 1949. It diverts most of the normal flow of the river through Clay Gully and into Upper Myakka Lake at its northeast corner. As a result, when the river is low, most of the flow goes directly into the lake, bypassing Tatum Sawgrass. This has hastened vegetation changes in the bypassed section of the river, which now stays dry almost half of the year between its juncture with Clay Gully and the point where it enters the Upper Myakka Lake (FDNR 1986).

The earthen dike separating Upper Myakka Lake from Vanderipe Slough was constructed in the 1930s to prevent water from the lake from entering the slough. The dike was extended in the late 1940s to redirect flow of Howard Creek from Vanderipe Slough into Upper Myakka Lake. This was done to convert areas bordering the slough into pasture land. The concrete weir where the Myakka River flows out of the upper lake was bypassed by a water control structure in the 1970s. Since 1979, this structure generally has been kept open, restricting no water. Occasionally the private concessionaire requests control for higher water in the upper lake for airboat tours. Another probable impediment to the river's flow within the park is State Road 72. Although a bridge spans the main river channel, sheet flow across the expansive floodplain is hindered by the highway.

The railroad grade was constructed from Nocatee (just south of Arcadia) to Sarasota during a twenty-year period beginning in 1904. Ditches were dug on either side of the railroad, using heavy equipment, to provide fill for the grade. The short-lived project was abandoned during the stock market crash in 1929. The railroad company salvaged the structural components (e.g. railroad ties, pea gravel) during the 1940s. A permanent easement for major transmission lines along the park's western three miles of the abandoned railroad grade was granted in 1949. The elevated grade and associated ditches may hinder sheet flow across the dry prairie. In 1999, a pilot project to lower three miles of the eastern portion of the railroad grade was completed. The project has proved to be a success, allowing sheet flow to cross the railroad grade. In 2002, an additional 2.5 miles of the railroad grade was lowered.

The east side of the park drains primarily through Deer Prairie Slough and to a lesser extent through Mud Lake Slough and Big Slough Canal. Deer Prairie Slough enters the Myakka River approximately eleven miles below the park. Channelization of this slough during the last fifty years has altered local surface water flow patterns and resulted in shorter hydroperiods in nearby wetlands. At the north end of this slough where it enters the park, upland ditches also connect to the channelized slough. At the southern border of the park, a dike with culverts was constructed in the 1970s to compensate for the effects of channelization in the slough.

The average flow of the Myakka River at its mouth in Charlotte Harbor is approximately 600 cubic feet per second (cfs), comprising most of the 940 cfs flowing from the watershed through all water courses. The upper portion of the river, from its headlands to the U.S. Geological

Survey gauge between Upper and Lower Myakka Lakes, drains some 235 square miles and has an average flow of 264 cfs. Throughout the Myakka River basin, the poor permeability of the materials beneath the soils, coupled with the lack of a well-developed drainage pattern and the shallow gradient of the river bottom (0.48 to 3.26 feet per mile), cause the water table to remain within a few feet of the ground surface unless drainage has been artificially modified (Lowrey, et al 1989).

During the wet season, lower elevations near the river may flood severely. Although the flood stage of 15.86 feet above sea level (asl) has been reached 158 days from August 1936 to June 2003, historic records indicate that, depending on lake levels and rainfall patterns, flooding may occur whenever six or more inches of rainfall within a three-day period. When the river reaches 16.25 feet ASL, the park's paved road is flooded and portions of the park are closed. Historically during the seasonal droughts of May and June, flows in the river above the lakes dropped to less than 0.1 cfs for up to 1.5 months, and ceased altogether about once a year. Since the mid-1980s, there are seldom periods of no flow in the park due to increased agricultural activities (citrus, tomato, spray irrigation, sod farms, etc.) upstream of the park.

Ground Water. Ground water resources are available from three different strata: surficial aquifer, secondary artesian aquifer and Floridian aquifer. The shallowest of these, the surficial aquifer, extends from just below the land surface to a depth of as much as 80 feet. It is composed primarily of very fine to coarse-grained sand with some sandy limestone intermixed. The surficial aquifer water level rises and falls in response to a number of factors, including rainfall, the rate of evapotranspiration and discharge to surface water bodies.

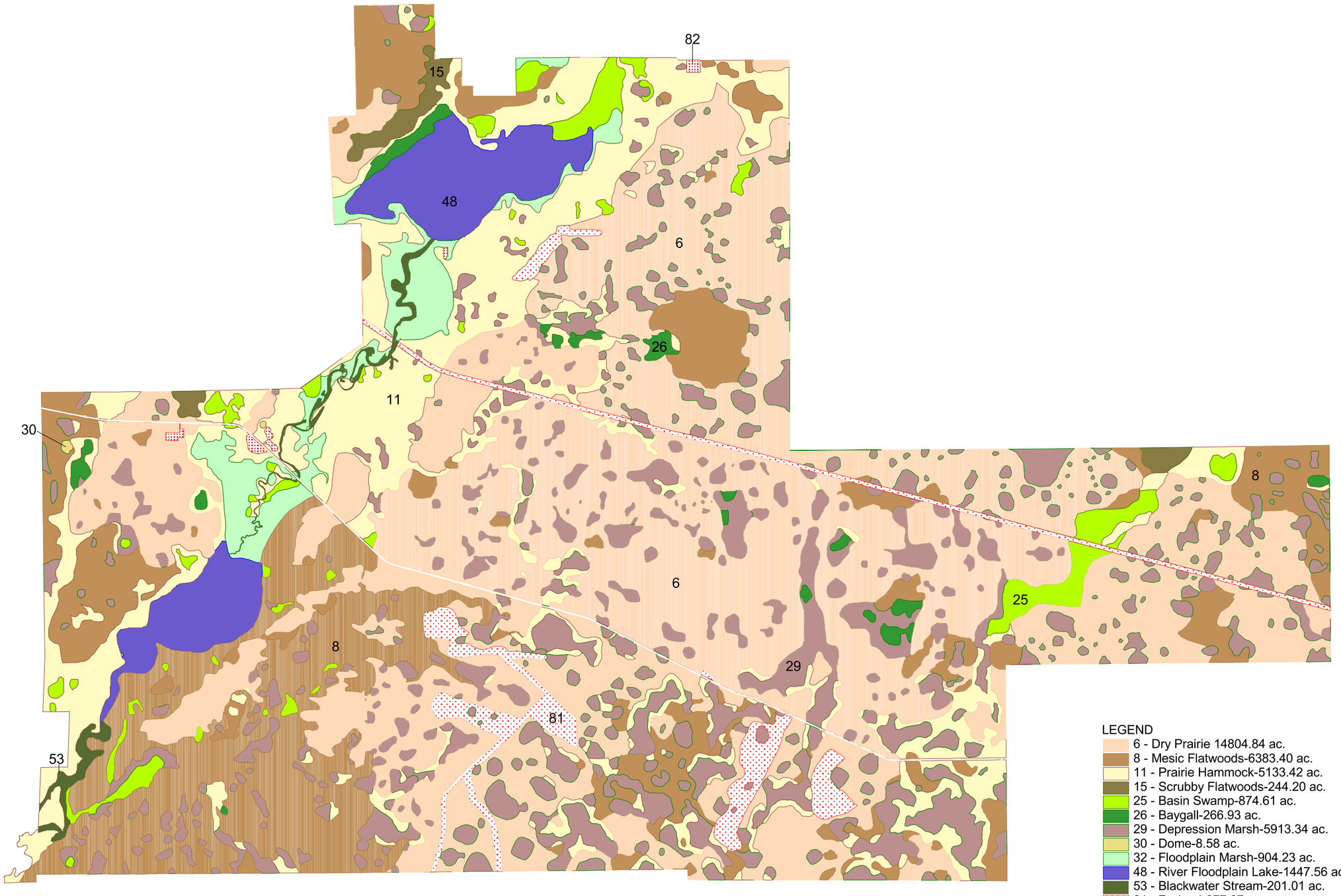
Beneath the surficial aquifer, the secondary artesian aquifer occurs at depths of 80 to nearly 400 feet within permeable units of the Hawthorn formation and Tampa limestone. The deepest of the three aquifers, the Floridian aquifer, is at depths exceeding 400 feet below the ground surface (Dames and Moore 1986).

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 eleven 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.

Dry prairie. The most extensive community type at the park is considered a globally imperiled habitat (Florida Natural Areas Inventory 1990). It is characterized by low, flat topography and relatively poorly drained, acidic, sandy soil sometimes underlain by an organic horizon (Myers and Ewel 1990). The vast, nearly treeless expanse is dominated by saw palmetto (*Serenoa repens*) intermixed with various grasses (*Andropogon*, *Aristida* and *Eragrostis spp*), herbaceous plants and low shrubs such as gallberry (*Ilex glabra*), and fetterbush (*Lyonia lucida*). Occasional



LEGEND

- 6 - Dry Prairie 14804.84 ac.
- 8 - Mesic Flatwoods-6383.40 ac.
- 11 - Prairie Hammock-5133.42 ac.
- 15 - Scrubby Flatwoods-244.20 ac.
- 25 - Basin Swamp-874.61 ac.
- 26 - Baygall-266.93 ac.
- 29 - Depression Marsh-5913.34 ac.
- 30 - Dome-8.58 ac.
- 32 - Floodplain Marsh-904.23 ac.
- 48 - River Floodplain Lake-1447.56 ac.
- 53 - Blackwater Stream-201.01 ac.
- 81 - Ruderal-977.87 ac.
- 82 - Developed-38.90 ac.

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MYAKKA RIVER STATE PARK

NATURAL COMMUNITIES MAP

South Florida slash pine (*Pinus elliottii*) and cabbage palm (*Sabal palmetto*) are also present in very low densities.

Under natural, historic conditions, lightning-induced fires and seasonal flooding controlled the ever-invading woody plants and trees. Typically, the dry prairie would burn every one to three years. Such periodic fires help prevent invasion by non-constituent oak trees and keep pine tree and shrub densities low. In the absence of fire, tree and shrub density increases (Huffman and Blanchard 1991). The change in plant composition causes a loss of animal species such as the crested caracara (*Polyborus plancus audubonii*) and the Florida burrowing owl (*Athene cunicularia floridana*). These two species are found nowhere else east of the Mississippi River, except Florida. Both species can be found on healthy dry prairie habitat and during the 1930s and 40s were common at the park.

Most of the original extent of dry prairie within the state has been lost to land use conversions, and much of the remainder is fragmented, degraded, or isolated, and cannot function on a landscape level. This park has the potential to function on the landscape level especially when cooperatively managed with the adjacent public conservation lands. Animals such as the crested caracara, burrowing owl, indigo snake, gopher frog and gopher tortoise find favorable habitat in this community. The listed bird species are infrequently seen now but are expected to nest on the park as dry prairie is restored. Numerous other vertebrates live in this community.

Fire was actively excluded or suppressed at the park between 1936 and 1977, degrading dry prairie in varying degrees. Some dormant season (winter) burns were introduced to the park in 1972 and growing season (April -August) burns were initiated in 1981. Although there is great variation in the condition of the prairie (from poor to good), the overall condition is considered fair - particularly when compared to other prairies in the state that have not experienced disruption of the natural fire return interval. The bedding activities associated with the pine plantations and feral hogs also degraded the dry prairie. By 1989 most of the pine plantations have been removed, although the ditches between the planting beds require restoration.

Mesic flatwoods. The mesic flatwoods of the park are similar in plant composition to dry prairie but with a greater density of pines. They are alternately wet during the summer rainy season and dry during the winter months. Vegetation includes scattered South Florida slash pine (*Pinus elliottii var. densa*) and/or longleaf pine (*Pinus palustris*) with an understory of saw palmetto (*Serenoa repens*), gallberry (*Ilex glabra*), fetterbush (*Lyonia lucida*), wax myrtle (*Myrica cerifera*), winged sumac (*Rhus copallina*), wiregrass (*Aristida beyrichiana*), and a variety of other grasses and herbaceous species.

Mesic flatwoods generally occur in areas between 15 and 30 feet in elevation. Most of this system is found south of State Road 72, in a designated “wilderness preserve.” Summer rains make the slash pine mesic flatwoods extremely wet and it is not uncommon to have several inches of water standing, or even flowing, here during the late summer. Longleaf pine mesic flatwoods only occur at Bee Island (35 to 40 feet ASL), at a small site on the north end of Deer Prairie Slough, and north of the Upper Myakka Lake. In the longleaf pine sites, standing water is less frequent.

Longleaf pine recruitment is poor throughout the park. Frequent fires usually provide the required bare mineral soil for longleaf pine seeds to germinate. Due to almost forty years of fire exclusion at the park the reintroduction of frequent fires has reduced the saw palmetto height but not density. This increased density increases the fire intensity and almost eliminates pine seed

survival. Those seeds that do survive usually succumb to hog rubbing. To compensate, in 2003 nearly 4000 longleaf seedlings were hand planted in zones 1A, 4B and 5B. Mature longleaf pine trees are also dying in the park due to lightning. Since 1995, Bee Island has experienced lightning strikes to approximately a dozen longleaf pine trees per year (Perry, personal observation).

Like dry prairie, mesic flatwoods is fire dependent, requiring fire every one to four years (FNAI 1990). Too frequent fire may injure pine seedlings, and less frequent fire creates a dense layer of duff that inhibits pine seed germination and allows the invasion of hardwoods (Myers and Ewel 1990). The condition of mesic flatwoods within the park ranges from poor to good, with most acreage in fair condition. As with dry prairie, the condition of each mesic flatwoods site is largely dependent on fire history. This community has also been significantly disturbed by feral hogs.

Prairie hammocks. Prairie hammock forms along the fringe of other freshwater wetlands. Historically, such hammocks form on the lee (north) side of wetlands that are protected from fire carried by the dominant southerly component winds. Fire rarely burns through hammocks but is necessary around its fringes to keep the hardwood trees from invading the adjacent habitat (Huffman and Blanchard 1991).

Typically, prairie hammocks consist of live oak (*Quercus virginiana*), laurel oak (*Quercus laurifolia*) cabbage palm (*Sabal palmetto*) and are often ringed with saw palmetto (*Serenoa repens*). A number of epiphytic plants are also common, including Spanish *moss (Tillandsia usneoides*), wild pine (*Tillandsia utriculata*), golden polypody (*Phelbodium aureum*), shoestring fern (*Vittaria lineata*), resurrection fern (*Polypodium polypodiodes var. michauxianum*) and butterfly orchid (*Encyclia tampensis*).

Although there is considerable damage by hogs in this community, hammocks in the park are in good to excellent condition. However, because of fire exclusion, most of these hammocks have expanded into the surrounding floodplain marsh, basin marsh or dry prairie and cover much more acreage than in 1948 (Huffman and Blanchard 1991).

Scrubby flatwoods. Scrubby flatwoods occur along a line of ridges running from northeast to southwest, just northwest of Upper Myakka Lake and along another ridge north of Deer Prairie Slough and the Oak Grove primitive camping area. These sites are open-canopy forests having widely scattered pine trees, a sparse scrubby understory, and numerous patches of barren white sand. Typical plants include longleaf pine (*Pinus palustris*), slash pine (*Pinus elliottii*), myrtle oak (*Quercus myrtifolia*), saw palmetto (*Serenoa repens*), staggerbush (*Lyonia fruticosa*) and wiregrass (*Aristida beyrichiana*). Florida scrub jays have historically occupied these areas. Currently, park surveys have observed Florida scrub jays northwest of Upper Myakka Lake in zone 1A.

The sandhill community identified in the 1986 park plan has been reclassified as scrubby flatwoods in this plan. Although turkey oak (*Quercus laevis*) is commonly found in sandhill, it does occur in scrubby flatwoods.

Some of the mature pines in the scrubby flatwoods of the park have been killed by intense prescribed fires in recent years. Because of high fuel loading due to years of fire exclusion, loss of some pines has been inevitable. Many of the South Florida slash pines are cat-faced in this community. Scrubby flatwoods is rated as fair to good condition in the park.

Basin swamp. Basin swamp describes a relatively large and irregular shaped basin, not associated with rivers, but vegetated with hydrophytic trees that can withstand extended hydroperiods. Soils are generally acidic, nutrient-poor peats overlying a clay lens or other impervious layer that often causes the water table to be perched above the surrounding terrain. Basin swamps collect runoff from the surrounding uplands, and release it to groundwater during drought periods. The typical hydroperiod is approximately 200-300 days.

A mature basin swamp is located on the northern end of Deer Prairie Slough. It includes some very large black gum (*Nyssa sylvatica var. biflora*), red maple (*Acer rubrum*), swamp bay (*Persea palustris*), cabbage palm (*Sabal palmetto*), and other trees with an affinity for frequently flooded areas. Basin swamps burn infrequently, perhaps once every 25 years, at which time the accumulated organic matter is reduced and the system can begin again if the natural hydrological pattern is maintained (Duever 1986).

Today Deer Prairie Slough drains an area of approximately 33.2 square miles beginning north of Myakka River State Park through Myakka Prairie, the Carlton Reserve and Warm Mineral Springs. Historically, it was a smaller system that joined other seasonal ponds only during periods of high water. South of the park, it was channelized during the 1950s for cattle grazing that significantly altered hydrological regimes and plant communities associated with it (Perry 1997).

Although few in number and small by acreage, basin swamp areas provide roosting and breeding sites for many wading birds at the park. Ibis, egret and heron roosts may be found along the southern shore of the Lower Myakka Lake and the northeast shore of Upper Myakka Lake. A large rookery area in Deer Prairie Slough, inactive for many years in the 1970s, is again being used by herons and egrets, although in lesser numbers.

As with hammock, much of this community is the result of fire suppression in marsh community. It is presently in good to excellent condition. Hogs do forage in this community when there is no standing water in it. An invasive exotic Mexican bromeliad weevil, *Metamasius callizona*, has established on native bromeliads killing many of the bromeliads in the park. Myakka River State Park is working in partnership with the University of Florida as a research site on the *Metamasius callizona* project.

Baygall. This seepage community is located on the northwest slope of the basin in which Upper Myakka Lake lies and in other smaller areas adjacent to several depressional marshes. It is a forested, peat-filled seepage depression at the base of the sandy slope dominated by sweet bay (*Magnolia virginiana*), black gum (*Nyssa sylvatica biflora*), red bay (*Persea borbonia*), and loblolly bay (*Gordonia lasianthus*) with an understory of shrubs, ferns and sphagnum moss.

Rooting by feral hogs has caused extensive damage to the substrate, which may preclude successful tree recruitment. Because of the hog damage to this community, it is only in fair condition.

Depression marsh. Depression marsh on the park is a typically shallow, generally round or elliptical depression that may be vegetated with concentric bands of hydrophytic herbaceous plants. Depending upon the depth and slope of the depression, an open water zone with or without floating plants may occur at the center. Some depression marshes on the park without an open zone frequently have tall thickets of herbaceous plants towards their center or have developed bay galls.

Depression marshes usually derive most, if not all, of their water from runoff from the immediately surrounding uplands. They have a normal hydroperiod of 50 to 200 days.

Within the park the character and plant communities of the thousands of marshes, both large and small are directly governed by the depth and extent of the solution features they occupy, and the porosity of the soil. These may be inundated seasonally or year-round by precipitation.

Vegetation associated with the park's herbaceous wetlands includes pickerelweed (*Pontederia cordata*), maidencane (*Panicum hemitomon*), St. John's-wort (*Hypericum fasciculatum*), sawgrass (*Cladium jamaicense*), various sagittarias (*Sagittaria spp*.), spatterdock (*Nuphar luteum var macrophyllum*), beak rush (*Rhynchospora tracyi*) and marsh fleabane (*Pluchea rosea*). Periodic fires, every two to eight years, maintain these seasonally wet depressions by inhibiting invasion by trees and shrubs (FNAI, 1990). Without fire, tree invasion and peat accumulation would convert a depression marsh into a forested wetland.

For the most part, the depression marshes on the park are in fair to good condition. Woody species (often primrose willow, *Ludwigia peruviana* or pop ash, *Fraxinus caroliniana*), have invaded some marshes because of reduced fire frequencies; consequently a relatively small proportion of the marshes are in poor condition. Six depression marshes (approximately over three acres total) within the park were planted with off-site bald cypress (*Taxodium distichum*) by the CCC. Four of these sites are expected to be restored to depression marshes with repeated treatment by fire. A number of off-site bald cypress have been harvested by volunteer groups from the marsh located south of State Road 72, west of Cabin Lane. The sixth site is unlikely to expand due to its location within the prairie hammock north of Ranch House Road and west of All Weather Road.

Dome. There is an interesting bald cypress dome south of State Road 72 along a historic pioneer trail. Its natural occurrence is questionable although it was present prior to the park and the trees appear to be randomly distributed. The smaller trees grow in the shallower waters at the outer edge, while the larger trees grow in the deeper water in the interior that give the overall domed profile.

Fire is essential for the maintenance of a cypress dome community. Without periodic fires, hardwood invasion and peat accumulation would convert the dome to bottomland forest. Domes dominated by bay trees are close to this condition. The normal hydroperiod for domes is 200 to 300 days per year. Extended hydroperiods will limit tree growth and prevent reproduction, while shortened hydroperiods will permit invasion by mesophytic species, which change the character of the understory and eventually replace the cypress.

This cypress dome is in fair condition with lightning striking approximately three trees per year.

Floodplain marsh. Floodplain marsh occurs between the Upper and Lower Myakka Lakes and along the Myakka River. It is the herbaceous wetland on the river floodplain and has decreased in acreage since 1948, because of fire exclusion. Much of this community is dominated with two exotic grasses: Paragrass (*Brachiaria mutica*) and West Indian marsh grass (*Hymenachne amplexicaulis*). West Indian marsh grass was observed in Tatum Sawgrass in the 1970s and became dominant in the park's floodplain marsh after 1987.

The overall condition of the floodplain marsh is fair. Park staff is treating this community with prescribed fire to reverse the trend towards succession to hammock and to control the exotic

marsh grasses. In 2000, a South American insect, *Ichnodemus variegates*, was found on the exotic West Indian marsh grass (*Hymenchne amplexicaulis*). It was the first time the insect, known as the Myakka Bug, had been recorded in Florida. The University of Florida is researching the insect, to determine its potential for use as a safe biological control for West Indian marsh grass.

River floodplain lake. Two shallow depression lakes, the Upper Myakka Lake and Lower Myakka Lake are found within the park. Both lakes have wide-open water. The lakes have been covered with aquatic weeds such as hydrilla (*Hydrilla verticillata*) and water hyacinth (*Eichhornia crassipes*), but with the efforts made by SWFWMD, the aquatic weeds have been controlled. These lakes also serve as two of the many detention areas within the Myakka River watershed that are nutrient-enriched and exhibit seasonally low dissolved oxygen levels and aquatic exotic plant problems. Agricultural activities, spray irrigation fields and an effluent treatment system along Howard Creek are possible contributors to the poor water quality of the lakes (Lowrey, et al 1989).

Blackwater stream. Twelve miles of the Myakka River and less than one mile of Clay Gully flow within the park. At river mile 43, just north of the park, the river channel splits into Clay Gully and the Myakka River. Both watercourses run into Upper Myakka Lake at approximately river mile 39. Downriver from Upper Myakka Lake, the river flows through a large marsh area known as Big Flats. Below State Road 72, the river enters the park's wilderness preserve at approximately river mile 36. At this point, the hammock closes in on the river channel for a short reach before again opening into marshes at the northern end of Lower Myakka Lake. Downriver from the lower lake, the hammock again closes in on the river channel.

Ruderal and developed. - Human disturbances are easily identified on the natural landscape of the park. They include a powerline right-of-way, an abandoned railroad grade, improved pasture, elevated roads, drainage ditches, borrow pits, seven miles of paved road and associated parking lots, two water treatment plants, fire lanes and vehicular trails as well as the old Palmer ranch site and CCC camp sites. Twelve buildings constructed by the CCC are in use and constitute a legacy from the past.

Non-native, invasive plants occur in disturbed areas including cogon grass (*Imperata cylindrica*), tropical soda apple (*Solanum viarum*), West Indian marsh grass (*Hymenachne amplexicaulis*) and torpedo grass (*Panicum repens*). All of these exotics have been observed spreading into the natural communities of the park.

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.

Seventy designated species comprising twelve plants, one fish, one amphibian, three reptiles, 46 birds and seven mammals have been identified within the park, based on tracking by FNAI (Marois 1998) and the FFWCC official lists (Wood 1996). None of the species listed are unique to this unit. However, some, like the Florida scrub jay, live in habitats that are rapidly disappearing outside this and other state parks.

Special Natural Features

One special natural feature unique to the park is Deep Hole, located at the south end of Lower Myakka Lake. Deep Hole is a sinkhole 300 feet in diameter and 13 to 180 feet deep. Joyner and Sutcliffe (1976) reported a ground water discharge of 1.6 cfs. A Mote Marine Laboratory video camera survey in 1988 revealed an inverted cone of sediment nearly 79 feet tall, suggesting a sediment sink rather than a ground water source. The survey also revealed that the deepest part was on the southwest side (Lowrey, et al 1989).

Cultural Resources

According to the Florida Master Site Files, Myakka River State Park contains 26-recorded cultural resources, including 22 historic sites and 4 prehistoric sites. The park has never been comprehensively surveyed for cultural resources. No survey has ever been conducted in the western half of the park, while the portions of the park in Manatee County and the former Ringling-MacArthur Reserve have been subjected to surface inspection and limited subsurface testing of high site potential areas. Additionally, the park's recorded sites that are not standing buildings have never been comprehensively studied. As a result, very little is known about the prehistoric occupation of the area, and more could be learned about the various historic activities in the area, including cattle ranching, oil drilling, turpentining, and homesteading.

Twenty-three of the park's recorded sites were documented during cultural resource survey projects conducted between 1985 and 1991 in the park, or in areas that are now encompassed within park boundaries. In 1989, Historic Property Associates, Inc., inventoried, evaluated the significance of, and made National Register of Historic Properties nomination and preservation recommendations for structures in Florida's nine New Deal parks, resulting in the recordation of eighteen CCC-related structures and one dump site in Myakka River State Park. In 1985, Piper Archaeological Research surveyed almost 3,000 acres of the 33,000-acre Ringling-MacArthur Reserve that were identified as possessing a high site potential based on environmental variables, in order to produce data on cultural sensitivity for Sarasota County. The portion of the park located east of Lower Myakka Lake and south of State Road 72 was included in this survey, which resulted in the recordation of three sites now within park boundaries (Piper Archaeological Research, Inc. 1987). In 1991, Piper Archaeology/Janus Research surveyed portions of Manatee County with a high site potential in order to assist the county with development planning, resulting in the recordation of one site now in the western reaches of the park (Piper Archaeology/Janus Research 1992).

Prehistoric Cultural Resources

The settlement model for the local interior coastal plain developed and refined by Robert Austin based on the results of the Ringling-MacArthur Reserve survey provides useful information for understanding prehistoric activity in the area and predicting site location (Piper Archaeological Research, Inc. 1987). Like the Ringling-MacArthur Reserve, Myakka River State Park is bisected by the Myakka River, and lies within the Gulf Coastal Lowlands and the DeSoto Plain physiographic regions. Prehistoric sites appear to be short-term resource extraction or camp-sites located primarily on upland slopes adjacent to freshwater sources (wetland depressions, streams, or rivers), and secondarily in oak hammocks adjacent to freshwater swamps. Few, if any, large or permanent habitation sites have been identified. Areas located on the 20-foot contour line appear to have the highest potential for containing sites, while areas with low elevation, poor drainage, poor soil, and no permanent potable water appear to have the lowest potential. While the Myakka River and its lakes are the largest local source of fresh water, erosion and redeposition activity caused by periodic flooding has altered the landscape and likely destroyed many lower elevation sites. According to Austin, this region was occupied most

intensively during the middle Archaic period, 5000 – 3000 B.C., and less frequently and intensively in the post-Archaic period.

Myakka River State Park contains four recorded prehistoric sites, of which our limited knowledge about presently contributes very limited insight into the prehistory of aboriginal peoples in the area. Two of these sites are represented by only a single artifact, and the other two sites were documented in 1951 based on informant data alone. All four sites are located in or immediately adjacent to high site probability areas –two sites (8SO21, 8SO22) are near the southwestern shore of Lower Myakka Lake, one site (8MA810) is near the northern end of Deer Prairie Slough, and one site (8SO431) is adjacent to an upland slope. No cultural affiliation or temporal period has been assigned to any of these sites.

Oak Grove/Deep Hole Site (8So21): Surface scatter, including ceramic sherds; disturbed by campers and flooded annually. Documented by Ripley Bullen in 1951. An associated collection of artifacts is accessioned with the State.

No Name (8SO22): Residence mound or kitchen midden; top layer excavated many years ago. Documented by Ripley Bullen in 1951. An associated collection of artifacts is accessioned with the State.

Cow Trail Site/Venice-Arcadia # 2 (8SO 431): Single coral thinning flake; recovered from the surface of an old cow trail in 1985 during the Ringling-MacArthur Reserve survey. Subsurface testing revealed no additional artifacts.

Deer Prairie Slough Site (8Ma810): Single lithic flake; recovered from a screen shovel test from 75cm below ground surface in 1991 during the Manatee County archaeological survey. Three additional shovel tests revealed no additional artifacts.

Historic Cultural Resources

Myakka River State Park contains recorded and unrecorded remnants of the early 20th century cattle ranching industry, and extant structures and other features associated with CCC park development and occupation during the late 1930s to early 1940s.

Mrs. Potter Palmer, a “progressive” agri-businesswoman, purchased much of what is now the park in 1910, and owned or controlled approximately 90,000 acres in Sarasota and Manatee Counties at the time of her death in 1918. The extensive dry prairie and wetlands in the region had been used for free-range cattle grazing since the 1840s. Mrs. Palmer, however, fenced and cross-fenced her property, installed dipping vats to eradicate ticks, erected silos and attempted to raise rice and corn for silage, and built a number of operational structures at her showcase ranch “Meadow Sweet Pastures” (Monroe 1977, Austin 1987). Beef cattle were brought in to improve the scrub-cow lineage, wetlands were connected by ditching to hasten drainage and increase grazing opportunities, earth roads were built, and exotic grasses were introduced to enhance the carrying capacity of the land for cattle. Shortly after the Palmer ranch was established, the Atlantic Coastline Railroad constructed and operated tracks from Nocatee (a small community southwest of Arcadia) to Sarasota, and a depot named Honore after Mrs. Palmer’s brother, Adrian Honore, was constructed for loading cattle. Mrs. Palmer’s death, followed by the great stock market crash a decade later, led to the decline of the cattle ranching industry and railroad operations in the area. The Palmer family donated 1,920 acres to the State of Florida, and the state purchased 17,070 acres from the estate of Adrian Honore in September 0f 1934.

Remnants of Mrs. Palmer’s ranch include two recorded structural remains and their associated

archaeological deposits, four unrecorded structural remains, two recorded trash piles, and unrecorded cultural landscape features such as roads and a 12-mile railroad grade that passed the Honore depot. The various structural remains are located in portions of the park not typically frequented by visitors. Many of the old roads are presently used as hiking trails or service roads for park maintenance. Half of the railroad grade has been used as a power line right-of-way since 1949. Five and a half miles of the grade have been lowered to restore the hydrology.

Cattle Dip Vat #1 (8So2272): One of two concrete cattle dip vats, poured below grade with an associated rough-cut, heart pine draining platform; constructed circa 1917. The Florida Department of Environmental Protection analyzed the vat for contaminants, detecting arsenic in the surrounding soil but not the water.

Old Palmer Ranch Site (8So395): Remnants of the ranch headquarters, including footprints and structural elements of the main structure and associated outbuildings, old fencing and field, wells and debris piles. Documented in 1977 by L. Ross Morrell, SHPO, during relocation of the park camping area.

Lincer Site #1 (8So430): Two-acre above ground refuse pile, 1920s – 1950s, adjacent to dirt road, upland slope, and intermittent stream; contains heavy duty, generic food-related artifacts such as glass bottles, jars and ceramic dishware, and structural remains such as clay bricks. Austin hypothesized that the site was associated with a cattle camp, either the result of debris accumulation over time or a single deposition of demolished structure and associated debris. Further research is needed to confirm site's association with the cattle ranching industry.

Lincer Site #2 (8So611): Small, scattered refuse pile exposed by earth moving activity, 1930s – 1960s, located on a low rise next to a stream; contains glass bottles and ceramics, similar in type, date range, and spatial proximity to Lincer Site #1. Further research is needed to confirm site's association with the cattle ranching industry. Site integrity has been disturbed by past land clearing activity.

Cattle Dip Vat #2 (unrecorded): Concrete cattle dip vat

Silo Bases (unrecorded): Four circular concrete silo bases at various locations in the park.

The most prominent of the park's cultural resources are the various structures, features, and other improvements constructed by the Civilian Conservation Corps (CCC) between 1935 and 1942. The park contains eighteen recorded CCC structures, one recorded CCC trash pile, and several unrecorded CCC-related features, primarily clustered just north of State Road 72 between Upper and Lower Myakka Lakes. In addition to constructing numerous park facilities, the CCC cleared extensive firebreaks, built many miles of all-weather roads, installed weirs below Upper and Lower Myakka Lakes, and planted hundreds of thousands of North Florida slash pines in the dry prairies. While many of the park's CCC buildings still serve the public, most of the other "enhancements" have been, or are being, removed or remedied; while they were well intended, they were not ecologically prudent actions. In addition to providing employment and job training for men during the Great Depression, CCC activities were also intended to improve or restore the degraded landscape, and to develop public recreation facilities according to professionally drawn plans. The majority of the park's extant CCC buildings are rustic structures that were constructed out of natural materials, including limestone, cabbage palm logs and timber, extracted from the surrounding area.

Latrine (8So2264): One-story, rectangular building with a wooden post-and-girt construction, cypress plank siding, gable roof with cypress shakes, and articulated limestone foundation. Past maintenance repairs and improvements that have altered the structure's historical integrity include installation of skylights and tile flooring in 1981.

Picnic Pavilion (8So2265): One-story shelter with a wooden post-and-girt construction, square hewn logs, crosses gable roof with cypress plank sidings, tripartite corner posts, and carved extended purlins. Its physical integrity is threatened by moisture damage, which is causing rot at the base of its square support beams despite installation of flashing. Past maintenance repairs and improvements that have altered the structure's historical integrity include replacement of rotted wood with mortar.

Log Picnic Pavilion (8So 2266): One-story building with a wooden post-and-girt construction, cross gable roof with cypress shakes and decorative king post trusses and knee bracing in the gable end, palm log exterior walls chinked with asphalt and sawdust composite mortar, carved rafter ends, limestone chimney, and articulated limestone foundation. Its physical integrity is threatened by moisture damage, which is causing limestone to spall and wooden elements such as shingles to deteriorate. Past maintenance repairs and improvements that have altered the structure's historical integrity include replacement of cypress shakes with sawn shingles in 1980 and 1993, repointing of chimney brick, and installation of an ADA ramp circa 1999.

Shed (8So2267): One and one half-story wood frame building with board-and-batten exterior wall fabric and a gable roof with 3-V crimp surfacing.

Ranger's Residence (8So2268): One-story wood frame vernacular residential building with a gable roof, end porch with knee wall and screen, wood weather board drop siding, brick chimney, and 3/1 double hung sash windows; pre-dates the CCC structures and was relocated to the park. The original structure consisted of a large room with a bedroom in the back; a kitchen, bedroom, and bathroom are later additions.

Horse Barn/Interpretive Center (8So2269): Large one and one half-story building with wooden post-and-girt construction, gable roof with cypress shakes, cypress plank exterior wall fabric, cupola, casement windows, and articulated limestone foundation. Its physical integrity is threatened by insects and water damage, which is causing mildew and wood rot. Past maintenance repairs and improvements that have altered the structure's historical integrity include replacement of majority of cypress siding in 1980, replacement of purlins, rotation and replacement of beams and rafters, replacement of cypress roof shakes with fiberglass tab shingles, and addition of reversible restrooms with separate plumbing in 2002.

Caretaker's Cottage (8So2270): One-story building with wooden post-and-girt construction, cross gable roof with cypress plank siding in gable ends, palm log exterior wall secured with heavy gauge wiring and chinked with asphalt and sawdust mortar, decorative shutters, limestone chimney, and limestone foundation piers. Its physical integrity is threatened by long periods of dampness in the lower walls, which is causing pocket rot. Past maintenance repairs and improvements that have altered the structure's historical integrity include replacement of log siding via stapling, addition of metal flashing, and replacement of original shakes with regular shim shingles.

Maintenance Shed/Park Shop (8So2271): One-story building with wooden post-and-girt construction, cross gable roof, articulated limestone foundation, and plywood siding. The

building has undergone substantial modifications, and consequently retains little historical integrity.

Concrete Dam (8So2273): Dam with limestone walls and cylindrical concrete spillway, approximately 200 feet long, located on the southern edge of Upper Myakka Lake.

Latrine (8So2274): One-story building with wooden post-and-girt construction, gable roof with cypress shakes, palm log exterior wall secured with heavy gauge wire and chinked with asphalt and sawdust mortar, two stoops, louvered windows, copper and lead flashing, and an articulated limestone foundation. Its physical integrity is threatened by termites. Past maintenance repairs and improvements that have altered the structure's historical integrity include replacement of oak corner beams with cypress beams and brackets.

Cabin 1 (8So2275): One-story, L-shaped building with wooden post-and-girt construction, cross gable roof with decorative king post trusses and knee braces in gable end, palm log exterior wall secured to with heavy gauge wire and chinked with asphalt and sawdust mortar, entrance porch, carved rafter ends, limestone chimney, and limestone foundation piers. Its physical integrity is threatened by periodic flooding. Past maintenance repairs and improvements that have altered the structure's historical integrity include floor replacement with plywood, and in-fill of the porch to provide ADA accessibility.

Cabins 2 – 5 (8So2276 – 8SO2279): Similar to Cabin 1, minus ADA alterations.

Earthen Dam/Levee (8So2280): Earthen levee, approximately 1000 feet long and 25 feet high, designed to stop downstream drainage of Upper Myakka River.

Fire Tower (8So2281): Elevated building with a hip roof, steel skeletal frame, and concrete piers. The building is not presently under park management.

CCC Boat Graveyard/Dump Site (8So2282): Large refuse pile, 1935 – 1945, scattered over .2 mile along two dirt roads; contains structural/construction debris, machinery and vehicle parts, ceramic dishware, glass bottles, and nine cypress rowboats. Retired park manager, Robert Dye, documented the site in 1993 via narrative text, video, and photography, and salvaged brass screws and oarlocks, and galvanized steel strapping and bow eyes. Site integrity is deteriorating as above ground remains rot and oxidize from exposure to the elements.

RESOURCE MANAGEMENT PROGRAM

Special Management Considerations

Timber Management Analysis

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

Restoration efforts at Myakka River State Park may include timber harvest of non-local pine trees planted on-site between the 1930s and 1970s, and harvest to reduce basal area to a more historic level. Addendum 6 contains the timber management analysis.

Additional Considerations

Restoration of disturbed or manipulated areas. Management of natural communities is often enhanced by physically restoring areas that have been disturbed or otherwise manipulated by people. Such management is often achieved in the course of hydrologic, scenic, or other restoration measures, such that two or more management goals can often be achieved simultaneously. Most of the park's disturbed sites are large-scale and will require cooperation from other agencies to achieve restoration. The priority areas include restoring the dry prairie, the bahia grass pastures, the scenic park drive and elevated roadway vistas, the hydrology of Vanderipe Slough, Howard Creek, Clay Gully, and controlling the aquatic exotic plants on the Upper and Lower Myakka Lakes and Myakka River.

Native species restoration. Native species restoration is often inherent in other measures. For example, burning to remove hardwoods from fire-adapted communities often restores native fire-adapted species. Exclosures to prohibit feral hogs may increase the plant and animal diversity in the natural community. Where only mature longleaf and slash pine have been able to survive, exclosures in the mesic flatwoods could be created. If natural recruitment fails, native trees could be planted at historic, scattered densities.

Priority will be given to those sites that include the greatest biodiversity desirable for the long-term health of natural communities. Expansion of such sites will provide the necessary seed source for similar, adjacent natural communities that are currently degraded.

As the dry prairie is restored to its historic condition, park staff will investigate the possibility of reintroducing the Florida grasshopper sparrow to this natural community. Possible reintroduction of red-cockaded woodpecker in mesic flatwoods and whooping crane in dry prairie and marsh also will be explored.

Management Needs and Problems

Natural Resources

Against the background of climate, geology and soils, Florida's ecosystems have evolved under and depend on the dynamic interaction of forces, or processes, associated primarily with hydrology, lightning-set fires and complex interactions between native species. Resource management needs center around restoring the park's historic natural ecosystems by utilizing hydrologic restoration, fire and mechanical treatment, and exotic species control.

Restoration of the park's hydrology including wetland hydroperiods and general sheet flow across the landscape has been initiated. Although eight wetlands are monitored monthly, additional wetlands lying within ditch restoration areas should be monitored. Sheetflow across the lowered Rail Road Grade should be monitored. This will provide information to be used in the evaluation of changing conditions caused by on- and off-site influences.

Myakka River State Park suffered nearly four decades of a severely altered fire regime, resulting in substantial changes in landscape aspect and species composition. Restoration of mesic flatwoods, scrubby flatwoods and dry prairie not only demand application of prescribed fire at appropriate interfire-intervals but will also require mechanical treatment such as mowing and restoration roller chopping. Burn zones invaded by hardwoods that are too large to be readily

killed by frequent fire may require additional treatment such as girdling or manual removal. The North Florida slash pine planted by the Future Farmers of America in Zone 1B need to be removed. After removal of the North Florida slash, native longleaf may be replanted. In addition, mechanical treatment can be used in conjunction with prescribed fire to facilitate burning under a wider variety of conditions.

Evidence of human disturbance should be eliminated from the undeveloped portions of the park unless it has historical significance. Old water control structures, fire plow lines, and drainage ditches should be removed when they conflict with resource management objectives and practices.

Invasive, exotic plants continue to create severe problems in the river corridor and Upper and Lower Myakka Lakes. Invasive, exotic plants that fall under EPPC category 1, in all habitats, will continue to be monitored and treated. Isolated marshes require close monitoring to prevent further spread of invasive exotics into unaffected areas. As development and urban landscapes crowd park borders, the occurrence of invasive, exotic plant species in upland communities becomes more prevalent, necessitating rigorous monitoring and prompt treatment or removal.

Feral hogs are a particular problem at the park and every effort needs to be made to eliminate them from the park. A contractor removes a yearly average of 1000 feral hogs. The contractor must be afforded a long- term contract due to the capital investment required in permanent trap locations. Trapping should be conducted daily except when trapping productivity is nil and capture by dogs impractical.

Exotic fish in the lakes and river include the walking catfish, armored catfish and tilapia. Research is needed to determine proper management action.

Cultural Resources

All things age and change; it is the extent of aging and changing and particularly the sensitivity with which changes have been made that are evaluated. Evaluating the condition of cultural resources is accomplished using a three part evaluative scale, expressed as good, fair, and poor. These terms describe the present state of affairs, rather than comparing what exists against the ideal, a newly constructed component. Good describes a condition of structural stability and physical wholeness, where no obvious deterioration other than normal occurs. Fair describes a condition in which there is a discernible decline in condition between inspections, and the wholeness or physical integrity is and continues to be threatened by factors other than normal wear. A fair judgment is cause for concern. Poor describe an unstable condition where there is palpable, accelerating decline, and physical integrity is being compromised quickly. A resource in poor condition suffers obvious declines in physical integrity from year to year. A poor condition suggests immediate action to reestablish physical stability.

The park's CCC structures are generally in fair condition, because of vigilant monitoring, maintenance, and retention of historical appearance by park staff. Please see the cultural resource description in the previous section for specific information on threats presently facing each structure. These buildings, the majority of which continue to serve public and park maintenance needs in the original function intended, show the predictable deterioration caused by environmental factors and daily use. Excessive environmental moisture in the form of heavy rainfall and periodic flooding is the largest threat to the structures, causing wood to rot, fungus to bloom, and limestone to spall. Remedial preservation efforts demand frequent repair and periodic replacement of structural elements, application of mildicides, and consideration of other effective, low risk alternatives to reducing structures' vulnerability to water damage. Pests that

nest and feed on structural lumber, such as termites and wasps, also threaten buildings' cosmetic appearance and structural integrity. All of the historic structures have been tented and fumigated with Vikane, Sentricon termite monitoring and baiting systems are employed, and physical barriers such as screens have been installed. Finally, park maintenance and improvements, such as new building additions or substitution of new construction material, can adversely impact structures' historical fabric and character. Care must be taken to select appropriate material, methods, and design that meet Secretary of Interior historic preservation standards, to consult with preservation consultants at the Bureau of Natural and Cultural Resources and elsewhere as needed, and to secure Florida Division of Historic Resources' Compliance and Review approval if warranted. Any historical structure requires routine maintenance in order to preserve its integrity. Historic structures at Myakka River State Park require at times an inordinate amount of maintenance due to the particularly wet environment.

Ongoing documentation of the preservation treatments applied to each historic structure is one of the park's largest cultural resource management needs. While preservation work ideally increases the longevity and maintains the integrity of a building, it can also alter the building's historical configuration and composition through the introduction of new treatment applications, structural materials, and building additions. Furthermore, despite highest hopes, some preservation work proves unsuccessful, or is later superseded by more effective or appropriate alternate treatments. Documenting each repair or restoration project is critical if we are to understand and differentiate between the structure's historical and modern composition at any point in time, learn about the best approaches and products from past efforts and mistakes, and make sound and informed decisions about future preservation needs.

One of the largest cultural resource management issues presently facing the park is mitigation of the recurrent threat posed to the five rental cabins by the periodic flooding of the Myakka River. Partial inundation by floodwaters hastens deterioration of structural elements, promotes microorganism growth, and impedes access to the area. Data on annual flood levels for the past ten to twenty years is needed to determine the scale of the needed remedial action. Consideration must be given not just to its potential efficacy, but also to any adverse impact, the solution itself might pose to the historical character and integrity of the structures, and their relationship to the surrounding cabins, landscape and vistas. The ideal option would retain the cabins' appearance and location near the river, have minimal visual impact and adverse effect on the natural environment, and pose the lowest risk should it fail.

The park's recorded archaeological sites are assumed to be in generally fair condition, although this was not verified during the 2003 cultural resource assessment. Site preservation is facilitated by sites' distance from public-use areas, and park staff's sensitive natural resource management and regular site inspections. DHR Compliance and Review of proposed development projects and archaeological resource monitoring of ground disturbing activity helps to protect both recorded and unrecorded cultural resources. The most at-risk archaeological component at the park appears to be above ground metal and organic artifacts, which are deteriorating from exposure to the elements at an unknown rate. In 1993, the Park Manager recognized the need for further investigation of the CCC Dump/Boat Graveyard before many of the artifacts deteriorated completely.

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.

At Myakka River State Park, some previous activities and management practices were damaging, but not irreversibly. In working toward the goal of natural communities' restoration, the following objectives are sought:

1. Assemble a comprehensive data system to aid in management decisions. This database should include documentation of resource conditions as well as past and present resource management practices.
2. Manage fire-adapted communities by means of the prescribed burn plan.
3. Restore, by mechanical means when necessary, upland natural communities including dry prairie and mesic flatwoods through the removal of non-constituent hardwoods and off site planted pines.
4. Remove exotic plants and animals in a manner consistent with Division policies.
5. Control and repair of erosion induced by man-made intrusions.
6. Eliminate any structures installed to manipulate the volume or flow of water when it is determined that these structures are not in the best interests of the resource.
7. Restore hydrology by eliminating ditches and obstructions to natural sheet flow.
8. Restore scenic natural vistas by selective removal of invading hardwoods from road shoulders and fenceline where appropriate.

Management objectives for cultural resources include the following:

1. Pursue funding for and conduct a comprehensive cultural and archaeological resource survey of Myakka River State Park.
2. Conduct regular inspections of the park's archaeological sites in order to assess their condition, identify real or potential threats, and protect them from vandalism, unauthorized digging or collecting, erosion, adverse visitor and animal activity, and other forms of threatening encroachment or events.
3. Conduct regular inspections and routine cyclical maintenance of the park's historic structures in order to assess their condition, identify real or potential threats, and protect them from the adverse impacts of daily use, inclement weather, moisture, pests, inappropriate repair work, vegetation, disasters, and other forms of threatening encroachment or events.
4. Conduct park improvement projects, preservation work, and ground-disturbing activities in a manner that minimizes any adverse impacts to archeological sites and historic structures, and is in accordance with Florida Park Service policies, Florida Statutes, and Secretary of Interior's historic preservation standards.

Management Measures for Natural Resources

Hydrology

The surface waters of the park must be closely monitored for the effective control of aquatic weeds. The cooperating agency is the Southwest Florida Water Management District. It must be kept apprised of all matters concerning these plants. Water levels are monitored daily at a river gauge in the south picnic area and a staff gauge in the boat basin. Records of water levels as they relate to precipitation are maintained to assess resource response to water fluctuation.

Several activities outside the park that could affect the park's surface water systems should be closely monitored. For example, proposed phosphate mining in the upper portions of the Myakka

River watershed could have deleterious effects on the river and its natural communities. In addition, any upstream developments involving ditching, diking, irrigation or removal of native vegetation affects the aquatic systems through disruption of hydroperiods and reduction of water quality.

A massive tree die-off in Flatford Swamp and other areas along the upper parts of the Myakka River reflects alterations in the river floodplain hydroperiod. The Southwest Florida Water Management District is investigating primary causes and possible remedies and thus far has determined a major contributor to be excess ground water pumped into the river in association with irrigation. So far, no tree mortality south of the Upper Myakka Lake has been observed (Coastal Engineering 1998).

Several disturbances have altered the natural flow of the park's surface waters. A weir constructed across the river at Upper Myakka Lake and a dike across Vanderipe Slough have altered flow patterns and caused deposition of sediments in Upper Myakka Lake. The weir is of low design and is circumvented to some degree by an open culvert system, but it still holds water back during most of the year.

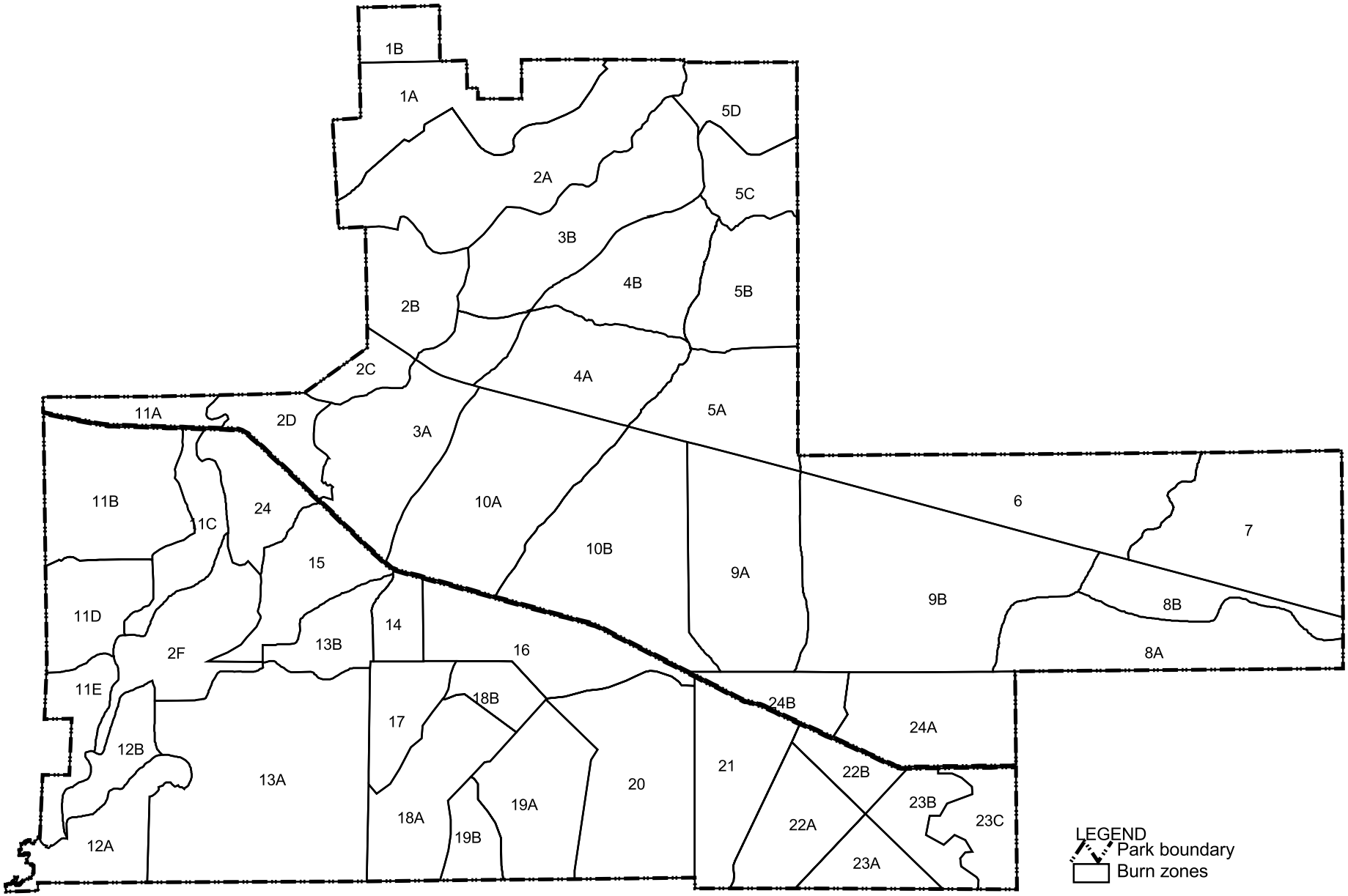
The construction of roads and fire lanes has severely altered historic flow patterns. State Road 72 is essentially a floodstage dam across the Myakka River floodplain. Three small bridges are all that permit the passage of floodwaters. These bridges serve as bottlenecks to rising and subsiding waters. Vanderipe Slough Dike Road, All Weather Road, Powerline Road, and Ranch House Road, all of which were built to permit vehicle access in the backcountry during the wet season, also have the unforeseen and undesirable effect of damming sheet flow. Conversely, numerous fire plow lanes hasten drainage by providing artificial channels that can rapidly convey a great deal of water. These lanes will ultimately become overgrown with vegetation but there seems to be no solution to the raised roadways short of complete removal. Fire plow lines and unnecessary ditches will be identified and eliminated to allow natural hydrologic flow. A three-mile section of the Railroad Grade was lowered in 1999, followed by an additional 2.5-mile section in 2003. All sections of the Railroad Grade will be maintained to restore sheet flow.

A dam across the Myakka River on the southwest park boundary separates a surface differential of up to four feet during the dry season. The degree of its impact is unknown but it may be a negative influence. Since 1979, the private owner of the dam has kept the dam's single floodgate open. Nonetheless, its presence may affect water levels and hinder management efforts to return the park to its "original" state.

Currently there are no severe soil conservation, soil erosion or water conservation issues at this park. But if future soil conservation or soil erosion issues arise, repairs and improvements will be initiated in a timely manner.

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 (see Burn Zones Map), 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 park and the DOF. Burn programs for each zone are maintained and periodically reviewed in the unit's burn plan.



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

MYAKKA RIVER STATE PARK

BURN ZONE MAP

Mechanical Treatment

Myakka River's prairies were species rich prior to several decades of fire exclusion. Healthy dry prairie typically has diverse plant occurrence with the bulk of species present being herbaceous. From 16 to 30 species per square meter should be present with highs of 40-45 not being atypical. The mechanical treatment of roller-chopping, in conjunction with a frequent fire return interval can, through time, greatly aid in regaining the low aspect and diversity of healthy Florida dry prairie.

The goal of roller chopping is to restore the aspect and woody/herbaceous ratio to within the range of non-fire-excluded prairie and flatwoods. Shrub height in such dry prairie gradates between one and four feet in height, with the tallest bordering wetlands and hammocks. Percent cover of woody species range from ten to ninety, with the majority of large expanses of area from twenty to fifty percent. This range corresponds with historical prairie descriptions such as described by Roland Harper (1927).

An additional objective is to obtain a natural mosaic of burned and unburned area, the treatment of roller chopping should achieve a mosaic of chopped and unchopped area. A general guideline is to leave unchopped islands totaling from 1 to 4 acres in a ten-acre parcel.

Roller chopping alone cannot effectively restore dry prairie (Watts 2002).The treatment does not increase species diversity in highly degraded prairie/flatwoods, but increases soil surface sunlight to allow herbaceous species to colonize when combined with other strategies. These strategies include chopping sites adjoining those with adequate seed source, selecting chop sites upwind of the prevailing SE/SW winds, scheduling treatment to benefit from peak seeding periods and collecting / planting seeds harvested from the same region. Using these strategies, a roller chopping plan is updated yearly.

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 FWCC and United States Fish and Wildlife Service (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.

There are 70 designated species in Myakka River State Park (see Addendum 5). While there are no measures specifically designed to protect the species, a number of current practices serve this end. Park policies prohibiting the removal of plants and animals benefit all species, designated or not. An additional practice is limiting access to the park's wilderness preserve area benefiting reclusive creatures such as the bald eagle. Another example is preserving the scrubby flatwoods community benefiting the threatened Florida scrub jay.

Florida scrub jay territories in scrubby flatwoods north of the Upper Lake were surveyed for nesting activity several times in the early 1990s (Thaxton 1990, 1991). Three to four families were found to have established territories that overlapped at least some of the scrubby flatwoods in the park. In 1990, one of the six nesting attempts among four families was successful. The

nests tended to be located on old fence lines or on immediately adjacent property. A nesting survey has not been done in recent years. A statewide survey of scrub distribution and the occurrence of Florida scrub jays were completed under the auspices of the USFWS in 1992-93. It needs to be updated for the vicinity of the park. In the meantime, the information available from the survey should be used to coordinate and implement conservation activities. The priorities for management of the Florida scrub jay include additional monitoring of the birds in the scrubby flatwoods, especially during nesting season, and maintaining suitable habitat on private and public lands within dispersal distance. Optimal Florida scrub jay habitat (Breininger 1981; Breininger et al. 1994; Berininger et al. 1996) is comprised of the following attributes:

- Bare sand or sparse herbaceous vegetation comprised of 10-30 percent of the area
- Greater than 50 percent of shrub layer comprised of scrub oaks
- A shrub height of 1.5-3.5 meters
- Less than 20 percent pine canopy
- Palmetto cover less than 40 percent of area

Conservation activities will include taking special care to buffer the scrubby flatwoods from too frequent prescribed burn intervals and burn only small portions of the scrubby flatwoods during a given burn season (Fitzpatrick et al. 1991)

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.

Plants. One hundred and three exotic plant species have been identified (see Addendum 4), many of which are considered invasive and pose a threat to natural areas. Using Florida Exotic Pest Plant Council's (EPPC) designation, all known exotic plants found in the park have been placed into one of three management classifications. These classifications and the suggested management response recommended for each category are listed below.

Category 1. Invasive and threatening (20 species). Exotic species so invasive as to threaten displacement of native plants in natural areas and if left uncontrolled, would become the predominant cover in the area. Park representative species in this category include paragrass (*Brachiaria mutica*), air potato (*Dioscorea bulbifera*), camphor (*Cinnamonum camphora*), and cogon grass (*Imperata cylindrica*). A system to record frequency, location coordinates, extent and treatment method has been developed which identifies individual locations and provides documentation for treatment methods and follow-up.

In addition, the SWFWMD herbicides the Upper and Lower Myakka Lake and river channel to control water hyacinth, hydrilla and other invasive aquatics which prohibit navigation of the waterways.

Category 2. Invasive but not threatening (six species). This category includes Guinea Grass (*Panicium maximum*), sour orange (*Citrus aurantium*), and Caesar's weed (*Urena lobata*). These are recorded as the above category 1 exotics.

Category 3. Non-invasive, confined to disturbed areas (77 species). This category includes

yellow nut-grass (*Cyperus esculentus*), pangola grass (*Digitaria decumbens*), and bush mint (*Hyptis mutabilis*). No treatment is given to these exotics.

Additions and deletions to the above categories are expected as exotics appear and disappear within the park.

Animals. Like exotic plants, some exotic animals are more deleterious than others are. Exotic animals having the greatest impact on natural communities receive the highest priority for removal. Generally, these are animals that have a high reproductive potential and few natural controls, such as feral hogs, armadillos, and fire ants. Also included in this group are animals whose abundance is directly related to human populations, such as domestic cats and dogs. Although house pets do not typically propagate in the wild, their free-ranging activities on park lands can affect native species which normally would not have to contend with theses additional pressures. The park's objective is to remove these deleterious exotic animals where practical. For example, since September 1986, over 18,000 hogs have been removed from the park by a hog contractor (Donaghy 2003). As additional exotic fauna move onto the park, research is required to determine impacts and best management practices.

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.

Fire exclusion and alterations to hydroperiods have caused the spread of hardwood species in the park. Laurel oak, water locust, pop ash and buttonbush are more common in marshes than in the past. In most cases, returning these marshes to original appearance requires mechanical removal. Fire only eliminates young encroaching hardwoods; mature trees must be physically removed. Laurel and live oaks have also invaded mesic flatwoods and dry prairies. These, too, will require mechanical removal because of their size and number.

Hardwoods have become established on road shoulders wherever fill material was used to elevate roadways. This detracts from scenic vistas on the park drive and in the mesic flatwoods and dry prairie. Priority will be given to removing these hardwoods in order to reestablish the scenic vistas along elevated grades.

Another problem species at Myakka River State Park is the alligator. Alligators are abundant and people are often tempted to feed them. Warning signs stating that feeding is illegal have been posted at points of visitor contact. Rangers are on alert for violations and take appropriate action when they are observed. In spite of these precautions, when an alligator over six feet in length loses its fear of people and becomes a nuisance, the Florida Fish and Wildlife Conservation Commission is asked to remove it.

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.

Park management should conduct routine maintenance, preservation work, and park improvement projects in a manner that minimizes any adverse impacts to the park's archaeological sites and historical structures. Prior to conducting ground-disturbing activity, park management must consult the DHR/DRP Compliance Review Matrix to determine whether DHR Compliance and Review Request for Comment are required given the project's nature. If the matrix indicates that the project should be submitted to DHR, or if there is uncertainty, the Project Manager should submit project documentation, including proposed location, extent, and type of associated ground disturbance, to DHR as soon as possible in the planning stage. If the matrix indicates that DHR Comment is not required, Park Management must still consult the matrix to determine whether a certified archaeological monitor is required to monitor the project. Compliance review and archaeological monitoring are critical pieces to the archaeological resource-monitoring program. Follow through is just as critical. Archaeological monitors must document the results of the monitoring, and Park Management must ensure that all paperwork, including the results of the monitoring, is submitted to DHR and a copy forwarded to BNCR.

Historic preservation treatment differs dramatically from new construction in that great care must be taken to identify and preserve the historic material, features, character, craftsmanship, and site associated with a historic structure during any kind of repair, restoration, or other alteration to the property. The Park Manager should solicit the expertise (BNCR and DHR) needed to ensure that proposed actions meet the Secretary of the Interior's commonly prescribed historic preservation standards; proposed preservation project specifications should be reviewed by BNCR and submitted to DHR for Comment and Review if the project entails substantial replacement of historic material or a new structural addition; and the necessary preservation or stabilization plans should be in place to guide treatment activities before construction work begins. In working toward the goal of cultural restoration, the following objectives are sought:

1. Compile a detailed, up-to-date description and condition assessment of each cultural resource's various components to use as a baseline when evaluating the rapidity and seriousness of structural or site deterioration. Identify the various threats to the structure, document the effects of the threats, and evaluate the degree of adverse impact posed by each threat.

2. Perform routine monitoring of the park's various archaeological sites and historic structures in order to evaluate the condition of each site on a regular basis, and to provide the information necessary to make needed adjustments to the maintenance program. Monitoring should consist of regular site visits, accompanied by written and photographic documentation of the condition of the structure or site. When determining the frequency of routine monitoring required for each site or structure, take into account the degree of deterioration, number of threats, and amount of visitor or other activity in the area. Develop the staff schedule necessary to implement the monitoring program.

3. Perform routine maintenance of the park's historic structures in order to preserve the structure from the adverse impacts of vandalism, unauthorized repairs or alterations, weathering, destructive visitor and animal activity, vegetation, disasters, and other threatening encroachments or events. Regular professional inspections of the historic structures in the park will be conducted.

4. Document all alterations to the physical integrity and original fabric of a historic structure.

Documentation should consist of filling out Record of Physical Change forms, a narrative description of the project, and photographs taken before, during and after the project.

5. Consult with staff at BNCR for more information on how to mitigate the adverse impact of preservation work and park improvement projects on archaeological sites and historic structures.

6. Obtain a DHR Compliance Review of the project in accordance with Florida Statutes Chapter 267 before conducting any activity that will substantially affect or alter the physical condition or historical integrity of a historic structure. Upon receipt of DHR's comment letter, adjust project specifications as needed to mitigate adverse impacts to the parks' historic structures. DHR review of and comment on the final plans must be received before commencement of the project.

7. Consult the DRP/DHR Compliance Review Matrix to determine the appropriate steps to follow before, during, and after a project that entails ground disturbance. When necessary, obtain a DHR Compliance Review of the project in accordance with Florida Statutes Chapter 267 before conducting any land-clearing or ground-disturbing activity associated with the project. Upon receipt of DHR's comment letter, adjust project specifications as needed to mitigate adverse impacts to the parks' cultural resources.

8. When DHR stipulates that a certified archaeological monitor must monitor a project, consult the Archaeological Resource Monitor Handbook to review proper monitoring procedure, record and map the results of the monitoring on the appropriate forms, and submit written documentation of the results and any artifacts recovered to DHR and BNCR in a timely fashion.

9. Immediately report any discovered or exposed human remains to the State Archaeologist at the Division of Historic Resources, pursuant to Florida Statutes Chapter 872.

10. Encourage park staff to attend and complete the Archaeological Resource Monitor Training, offered by DHR and FPS, and other preservation-related workshops and training offered periodically by FPS and the Florida Trust for Historic Preservation.

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.

Six research categories are needed at the park to document restoration and better manage the natural resources. These include base-line data, fire and mechanical treatment effects on natural communities, exotic control, species reintroduction, and hydrology. All research proposals shall be submitted to the district office for review prior to initiating research. In addition, annual research reports shall be submitted as research is being conducted.

1. Base-line data research
- **A.** Coordinate survey of vertebrates and invertebrates found in the park.
- **B.** Coordinate biodiversity surveys.
- **C.** Coordinate ecological studies.

2. Fire effects on natural communities
- **A.** Continue monitoring fire effects on successional dry prairie/mesic flatwoods.
- **B.** Coordinate monitoring fire effects in the park's wetlands, especially in depression marshes, slough and river marshes through two fire intervals.

C. Inventory gopher tortoise population by mapping burrows in at least one burn zone or in a representative section of one burn zone per year treated with fire.

3. Mechanical treatment effects on natural communities
- **A.** Continue monitoring roller-chopping effects on successional dry prairie/mesic flatwoods.

4. Invasive exotic management research
- **A.** Cooperate with other agencies to document the effects of motorized watercraft on the spread and re-establishment of hydrilla.
- **B.** Monitor herbicide methodologies for effective control of category I invasive, exotic plants.
- **C.** Continue the research of the Myakka Bug used as an effective biological control of West Indian Marsh Grass.
- **D.** Continue to coordinate the research on the Mexican bromeliad weevil to determine best control methods for the survival of the native infected bromeliads.
- **E.** Collaborate with other agencies in a study to determine exotic fish presence, density, and the effects on native fish and aquatic vegetation.

5. Species reintroduction
- **A.** Continue to research the suitability of Myakka River State Park as a reintroduction site for Florida grasshopper sparrows.
- **B.** If found suitable, coordinate possible reintroduction of Florida grasshopper sparrow at the park with the U.S. Fish and Wildlife Service, Florida Fish and Wildlife Conservation Commission and other agencies.

6. Hydrologic research
- **A.** Coordinate a three-year hydrologic study of Myakka River impediments to flow (State Road 72 bridge, County Road 780 bridge, Down's dam, Clay Gully bridge, bridges within the park, etc.).
- **B.** Install 4 groundwater well transects through seven natural communities to develop understanding of the park's current hydrologic condition.
- **C.** Coordinate water chemistry assays**.**

Cultural Resources

Research needs include the following:

1. Complete a comprehensive cultural and archaeological survey.

2. Continue to research the local historical communities, especially those that may have previously existed within the park.

3. Research and document the accomplishments of the CCC enrollees who built the park, to the most complete extent possible. Incorporate into the park's interpretive programs.

4. Research, analyze and evaluate the CCC sites to determine if the park 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 7. Cost estimates for conducting priority management activities are based on the most cost effective methods and recommendations currently available (see Addendum 7).

Land Management Review

Section 259.036, Florida Statutes, established land management review teams to determine whether conservation, preservation, and recreation lands titled in the name of the Board of Trustees of the Internal Improvement Trust Fund (board) are being managed for the purposes for which they were acquired and in accordance with a land management plan adopted pursuant to s.

259.032, the board of trustees, acting through the Department of Environmental Protection (department). The managing agency shall consider the findings and recommendations of the land management review team in finalizing the required update of its management plan.

Myakka River State Park was subject to a Land Management Review on November 4, 2003. 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.

Myakka River State Park is located within Sarasota and Manatee counties, about ten miles southeast of the city of Sarasota in southwest Florida. The incorporated areas of Venice and North Port are located less than 4.5 mile southwest and south of the park boundary, respectively. Over 2.2 million people reside within 50 miles of the park, which includes the Tampa - St. Petersburg and Cape Coral - Fort Myers metropolitan areas (U.S. Bureau of the Census, 2000). The populations of Sarasota and the adjacent Manatee County have grown 14.6 percent since 1990, and are projected to grow an additional 23 percent by 2015 (BEBR, University of Florida, 2002). This area of the state has a significant retiree population as reflected in median ages of 50.4 and 42.5 for Sarasota and Manatee counties, respectively. Over one third of the total population of Sarasota County is aged 65 or over (BEBR, University of Florida, 2002). Per-capita personal income levels in both counties exceeded levels evident in Florida and the United States between 1980 and 2000. High rates of growth in both population, particularly among seniors, and per-capita personal income suggests that citizens of Manatee and Sarasota Counties may have both the time and disposable income to engage in recreational activities (Philippakos, E., A. W. Hodges, D. Mulkey, and C. M. Adams, 2000).

Visitation at the park has remained relatively steady over the last ten years, varying from a low of 196,788 in fiscal year 1997-98 to a high of 285,590 in 2000-01. While statewide tourism trends affect park visitation, the duration and frequency of flooding of the Myakka River is also a significant factor. During any given year, the park may close for days at a time until flood waters

recede. Visitation generally peaks in February and March and reaches its lowest during the summer months. The park was the seventh most visited of the 30 units in the Division's District 4 during 2003-04 with nearly 251,000 visitors. By Division estimates, these visitors contributed over 8.1 million dollars in direct economic impact and the equivalent of 163 jobs to the local economy (Florida Department of Environmental Protection, 2004).

Existing and Planned Uses of Adjacent Lands

The Future Land Use designation northeast of the park in Manatee County is Agriculture/Rural (Manatee County, 1999). The Agriculture/Rural designation allows for agricultural related uses, low density residential and mining. Maximum allowable densities (.2 dwelling units/gross acre) and uses have maintained a largely rural character in this area. However, the landscape is transitioning from agricultural to residential as ranchettes replace row crops, and open pastures. One such development is Mossy Hammock Estates along the northeast boundary. While the county's Future Development Area Boundary limits the intensity of development in this area by restricting infrastructure services, this transition is anticipated to continue to occur. Land to the east of the park is owned by IMC phosphate. Phosphate mining within the Myakka River watershed has the potential to impact hydrology and water quality.

Future Land Use designations on adjacent lands in Sarasota County include Rural (southeast, west and north), Conservation/Preservation (south) and Major Government Uses (northwest) (Sarasota County, 1997). The primary function of the rural land use designation is the preservation of agricultural lands. The County's Urban Service Area has served to contain urban densities primarily west of I-75. Primary agricultural activities on rural lands around the park include cattle grazing, row and field cropping, silviculture and citrus production. Maximum allowable housing densities are 1-unit/5 acres. Several subdivisions occur in these adjacent rural areas including Myakka Valley west of Vanderipe Slough and Hidden River north of Upper Myakka Lake. Rural designated lands adjacent to the park can be expected to maintain their character in the near future, yet are likely to continue to support more low-density residential development. Lands designated Conservation/Preservation includes Sarasota County's T. Mabry Carlton, Jr. Memorial Reserve and the Myakkahatchee Creek property. The latter is protected by conservation easement managed by the SWFWMD. Land adjacent to the northwest boundary designated Major Government Uses is owned by the City of Sarasota and used for irrigation reuse of treated wastewater.

The land use changes that accompany growth and development in Sarasota and Manatee Counties, especially the latter, are considered primary threats to resource integrity at the park. Decisions regarding permitting and development in general must be based on potential cumulative impacts with an emphasis on hydroperiod skewing potential and water quality changes. Attenuation of water should be similar to that of historic retention to avoid flooding impacts within the park. Irrigation must be looked at in terms of the quality of the water withdrawn and ability of the river system to absorb the pollutant loads of runoff. The Division will continue to encourage the SWFWMD, Sarasota and Manatee Counties, and the regulatory sections within DEP to consider the gross impacts of additional development activity within the Myakka River watershed.

State Road 72 cuts diagonally through the southern half of the park, creating a barrier to wildlife movement and altering hydrology. This roadway is scheduled to be widened in 2005-06. The widening will not impact park lands directly since work will occur within the existing road right-of-way. However, this project provides a unique opportunity to improve local hydrology by lengthening the Vanderipe Slough and Myakka River bridges. The Division is encouraging the DOT to consider bridge improvements that would improve the flow of these water bodies as part

of this project.

Several other conservation lands exist near the park. They include lands managed by SWFWMD (Upper Myakka River Watershed, Flatford Swamp, Myakkahatchee Creek, and Myakka River), Sarasota County (T. Mabry Carlton, Jr. Memorial Reserve, Rocky Ford Preserve, Pinelands Reserve, Myakkahatchee Creek Environmental Park, Sarasota Ranch Lands and Jelks Preserve), DOF (Myakka State Forest) and the Division of Recreation and Parks (Oscar Scherer State Park). Resource-based recreational opportunities provided by these lands include hiking, biking, horseback riding, boating, fishing, swimming, picnicking, full facility, primitive and group camping and nature appreciation. The Manatee County proposed greenway trail system includes the Duette-Myakka Trail that would link Duette County Park, SWFWMD lands and Myakka River State Park along the Myakka River corridor.

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.

Myakka River State Park is Florida’s third largest state park. The park stretches 12 miles along its east-west axis, eight miles from north to south, and covers about 58 square miles. The landscape alternates between spacious vistas and forested hammocks. A mosaic of river, lakes, marshes, flatwoods, hammocks and prairies makes this one of Florida’s finest natural areas. Visual scenery is of exceptional quality, particularly when wildflowers are in bloom on the prairie. The size, scope and unique nature of park resources is reflected in the designation of 7,500 acres as a Wilderness Preserve (see Conceptual Land Use Plan). The Preserve provides opportunities for solitude with visitor access and recreational uses managed so as to protect the wilderness experience.

The significance of the Myakka River was recognized in 1985 when a 34-mile segment, including the entire section in the park, was designated by the state as a Wild and Scenic River. The river winds through the park for about 12 miles from the northeast to the southwest corner. The park is dotted with many intermittent wetlands and much of the property is flooded during the rainy season (generally June through September). The Upper and Lower Myakka Lakes are popular places for fishing and boating. Canoeing or kayaking the Myakka River provides visitors a chance to glimpse natural Florida as it used to be. Water levels in the river can get very low, which restricts watercraft to relatively shallow draft vessels. Portions of the river, including Lower Myakka Lake, dry up completely during periods of extended drought.

Wildlife is abundant in this rich river valley, and the entire park can be considered significant wildlife habitat. During the winter season, migratory birds may reach spectacular concentrations. Herons, egrets, roseate spoonbills, woodstorks, and sandhill cranes are common. Alligators are extremely plentiful along the river corridor while dry prairie is home to the crested caracara,

burrowing owl, indigo snake, gopher frog and gopher tortoise. Bald eagles nest within the park and evidence of the Florida panther has been recorded.

A significant number of cultural resources are present that add further dimension to the park. The pavilions and buildings constructed by the Civilian Conservation Corps are historically significant and an important component of the visitor experience at Myakka River State Park. Many of the structures are used for public purposes (visitor center, Log Pavilion, cabins) or support park operations. They are constructed of native Florida materials, such as cabbage palm trunks and hand-hewn pine and oak, and are of an architectural style typical of early national and state parks. CCC structures provide a unique opportunity to educate visitors to the role this federal works program had in establishing some of the first units in the Florida State Park system. Other known cultural resources provide additional opportunities to interpret the use of the land by prehistoric peoples and Florida's early cattle ranching industry. The known cultural resources of the park are described in detail in the resource management component of this plan.

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

The Myakka Valley was used as open range for cattle ranch operations as early as 1843. A number of changes took place during the early 1900s. Ms. Potter Palmer established Meadow Sweet Pastures, a large cattle ranching operation, and the Atlantic Coastline Railroad laid tracks for a line from Nocatee to Sarasota through land now within the park. After acquisition of park property by the state, the CCC began construction of park facilities, and were active at Myakka from 1934-1941.

Recreational Uses

Myakka River State Park provides a wide range of outdoor activities including hiking, nature study, photography, fishing, boating, wildlife observation, picnicking, canoeing, horseback riding, bicycling, camping (both full facility and primitive), and overnight cabins. Interpretive opportunities are enhanced by a visitor center and guided airboat and tram tours conducted by the park's concessionaire.

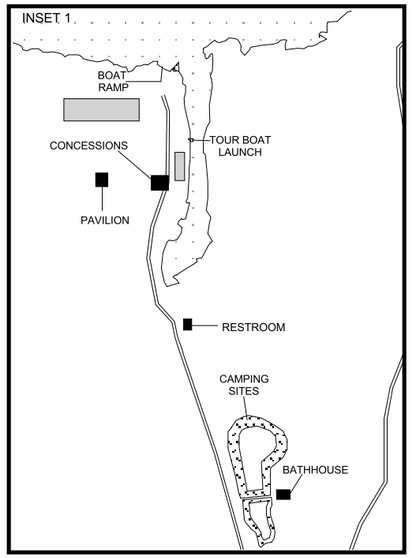
Other Uses

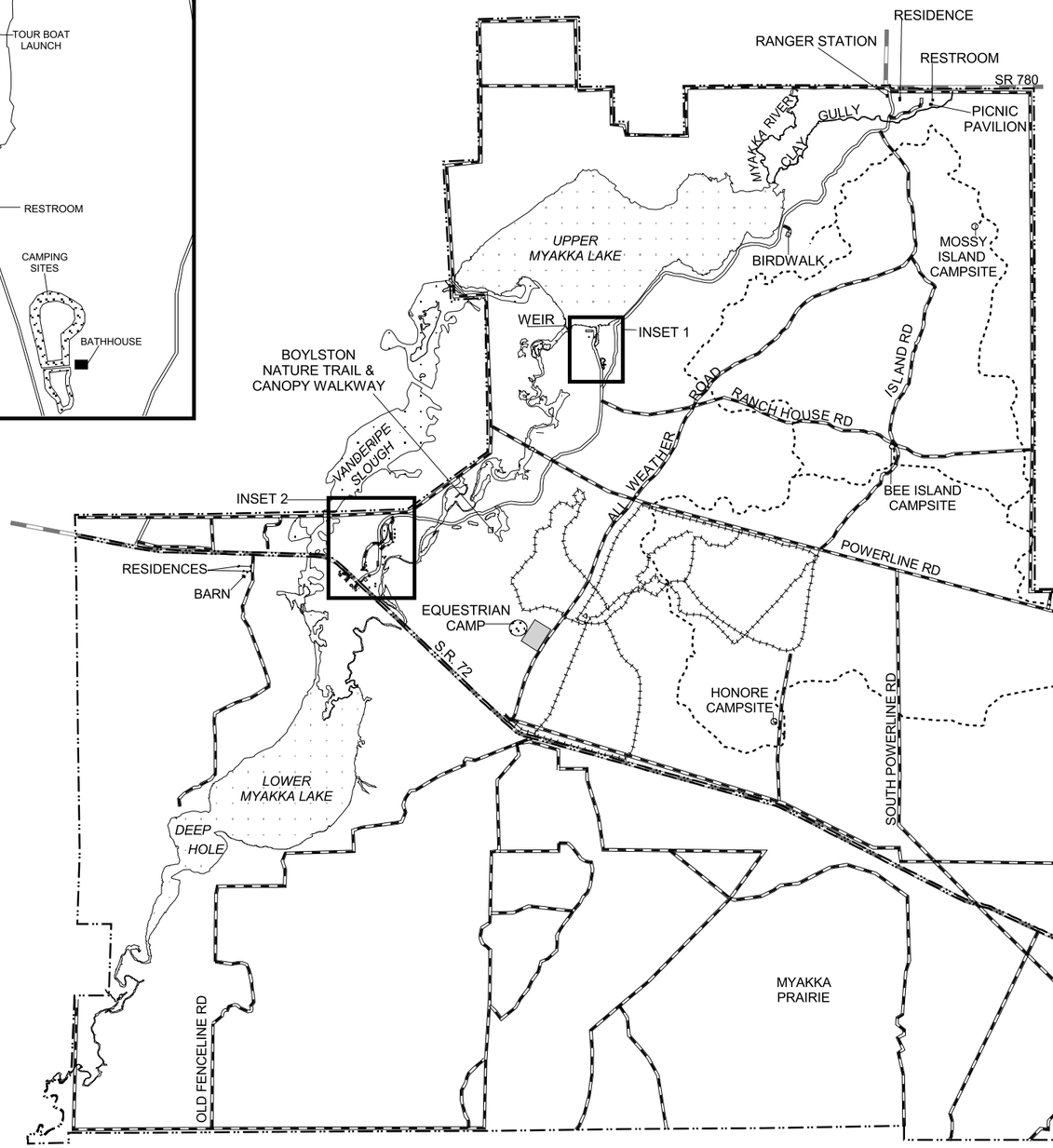
The Department of Juvenile Justice subleased a five-acre tract on the northeast corner of the wilderness area from 1977 to 2003 to operate a wilderness youth camp as part of the Short Term Offenders Program (STOP). This facility is no longer in operation.

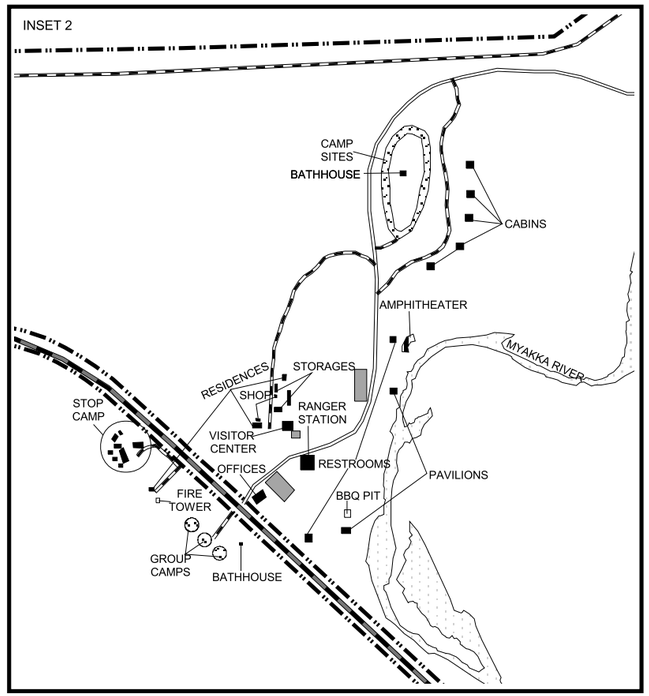
Protected Zones

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, full facility 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 Myakka River State Park, depression and floodplain marshes, river floodplain lakes, basin swamps, blackwater streams, baygalls, domes, scrubby flatwoods, dry prairies have been







LEGEND

- Park Boundary
- Park Road Paved
- Park Road Unpaved
- State Road
- Equestrian Trail
- Hiking Trail
- Parking Lots
- Structures
- Marine Structures
- Special Use Areas
- Camping Sites
- Water Bodies

3000 0 N 3000 6000 Feet

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

MYAKKA RIVER STATE PARK

BASE MAP

designated as protected zones as delineated on the Conceptual Land Use Plan. Protected zones comprise approximately 67 percent of the park.

Wilderness Preserve

A 7,500-acre tract in the southwest corner of the park has been designated as a Wilderness Preserve. Wilderness Preserve designations are reserved for large, undeveloped areas within units managed by the Division of Recreation and Parks that have retained their principal character and influence without permanent alteration. They are protected and managed in a manner to preserve the natural appeal and values of a significant portion of the park. The number of visitors allowed into the area at one time is limited to maintain the wilderness quality. The characteristics of a Wilderness Preserve are as follows:

- Generally appears to have been affected primarily by the forces of nature, with human impacts substantially unnoticeable;
- Offers outstanding opportunities for solitude, or a primitive and unconfined type of recreation;
- Is expansive and sufficient in size to make preservation and use in an unimpaired condition practical;
- May also contain ecological, archaeological, or other features of scientific, educational, scenic, or historic value.

Uses are to be limited, passive in nature, and related to the aesthetic, educational and scientific enjoyment of the features and conditions maintained. Other uses may be permitted if fully compatible. Activities that are generally recognized as being compatible within a Preserve are trail use, canoeing/kayaking, nature study and natural scenery appreciation. Facilities are limited to those considered essential for management and appropriate forms of public use.

Existing Facilities

Two entrances provide access to the park. The primary entrance is located off State Road 72 in the west-central part of the park. A second entrance off State Road 780 provides access from the north and is open only on weekends and holidays. A paved park drive extends nearly seven miles between entrances and provides access to picnic areas, campgrounds, cabins and the boat basin. The State Road 72 entrance area includes the park administrative offices and visitor center. The former building used to serve as the entrance station but was replaced with a new facility in 2001. A portion of the visitor center provides office space for park staff. Four picnic areas provide ample picnicking opportunities throughout the park. Opportunities for extended stays are available at two full facility campgrounds and the CCC-era palm log cabins. Five hike-in primitive campsites and an equestrian camping area enhance backcountry access. A group camp serves youth or other organized groups interested in camping together. Water access is provided at Upper Myakka Lake where a boat ramp, fishing platform and concession facilities are located. Canoes and kayaks are available for rental and airboat tours of Upper Myakka Lake are provided. The Birdwalk is a boardwalk on Upper Myakka Lake that enhances views of the lake, provides interpretive information and is a popular birding spot.

A concession operated tram tour takes visitors into the park interior using existing dirt roads. Additional opportunities for exploring the park interior are available via the park's extensive network of hiking, biking and equestrian trails. Trails on the Myakka Prairie portion of the park are linked to the Carlton Trail and the T. Mabry Carlton, Jr. Memorial Reserve. The Myakka Canopy Walkway is unique to the state park system and allows visitors to ascend into the treetops of a prairie hammock. An 84-foot long suspension bridge is supported by two

towers, the tallest of which rises 74 feet above the forest canopy. Access to the Canopy Walkway is provided from the Boylston Nature Trail.

The park shop area is located due north of the visitor center, and contains multiple structures to meet park maintenance, operations and housing needs. Additional park residences are concentrated off State Road 72 a short distance west of the park entrance. Facilities associated with the defunct STOP Camp are located on the south side of State Road 72 adjacent to a DOF fire tower. Two sewage treatment plants handle wastewater in the park, and water is supplied by a 45,000 GPD chlorinating plant.

The following is a comprehensive listing of facilities at Myakka River State Park. Historic structures are indicated by their FMSF number.

South Entrance Area
Entrance station
Administrative office
Visitor center (8So2269)
Paved parking (30 spaces)

North Entrance Area
Entrance station
Paved parking
Residence

Picnic Areas
South Picnic Area
- Large picnic pavilion (8So2265)
- BBQ pit
- Playground equipment
- Scattered tables and grills
- Restroom (8So2264)
- Paved parking (41spaces)

Log Pavilion Picnic Area
- Stone memorial
- Amphitheater
- Log Pavilion (8So 2266)
- Scattered tables and grills
- Restroom (8So2274)
- Paved parking

Clay Gully Picnic Area
- Large picnic pavilion
- Restroom
- Scattered tables and grills
- Playground equipment
- Unpaved parking

Camping and Cabins
Old Prairie Campground
- Full facility campsites (24)
- Bathhouse
- Sewage treatment plant

Big Flats Campground
- Full facility campsites (52)
- Tent campsites
- Sewage treatment plant

Rental cabins (5 - 8So2275-8So2279)
Group Camp
- Campsites (3)
- Restroom
- Fire circle

Equestrian Camping Area
- Fenced paddock
- Pit latrine
- Water hand pump

Prairie Primitive Campsite
- Water hand pump
- Fire rings

Panther Point Primitive Campsite
- Water hand pump
- Fire rings

Honore Primitive Campsite
- Water hand pump
- Fire rings

Bee Island Primitive Campsite
- Water hand pump
- Fire rings

Oak Grove Primitive Campsite
- Water hand pump
- Fire rings

Upper Myakka Lake Use Area
Concession Building
Picnic Area
- Large picnic pavilion
- Scattered tables and grills
- Playground equipment

Fishing Platform

Boat Ramp
Restroom
Paved parking (180 spaces at boat ramp and 65 at concession)

Trails and Interpretation
Birdwalk boardwalk
Native Tree Walk
Equestrian trails (16 miles)
Hiking trails (39 miles)
Nature trail and canopy walkway (.6 mile)
Biking trails (45 miles)

Shop Area
4-bay pole barn
Maintenance shed/park shop (8So2271)
2-bay shop
Storage buildings (4 - 8So2267))
Residences (2 - 8So2268 and 8So2270)
Volunteer laundry
Volunteer RV sites (7)
DOF office (portable trailer)
Water treatment plant

Fire Tower/STOP Camp
Fire tower (DOF)
Residence
STOP Camp
- Cabins (3)
- Dining hall
- Restrooms/Shower/Laundry
- Administrative building
- Storage buildings
- Basketball court
- Sewer lift station
- Septic tank sand filter

Hill Residence Area
Residences (7 - 3 DRP owned houses and 4 employee owned trailers)
Volunteer RV sites (2)
Storage building

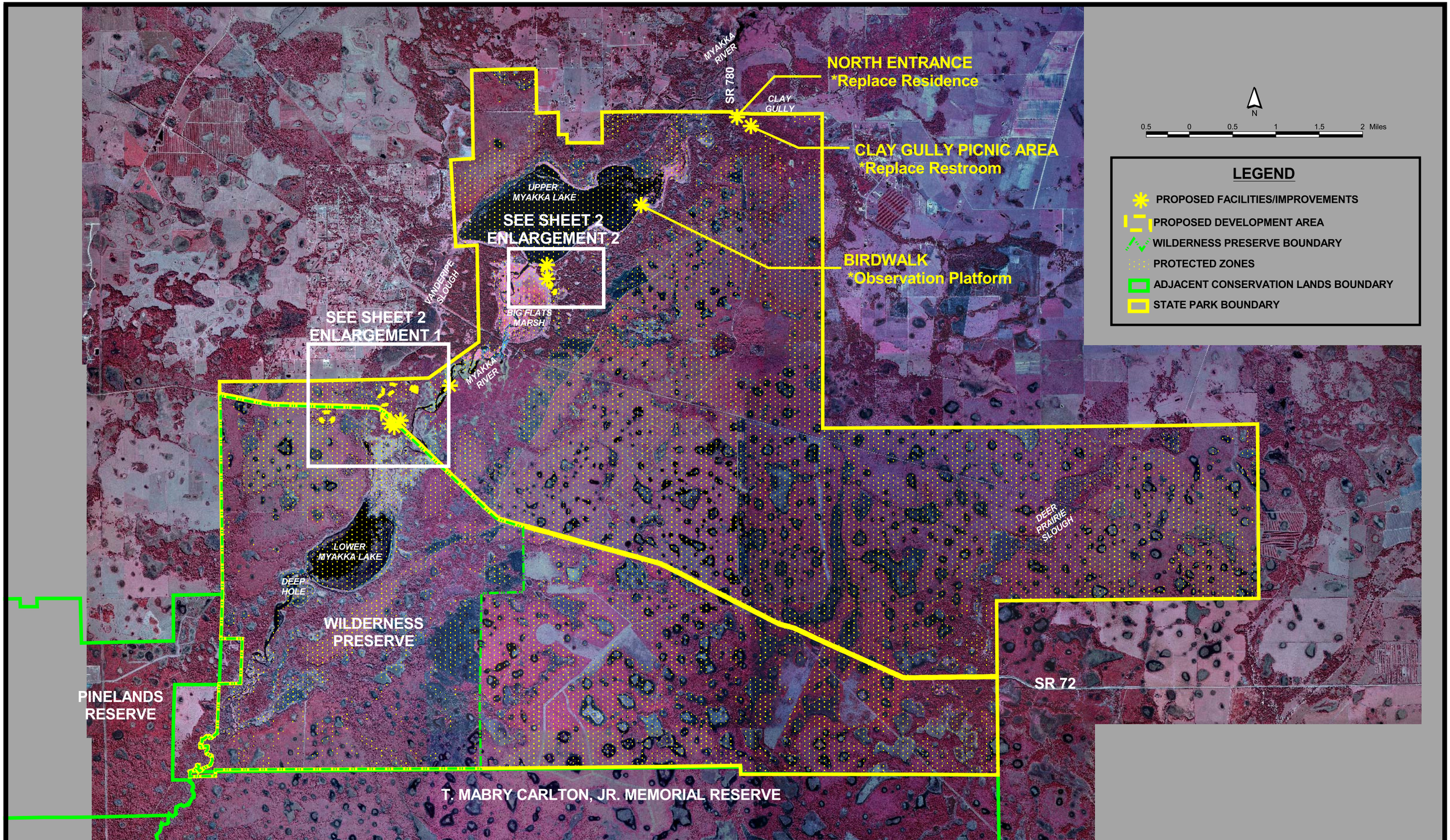
CONCEPTUAL LAND USE PLAN

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 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

As a state park, a balance is sought between maintaining and protecting natural and cultural resources and providing resource-based recreation. Maintaining the natural character of this park is important to the visitor experience, and should remain a priority for all future land use



MYAKKA RIVER STATE PARK

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

CONCEPTUAL LAND USE PLAN
SHEET 1 OF 2

ENLARGEMENT 1

CCC CABINS
*Address chronic flooding of structures

OLD PRAIRIE CAMPGROUND
*Reduce & Reconfigure Sites
*Replace Bathhouse

NEW STANDARD CAMPGROUND
*Up to 45 sites

MYAKKA RIVER BRIDGE
*Improve Pedestrian Safety

SR 72

Park Drive

MYAKKA RIVER

Existing Shop Area

HILL RESIDENCE AREA
*Replace Residences (2)

STOP CAMP
*Convert to Training/ Education Facilty

VISITOR CENTER
*Update/Expand Exhibits

FIRE TOWER SITE
*Replace Residence

GROUP CAMP
*Replace Restroom

N
800 0 800 Feet

ENLARGEMENT 2

UPPER MYAKKA LAKE

North Entrance Road

IMPROVE BOAT RAMP

MYAKKA RIVER

CONCESSION FACILITIES
*New Concession Building
*Improve Circulation & Parking

REMOVE RESTROOM

BIG FLATS CAMPGROUND
*Reduce & Reconfigure Sites
*Replace Bathhouse

BIG FLATS MARSH

N
500 0 500 1000 Feet

MYAKKA RIVER STATE PARK

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

CONCEPTUAL LAND USE PLAN
SHEET 2 OF 2

planning. The existing recreational activities at Myakka River State Park are appropriate and should be continued. Improvements identified in this plan focus on enhancing the camping and cabin experience, upgrading interpretive, concession, boating and support facilities, and adaptively reusing existing facilities for training and research purposes.

Camping. Camping is an integral part of the state park experience. Campgrounds provide opportunities for extended stays in a convenient outdoor setting that, ideally, deepens the connection of visitors to the resources and rhythms of the park. However, good campground design is an important element of providing a quality camping experience. Well-maintained facilities are essential but the layout of sites and the character of the setting are equally important. The campgrounds at Myakka River State Park are contained within relatively small areas constrained by roads or wetlands that have resulted in vegetation loss and insufficient buffering between sites. This has been exacerbated over time as changes in user patterns have resulted in the need to accommodate today's larger recreation vehicles. There is simply not enough room to address deficiencies in the campgrounds' layout without reducing the total number of campsites available, which is not desirable given the demand for developed camping facilities at the park. To improve the overall camping experience, and not diminish camping opportunities, it is proposed that a new campground be built a short distance northwest of the Old Prairie Campground. This area lies within less floodprone oak hammock and is accessible from an existing road that was used by the CCC for dumping waste (So2282). It is also in the general vicinity of where the CCC had planned to site a trailer campground in the original plans for the park. Additional archaeological investigations are needed to determine the precise boundaries of the dumpsite to inform the siting and design of a campground. A new campground with up to 45 sites, will provide a camping area that meets current recreation standards, allow a modest increase in camping capacity to meet existing demand, and create an opportunity to reduce the number of sites within existing campgrounds to improve the camping experience for all users.

To provide an alternative camping experience, it is recommended that the river corridor be evaluated for the development of primitive camping opportunities. If operational and resource management concerns can be adequately addressed, at least one site should be made available in a location accessible by canoe or kayak.

Upper Myakka Lake Use Area. The existing concession building is a small, antiquated structure that does not have the capacity to serve the current volume of visitor use. Construction of a new concession building is proposed across the park drive from the current location on the west side of the boat basin. Restrooms with external access are recommended to be incorporated into this facility to serve visitors using the boat ramp and adjacent picnic area.

Visitor circulation and pedestrian safety needs to be considered as a component of the concession building project since the park drive will separate the concession building from the picnic area. Consideration should be given to shifting the park drive toward the old building footprint to allow for some parking on the same side as the new concession building. Designated crosswalks and traffic safety signage should be incorporated to enhance pedestrian safety between the picnic area and concession. While it is not possible to provide enough individual parking spaces to accommodate all visitors in this area during peak periods of use, a sufficient number should be established to meet visitor parking needs as is practical.

The existing 1950s era restrooms at the south end of the basin is a considerable distance from

existing parking and use areas and does not effectively meet visitor needs. It is recommended that this structure be removed when the new concession is developed and the building footprint used for additional overflow parking.

Boating on Upper Myakka Lake is a popular recreational activity at the park. The existing park boat ramp is narrow and has a steep drop-off, which makes it difficult to use during low water conditions. Improvements are recommended to facilitate the efficient and safe launching of shallow draft boats.

Trails and Interpretation. The most extensive habitat type at Myakka River State Park is the globally imperiled dry prairie. However, this unique natural community is not readily accessible from existing public access points. It is recommended that an interpretive trail be developed at a location convenient to visitors that would provide a hands-on opportunity to learn about this unique natural community.

The Birdwalk is one of the most popular recreation facilities at the park. To enhance views of Upper Myakka Lake an elevated observation platform is recommended near the beginning of the boardwalk. The platform should be elevated as much as is feasible while meeting standards for universal accessibility for outdoor recreation facilities.

The visitor center serves the important function of introducing visitors to the diverse resources of the park. Exhibits were initially installed in 1969 and provide information on wildlife and ecosystem processes via static and audiovisual displays. The interior, including exhibits, was refurbished in 1992. While existing exhibits and media have made important contributions to the interpretive programs of the park for the last 35 years, it is recommended that they be evaluated and upgraded to meet modern interpretive standards. A portion of exhibit content should be devoted to the CCC era and its role in developing the park, and an emphasis placed on increasing the interactivity of exhibits.

Myakka River Bridge. The bridge over the Myakka River on the park drive is a popular spot for fisherman and wildlife observation. The mixing of pedestrians and vehicles on the bridge poses public safety concerns. Use patterns in this area will be monitored and management actions implemented to address public safety while maintaining public access. Options to consider will include striping of the bridge, pedestrian safety signage and the development of fishing platforms.

STOP Camp. STOP Camp facilities have the potential to support the training, education and research needs of the park. A partnership is recommended to rehabilitate these facilities for use by interns, volunteers, researchers, Americorps or other transient individuals performing work or conducting research for the park or Division. The park/Division could also use the facility for instruction of prescribed burn courses, interpretive workshops and programming, CPR/First Aid courses, or other staff training sessions and related functions.

The administration/education building is in good condition, the dorms in fair condition and the restroom/showers and dining hall are in poor condition. Removal of the sand filter and refurbishing of the lift station is recommended. Funds to perform the necessary modifications to bring the facilities up to Division standards should be identified upon exploration of the above partnership.

Support Facilities. Existing restroom facilities in the Big Flats and Old Prairie Campgrounds,

group camp and picnic areas pose ongoing maintenance problems and do not meet current Division standards. With the exception of CCC-era structures, these facilities are recommended to be replaced. The same is true for existing staff residences at the DOF fire tower, Hill Residence area and the north entrance.

Existing roadside parking areas are not well designed and encourage inefficient alignment of vehicles, particularly during peak periods. It is recommended that these areas be evaluated and improvements implemented to organize parking more efficiently.

To reduce traffic congestion during peak periods it may be suitable to consider a shuttle service from the front gate to other use areas of the park in the future. The viability of a shuttle system is contingent on user demand and private sector interest and would be facilitated by the extension of bus service between surrounding communities and the park.

Facilities Development

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

Camping
New standard campground (up to 45 sites)
Reduce and reconfigure sites at existing campgrounds
Primitive canoe/kayak campsite

Upper Myakka Lake Use Area
Improve concession operations
  Remove and replace concession building
  Reroute park drive and provide parking
Remove restroom
Upgrade boat ramp

Trails and Interpretation
Dry prairie interpretive trail
Birdwalk observation platform
Update/expand visitor center exhibits

Myakka River Bridge
Pedestrian safety improvements

STOP Camp
Remove/refurbish facilities for training and education purposes

Support Facilities
Replace campground, group camp and picnic area restrooms (non-CCC structures only)
Reconfigure roadside parking areas
Replace staff residences (4)

Existing Use and Optimum Carrying Capacity

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

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

Table 1--Existing Use And Optimum Carrying Capacity

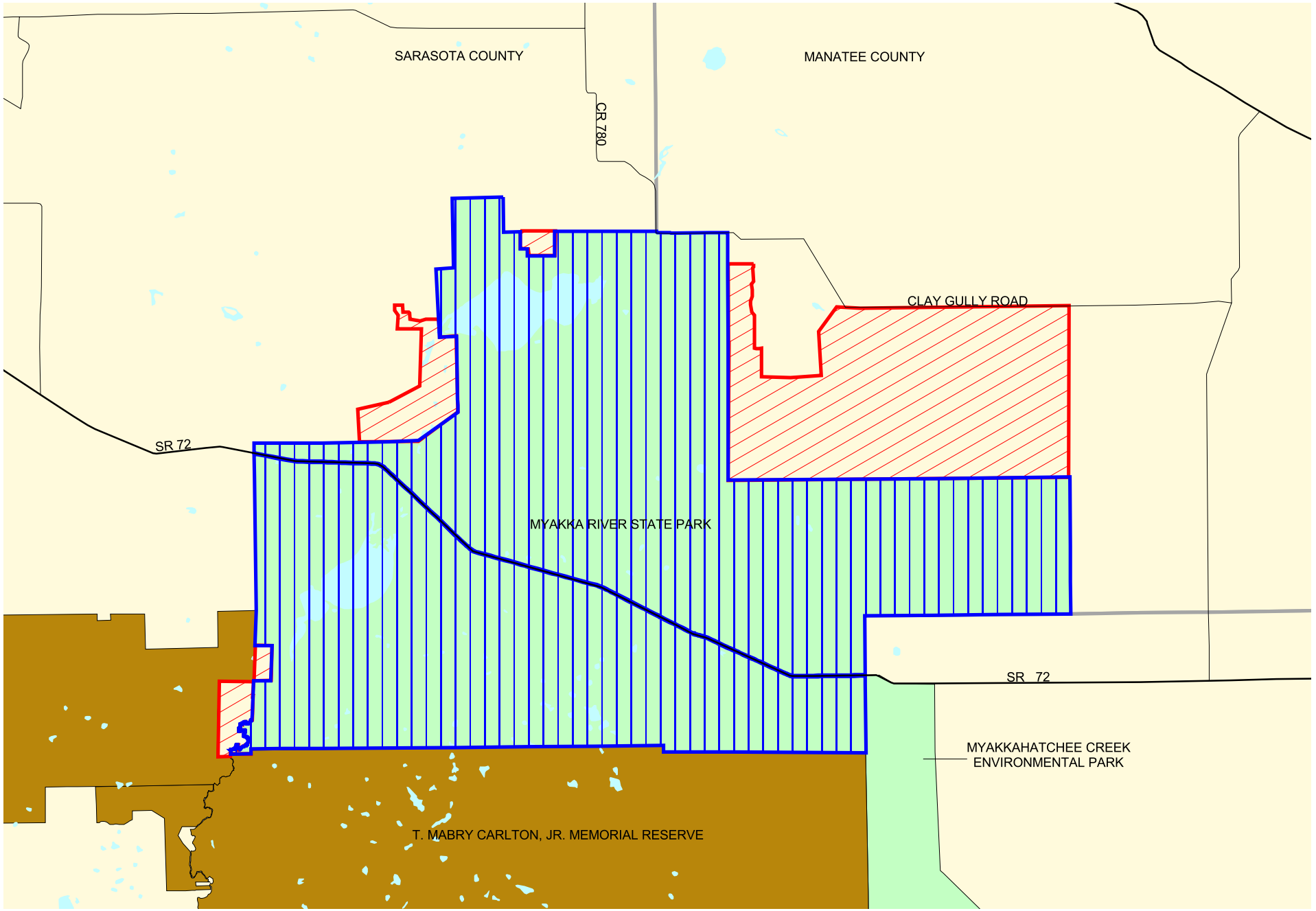
	Existing Capacity		Proposed Additional Capacity		Estimated Optimum Capacity	
Activity/Facility	**One Time**	**Daily**	**One Time**	**Daily**	**One Time**	**Daily**
Camping						
Standard	608	608	240	240	848	848
Group camp	60	60			60	60
Primitive backcountry	60	60	12	12	60	60
Primitive equestrian	30	30			30	30
Picnicking	400	800			400	800
Boating						
Unlimited power	132	132			132	132
Canoe/kayak	120	240			120	240
Trails						
Nature	24	96	30	120	54	216
Hiking	120	240			120	240
Equestrian	128	128			128	128
Biking	100	400			100	400
Concession Tours						
Airboat	70	210			70	210
Tram	70	210			70	210
Wilderness Preserve	30	30			30	30
TOTAL	**1,952**	**3,244**	**282**	**372**	**2,222**	**3,604**

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



MYAKKA RIVER STATE PARK

N

4000 0 4000 8000 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

as part of the park. These parcels may include public as well as privately owned lands that improve the continuity of existing park lands, provide additional natural and cultural resource protection, and/or allow for future expansion of recreational activities. At this time, no lands are considered surplus to the needs of the park.

The following is a summary of those areas identified on the park optimum boundary map: The Down's parcel consists of approximately 235acres (S12-T38S-R19E) along the southwestern corner of the park. The Myakka River abuts this property for nearly one mile. Inclusion in the optimum boundary identifies the importance of securing the health of the Wild and Scenic River corridor within the park. This parcel is bounded on the west by Sarasota County property (Pinelands Reserve) affording a more uninterrupted landscape scale management perspective. Acquisition would also permit removal of a dam on the river and more thorough hydrologic restoration of the river and park. The Gulsby parcel consists of approximately 65 acres (S2-T37S-R20E) along the northern park boundary. Boundary continuity and control of significant wetlands and water flow into the park can be gained via this acquisition. The property is significant for a large red maple swamp and seepage slope from which drainage flows into the park. It is geologically significant too in that it is one of the few locations in Sarasota County that has surficial exposed limestone outcrops associated with seeps. Fire management and restoration of the park property north of Upper Myakka Lake will be greatly aided if this property is obtained.

The Lanier parcel consists of approximately 710 acres (S9-T37S-R20E) on the western boundary of the park. Acquisition of this parcel would allow for the restoration of Vanderipe Slough.

The multi-ownership parcel abutting the park "panhandle" consists of approximately 3,900 acres (S15-17and S20-S24-T37S-R21E) along nearly 7.5 miles of shared boundary. Fire management is currently very difficult along this boundary owing to the many large wetlands, which flow into the park and are bisected by the boundary. The headwaters of both Deer Prairie Slough and Mossy Hammock Slough are within this recommended parcel. Hydrological restoration of these wetlands is essential for successful restoration of thousands of acres of dry prairie in the park. Nearly half of this parcel is wetlands and most of the other half is dry prairie or semi-improved pasture having similar ecological aspect as dry prairie. The level of disturbance on this property is readily revertible through sound hydrologic and fire management measures, which bodes well for the suite of extant prairie species and the population viability of other listed species.

Addendum 1—Acquisition History

Purpose and Sequence of Acquisition

The State of Florida acquired Myakka River State Park to manage the park 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.

Myakka River State Park is one of Florida's original Civilian Conservation Corps Parks. On June 23, 1936, the Florida Board of Forestry ("FBF"), predecessor in interest to the Florida Board of Parks and Historic Memorials ("FBPHM"), purchased a 1,600-acre property which later became Myakka River State Park. The property was purchased funded with "Old Money." Since this initial purchase, FBF and succeeding state agencies have acquired several individual parcels and added them to Myakka River State Park. The methods of acquisition included dedication, resolution, patent and management agreement and a purchase under the Florida Forever program. The current area of the park is approximately 37,198.89 acres.

Title Interest

The Trustees and SWFWMD hold fee simple title Interest in Myakka River State Park.

Management Agreements

On September 28, 1967, FBPHM, predecessor in interest to the Division of Recreation and Parks ("Division"), transferred its title interest in Myakka River State Park to the Board of Trustees of the Internal Improvement Trust Fund ("Trustees"). On January 23, 1968, the Trustees leased the property back to FBPHM under a 99-year lease, Lease No. 2324. In 1988, the Trustees assigned a new lease number, Lease No. 3636, to Myakka River State Park without making any changes to the terms and conditions of Lease No. 2324. Lease No. 3642 will expire on January 22, 2067.

On March 25, 1997, the Division entered into a management agreement with the South West Florida Water Management District ("SWFWMD") to manage an 8,248.75-acre property owned by the district as part of Myakka River State Park. This management agreement is for a period of twenty (20) years, which will expire on March 26, 2017.

According to the Trustees lease and the management agreement with the SWFWMD, the Division manages Myakka River State Park to develop, conserve and protect the natural and cultural resources and to use the property for resource-based public outdoor recreation that is compatible with the conservation and protection of the property.

Special Conditions on Use:

Myakka River State Park is designated single-use to provide resource-based public 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.

Outstanding Reservations

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

Instrument:	Easement
Instrument Holder:	Trustees
Beginning Date:	January 6, 2004
Ending Date:	No ending date given.
Outstanding Rights, Uses, Etc.:	The easement will enable the Florida Power & Light Company to construct, operate and maintain overhead and underground electric utilities on a portion of Myakka River State Park.

Instrument:	Management Agreement
Instrument Holder:	SWFWMD
Beginning Date:	March 25, 1997
Ending Date:	March 26, 2017
Outstanding Rights, Uses, Etc.:	The management is subject to a certain license granted to Sarasota County granting the county the right of ingress and egress to access roads, wells, and monitoring equipment dated April 28, 1994; and a perpetual utility easement recorded in O.R. Book 1658, page 1814.

Instrument:	Easement
Instrument Holder:	Trustees
Beginning Date:	June 22, 2001
Ending Date:	No specific date is given.
Outstanding Rights, Uses, Etc.:	The easement allows the Florida Power & Light Company to construct, maintain, and install an electric utility facility on a portion of Myakka River State Park.

Instrument:	Easement
Instrument Holder:	Trustees
Beginning Date:	March 8, 1989
Ending Date:	March 8, 2039
Outstanding Rights, Uses, Etc.:	The easement allows the Department of Health and Rehabilitative Services to construct and maintain a wastewater pipeline.

Instrument:	Easement
Instrument Holder:	Department of Natural Resources
Beginning Date:	June 7, 1987
Ending Date:	No specific date is given.
Outstanding Rights, Uses, Etc.:	The easement allows the General Telephone of Florida to install, operate, and maintain a telephone distribution system.

Instrument:	License Agreement
Instrument Holder:	FBPHM
Beginning Date:	January 27, 1967
Ending Date:	No specific date is given.
Outstanding Rights, Uses, Etc.:	The agreement allows the General Telephone Company of

	Florida to construct, erect, and maintain facilities for the transmission and distribution of electrical energy on a portion of Myakka River State Park.
Instrument:	Right-of–way Easement
Instrument Holder:	FBPHM
Beginning Date:	June 29, 1964
Ending Date:	No specific date is given.
Outstanding Right, Uses, Etc.:	The easement allows the General Telephone Company of Florida to construct, erect, and maintain telephone poles, wire, and cables on a portion of Myakka River State Park.
Instrument:	Easement
Instrument Holder:	FBPHM
Beginning Date:	October 15, 1961
Ending Date:	No specific date is given.
Outstanding Rights, Uses, Etc.:	The easement allows the General Telephone Company of Florida to construct, erect, and maintain telephone poles, wires, and cables on a portion of Myakka River State Park.
Instrument:	Easement
Instrument Holder:	FBPHM
Beginning Date:	July 9, 1956
Ending Date:	When the property ceases to be used for intended purpose.
Outstanding Rights, Uses, Etc.:	The easement allows the Florida Power & Light Company to construct, erect, operate, and maintain lines for transmitting electrical power in a portion of Myakka River State Park.
Instrument:	Easement
Instrument Holder:	FBPHM
Beginning Date:	May 16, 1955
Ending Date:	When the property ceases to be used for intended purposes.
Outstanding Rights, Uses, Etc.:	The easement allows the Florida Power and Light Company to construct, operate, and maintain lines for transmitting electrical power.

Myakka River State Park
List of Advisory Group Members

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Mr. Robert Dye
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Nokomis, Florida 34275

Mr. Bill Lewis
P.O. Box 2511
Sarasota, Florida 34230

The Advisory Group appointed to review the proposed land management plan for Myakka River State Park was held at Oscar Sherer State Park on May 27, 2004. Dannie Smith represented the Honorable Jane von Hahmann, David Feagles represented Karen Fraley, and Mary Jelk represented Bob Richardson. The Honorable John Thaxton, Gary Reeder, Delaney Faircloth, Ed Flowers, Betsy Roberts, Barbara Carlton and Robert Dye did not attend. Kevin Main submitted written comments. All other appointed Advisory Group members were present. Attending staff were Robert Wilhelm, Ken Alvarez, Jon Robinson, Jill Parnell, Diane Dutcher, Paula Benshoff, Diana Donaghy, Don Younker, Triel Lindstrom, and Michael Kinnison. Norvia Torine of the Myakka Outpost, Inc. was also present at the meeting.

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

Summary Of Advisory Group Comments

Bruce Rinker suggested the Research Needs section be expanded to include areas of "pure research" such as biodiversity surveys, water chemistry assays, and ecological studies. This approach allows for the collection of base-line data to know what is "normal" as development progresses east of Interstate 75 toward the park and anthropogenic impacts (housing, traffic, etc.) are noted within park boundaries over the next decade. He noted that the plan often refers to plants and vertebrates, but rarely notes diagnostic invertebrate groups such as butterflies, beetles, herbivorous insects, and aquatic species. He strongly encouraged a reference to these, especially when recommending management practices that disrupt large areas of the park. He also recommended adding a reference to the link between intact forest canopy and water conservation where appropriate in the document.

Danny Smith commended staff on the work they are doing at Myakka despite rising costs and limited resources. He also discussed the increasing challenge of managing park resources as more land is developed around the park.

Bill Martin indicated that the plan was satisfactory from a hiker's perspective. He expressed interest in being involved in planning the proposed prairie interpretive trail. He stated that the Florida Trail Association does not support multi-use trails except where local conditions demand a shared-use alignment, and recommended establishing separate parallel trails to meet other users' needs. Bill Lewis commented that the proposed prairie interpretive trail would add to an already confusing trail configuration. He suggested an alternative location north of SR 72 near Vanderipe Slough. Park staff was receptive to this idea and recommended revising the plan to offer flexibility in the layout of trails.

Dick Ptaff stated that the Myakka River was one of the top paddling destinations in the U.S. He asked that a site be provided for primitive canoe/kayak camping, and suggested a location near the powerline crossing or Lower Myakka Lake. Bill Martin responded that a site on the lower river may prove inaccessible if the dam on adjacent private property were ever removed. Bill Lewis added that the river is naturally low flowing and levels should not be artificially manipulated. He discouraged establishing primitive camping in the wilderness preserve and suggested adjacent conservation lands to the south were more appropriate. Bill Martin felt that primitive, low impact camping could be managed appropriately. Jon Robinson discussed the

wilderness preserve permit system and explained that access into the preserve from the south is managed through a combination of education and enforcement. Ken Alvarez discussed the need for hydrological studies to determine the true impacts of the dam on local hydrology before proposing management action.

Wade Matthews discussed the popularity of birding at Myakka and recommended identifying the importance of this recreational activity at the park. He requested the plan include a discussion of the affects of roller chopping and fire on species abundance and diversity. Mr. Matthews asked for clarification on the miles of fire lanes to be prepared and the amount of burning that occurs at the park. Staff explained that fire return intervals vary by natural community type and that implementation of the burn program is affected by environmental conditions. Belinda Perry suggested including reference to existing and pending studies that address ecosystem impacts from the use of fire as a management tool and providing a range of recommended burn intervals to reflect variables that affect burning. Bruce Rinker discussed the need to consider invertebrates or other non-high profile species that may be impacted by management activities associated with prescribed fire. Ken Alvarez explained that fire does not present a serious impact to wildlife and is in fact a critical part of species management at Myakka. David Feagles stated that discussing roller chopping along with prescribed fire as a management tool is confusing monitoring since their impacts are different and those associated with roller chopping not clearly understood. Ken Alvarez explained that roller chopping is necessary to reduce saw palmetto density from years of fire exclusion. He clarified that the purpose of mechanical treatment is to restore more natural conditions so that prescribed fire can be used. Diana Donaghy explained that the park has data on the effects of roller chopping and that additional data is currently being analyzed. Rudy Garber asked why the park burns at the time of year that turkeys are hatching and are most vulnerable to fire. Diana Donaghy explained that growing season burns are pursued to mimic nature and that fires do not burn evenly, producing a mosaic pattern of burned and unburned areas. She added that the ecosystem at Myakka has evolved with fire. Paula Benschoff added that the park has analyzed nesting cycles of different birds and altered the timing of burns to limit impacts to birds that do not nest twice in a season (like turkeys). Jon Robinson added that local conditions provide a very limited window in which to burn. Don Younker stated that while it is impossible not to have some impacts to species from fire, that a burn zone is not burned every time every year. Todd Underhill felt that the plan fails to capture the Division of Recreation and Parks' burn philosophy and that information should be provided to clarify this issue.

Cathy Slusser indicated she was disappointed with the way cultural resource issues were handled in the plan. She stated that the park has a rich cultural history, including Native American, African-American, cattle ranching, and CCC histories, but that the plan focuses primarily on natural resources not cultural resources. She stated that while the plan does a good job of documenting cultural resource conditions, no detail is provided on plans for remedying their problems. She also noted that no costs were provided related to cultural resource management. Ms. Slusser pointed out that she was the only advisory group member with a cultural resource focus and that the process could have been more inclusive. Ms. Slusser recommended leaving a portion of the old railroad grade for interpretive purposes. Diana Donaghy clarified that the grade had been lowered to improve hydrology, not entirely removed. David Feagles added a comment on the importance of completing archaeological survey work.

Todd Underhill asked about an interpretive component in the plans. Michael Kinnison explained that interpretive planning occurs at the park level and is not included in land management plans. Mr. Underhill supported Ms. Slusser's comments and felt that the plan

should not only focus on physical resources, but also address folklife or folkways. He discussed the importance of oral histories and pointed out that no costs were included for research associated with recording the cultural history of the park. Bill Lewis responded that the park does not have to be an expert on all cultural resources matters, and that this burden could be shared with other organizations. Jon Robinson discussed his experience with managing cultural resources at Koreshan State Historic Site, and indicated he would be reaching out to local government for grant writing assistance. Mr. Underhill supported the concept of management cooperation, but felt that the issue was not adequately discussed in the plan. He asked how management would address situations where different endangered species needs were in conflict. Staff responded that the endangered species at the park had different habitat requirements and that this was not an issue at Myakka. Staff clarified that the dry prairie was still in a restoration phase and that it was premature to consider reintroducing grasshopper sparrows to the park.

Bill Lewis recommended against restoring scenic vistas along the park drive if the removal of trees would make cars or structures visible from park trails. Mr. Lewis emphasized the importance of hydrology to the health of park resources and suggested adding Tatum Sawgrass to the park optimum boundary. Belinda Perry added that having this area on the optimum boundary could assist with acquiring funds for research or public access in the future. Michael Kinnison responded that this area had been considered but since it was already identified as a priority acquisition project by the Southwest Florida Water Management District (SWFMD) it was not included on the park optimum boundary. Ed McAdam stated that having the same property identified by multiple agencies would only increase its importance for acquisition. Mr. Matthews added that the lack of an acquisition program in Manatee County underscored the importance of the Division considering purchasing the property. Members of the advisory group noted that the Tatum Sawgrass area had been considered for use as a water storage area. Mr. Lewis expressed concern that as road standards change over time, pavement is widened and canopy lost along park roads. He encouraged staff to consider ways of removing automobiles from the park in the future, including a tram system and one-way vehicular circulation. He was opposed to designing park facilities to accommodate the largest of recreational vehicles. Belinda Perry suggested the park could be linked with the local bus system and a tram used to move visitors within the park. Wade Matthews felt that plans for limiting personal vehicle use were premature, and noted that personal vehicles provide a major convenience that is important to visitors.

Ed McAdam complemented staff on an outstanding job of managing the park with limited resources. He believes that the quality of services at state parks is declining due to funding shortfalls. He encouraged user groups and other interests to be advocate for more resources by contacting their legislators. He recommended including a discussion of local and state greenways in the plan and discussed potential linkages between the park and RV Griffin and Deep Creek properties. He would like to see more of a direct relation between elements of the plan and the Division's policy guiding the administration of Florida's park system (as identified under Management Authority and Responsibility). Mr. McAdam stated that an agreement was made between the Division and equestrian users that equestrian use would not be pursued at Oscar Sherer State Park in return for improvement of facilities at Myakka. He felt that the current plan was not consistent with this agreement as proposed recreational improvements did not include equestrians. Jon Robinson responded that the park has expanded the equestrian trail system and made changes to improve access for equestrian users. He discussed the challenges of providing trail access when users are not willing to share facilities and questioned the need for additional equestrian facilities given current levels of use. Mr. McAdam stated that more equestrians would

use the trails if they provided access to hammock areas with a tree canopy. He recommended including language in the plan that leaves open the potential for additional trails. He cited the need to update the Base Map to reflect the current trail configuration. He would like consideration of equestrian ingress and egress through the main gate. Staff responded that changing current equestrian circulation would conflict with the park tram. Mr. McAdam also advocated for improved equestrian camping facilities, such as are provided at Alafia River and Little Manatee State Parks.

David Feagles discussed the rise in importance of ecotourism, particularly with increasing urbanization. He supports establishing additional primitive camping opportunities to attract visitors. Bill Lewis opposed this perspective and argued that expanded facilities will eventually undermine the quality of the recreational experience. Mr. Feagles stated his approval of the advisory group process and meeting format. He noted that the plan did not include an operations component that clarified park operating policies. Michael Kinnison stated that current plans do not have an operations component but include a live link to the Division's Operations Manual. Mr. Feagles asked if swimming was allowed at the park. Staff clarified that swimming was not allowed and discussed safety concerns related to alligators and elevated fecal coliform levels. Mr. Feagles discussed the importance of educating visitors through interactive interpretive media and recommended more signage about ecology and the CCC throughout the park. Ken Alvarez discussed the variety of education programs provided at the park and urged caution about the proliferation of signs on the landscape. Mr. Feagles urged staff to consider expanding special events programming. Jon Robinson expressed interest in this concept and noted the challenge of finding appropriate times to host events that do not conflict with the park's busy season. Mr. Feagles supported the idea of discussing potential greenway linkages in the plan. He asked if fencing the boundary along SR 72 would affect the movement of wildlife and pointed out the need for wildlife passages to reduce roadkills. He recommended prioritizing timber removal to speed restoration of scrub jay habitat. Staff explained that the park does not contain sufficient scrub habitat itself to maintain a population of scrub jays. Belinda Perry added that proposed timber removal activity needs additional clarification and should be updated to reflect work that has already been completed. She discussed successful efforts by the county to have small areas included with larger thinning projects to make them economically feasible and recommended similar arrangements at Myakka. Mr. Feagles noted that no costs were included for removal of aquatic exotic, feral hogs or exotic fish removal. Staff explained that SWFMD sprays for exotics, no costs are associated with hog removal and that a plan to address exotic fish has not been developed.

Belinda Perry identified areas where maps should be updated. She indicated that the park does not contain enough suitable habitats to support the number of scrub-jay territories as proposed in objective 4.A of the Goals and Objectives. She explained that Sarasota County was currently developing a model for scrub jay management and that Myakka River State Park was not considered a significant site.

Mary Jelks discussed the park Citizen Support Organization's successes in raising funds for capital improvements and the challenges of attracting more funds to an endowment. She recognized the management plan as important for identifying park needs.

Rudy Garber stated that he was impressed with the meeting process and that the park is very cooperative and a good neighbor.

Wes Eubank explained the work of Southwest Association of Mountainbike Pedalers (SWAMP) in building and maintains trails on public lands. He discussed how SWAMP partners with land managers so that users cover costs of building and maintaining trails. He stated that the trails at Myakka do not provide a high quality off-road biking experience since they are very sandy, wide and very exposed. He offered the services of SWAMP to park staff for trail development and maintenance if additional bike trails are considered in the future. He discussed the lack of biking opportunities south of Tampa and the economic boost bicyclists provide to local communities. Bill Lewis expressed concern about trail expansion and discussed the environmental constraints (lack of shaded areas, extensive wetlands, etc.) to bike trails. Belinda Perry noted that trails can further fragment habitat and provide opportunities for exotics to spread.

Jon Robinson discussed the need to view the interests of all user groups as legitimate and committed to balancing user requests for access with resource protection.

Wade Matthews discussed how interactive signage was popular with the birding community. He suggested that the plan identify the relative abundance of a species on the Animal List. He also felt that including visitor demographic information in the plan would be beneficial.

The meeting was then adjourned.

Written Comments

The following is a summary of substantive comments submitted in writing by Kevin Main:
The park's goal of burning 12,000 acres per year sounds low based on the fire return interval for the major community types at the park. I would propose it could be more like 18,000 acres per year.

Suggest including the extensive work the park has done with mechanical treatment and its impact on saw palmetto height under Mesic Flatwoods section (pg. 18).

Plan repeatedly mentions the extensive damage caused by hogs but does describe the damage. Burning more acreage per year would probably cut down on the number of hogs.

Recommend clarifying target number of trees per acre, average scrub height and percent bare sand for scrubby flatwoods areas (pg. 19).

Add discussion of efforts to coordinate burning with adjacent protected areas, type of ignition, average burn size, and season of burn to Prescribed Burning section.

Provide a full listing of the Category One species found at the park under Exotic Species Control.

I applaud the park for their aggressive management and encourage them to continue in their efforts. If the FWC can be of any assistance, please let us know.

Staff Recommendations

The following comments represent staff responses to substantive issues raised by the Advisory

Group and reflect how they will be handled in the plan. Advisory group comments related to text additions, clarifications, inaccurate or incomplete information have been noted and will be addressed in the final plan where considered appropriate.

Prescribed Fire. The Division of Recreation & Parks' burn philosophy will be clarified in the plan. The park's goal of burning 12,000 acres is based on an approximate burning interval of 2 years. The natural communities in the park have intervals ranging from 1-7 years, with the majority having an interval of 1-3 years. Although due to the current condition of the natural communities associated with a one year burn interval (i.e. dry prairie and mesic flatwoods), only under extreme environmental conditions will a one-year interval be effective. The acreage treatment by prescribed fire may be better stated as a range of 8,000-14,000 total burn acres. Ignition pattern, burn size and season of burn for each zone vary with environmental conditions, making the specifics unsuitable to be addressed in the plan.

Scrub Jays. The goal of maintaining scrub jay habitat for five territories will be re-examined using historical data for number of territories. Based on historical information, the park does contain sufficient scrub habitat for 2-3 territories. The scrub jay preference of average scrub height and percent bare ground will be discussed when addressing the maintenance of scrubby flatwoods in the plan.

Plant and Animal Lists. Relative abundance using terms such as common, infrequent and rare will be added to lists. The Exotic Pest Plant Council's designation of exotic, invasive plants will be added to the plant list.

Cultural Resource Management. *The management plan presents elements of an overall framework to guide the park in developing its cultural resource management (CRM) program and conducting specific CRM activities, rather than specific implementation steps for the treatment of individual structures and sites. A long-term preservation plan for the park's CCC-era structures will be predicated upon professional architectural evaluation and treatment recommendations for which park management will be pursuing funding (see Introduction, Goals and Objectives 5.C-F). Architectural surveys of the CCC cabins will be completed first, as those buildings are subjected to recurring flooding. Until preservation plans can be developed for all of the park's historic structures, the park manager will develop a cyclical maintenance plan, consistent with Department of the Interior standards, in order to protect the buildings from further deterioration.*

Although segments of the park have had an archaeological survey completed, a comprehensive cultural and archaeological survey is important and is addressed on page 30 of the plan. The surveys are important enough to be reiterated in additional appropriate sections of the plan.

Research. It is agreed that "pure research" such as biodiversity surveys, water chemistry assays and ecological studies including invertebrate groups, be included in the plan.
There has been prior and ongoing research on the affects of roller chopping at the park. These studies along with research on the affects of fire will be referenced in the plan.

Trails. Plan will be revised to allow greater flexibility in the location of the proposed interpretive trail. During the life of this plan, existing trails will be evaluated for the quality of visitor experience they provide and improvements considered as recommended by various user groups. It should be noted that the environmental setting (extensive wetlands, sandy soils, and limited

tree canopy) places constraints on the types of trail experiences the park is able to provide. Consideration will also be given to minimizing environmental impacts, such as habitat fragmentation and exotic species management.

Camping Facilities. While the plan specifically recommends an expansion and upgrading of standard camping facilities to improve the camping experience, staff will be evaluating the camping experience of all users at the park and identifying ways to make improvements. This will include developed and primitive camping experiences for RV users, tent campers and equestrians. As part of this evaluation, the opportunity for establishing a primitive canoe-in campsite along the Myakka River will be assessed.

Vehicular Traffic. To reduce traffic and congestion during peak season it may be suitable to consider a private shuttle service from the front gate to the concession area. This concept will be added to the plan for future consideration.

Priority Schedule and Cost Estimate. Current cost estimates will be reviewed and expanded, where necessary. Attention will be given to including costs associated with management of cultural resources.

Optimum Boundary. Suggested revisions to the Optimum Boundary Map have been taken under advisement.

Addendum 2—References Cited

Austin, Robert J., compiler. Archaeological and Historical Study of the Ringling MacArthur Reserve, Sarasota County, Florida. St. Petersburg, FL: Piper Archaeological Services, 1987.

Blanchard, J., S. Jue and A. Crook. 2001. *Florida Conservation Lands 2001*. Florida Natural Areas Inventory. Tallahassee, FL.

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

Breininger, D.R. 1981. *Habitat preferences of the Florida Scrub-Jay on Merritt Island National Wildlife Refuge.* Unpublished M.S. Thesis, Florida Institute of Technology, Melbourne, FL.

Breininger, D.R., and R.B. Smith. 1992. *Relationships between fire and bird densitu on coastal scrub and slash pine flatwoods in Florida.* American Midland Naturalist.

Breininger, D.R, V.L. Larson, R.Schaub, B.W.Duncan, P.A. Schmalzr, D.M. Oddy, R.B. Smith, F. Adrian and H. Hill, Jr. 1996., *A Conservation Strategy for the Florida Scrub-Jay on John F. Kennedy Space Center/Merritt Island National Wildlife Refuge: An Initial Scientific Basis for Recovery*. National Aeronautics and Space Administration, Kennedy Space Center, FL

Coastal Engineering. 1998. *Tree Mortality Assessment of the Upper Myakka River Watershed.* Southwest Florida Water Management District, Brooksville, FL.

Coile, N.C. 1996. *Notes on Florida's Endangered and Threatened Plants.* Gainesville, FL: Florida Department of Agriculture & Consumer Services, Division of Plant Industry.

Dames and Moore. 1986. *Ringling-MacArthur Reserve Water Resources Investigation.* Tampa, FL.

Donaghy, D. 2003. *Summary of Hogs Removed from Park 1982-2003.* Myakka River State Park. Sarasota, FL.

Duever, M.J., et al. 1986. *The Big Cypress National Preserve. Research Report No. 8.* New York: National Audubon Society.

Fitzpatrick, J.W., G.E. Woolfenden, and M.T. Kopeny. 1991. *Ecology and development-related habitat requirements for the Florida Scrub Jay (Aphelocoma c. coerulescens).* Florida Game and Fresh Water Fish Commission Nongame Wildlife Report No. 8 Tallahassee, FL.

Florida Department of Environmental Protection. 2004. Florida State Park System Economic Impact Assessment for Fiscal Year 2003/2004. Tallahassee, Florida.

Florida Department of Environmental Protection. 2004. Florida State Park System Operations Manual. Tallahassee, Florida.

Florida Department of Natural Resources. 1986. *Myakka River State Park Unit Plan.* Division of Recreation and Parks, Tallahassee, FL.

Florida Department of Natural Resources. 1990. *Myakka Wild and Scenic River Management Plan*. Division of Recreation and Parks, Tallahassee, FL.

Florida Department of State. Division of Historical Resources. Bureau of Archaeological Research. Florida Master Site File materials, as cited, for appropriate areas.

Florida Exotic Pest Plant Council's List of Invasive Species. 2003

Florida Game and Fresh Water Fish Commission. 1996. *Florida's Endangered Species, Threatened Species and Species of Special Concern, Official Lists.* Tallahassee, FL: Bureau of Nongame Wildlife.

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

Geraghty and Miller, Incorporated and Southwest Florida Water Management District. 1981. *MacArthur Tract Hydrologic and Water-supply Investigation: Phase I*. Tampa, FL.

Historic Property Associates, Inc. 1989. *New Deal Era Resources in Nine Florida State Parks, A Cultural Resource Survey - DNR: 276-88/89.* Tallahassee, FL.

Huffman, J. M. and S. W. Blanchard. 1991. *Changes in Woody Vegetation in Florida Dry Prairie and Wetlands During a Period of Fire Exclusion, and After Dry-growing-season Fire. In* Fire and the environment: ecological and cultural perspectives: Proceedings of an international symposium; 1990 March 20-24; Knoxville, TN. Gen. Tech. Rep. SE-69. Southeastern Forest Experiment Station, Asheville, NC. Huffman, J. and P. Benshoff. 1996. Vascular plants of Myakka River State Park. Sarasota, FL. Hunter Services, Inc. 1990. *Myakka Wild and Scenic River Management Plan.* Florida Department of Natural Resources and Myakka River Coordinating Council, Tallahassee, FL.

Lowrey, S.S., K.B. Babbitt, J.L. Lincer, S.J. Schropp, H.L. Windom and R.B. Taylor. 1989. *Myakka River Basin Project: A Report on Physical and Chemical Processes Affecting the Management of the Myakka River Basin.* Sarasota County Natural Resources Department, Sarasota, FL.

Marois, K.C. 1998. *Plants and Lichens, Vertebrates, Invertebrates and Natural Communities Tracked by Florida Natural Areas Inventory.* Tallahassee, FL.

Manatee County. 1999. *The 2020 Manatee County Comprehensive Plan*. Bradenton, Florida.

Manatee County. 2002. *Manatee County Greenways Master Plan.* Bradenton, Florida.

Monroe, Elizabeth. Further Research. (Memorandum to File) November 17, 1977.

Myers, R.L. and J.J. Ewel, eds. 1990. *Ecosystems of Florida.* Orlando, FL: University of Central Florida Press.

Perry, B. 1997. *Dry Prairie Restoration at Myakka River State Park. In* Program and abstracts of the Society for Ecological Restoration Ninth Annual International Conference, Fort Lauderdale, FL.

Philippakos, E., A. W. Hodges, D. Mulkey, and C. M. Adams. 2000. *The Economy of Manatee and Sarasota Counties*. Staff Paper 00-1, University of Florida, Gainesville, FL.

Piper Archaeological Research, Incorporated. 1987. *Technical Report Number 3: An Archaeological and Historical Study of the Ringling-MacArthur Reserve in Sarasota County, FL.* St. Petersburg, FL.

Randazzo, A.F. and D.S. Jones, eds. 1997. *The Geology of Florida.* Gainesville, FL: University Press of Florida.

Sarasota County. 1997. Apoxsee: The Sarasota County Comprehensive Plan. Sarasota County, FL.

Southwest Florida Water Management District. 1996. *Save Our Rivers Preservation 2000 Five-year Plan.* Water Management Lands Trust Fund. SWFWMD. Brooksville, FL.

Southwest Florida Water Management District. 1992. *Resource Evaluation of the Ringling/MacArthur SOR Project.* Southwest Florida Water Management District, Brooksville, FL.

Simberloff, D., D. C. Schmitz and T. C. Brown, eds. 1997. *Strangers in Paradise: Impact and Management of Nonindigenous Species in Florida.* Washington, DC: Island Press.

Soil Conservation Service. 1983. *Soil Survey of Manatee County, Florida.* United States Department of Agriculture.Soil Conservation Service. 1991. *Soil Survey of Sarasota County, Florida.* United States Department of Agriculture.

Thaxton, J. 1990. Demographics of Florida scrub jays in scrubby oak flatwood habitat in Sarasota County. Florida Park Service, 1989 Annual Report, District 8 Administration, Osprey, Florida. 9 pp.

Thaxton, J. 1991 Demographics of Florida scrub jays in Sarasota County. Florida Park Service, 1990 Annual Report, District 8 Administration, Osprey, Florida. 18 pp.

U. S. Bureau of the Census. 2000. Population data for census block groups. Washington, D.C.

Watts A. 2002 *Ecological Restoration in Florida Dry Prairie: Comparing strategies in a long-term study @ Myakka River State Park*, Unpublished M.S. Thesis, University of Florida, Gainesville, FL

Wunderlin, R.P., B.F. Hansen and E.L. Bridges. 1996. *CD-ROM of Atlas of Florida Vascular Plants.* Tallahassee, FL: Florida Department of State.

Addendum 3—Soils Descriptions

(4) Bradenton fine sand - This is a poorly drained soil on low-lying ridges and hammocks in both Manatee and Sarasota counties. Slopes are smooth and range from 0 to 2 percent.

Typically, the surface layer is dark gray fine sand about 4 inches thick. The subsurface layer is grayish brown fine sand 5 inches thick. The subsoil is dark gray and gray fine sand loam about 18 inches thick. Below the subsoil there is a layer of gray loamy fine sand 11 inches thick, and below that, there is a light gray marl to a depth of 80 inches or more.

Included with this soil in mapping are small areas of Parkwood, Floridana, Chobee, Felda, and Manatee soils. Aslo included are a few areas where the subsoil is finer textured than that of this Bradenton soil and a few areas where a brown sandy layer overlies the subsoil.

If this Bradenton soil is not drained, the water table is within 10 inches of the surface for 2 to 6 months out of the year and at a depth between 10 and 40 inches for much of the remainder of the year. In dry seasons the water table recedes to a depth of 40 inches. Permeability is rapid in the surface and the subsurface layers and moderate in the subsoil and substratum. The available water capacity is low in the surface layer and substratum, very low in the subsurface layer, and medium in the subsoil.

In many areas this soil is used for citrus and for urban development. In some areas the soil is in vegetables, and in some areas it is in improved pasture. The native vegetation consists of slash pine, laurel and live oak, cabbage palm, wax myrtle, magnolia, bluestem, saw palmetto and various vines.

(7) Canova Anclote, and Okeelanta soils - This Manatee map unit consists of nearly level, very poorly drained mineral and organic soils in freshwater swamps and in broad, poorly defined drainageways. In a typical mapped area, Okeelanta soils are in the lowest places; Anclote soils in the highest places, generally near the edges; and Canova soils in an intermediate position. In the poorly defined drainageways, the Anclote soils and to a lesser extent the Canova soils are adjacent to the streams. Slopes are less than 2 percent.

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

In most years, Canova soils are ponded, or the water table is at or near the surface for 9 months or more out of the year. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. The available water capacity is high in the surface layer, very low in the subsurface layer, and medium in the subsoil.

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

In most years, Anclote soils are ponded, or the water table is at or near the surf ace for 9 months or more out of the year. Permeability is rapid throughout. The available water capacity is

medium in the surface layer and low in the other layers.

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

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

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

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

(11) Cassia fine sand - This is a nearly level, somewhat poorly drained soil, on low ridges and knolls that are slightly higher than the adjacent flatwoods found in Manatee and Sarasota counties. Slopes range from 0 to 2 percent.

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

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

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

The native vegetation consists of scattered slash and longleaf pine, dwarf oak and sand live oak, saw palmetto, pineland threeawn, running oak, and broomsedge bluestem.

(8) Delray fine sand, depressional - This nearly level, very poorly drained soil is in depressions on flatwoods in Sarasota County. Individual areas are oval, irregularly shaped, or elongated and range from 5 to 200 accres in size. Slopes are concave and are less than 2 percent.

Typically, the surface layer is black fine sand about 30 inches thick. The subsurface layer is light brownish gray fine sand to a depth of about 54 inches. The subsoil to a depth of 80 inches or more is olive gray fine sandy loam.

Included with this soil in mapping are small areas of Astor, Felda, Gator, and Pompano soils. Also included are soils that are similar to the Delray soil but have a thin surface layer of muck.

Under natural conditions, the Delray soil is ponded for 6 to 9 months or more each year. For much of the remainder of most years, the seasonal high water table is within a depth of 12 inches. Permeability is rapid in the surface layer and subsurface layer and moderate or moderately rapid in the subsoil. The available water capacity is moderate. Natural fertility is medium, and the organic matter content is moderate or high.

Most areas of this soil support natural vegetation of cypress, pickerelweed, maidencane, arrowhead, cutgrass, sand cordgrass, sedges, ferns, and other water-tolerant grasses. This soil provides excellent habitat for wading birds and other wetland wildlife.

(9) Delray and Astor soils, frequently flooded - These level and nearly level, very poorly drained soils are on the flood plain along the Myakka River and in the swamps adjacent to park's lakes in Sarasota County. The soils are frequently flooded after prolonged heavy rains. Individual areas are irregularly shaped or elongated and range from 10 to 100 acres in size. Slopes are smooth or concave and range from 0 to 2 percent.

There is no regular and repeating pattern in this map unit. Some areas are entirely Delray and similar soils, some are entirely Astor and similar soils, and some are made up of Delray, Astor, and other soils.

Typically, the surface layer of the Delray soil is black fine sand about 30 inches thick. The subsurface layer is dark gray fine sand to a depth of about 54 inches. The subsoil to a depth of 80 inches or more is gray sandy loam.

Typically, the surface layer of the Astor soil is 32 inches thick. The upper 2 inches is black mucky fine sand. The next 20 inches is very dark gray mucky fine sand. The lower 10 inches is very dark gray fine sand. The underlying material extends to a depth of about 80 inches or more. The upper 15 inches is grayish brown loamy sand. The next 7 inches is light brownish gray loamy sand. The lower 26 inches or more is light brownish gray fine sand.

Included with these soils in mapping are small areas of Felda and Floridana soils. The Delray and Astor soils have a seasonal high water table at or above the surface during the summer rainy season. During dry periods the water table may recede to a depth of 30 inches or more. Sheet flow occurs during periods of heavy rainfall. The duration and extent of flooding vary, depending on the intensity and frequency of rainfall. Permeability is rapid in the Astor soil and moderate or moderately rapid in the subsoil of the Delray soil. The available water capacity is moderate in both soils. Natural fertility is high in both soils, and the organic matter content is very high or high.

Most areas of these soils support natural vegetation of cypress, sweet gum, water and laurel oak, red maple, cabbage palm, wax myrtle, greenbrier, poison ivy, maidencane, chalky bluestem, sedges, and other water-tolerant grasses.

These soils provide habitat for wetland and woodland wildlife. Shallow water areas can be easily developed, and the vegetation provides abundant food and shelter.

(16) Delray complex - This complex consists of several nearly level, very poorly drained soils on flats and in sloughs that are moderately broad, low, and grassy in Manatee County. The soils are so intermixed that they could not be shown separately at the scale selected for mapping.

Typically, the surface layer of Delray soils is black fine sand about 15 inches thick. The subsurface layer is grayish brown and light brownish gray fine sand to a depth of about 55 inches. The subsoil is grayish brown and greenish gray fine sandy loam and sandy clay loam to a depth of 80 inches or more.

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

The natural vegetation consists mainly of water-tolerant grasses such as bluestem, lopsided indiangrass, maidencane, and pineland threeawn. In some places it also consists of wax myrtle and widely spaced gum and cypress.

(15) Delray mucky loam fine sand - This is a very poorly drained, nearly level soil in shallow depressions in flatwoods in Manatee County. Individual areas are irregularly shaped. Slopes are 0 to 2 percent.

Typically, the surface layer is black. In the upper part it is mucky loamy fine sand 8 inches thick. In the lower part it is loamy fine sand 8 inches thick. A thin layer of muck and litter on the surface is common. The subsurface layer is fine sand. The upper 5 inches is grayish brown, the next 22 inches is light brownish gray, and the lower 5 inches is grayish brown. The subsoil in the upper 3 inches is grayish brown fine sandy loam. In the next 15 inches it is grayish brown sandy clay loam. In the next 9 inches it is greenish gray sandy clay loam. Below that, to a depth of 80 inches or more it is grayish brown sandy clay loam.

Included with this soil in mapping are small areas of Felda, Floridana, Manatee, and Chobee soils.

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

The natural vegetation in some places is maidencane and sawgrass in dense stands. In other places it is bay, sweet gum, and maple.

(10) EauGallie and Myakka fine sands - These nearly level, poorly drained soils are on broad flatwoods in Sarasota County. Individual areas are long and broad or are irregular in shape and range from 20 to more than 700 acres in size. Slopes are smooth and range from 0 to 2 percent.

There is no regular and repeating pattern in this map unit. Some areas are entirely EauGallie and similar soils, some are entirely Myakka and similar soils, and some are made up of EauGallie, Myakka, and other soils.

Typically, the surface layer of the EauGallie soil is black fine sand. The subsurface layer is gray fine sand to a depth of about 22 inches. The subsoil extends to a depth of about 66 inches. The upper 22 inches is fine sand coated with organic matter. It is dark reddish brown grading to dark brown. The next 4 inches is light gray fine sand. The lower 18 inches is grayish brown sandy loam. The substratum to a depth of about 80 inches or more is gray fine sandy loam.

Typically, the surface layer of the Myakka soil is dark grayish brown fine sand about 6 inches thick. The subsurface layer is light gray fine sand about 18 inches thick. The subsoil to a depth of 60 inches is fine sand. The upper 11 inches is very dark gray, and the lower 18 inches is light yellowish brown. The substratum to a depth of 80 inches or more is pale brown fine sand.

Included with these soils in mapping are areas of Ona, Smyrna, and Wabasso soils. Also included are small areas of soils that are similar to the EauGallie and Myakka soils but have a subsoil that is low in content of organic matter and is less than 12 inches thick.

Under natural conditions, the EauGallie and Myakka soils have a seasonal high water table at a depth of 6 to 18 inches for 1 to 3 months and within a depth of 40 inches for 2 to 6 months. The water table recedes to a depth of more than 40 inches during the extended dry periods. The available water capacity is low in both soils. Natural fertility also is low. Permeability is rapid in the sandy surface layer, subsurface layer, and substratum. It is moderate or moderately rapid in the sandy subsoil of both soils and slow or moderatley slow in the loamy part of the EauGallie soil.

The natural vegetation is slash pine, longleaf pine, and scattered cabbage palm and oak. The understory includes inkberry, saw palmetto, chalky bluestem, creeping bluestem, pineland threeawn, and various other grasses.

(20) EauGallie fine sand - This somewhat poorly drained sandy soil of the saw palmetto prairies and pine flatwood forests in Manatee County, has a characteristic organic pan layer below 30 inches. It developed from thick stratified beds of acid sands in flat or nearly level areas. Runoff is very slow. Internal drainage is slow to rapid and is influenced seasonally by the high water table.

The ground cover on Eaugallie fine sand consists mostly of saw palmetto, gallberry, runner oak, huckleberry, and wiregrass and other grasses. The principal trees are longleaf pine and slash pine.

(13) Felda and Pompano fine sand, frequently flooded - These nearly level, poorly drained soils are on floodplains throughout Sarasota County. They are frequently flooded following prolonged, heavy rains. Individual areas are elongated and range from 10 to more than 100 acres in size. Slopes are smooth or concave and range from 0 to 2 percent.

There is no regular and repeating pattern in this map unit. Some areas are entirely Felda and similar soils, some are entirely Pompano and similar soils, and some are made up of Felda, Pompano, and other soils.

Typically, the surface layer of the Felda soil is very dark gray fine sand about 4 inches thick. The subsurface layer is dark grayish brown fine sand to a depth of about 24 inches. The subsoil to a depth of 65 inches is sandy clay loam. The upper 24 inches is dark grayish brown, and the lower 17 inches is grayish brown. The substratum to a depth of about 80 inches is light gray loamy sand.

Typically, the surface layer of the Pompano soil is black fine sand about 3 inches thick. The underlying material to a depth of about 80 inches is gray, light brownish gray, and grayish brown fine sand.

Included with these soils are areas of Astor, Bradenton, Delray, and Holopaw soils. Also included are a few areas of soils that are similar to the Felda soil but have an organic surface layer as much as 15 inches thick.

The Felda and Pompano soils have a seasonal high water table within 12 inches of the surface for 2 to 6 months in most years. These soils usually are flooded every year and more than once in most years. The duration and extent of flooding vary, depending on the intensity and frequency of rainfall. Permeability is rapid or very rapid in the sandy layers and moderate or moderately rapid in the loamy layers. The available water capacity is low. Natural fertility also is low.

The natural vegetation is bald cypress, laurel and water oak, pond pine, slash pine, longleaf pine, and cabbage palm. The understory vegetation is wax myrtle, pineland threeawn, maidencane, greenbrier, poison ivy, and other water-tolerant grasses.

(22) Felda fine sand - This is a nearly level, poorly drained soil on low hammocks in Manatee and Sarasota counties. Slopes are generally smooth and range from 0 to 2 percent.

Typically, the surface layer is very dark gray fine sand about 3 inches thick. The subsurface layer is grayish brown fine sand 21 inches thick. It is mottled with gray and brown. The subsoil is 40 inches thick. It is mottled with brown and yellow. The upper 3 inches is grayish brown fine sandy loam, the next 6 inches is gray sandy clay loam, and the lower 29 inches is light gray sandy clay loam. Below the subsoil there is light gray sandy loam to a depth of 80 inches or more.

Included with this soil in mapping are small areas of Bradenton soil.

In most years, if this Felda soil is not drained, the water table is within a depth of 10 inches for 2 to 4 months out of the year and at a depth of 10 to 40 inches for about 6 months out of the year. It recedes to a depth of more than 40 inches in dry seasons. Permeability is rapid in the surface and subsurface layers and moderate to moderatley rapid in the subsoil. The available water capacity is very low in the surface and subsurface layers and medium in the subsoil.

The natural vegetation consists of live oak, cabbage palm, slash pine, pineland threeawn,, and bluestem.

(23) Felda-Palmetto complex - This complex consists of soils in broad sloughs where stream channels are poorly defined and soils around some of the larger ponds in the eastern and central parts of Manatee County. Felda and Pompano soils are so intricately mixed that they could not be mapped separately for mapping. Slopes are less than 2 percent.

Typically, the surface layer of Felda soils is very dark gray fine sand about 3 inches thick. The subsurface layer is grayish brown fine sand 21 inches thick. The subsoil in the upper part is grayish brown fine sandy loam 3 inches thick. In the middle part it is gray sandy clay loam 6 inches thick, and in the lower part it is light gray sandy clay loam 29 inches thick. The substratum is at a depth of about 62 inches and is light gray sandy loam.

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

Typically, the surface layer of Palmetto soils is black sand about 8 inches thick. The subsurface layer is dark gray or gray sand to a depth of 25 inches. The subsoil is dark grayish brown and very dark grayish brown sand to a depth of 45 inches. It is grayish brown and dark grayish brown sandy clay loam and sandy loam to a depth of about 64 inches and dark grayish brown loamy sand to a depth of 68 inches. The soils that are similar to Palmetto soils have a thicker, dark colored surface layer.

Palmetto soils are poorly drained. In most years, if the soils are not drained, the water table is within 10 inches of the surface for 2 to 6 months out of the year. In some areas water stands on the surface briefly after heavy rainfall. Permeability is rapid in the surface and subsurface layers and moderately slow in the subsoil. The available water capacity is low to medium in the surface and subsurface layers and medium in the subsoil.

The most common minor soils included in the complex are the Myakka, Delray, and Floridana soils.

The natural vegetation consists of slash pine, water and live oak, saw palmetto, runner's oak, gallberry, and pineland threeawn.

(15) Floridana and Gator soils, depressional - These very poorly drained, nearly level soils are in depressions in Sarasota County. They are subject to ponding. Individual areas are oval or irregular in shape and range from 5 to about 100 acres in size. Slopes are dominately concave and are less than 2 percent.

There is no regular and repeating pattern in this map unit. Some areas are entirely Floridana and similar soils, some are entirely Gator and similar soils, and some are made up of Floridana, Gator, and other soils.

Typically, the surface layer of the Floridana soil is about 14 inches of black mucky fine sand and fine sand. The subsurface layer to a depth of about 22 inches is gray and light gray fine sand. The subsoil to a depth of about 52 inches is grayish brown sandy clay loam.

Typically, the surface layer of Gator soil is very dark brown muck about 22 inches thick. The upper 4 inches of the underlying material is very dark gray loamy sand, the next 34 inches is dark gray sandy clay loam, and the lower part to a depth of 80 inches is greenish gray sand.

The Floridana and Gator soils are ponded for 6 to 9 months during most years. The water table is within 12 inches of the surface for much of the remainder of the year. Permeability is rapid in the surface layer and subsurface layer and moderately slow or very slow in the loamy subsoil and underlying material. The available water capacity is dominately moderate to very high.

Natural fertility is medium.

Most areas of these soils support natural vegetation of sand cordgrass, maidencane, St. John's wort, scattered wax myrtle, and other water-tolerant herbaceous plants. They provide excellent habitat for wading birds and other wetland wildlife.

(16) Floridana and Gator soils, frequently flooded - These poorly drained, nearly level soils are on Sarasota County's floodplains. They are frequently flooded after prolonged, heavy rains. Individual areas are oblong or are narrow and elongated. They range from 5 to 60 acres in size. Slopes are smooth or concave and range from 0 to 2 percent.

There is no regular and repeating pattern to this map unit. Some areas are entirely Floridanna and similar soils, some are entirely Gator and similar soils, and some are made up of Floridana, Gator, and other soils.

Typically, the surface layer of the Floridana soil is about 14 inches of very dark gray mucky fine sand and fine sand. The subsurface layer is gray and grayish brown fine sand to a depth of about 36 inches. The subsoil to a depth of about 52 inches is grayish brown fine sandy loam. The substratum to a depth of 80 inches or more is grayish brown sandy loam.

Typically, the surface layer of the Gator soil is very dark brown muck about 22 inches thick. The upper 4 inches of the underlying material is very dark gray laomy sand. The next 34 inches is dark gray sandy clay loam. The lower part to a depth of 80 inches is greenish gray sand.

The Floridana and Gator soils are frequently flooded during the rainy season in most years. The water table is within 12 inches of the surface for much of the year. Permeability is rapid in the surface and subsurface layers and slow or very slow in the loamy subsoil and underlying material. The available water capacity is moderate or high. Natural fertility is medium.

The natural vegetation is black gum, red maple, sweet gum, cabbage palm, cypress, laurel and water oak, and loblolly bay. The understory is smartweed, fern, sedges and other water-tolerant grasses.

(25) Floridana fine sand - This is a nearly level, very poorly drained soil in the low flats that have been drained by ditches and channels in many places in Manatee County. Slopes are smooth to concave and are less than 2 percent.

Typically, the surface layer is about 15 inches thick, In the upper part it is black fins sand 4 inches thick, and in the lower part it is very dark gray fine sand 11 inches thick. The subsurface layer is gray fine sand 17 inches thick. The subsoil is dark sandy clay loam to a depth of 44 inches and gray sandy loam to a depth of 65 inches. The substratum is light gray fine sand to a depth of 80 inches or more. Included with this soil are areas of Delray and Felda soils and a few areas of organic soils.

In most years, if this Floridana soil is not drained, the water table is at a depth of less than 10 inches for about 6 months out of the year. Permeability is rapid in the surface and subsurface layers and slow in the subsoil. The available water capacity is medium in the surface layer and subsoil and low in the subsurface layer.

The natural vegetation consists of cattails and dense stands of maidencane and sawgrass.

(26) Floridana-Immokalee-Okeelanta association - This map unit consists of nearly level, very poorly drained Floridana soils, poorly drained Immokalee soils, and very poorly drained Okeelanta soils. These soils are in small to large shallow grassy ponds mainly in the central and eastern parts of Manatee County. Generally, Okeelanta soils are in the lowest places near in the center of the ponds; Floridana soils are in an intermediate position; and Immokalee soils are along the edges of ponds. Slopes are less than 2 percent. Areas of the individual soils are large enough to map separately, but in considering the present and predicted use they were mapped as one unit. Most of the mapped areas are circular or oblong. The composition of this map unit is more variable than that of most other map units in Manatee County; nevertheless, valid interpretations for expected uses of the soil can still be made.

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

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

Typically, the surface layer of Immokalee soils is black fine sand about 5 inches thick. The subsurface layer is dark gray, gray, and light gray fine sand 29 inches thick. The subsoil is dark

reddish brown and dark brown fine sand 9 inches thick. The substratum to a depth of 80 inches or more is grayish brown fine sand.

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

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

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

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

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

(21) Ft. Green fine sand - This deep, nearly level, poorly drained soil is on broad flatwoods in Sarasota County. Individual areas range from 10 to 150 acres in size. Slopes are smooth and range from 0 to 2 percent.

Typically, the surface layer is dark gray fine sand about 3 inches thick. The subsurface layer is light brownish gray and grayish brown fine sand to a depth of about 80 inches. It is gray cobbly sandy loam in the upper 12 inches, gray and light gray sandy clay loam in the next 10 inches, and light gray sandy loam in the lower 32 inches. Small areas of EuGallie, Holopaw, Malabar, and Wabasso soils are included with this soil. Also included are wet soils in scattered small depressions.

The water table is at a depth of 6 to 18 inches for 2 to 4 months during the wet periods and within a depth of 40 inches for more than 6 months. Permeability is rapid in the surface and subsurface layers and slow or moderately slow in the subsoil. The water capacity is low. Natural fertility is also low.

Natural vegetation consist of slash and longleaf pine, cabbage palm, saw palmetto, inkberry, rusty lyonia, blackroot, pennyroyal, pineland threeawn, chalky bluestem, panicum, and other herbaceous plants.

(27) Gator muck - This is a very poorly drained, nearly level soil in depressions in Manatee County. Slopes are 1 percent or less. Typically, the surface layer is black muck about 18 inches thick. Below the surface layer there is a light gray, dark grayish brown, and grayish brown sandy loam to a depth of 55 inches. Below that, there is grayish brown loamy sand to a depth of 72

inches and stratified layers of light gray sand and loamy sand to a depth of 80 inches or more.

Included with this soil are small areas of Chobee, Bradenton and Floridana soils. Also included are soils with sandy layers between the organic layers and the loamy substratum and soils where the organic material is less than 16 inches thick or more than 40 inches thick.

The soil ponds or the water table is within a depth of 10 inches except in extended dry seasons. The available water capacity is very high in the organic layers, medium in the loamy layers, and low in the underlying sandy material. Permeability is rapid in the organic layer and moderate in the loamy layer. Natural fertility is medium to high.

Natural vegetation consists of willows, red maple, sawgrass, pickerelweed, sedges, ferns, maidencane, and other water-tolerant grasses.

(22) Holopaw fine sand - Occurring in depressions in Sarasota County, this fine sand is underlain by sandy loam or sandy clay loam at depths of 30 to 42 inches. It developed from moderately thick deposits of sandy sediments. For a few months each year the soil is normally covered with shallow water.

Most areas of Holopaw Fine Sand are treeless. They have a sparse to moderate growth of St. John's wort, broomsedge, rushes' and other herbaceous plants having a tolerance for long hydroperiods or waterlogged substrate.

(26 in Sarasota) Manatee loamy fine sand, depressional - This nearly level, very poorly drained soil is in depressions in Sarasota County. Slopes are concave and are less than 1 percent.

Typically, the surface layer is black loamy fine sand about 18 inches thick. The subsoil is very dark gray sandy loam in the upper 11 inches and light gray sandy loam in the lower 13 inches. The substratum to a depth of 80 inches is gray and dark greenish gray sandy loam, sandy clay loam, and fine sand. Small areas of Felda, Floridana, Holopaw, Malabar, and Pineada soils are included in this soil.

This soil is ponded for 6 to 9 months or more during most years. The water table is within 12 inches of the surface the remainder of the year. Permeability is moderatley rapid in the surface layer and moderate in the subsoil and substratum. The available water capacity is moderate, natural fertility is medium, and the organic content is high.

Natural vegeatation consists of sawgrass, maidencane and pickerelweed. Some areas support red maple, cypress, black gum, cabbage palm, loblolly bay, sweet bay, scattered wax myrtle, sedges, and ferns. Areas of this soil provide excellent habitat for wading birds and other wetland wildlife.

(30) Myakka fine sand, 0 To 2 Percent Slopes - This is a nearly level, poorly drained soil in areas of broad flatwoods in Manatee County. Slopes are smooth to concave.

Typically, the surface layer is dark gray fine sand about 5 inches thick. The subsurface layer is

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

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

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

(35) Ona fine sand - This is a nearly level, poorly drained soil that is in areas of broad flatwoods in Manatee County. Slopes are smooth and range from 0 to 2 percent.

Typically, the surface layer is black fine sand about 5 inches thick. The subsoil in the upper part is very dark brown and ddark reddish brown fine sand 11 inches thick. The next layer is brown and light brownish gray fine sand 36 inches thick. The subsoil in the lower part is black fine sand that is weakly cemented to a depth of 68 inches and black friable fine sand to a depth of 80 inches. Included with this soil are small areas of Myakka, Pompano, St Johns, Waveland, and Wauchula soils.

A water table is at a depth of 10 to 40 inches for 4 to 6 months out of the year. It rises to a depth of less than 10 inches for 1 to 2 months a year. It may recede to a depth of more than 40 inches in very dry seasons. Permeability is moderate in the upper part of the subsoil, slow or very slow in the lower part of the subsoil, and rapid in the other layers. The available water capacity is medium in the surface layer and subsoil, and low in the layer between the two parts of the subsoil.

Native vegetation consists of pine trees and an understory of saw palmetto, runner's oak, pineland threeawn, and gallberry.

(38) Palmetto sand - This is nearly level, poorly drained soil in flatwoods in Manatee County. The soil is in sloughs, in poorly drained drainageways, and in narrow bands around some ponds. Slopes are smooth to slightly concave and are less than 2 percent. Included with this soil are areas of similar soils that have a yellowish subsurface layer, that do not have a loamy subsoil, or that have a slightly more developed, brownish subsurface layer. Also included are small areas of Delray soils.

The water table is within 10 inches of the surface for 2 to 6 months a year. In some areas the soil may be ponded briefly asfter a heavy rainfall. Permeability is rapid in the surface and subsurface

areas and moderately slow in the subsoil. The available water capacity is low to medium in the surface and subsurface layers and medium in the subsoil.

The native vegetation consists of chalky bluestem, blue maidencane, sand cordgrass, pineland threeawn, low panicums, scattered slash pines and clumps of saw palmetto.

(39) Parkwood Variant complex - This complex consists of nearly level, poorly drained, and very poorly drained soils on cabbage palm hammocks, in drainageways, and around the edges of ponds in Manatee County. The soils are intermixed and could not be mapped separately.

The water table is within 10 inches of the surface for 2 to 4 months during the rainy season. The available water capacity is low in the surface layer and medium in the subsoil. Permeability is very rapid in the surface layer and moderately rapid in the subsoil. Natural fertility is medium.

The natural vegetation consists of cabbage palm, a few live oak, slash pine, water oak, magnolia and an undergrowth of shrubs, vines, grasses and saw palmetto.

(31) Pineda fine sand - A poorly drained soil closely associated with flatwoods and very similar to EauGallie fine sand except that it has developed from beds of sand 42 inches or more deep that overlie finer textured alkaline materials. This soil is found in Sarasota County.

(40) Pinellas fine sand - This is a nearly level, poorly drained soil in the areas of flatwoods bordering sloughs and depressions in Manatee County. Slopes are smooth. Included in this map unit are small areas of similar soil that have a subsoil at a depth of more than 40 inches, areas of similar soils that have a dark colored surface layer more than 6 inches thick, and areas of soils that have a yellowish layer above the subsoil and limestone below. Also included are small areas of Bradenton, Broward Variant, EauGallie, and Wabasso soils.

The water table is at a depth within 10 inches of the surface for less than 3 months out of the year and at a depth of 10 to 40 inches for 4 to 6 months out of the year. It may recede to a depth of more than 40 inches during extended dry periods. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. The available water capacity is very low in the surface layer and medium in the subsurface layer and subsoil. Natural fertility and the content of the organic matter are low.

The natural vegetation consists of slah pine, cabbage palm, saw palmetto, wax myrtle, gallberry, broomsedge, chalky bluestem, blue maidencane, lopsided indiangrass, sand cordgrass, and pineland threeawn.

(42) Pomello fine sand - This moderately well drained to somewhat excessively drained soil of the flatwoods in Manatee County, has a well-developed organic pan at depths greater than 42 inches. Its parent materials were thick beds of unconsolidated, acid sand. Pomello fine sand occurs on a nearly level to level relief along with Immokalee, Leon, Ona, and St. Lucie soils.

Moisture conditions are more favorable than those in St. Lucie fine sand. Ona, Leon and Immokalee soils have a pan layer at higher levels than Pomello fine sand and are darker in the

surface soil.

Little rainfall flows from the surface; most of the moisture soaks into the ground and drains downward. During some rainy periods the soil is saturated to the surface. During dry months the moisture content may be low and the soil droughty.

The native cover consists principally of saw palmetto, pine, runner oak, pricklypear cactus, small scrub oak, gallberry, and wiregrass.

(36) Pople fine sand - This nearly level, poorly drained soil is on low hammocks and in poorly defined drainageways and broad sloughs in Sarasota County. Slopes are smooth or concave and range from 0 to 2 percent.

Typically, the surface layer is very dark grayish brown fine sand about 4 inches thick. The subsurface layer is light brownish gray fine sand about 3 inches thick. The subsoil is brown and brownish yellow fine sand in the upper 21 inches and gray fine sandy loam in the lower 28 inches.

Included in this soil are small areas of Bradenton, EauGallie, and Wabasso soils. Also included are areas of soils that have a weakly stained layer of organic material above the subsoil and extending into the subsoil and areas of soils that have small fragments of iron-cemented sandstone or calcareous material at a depth of 10 to 30 inches.

The water table is within 12 inches of the surface for 1 to 6 months and at a depth of 12 to 40 inches for more than 6 months. It recedes to a depth of more than 40 inches during extended dry periods and is above the surface for short periods after a heavy rainfall. The water capacity is low. Permeability is rapid in the surface and subsurface layers, slow or very slow in the loamy part of the subsoil, and moderate or moderately slow in the substratum. Natural fertility and the organic matter content are low.

Natural vegetation includes slash and longleaf pine, cabbage palm, wax myrtle, scattered saw palmetto, laurel oak, blue maidencane, pineland threeawn, creeping bluestem, sand cordgrass, and low panicum.

(48) Wabasso fine sand - This is a nearly level, poorly drained soil in areas of broad flatwoods in Manatee County. slopes are less than 2 percent. Included in this map unit are small areas of EauGallie and Felda soils.

The water table is within 10 to 40 inches of the surface for more than 6 months a year. It is at a depth of less than 10 inches for less than 60 days in wet seasons and at a depth of more than 40 inches in very dry seasons. The available water capacity is low in the sandy layers and medium in the loamy subsoil. Permeability is rapid in the sandy surface and subsurface layers, slow in the loamy layers, and very rapid in the substratum. The natural fertility is low.

The nat vegetation consists of lonfleaf and slash pines, scattered cabbage palms, and an understory of saw palmetto, inkberry, wax myrtle, creeping bluestem, indiangrass, little

bluestem, Florida paspalum, pineland threeawn, panicums, deertongue, grassleaf goldaster, huckleberry, and runner's oak.

Addendum 4—Plant And Animal List

Myakka River State Park

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Rosary pea *	*Abrus precatorius*	
Three-seeded mercury	*Acalypha gracilens*	
Southern red maple	*Acer rubrum*	
Giant leatherfern	*Acrostichum danaeifolium*	
Shyleaf	*Aeschynomene americana*	
Indian jointvetch *	*Aeschynomene indica*	
Seminole false foxglove	*Agalinis filifolia*	
Flaxleaf false foxglove	*Agalinis linifolia*	
Purple false foxglove	*Agalinis purpurea*	
Woman's-tongue *	*Albizia lebbeck*	
Yellow colic-root	*Aletris lutea*	
Alligator weed *	*Alternanthera philoxeroides*	
Southern water hemp	*Amaranthus australis*	
Amaranth *	*Amaranthus blitum* subsp. *emarginatus*	
Spiny amaranth *	*Amaranthus spinosus*	
Common ragweed	*Ambrosia artemisiifolia*	
Indigo bush	*Amorpha herbacea*	
Pepper-vine	*Ampelopsis arborea*	
Blue maidencane	*Amphicarpum muhlenbergianum*	
Chaffweed	*Anagallis minima*	
Big chalky bluestem	*Andropogon glomeratus* var. *glaucopsis*	
Bushy bluestem	*Andropogon glomeratus* var. *pumilus*	
Bluestem	*Andropogon gyrans*	
Split-beard bluestem	*Andropogon ternarius*	
Little chalky bluestem	*Andropogon virginicus* var. *glaucus*	
Broomsedge	*Andropogon virginicus*	
Groundnut	*Apios americana*	
Nodding nixie	*Apteria aphylla*	
Marlberry	*Ardisia escallonioides*	
Mexican poppy	*Argemone mexicana*	
Jack-in-the-pulpit	*Arisaema triphyllum*	
Longleaf threeawn	*Aristida lanosa*	
Tall threeawn	*Aristida patula*	
Hillsborough threeawn	*Aristida purpurascens* var. *tenuispica*	
Arrowfeather	*Aristida purpurascens* var. *virgata*	
Bottlebrush threeawn	*Aristida spiciformis*	
Wiregrass	*Aristida stricta* var. *beyrichiana*	
Ovateleaf cacalia	*Arnoglossum ovatum*	
Largeflower milkweed	*Asclepias connivens*	
Scarlet milkweed *	*Asclepias curassavica*	
Florida milkweed	*Asclepias feayi*	
Swamp milkweed	*Asclepias incarnata*	
Red milkweed	*Asclepias lanceolata*	
Green milkweed	*Asclepias pedicellata*	

* Non-native Species
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Myakka River State Park

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Swamp milkweed	*Asclepias perennis*	
Butterflyweed	*Asclepias tuberosa*	
Small-flowered pawpaw	*Asimina parviflora*	
Pawpaw	*Asimina reticulata*	
Yellow foxglove	*Aureolaria pedicularia* var. *pectinata*	
Common carpet grass	*Axonopus fissifolius*	
Big carpetgrass	*Axonopus furcatus*	
Mosquito fern	*Azolla caroliniana*	
Groundsel tree	*Baccharis glomeruliflora*	
Salt bush	*Baccharis halimifolia*	
Blue waterhyssop	*Bacopa caroliniana*	
Tropical waterhyssop	*Bacopa innominata*	
Coastal waterhyssop	*Bacopa monnieri*	
Yellow buttons	*Balduina angustifolia*	
Common bamboo *	*Bambusa sp.*	
White screwstem	*Bartonia verna*	
Tar-flower	*Bejaria racemosa*	
Rattan vine	*Berchemia scandens*	
Beggar-ticks	*Bidens alba* var. *radiata*	
Spanish needles	*Bidens bipinnata*	
Marsh marigold	*Bidens laevis*	
Yellow beggar-ticks	*Bidens mitis*	
Rayless goldenrod	*Bigelowia nudata*	
Swamp fern	*Blechnum serrulatum*	
Brown's blechum *	*Blechum pyramidatum*	
Bog hemp; false nettle	*Boehmaria cylindrica*	
False aster	*Boltonia diffusa*	
Rape *	*Brassica rapa*	
Blueheart	*Buchnera americana*	
Hairsedge	*Bulbostylis ciliatifolia*	
Watergrass	*Bulbostylis stenophylla*	
Northern bluethread	*Burmannia biflora*	
Southern bluethread	*Burmannia capitata*	
American beautyberry	*Callicarpa americana*	
Roseling	*Callisia ornata*	
Manyflowered grasspink	*Calopogon multiflorus*	6, 8
Pale grasspink	*Calopogon pallidus*	
Straggler daisy *	*Calyptocarpus vialis*	
Florida bellflower	*Campanula floridana*	
Trumpet-creeper	*Campsis radicans*	
Strap fern	*Campyloneurum phyllitidis*	
Yellow canna	*Canna flaccida*	
Greenwhite sedge	*Carex alboutescens*	
Giant sedge	*Carex gigantea*	

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Myakka River State Park

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Glaucous sedge	*Carex glaucescens*	
Long's sedge	*Carex longii*	
Hop sedge	*Carex lupulina*	
Owlfruit sedge	*Carex stipata*	
Glaucus sedge	*Carex verrucosa*	
Florida paintbrush	*Carphephorus corymbosus*	
Vanilla plant	*Carphephorus odoratissimus* var. *subtropicanus*	
Purple fire aster	*Carphephorus paniculatus*	
Pignut hickory	*Carya glabra*	
Love vine	*Cassytha filiformis*	
Madagascar periwinkle *	*Catharanthus roseus*	
Hackberry	*Celtis laevigata*	
Coast sandspur	*Cenchrus spiniflex*	
Coinwort	*Centella asiatica*	
Butterfly-pea	*Centrosema virginianum*	
Buttonbrush	*Cephalanthus occidentalis*	
Hornwort	*Ceratophyllum demersum*	
Water horn fern	*Ceratopteris pteridoides*	
Partridge pea	*Chamaecrista fasciculata*	
Wild sensitive plant	*Chamaecrista nictitans* var. *aspera*	
Heartleaf sandmat	*Chamaesyce cordifolia*	
Hairy spurge *	*Chamaesyce hirta*	
Eyebane	*Chamaesyce hyssopifolia*	
Florida Alicia	*Chapmannia floridana*	
Pineland daisy	*Chaptalia tomentosa*	
Pigweed	*Chenopodium album*	
Mexican tea	*Chenopodium ambrosioides*	
Fringe tree	*Chionanthus virginicus*	
Maryland goldenaster	*Chrysopsis mariana*	
Scrubland goldenaster	*Chrysopsis subulata*	
Water hemlock	*Cicuta maculata*	
Camphor tree *	*Cinnamomum camphora*	
Bull thistle	*Cirsium horridulum*	
Thistle	*Cirsium nuttallii*	
Sour orange, grapefruit, sweet orange*[3]	*Citrus x aurantium*	
Lemon *	*Citrus x limon*	
Sawgrass	*Cladium jamaicense*	
Pine hyacinth	*Clematis baldwinii*	
Leather flower	*Clematis crispa*	
Turk's turban *	*Clerodendrum indicum*	
Tread-softly	*Cnidoscolus stimulosus*	
Carolina joint-tail	*Coelorachis cylindrica*	
Wrinkled joint-tail	*Coelorachis rugosa*	
Wild taro *	*Colocasia esculenta*	

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Myakka River State Park

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Dayflower *	*Commelina diffusa*	
Large dayflower	*Commelina erecta*	
Mist flower	*Conoclinium coelestinium*	
Dwarf horseweed	*Conyza canadensis* var. *pusilla*	
Florida tickseed	*Coreopsis floridana*	
Tickseed	*Coreopsis leavenworthii*	
Swamp dogwood	*Cornus foemina*	
String-lily	*Crinum americanum*	
Smooth rattlebox*	*Crotalaria pallida* var. *obovata*	
Small rattlebox	*Crotalaria rotundifolia*	
Tropic croton	*Croton glandulosus*	
Rushfoil	*Croton michauxii*	
Columbian waxweed *	*Cuphea carthagenensis*	
Love vine	*Cuscuta pentagona*	
Hairnet vine	*Cynanchum scoparium*	
Bermuda grass *	*Cynodon dactylon*	
Jointed flat sedge	*Cyperus articulatus*	
Poorland flat sedge	*Cyperus compressus*	
Baldwin's flat sedge	*Cyperus croceus*	
Swamp flat sedge	*Cyperus distinctus*	
Redroot flat sedge	*Cyperus erythrorhizos*	
Yellow nut grass *[3]	*Cyperus esculentus*	
Wiry flat sedge	*Cyperus filiculmis*	
Haspan flat sedge	*Cyperus haspan*	
Swamp flat sedge	*Cyperus ligularis*	
Fragrant flat sedge	*Cyperus odoratus*	
Manyspike flat sedge	*Cyperus polystachyos*	
Manyspike flat sedge	*Cyperus retrorsus*	
Nutgrass *[3]	*Cyperus rotundus*	
Strawcolored flat sedge	*Cyperus stenolepis*	
Tropical flat sedge	*Cyperus surinamensis*	
Fourangle flat sedge	*Cyperus tetragonus*	
Crowfoot grass *[3]	*Dactyloctenium aegyptium*	
White tassels	*Dalea carnea*	
Summer's farewell	*Dalea feayi*	
Prairie clover	*Dalea pinnata* var. *adenopoda*	
Western tansymustard	*Descurainia pinnata*	
Beggar-tick	*Desmodium incanum*	
Panciledleaf ticktrefoil	*Desmodium paniculatum*	
Slimleaf ticktrefoil	*Desmodium tenuifolium*	
Dixie ticktrefoil	*Desmodium tortuosum*	
Small beggar-tick *[3]	*Desmodium triflorum*	
Needleleaf panicum	*Dichanthelium aciculare*	
Variable panicum	*Dichanthelium commutatum*	

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Myakka River State Park

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Cypress witchgrass	*Dichanthelium dichotomum*	
Forked panicum	*Dichanthelium ensifolium*	
Low panicum	*Dichanthelium erectifolium*	
Hemlock witchgrass	*Dichanthelium portoricense*	
Low panicum grass	*Dichanthelium strigosum*	
Pony-foot	*Dichondra caroliniensis*	
Southern crabgrass	*Digitaria ciliaris*	
Pangola grass *[3]	*Digitaria pentzii*	
Blanket crabgrass	*Digitaria serotina*	
Poor joe	*Diodia teres*	
Buttonweed	*Diodia virginiana*	
Air-potato *[1]	*Dioscorea bulbifera*	
Persimmon	*Diospyros virginiana*	
Sundew	*Drosera capillaris*	
West Indian chickweed	*Drymaria cordata*	
Florida shield fern	*Dryopteris ludoviciana*	
Twinflower	*Dyschoriste oblongifolia*	
Barnyard grass *[3]	*Echinochloa crusgalli*	
Coast cockspur	*Echinochloa walteri*	
False daisy*[3]	*Eclipta prostrata*	
Water hyacinth *[1]	*Eichhornia crassipes*	
Roadgrass	*Eleocharis baldwinii*	
Gulf coast spikerush	*Eleocharis elongata*	
Knotted spikerush	*Eleocharis equisetoides*	
Yellow spikerush	*Eleocharis flavescens*	
Canada spikerush	*Eleocharis geniculata*	
Black spikerush	*Eleocharis nigrescens*	
Viviparous spikerush	*Eleocharis vivipara*	
Florida elephant's foot	*Elephantopus elatus*	
Goose grass *[3]	*Eleusine indica*	
Elodea	*Elodea canadensis*	
Florida tasselflower *[3]	*Emilia fosbergii*	
Lilac tasselflower *[3]	*Emilia sonchifolia*	
Butterfly orchid	*Encyclia tampensis*	25, 30, 35, 39
Thalia lovegrass *[3]	*Eragrostis atrovirens*	
Elliott lovegrass	*Eragrostis elliottii*	
Teal lovegrass	*Eragrostis hypnoides*	
Purple lovegrass	*Eragrostis spectabilis*	
Fireweed	*Erechtites hieraciifolius*	
Centipede grass *[3]	*Eremochloa ophiuroides*	
Southern fleabane	*Erigeron quercifolius*	
Robin's plantain	*Erigeron vernus*	
Flattened pipewort	*Eriocaulon compressum*	
Tenangle pipewort	*Eriocaulon decangulare*	

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Myakka River State Park

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Ravenel's pipewort	*Eriocaulon ravenelii*	
Fragrant eryngium	*Eryngium aromaticum*	
Baldwin's eryngo	*Eryngium baldwinii*	
Button snakeroot	*Eryngium yuccifolium*	
Coral/Cherokee-bean	*Erythrina herbacea*	
Eucalyptus *[3]	*Eucalyptus* sp.	
White stopper	*Eugenia axillaris*	
Surinam cherry *[1]	*Eugenia uniflora*	
Wild coco	*Eulophia alta*	
Dog fennel	*Eupatorium capillifolium*	
Falsefennel	*Eupatorium leptophyllum*	
Pale boneset	*Eupatorium mohrii*	
False hoarhound	*Eupatorium rotundifolium*	
Boneset	*Eupatorium serotinum*	
Saltmarsh fingergrass	*Eustachys glauca*	
Pinewoods fingergrass	*Eustachys petraea*	
Slender flattop goldenrod	*Euthamia caroliniana*	
Strangler fig	*Ficus aurea*	
Weeping Fig *[3]	*Ficus benjamina*	
Slender fimbry	*Fimbristylis autumnalis*	
Carolina fimbry	*Fimbristylis caroliniana*	
Hurricane-grass	*Fimbristylis cymosa*	
Ditch fimbry *[3]	*Fimbristylis schoenoides*	
Marsh fimbry	*Fimbristylis spadicea*	
Pop ash, Water ash	*Fraxinus caroliniana*	
Cottonweed	*Froelichia floridana*	
Dwarf umbrella grass	*Fuirena pumila*	
Southern umbrella grass	*Fuirena scirpoidea*	
Elliott's milkpea	*Galactia elliottii*	
Eastern milkpea	*Galactia regularis*	
Twining milkpea	*Galactia volubilis*	
Bedstraw	*Galium tinctorium*	
Purple cudweed	*Gamochaeta falcata*	
Cud weed	*Gamochaeta pensylvanica*	
Southern guara	*Gaura angustifolia*	
Dwarf huckleberry	*Gaylussacia dumosa*	
Blue huckleberry	*Gaylussacia frondosa* var. *tomentosa*	
Yellow jessamine	*Gelsemium sempervirens*	
Cranesbill	*Geranium carolinianum*	
Vervain	*Glandularia tampensis*	6, 8
Water locust	*Gleditsia aquatica*	
Globe amaranth *[3]	*Gomphrena serrata*	
Loblolly bay	*Gordonia lasianthus*	
Rough hedgehyssop	*Gratiola hispida*	

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Myakka River State Park

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Shaggy hedgehyssop	*Gratiola pilosa*	
Branched hedgehyssop	*Gratiola ramosa*	
Chapman's skeletongrass	*Gymnopogon chapmanianus*	6, 8
False reinorchid	*Habenaria floribunda*	
Water spider false reinorchid	*Habenaria repens*	
Firebush	*Hamelia patens*	
Threadroot orchid	*Harrisella porrecta*	25, 26
Bitterweed, Spanish daisy	*Helenium amarum*	
Southern sneezeweed	*Helenium pinnatifidium*	
Rockrose	*Helianthemum corymbosum*	
Slender sunflower	*Helianthus agrestis*	
Flatwoods sunflower	*Helianthus angustifolius*	
Heliotrope	*Heliotropium polyphyllum*	
Camphorweed	*Heterotheca subaxillaris*	
Swamp hibiscus	*Hibiscus grandiflorus*	
Hawkweed	*Hieracium megacephalon*	
Innocence	*Houstonia procumbens*	
Hydrilla *[1]	*Hydrilla verticillata*	
Floating pennywort	*Hydrocotyle ranunculoides*	
Marsh pennywort	*Hydrocotyle umbellata*	
Whorled pennywort	*Hydrocotyle verticllata*	
Sky flower	*Hydrolea corymbosa*	
West Indian marshgrass *[1]	*Hymenachne amplexicaulis*	
Spider lily	*Hymenocallis crassifolia*	
Alligator-lily	*Hymenocallis palmeri*	
Coastal plain St. John’s wort	*Hypericum brachyphyllum*	
Roundpod St. John's-wort	*Hypericum cistifolium*	
St. Peter's-wort	*Hypericum crux-andreae*	
Sandweed	*Hypericum fasciculatum*	
Pineweeds	*Hypericum gentianoides*	
St. Andrew's cross	*Hypericum hypericoides*	
Dwarf St. John's-wort	*Hypericum mutilum*	
Myrtleleaf St. John's-wort	*Hypericum myrtifolium*	
Atlantic St. John's-wort	*Hypericum reductum*	
Fourpetal St. John’s-wort	*Hypericum tetrapetalum*	
Common yellow stargrass	*Hypoxis curtissii*	
Fringed yellow stargrass	*Hypoxis juncea*	
Musky mint	*Hyptis alata*	
Bush mint *[3]	*Hyptis mutabilis*	
Carolina holly, Sand holly	*Ilex ambigua*	
Dahoon holly	*Ilex cassine*	
Inkberry, Gallberry	*Ilex glabra*	
Cogon grass *[1]	*Imperata cylindrica*	
Hairy indigo *[3]	*Indigofera hirsuta*	

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Myakka River State Park

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Sharp-pod morning-glory	*Ipomoea cordatotriloba*	
Man-of-the-earth	*Ipomoea pandurata*	
Cypress vine *[3]	*Ipomoea quamoclit*	
Everglades morning-glory	*Ipomoea sagittata*	
Bloodleaf	*Iresine diffusa*	
Prairie iris	*Iris hexagona*	
Virginia willow	*Itea virginica*	
Piedmont marshelder	*Iva microcephala*	
Forked rush	*Juncus dichotomus*	
Soft rush	*Juncus effusus* var. *solutus*	
Shore rush	*Juncus marginatus*	
Large-headed rush	*Juncus megacephalus*	
Manyhead rush	*Juncus polycephalos*	
Submerged rush	*Juncus repens*	
Needlepod rush	*Juncus scirpoides*	
Southern red cedar	*Juniperus virginiana*	
Water willow	*Justicia angusta*	
Saltmarsh mallow	*Kosteletzkya virginica*	
Shortleaf sedge *[3]	*Kyllinga brevifolia*	
Fragrant spike sedge	*Kyllinga odorata*	
Redroot	*Lachnanthes caroliana*	
Bog buttons	*Lachnocaulon anceps*	
Wild lettuce	*Lactuca graminifolia*	
Dotted duckweed	*Landoltia punctata*	
Shrub verbena *[1]	*Lantana camara*	
Drysand pinweed	*Lechea divaricata*	
Pineland pinweed	*Lechea sessiliflora*	
Piedmont pinweed	*Lechea torreyi*	
Southern cutgrass	*Leersia hexandra*	
Little duckweed	*Lemna obscura*	
Duckweed	*Lemna valdiviana*	
Pepper-grass	*Lepidium virginicum*	
Bearded sprangle top	*Leptochloa fusca* subsp. *fasicicularis*	
Garber's gayfeather	*Liatris garberi*	
Slender gayfeather	*Liatris gracilis*	
Grassleaf gayfeather	*Liatris graminifolia*	
Shortleaf gayfeather	*Liatris tenuifolia* var. *quadriflora*	
Gopher apple	*Licania michauxii*	
Pine lily	*Lilium catesbaei*	6, 8
Frog's-bit	*Limnobium spongia*	
Blue toadflax	*Linaria canadensis*	
Malayasian false pimpernel *[3]	*Lindernia crustacea*	
Savannah false pimpernel	*Lindernia grandiflora*	
Stiff yellow flax	*Linum medium* var. *texanum*	

*** Non-native Species**
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Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
American halfchaff sedge	*Lipocarpha maculata*	
Smallflower halfchaff sedge	*Lipocarpha micrantha*	
Southern twayblade	*Listera australis*	
Bay lobelia	*Lobelia feayana*	
Blue lobelia	*Lobelia glandulosa*	
Pineland lobelia	*Lobelia homophylla*	
White lobelia	*Lobelia paludosa*	
Piedmont primrosewillow	*Ludwigia arcuata*	
Yerba de jicotea	*Ludwigia erecta*	
Lanceleaf primrosewillow	*Ludwigia lanceolata*	
Hairy primrosewillow	*Ludwigia leptocarpa*	
Delicate ludwigia	*Ludwigia linifolia*	
Coastal plain seedbox	*Ludwigia maritima*	
Smallfruit primrose willow	*Ludwigia microcarpa*	
Long-capsuled ludwigia	*Ludwigia octovalvis*	
Low ludwigia	*Ludwigia palustris*	
Peruvian primrosewillow *[3]	*Ludwigia peruviana*	
Hairy primrose willow	*Ludwigia pilosa*	
Low ludwigia	*Ludwigia repens*	
Shrubby primrose willow	*Ludwigia suffruticosa*	
Southern watergrass	*Luziola fluitans*	
Foxtail clubmoss	*Lycopodiella alopecuroides*	
Southern bog clubmoss	*Lycopodiella appressa*	
Nodding clubmoss	*Lycopodiella cernua*	37
Roserush, Skeletonplant	*Lygodesmia aphylla*	
Japanese climbing fern *[1]	*Lygodium japonicum*	
Old World climbing fern *[1]	*Lygodium microphyllum*	
Rusty lyonia, Staggerbush	*Lyonia fruticosa*	
Maleberry	*Lyonia ligustrina* var. *foliosiflora*	
Shiny lyonia, Fetterbush	*Lyonia lucida*	
Loosestrife	*Lythrum alatum*	
Lowland loosestrife	*Lythrum flagellare*	
Southern watergrass	*Luziola fluitans*	
Red-flowered pea *[3]	*Macroptilium lathyroides*	
Marianna fern *[3]	*Macrothelypteris torresiana*	
Sweet bay	*Magnolia virginiana*	
Shinners	*Matelea gonocarpos*	
Axilflower	*Mecardonia acuminata* subsp. *peninsularis*	
Black medic *[3]	*Medicago lupulina*	
Punk tree *[1]	*Melaleuca quinquenervia*	
Snow squarestem	*Melanthera nivea*	
White sweet clover *[3]	*Melilotus albus*	
Bretonica peluda	*Melochia spicata*	
Creeping cucumber	*Melothria pendula*	

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Myakka River State Park

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Water hyssop	*Micranthemum glomeratum*	
Florida Keys hempvine	*Mikania cordifolia*	
Climbing hempvine	*Mikania scandens*	
Sensitive plant	*Mimosa strigillosa*	
Four-o-clock *[3]	*Mirabilis jalapa*	
Partridge berry, Twin berry	*Mitchella repens*	
Miterwort	*Mitreola sessilifolia*	
Wild balsam apple *[3]	*Momordica charantia*	
Red mulberry	*Morus rubra*	
Hairgrass	*Muhlenbergia capillaris*	
Nakedstem dewflower *[3]	*Murdannia nudiflora*	
Dwarf banana *[3]	*Musa acuminata*	
Wax myrtle	*Myrica cerifera*	
Parrot feather *[2]	*Myriophyllum aquaticum*	
Water milfoil	*Myriophyllum heterophyllum*	
Boston fern	*Nephrolepis exaltata*	
Spatterdock	*Nuphar advena*	
Yellow water lily	*Nymphaea mexicana*	
White water lily	*Nymphaea odorata*	
Floating hearts	*Nymphoides aquatica*	
Swamp black gum	*Nyssa sylvatica* var. *biflora*	
White-topped aster	*Oclemena reticulata*	
Cut-leaved evening primrose	*Oenothera laciniata*	
Flattop mille graines *[3]	*Oldenlandia corymbosa*	
Clustered mille graine	*Oldenlandia uniflora*	
Stalked adder's tongue	*Ophioglossum petiolatum*	
Woodsgrass	*Oplismenus hirtellus*	
Prickly pear	*Opuntia humifusa*	
Golden club	*Orontium aquaticum*	
American devilwood	*Osmanthus americanus*	
Cinnamon fern	*Osmunda cinnamomea*	8, 11, 35, 25, 26, 29
Royal fern	*Osmunda regalis* var. *spectabilis*	25, 26
Lady's sorrel	*Oxalis corniculata*	
Water dropwort	*Oxypolis filiformis*	
Golden ragwort	*Packera glabella*	
Palafoxia	*Palafoxia integrifolia*	
Beaked Panicum	*Panicum anceps*	
Fall Panicum	*Panicum dichotomiflorum*	
Maidencane	*Panicum hemitomon*	
Gaping Panicum	*Panicum hians*	
Guinea grass *[2]	*Panicum maximum*	
Torpedograss *[1]	*Panicum repens*	
Redtop Panicum	*Panicum rigidulum*	
Bluejoint panicum	*Panicum tenerum*	

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Myakka River State Park

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Warty Panicum	*Panicum verrucosum*	
Switch grass	*Panicum virgatum*	
Florida pellitory	*Parietaria floridana*	
Virginia creeper	*Parthenocissus quinquefolia*	
Egyptian paspalidium *[3]	*Paspalidium geminatum*	
Blue crowngrass	*Paspalum caespitosum*	
Sour grass	*Paspalum conjugatum*	
Mudbank crowngrass	*Paspalum distichum*	
Florida paspalum	*Paspalum floridanum*	
Field paspalum	*Paspalum laeve*	
Bahia grass *[3]	*Paspalum notatum*	
Early paspalum	*Paspalum praecox*	
Water paspalum	*Paspalum repens*	
Thin paspalum	*Paspalum setaceum*	
Vasey grass *[3]	*Paspalum urvillei*	
May-pop passion flower	*Passiflora incarnata*	
Corky-stemmed passion flower	*Passiflora suberosa*	
Lemon grass	*Pectis linearifolia*	
Spreading cinchweed	*Pectis prostrata*	
Green arum	*Peltandra virginica*	
Manyflowered beardtongue	*Penstemon multiflorus*	
Eastern smooth beardtongue	*Pentodon pentandrus*	
Red bay	*Persea borbonia var. borbonia*	
Swamp bay	*Persea palustris*	
Golden polypody	*Phlebodium aureum*	
Florida false sunflower	*Phoebanthus grandiflorus*	
Date palm *[3]	*Phoenix reclinata*	
Mistletoe	*Phoradendron leucarpum*	
Common Reed	*Phragmites australis*	
Carpetweed, Frog-fruit	*Phyla nodiflora*	
Mascarene Island leafflower *[3]	*Phyllanthus tenellus*	
Chamber bitter *[3]	*Phyllanthus urinaria*	
Cutleaf groundcherry	*Physalis angulata*	
Cypresshead groundcherry	*Physalis arenicola*	
Husk tomato	*Physalis pubescens*	
Walter's groundcherry	*Physalis walteri*	
Obedient plant	*Physostegia purpurea*	
Pokeberry	*Phytolacca americana*	
Pennyroyal	*Piloblephis rigida*	
Blue butterwort	*Pinguicula caerulea*	
Yellow butterwort	*Pinguicula lutea*	
Small butterwort	*Pinguicula pumila*	
Sand pine	*Pinus clausa*	
South Florida slash pine	*Pinus elliottii*	

*** Non-native Species**
(plants identified with FLEPPC classification)

Myakka River State Park

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Longleaf pine	*Pinus palustris*	
Florida Needlegrass	*Piptochaetium avenacioides*	
Pitted stripeseed	*Piriqueta cistoides* subsp. *caroliniana*	
Water-lettuce	*Pistia stratiotes*	
Grass-leaved goldenaster	*Pityopsis graminifolia*	
Common plantain *[3]	*Plantago major*	
Southern plantain	*Plantago virginica*	
Resurrection fern	*Pleopeltis polypodioides* var. *michauxiana*	
Sweetscent	*Pluchea odorata*	
Rosy camphorweed	*Pluchea rosea*	
Painted leaf	*Poinsettia heterophylla*	
Baldwin's milkwort	*Polygala balduinii*	
Drumheads	*Polygala cruciata*	
Tall pinebarren milkwort	*Polygala cymosa*	
Showy milkwort	*Polygala grandiflora*	
Procession flower	*Polygala incarnata*	
Orange milkwort	*Polygala lutea*	
Yellow milkwort	*Polygala nana*	
Low pinebarren milkwort	*Polygala ramosa*	
Yellow milkwort	*Polygala rugelii*	
Coastal plain milkwort	*Polygala setacea*	
Wireweed	*Polygonella ciliata*	
Big smartweed	*Polygonum densiflorum*	
Mild water-pepper	*Polygonum hydropiperoides*	
Dotted smartweed	*Polygonum punctatum*	
Smartweed	*Polygonum setaceum*	
Rabbitfoot grass *[3]	*Polypogon monspeliensis*	
Rustweed	*Polypremum procumbens*	
Pickerelweed	*Pontederia cordata*	
Pink purslane	*Portulaca pilosa*	
Pondweed	*Potamogeton pusillus*	
Marsh mermaidweed	*Proserpinaca palustris*	
Combleaf mermaidweed	*Proserpinaca pectinata*	
Carolina laurel cherry	*Prunus caroliniana*	
Dogstongue *[3]	*Pseudelephantopus spicatus*	
Guava *[1]	*Psidium guajava*	
Wild coffee	*Psychotria nervosa*	
Shortleaf wild coffee	*Psychotria sulzneri*	
Bracken fern	*Pteridium aquilinum*	
Blackroot	*Pterocaulon pycnostachyum*	
Giant orchid	*Pteroglossaspsis ecristata*	
Mock bishop's weed	*Ptilimnium capillaceum*	
False dandelion	*Pyrrhopappus carolinianus*	
Chapman's oak	*Quercus chapmanii*	

*** Non-native Species**
(plants identified with FLEPPC classification)

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Runner oak	*Quercus elliottii*	
Scrub live oak	*Quercus geminata*	
Bluejack oak	*Quercus incana*	
Turkey oak	*Quercus laevis*	
Laurel oak	*Quercus laurifolia*	
Dwarf live oak	*Quercus minima*	
Myrtle oak	*Quercus myrtifolia*	
Water oak	*Quercus nigra*	
Live oak	*Quercus virginiana*	
Myrsine	*Rapanea punctata*	
Buckthorn	*Rhamnus caroliniana*	
Meadow beauty	*Rhexia cubensis*	
Pale meadow beauty	*Rhexia mariana*	
Small meadow beauty	*Rhexia nuttallii*	
Fringed meadow beauty	*Rhexia petiolata*	
Winged sumac	*Rhus copallinum*	
Natalgrass *[2]	*Rhynchelytrum repens*	
Twinning dollarleaf	*Rhynchosia michauxii*	
Anglestem beakrsedge	*Rhynchospora caduca*	
Bunched beaksedge	*Rhynchospora cephalantha*	
Chapman's beaksedge	*Rhynchospora chapmanii*	
Fringed beaaksedge	*Rhynchospora ciliaris*	
White-topped sedge	*Rhynchospora colorata*	
Shortbristle horned beaksedge	*Rhynchospora corniculata*	
Fascicled beaksedge	*Rhynchospora fascicularis*	
Threadleaf beaksedge	*Rhynchospora filifolia*	
Horned beaksedge	*Rhynchospora inundata*	
Giant whitetop	*Rhynchospora latifolia*	
Sandyfield beaksedge	*Rhynchospora megalocarpa*	
Southern beaksedge	*Rhynchospora microcarpa*	
Bunched beaksedge	*Rhynchospora microcephala*	
Millet beaksedge	*Rhynchospora miliacea*	
Bald-rush	*Rhynchospora nitens*	
Fragrant beaksedge	*Rhynchospora odorata*	
Plumed beaksedge	*Rhynchospora plumosa*	
Tracy's beaksedge	*Rhynchospora tracyi*	
Tropical Mexican clover *[3]	*Richardia brasiliensis*	
Rough Mexican clover *[3]	*Richardia scabra*	
Rouge plant	*Rivinia humilis*	
Southern marsh yellowcress	*Rorippa teres*	
Toothcup	*Rotala ramosior*	
Highbush blackberry	*Rubus argutus*	
Southern dewberry	*Rubus trivialis*	
Black-eyed Susan	*Rudbeckia hirta*	

* Non-native Species
(plants identified with FLEPPC classification)

Myakka River State Park

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Carolina wild petunia	*Ruellia caroliniensis*	
Britton's wild petunia *[1]	*Ruellia tweediana*	
Hastate-leaved dock	*Rumex hastatulus*	
Fiddle dock *[3]	*Rumex pulcher*	
Swamp dock	*Rumex verticillatus*	
Dwarf palmetto	*Sabal minor*	
Cabbage palm	*Sabal palmetto*	
Many-petaled marsh pink	*Sabatia bartramii*	
White sabatia	*Sabatia brevifolia*	
Lanceleaf rosegentian	*Sabatia difformis*	
Largeflower rosegentian	*Sabatia grandiflora*	
Rose-of-Plymouth	*Sabatia stellaris*	
Sugarcane plumegrass	*Saccharum giganteum*	
India cupscale *[3]	*Sacciolepis indica*	
American cupscale	*Sacciolepis striata*	
Leafless beaked ladies tresses	*Sacoila lanceolata*	
Smallflower mock buckthorn	*Sageretia minutiflora*	
Narrow-leaved sagittaria	*Sagittaria graminea*	
Lanceleaf arrowhead	*Sagittaria lancifolia*	
Duck-potato arrowhead	*Sagittaria latifolia*	
Water arrowhead	*Sagittaria subulata*	
Carolina willow	*Salix caroliniana*	
Lyre-leaved sage	*Salvia lyrata*	
Water sponges	*Salvinia minima*	
Elderberry	*Sambucus nigra* subsp. *canadensis*	
Water pimpernel	*Samolus ebracteatus*	
Pineland pimpernel	*Samolus valerandi* subsp. *parviflorus*	
White-vine	*Sarcostemma clausum*	
Lizard tail	*Saururus cernuus*	
Brazilian pepper *[1]	*Schinus terebinthifolius*	
Creeping bluestem	*Schizachryium scoparium*	
Cuban bulrush *[3]	*Scirpus cubensis*	
Drooping bulrush	*Scirpus lineatus*	
Swordgrass	*Scirpus pungens*	
Softstem bulrush	*Scirpus tabernaemontani*	
Nutrush	*Scleria baldwinii*	
Fewflower nutrush	*Scleria ciliata* var. *pauciflora*	
Slenderfruit nutrush	*Scleria georgiana*	
Common nutrush	*Scleria reticularis*	
Tall nutrush	*Scleria triglomerata*	
Sweet broom	*Scoparia dulcis*	
Rough skullcap	*Scutellaria integrifolia*	
Privet wild sensitive plant	*Senna ligustrina*	
Sicklepod *[3]	*Senna obtusifolia*	

*** Non-native Species**
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Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Coffee senna	*Senna occidentalis*	
Saw palmetto	*Serenoa repens*	
White-topped aster	*Seriocarpus tortifolius*	
Danglepod	*Sesbania herbacea*	
Bladderpod	*Sesbania vesicaria*	
Foxtail, Giant bristlegrass	*Setaria magna*	
Knotroot foxtail	*Setaria parviflora*	
Senna	*Seymaria pectinata*	
Broom weed	*Sida acuta*	
Heartleaf sida *[3]	*Sida cordifolia*	
Indian hemp	*Sida rhombifolia*	
False Buckthorn	*Sideroxylon reclinatum*	
Blue-eyed grass	*Sisyrinchium angustifolium*	
Catbrier, Greenbrier	*Smilax auriculata*	
Greenbrier, Catbrier	*Smilax bona-nox*	
Sawbrier	*Smilax glauca*	
Bamboo-brier	*Smilax laurifolia*	
Sarsaparilla vine	*Smilax pumila*	
Hogbrier	*Smilax tamnoides*	
Coral greenbrier	*Smilax walteri*	
Common nightshade	*Solanum americanum*	
Soda apple	*Solanum capsicoides*	
Black nightshade	*Solanum chenopodioides*	
Shrubby Nightshade *[3]	*Solanum diphyllum*	
Tropical soda apple *[1]	*Solanum viarum*	
Pinebarren goldenrod	*Solidago fistulosa*	
Chapaman's goldenrod	*Solidago odora* var. *chapmanii*	
Wand goldenrod	*Solidago stricta*	
Twistedleaf goldenrod	*Solidago tortifolia*	
Common sowthistle *[3]	*Sonchus oleraceus*	
Yellow indiangrass	*Sorghastrum nutans*	
Lopsided indiangrass	*Sorghastrum secundum*	
Johnson grass *[3]	*Sorghum halepense*	
Sand cordgrass	*Spartina bakeri*	
Woodland false buttonweed	*Spermacoce assurgens*	
Wedelia *[2]	*Sphagneticola trilobata*	
Prairie wedgescale	*Sphenopholis obtusata*	
Giant spiral ladiestresses	*Spiranthes longilabris*	6, 8
Fragrant ladiestresses	*Spiranthes odorata*	
Greenvein ladiestresses	*Spiranthes praecox*	
Little ladiestresses	*Spiranthes tuberosa*	
Spring ladiestresses	*Spiranthes vernalis*	
Smutgrass *[3]	*Sporobolus indicus*	
Pineywoods dropseed	*Sporobolus junceus*	

*** Non-native Species**
(plants identified with FLEPPC classification)

Myakka River State Park

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Hedge nettle	*Stachys floridana*	
Sweet shaggytuft	*Stenandrium dulce*	
Crow poison	*Stenanthium densum*	
St. Augustine grass	*Stenotaphrum secundatum*	
Queen's delight	*Stillingia sylvatica*	
Pineland scalypink	*Stipulicida setacea* var. *lacerata*	
Storax	*Styrax americana*	
Wild aster	*Symphyotrichum adnatum*	
Climbing aster	*Symphyotrichum carolinianum*	
Bushy aster	*Symphyotrichum dumosum*	
Annual satmarsh aster	*Symphyotrichum subulatum*	
Shoe buttons	*Syngonanthus flavidulus*	
Bald cypress	*Taxodium distichum*	
Sprawling hoarypea	*Tephrosia hispidula*	
Spiked hoarypea	*Tephrosia spicata*	
Wood sage	*Teucrium canadense*	
Fireflag, Arrowroot	*Thalia geniculata*	
Downy shield fern	*Thelypteris dentata*	
Hairy maiden fern	*Thelypteris hispidula* var. *versicolor*	
Hottentot fern	*Thelypteris interrupta*	
Medusa head airplant	*Tillandsia balbisiana*	
Wild pine, airplant	*Tillandsia fasciculata*	
Ball moss	*Tillandsia recurvata*	
Narrow-leaved airplant	*Tillandsia setacea*	
Spanish-moss	*Tillandsia usneoides*	
Wild-pine airplant	*Tillandsia utriculata*	11, 25, 26, 35
Poison ivy	*Toxidendron radicans*	
Spiderwort	*Tradescantia ohiensis*	
Marsh St. John"s-wort	*Triadenum virginicum*	
Forked bluecurls	*Trichostema dichotomum*	
Tall redtop, Purpletop	*Tridens flavus*	
White clover *[3]	*Trifolium repens*	
Eastern gammagrass	*Tripsacum dactyloides*	
Southern cattail	*Typha domingensis*	
Common cattail	*Typha latifolia*	
American elm	*Ulmus americana*	
Caesar weed *[2]	*Urena lobata*	
Paragrass *[1]	*Urochloa mutica*	
Browntop millet *[3]	*Urochloa ramosa*	
Horned bladderwort	*Utricularia cornuta*	
Bladderwort	*Utricularia foliosa*	
Bladderwort	*Utricularia gibba*	
Floating bladderwort	*Utricularia inflata*	
Southern bladderwort	*Utricularia juncea*	

*** Non-native Species**
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Myakka River State Park

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Eastern purple bladderwort	*Utricularia purpurea*	
Little floating bladderwort	*Utricularia radiata*	
Zigzag bladderwort	*Utricularia subulata*	
Sparkleberry	*Vaccinium arboreum*	
Black highbush blueberry	*Vaccinium corymbosum*	
Glaucous blueberry	*Vaccinium darrowii*	
Shiny blueberry	*Vaccinium myrsinites*	
Deerberry	*Vaccinium stamineum*	
Vervain *[3]	*Verbena brasiliensis*	
Harsh verbena	*Verbena scabra*	
Frostweed	*Verbesina virginica*	
Ironweed	*Vernonia blodgettii*	
Possum haw	*Viburnum nudum*	
Black haw	*Viburnum obovatum*	
Fourleaf vetch	*Vicia acutifolia*	
Yellow cow pea	*Vigna luteola*	
Long-leaf violet	*Viola lanceolata*	
Lobed-leaved violet	*Viola palmata*	
Primroseleaf violet	*Viola primulifolia*	
Blue violet	*Viola sororia*	
Summer grape	*Vitis aestivalis*	
Scuppernong, Muscadine	*Vitis rotundifolia*	
Calusa grape	*Vitis shuttleworthii*	
Shoestring fern	*Vittaria lineata*	
Algal bulrush	*Websteria confervoides*	
Netted chain fern	*Woodwardia areolata*	
Virginia chain fern	*Woodwardia virginica*	
Tallowwood, Hogplum	*Ximenia americana*	
Coastalplain yelloweyed grass	*Xyris ambigua*	
Small yelloweyed grass	*Xyris brevifolia*	
Carolina yelloweyed grass	*Xyris caroliniana*	
Bog yelloweyed grass	*Xyris floridana*	
Elliott's yelloweyed grass	*Xyris elliottii*	
Fringed yelloweyed grass	*Xyris fimbriata*	
Savannah yelloweyed grass	*Xyris flabelliformis*	
Richard's yelloweyed grass *[3]	*Xyris jupicai*	
Small's yelloweyed grass	*Xyris smalliana*	
Oriental false hawksbeard *[3]	*Youngia japonica*	
Spanish dagger *[3]	*Yucca aloifolia*	
Bear grass	*Yucca filamentosa*	
Wild lime	*Zanthoxylum fagara*	
Rain-lily	*Zephyranthes simpsonii*	35
Lawn orchid *[3]	*Zeuxine strateumatica*	

*** Non-native Species**
(plants identified with FLEPPC classification)

Myakka River State Park
Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
	FISH	
Florida gar	*Lepisosteus platyrhincus*	48, 53
Bowfin	*Amia calva*	48, 53
Tarpon	*Megalops atlantica*	48, 53
American eel	*Anguilla rostrata*	48, 53
Gizzard shad	*Dorosoma cepedianum*	48, 53
Golden shiner	*Notemigonus crysoleucas*	48, 53
Iron-colored shiner	*Notropis chalybaeus*	48, 53
Tailight shiner	*Notropis maculatus*	48, 53
Lake chubsucker	*Erimyzon sucetta*	48, 53
Brown bullhead	*Ictalurus nebulosus*	48, 53
Yellow bullhead	*Ictalurus natalis*	48, 53
Channel catfish	*Ictalurus punctatus*	48, 53
Tadpole madtom	*Noturus gyrinus*	48, 53
Walking catfish	*Clarias batrachus*	48, 53
Brown hoplo*	*Hoplosternum littorale*	53
Vermiculated sailfin catfish*	*Pterygoplichthys disjunctivus*	53
Bluefin killifish	*Lucania goodei*	24, 29, 32, 48, 53
Seminole killifish	*Fundulus seminolis*	24, 29, 32, 48, 53
Golden topminnow	*Fundulus chrysotus*	24, 29, 32, 48, 53
Flagfish	*Jordanella floridae*	24, 29, 32, 48, 53
Eastern mosquitofish	*Gambusia holbrooki*	24, 29, 32, 48, 53
Least killifish	*Heterandria formosa*	24, 29, 32, 48, 53
Sailfin molly	*Poecilia latipinna*	48, 53
Brook silverside	*Labidesthes sicculus*	48, 53
Common snook	*Centropomus undecimalis*	48, 53
Everglades pigmy sunfish	*Elassoma evergladei*	32, 48
Blue-spotted sunfish	*Enneacanthus gloriosus*	48, 53
Black crappie	*Pomoxis nigromaculatus*	48, 53
Warmouth	*Lepomis gulosus*	48, 53
Spotted sunfish	*Lepomis punctatus*	48, 53
Red-eared sunfish	*Lepomis microlophus*	48, 53
Dollar sunfish	*Lepomis marginatus*	48, 53
Bluegill	*Lepomis macrochirus*	48, 53
Largemouth bass	*Micropterus salmoides*	48, 53
Swamp darter	*Etheostoma fusiforme*	32, 48
Hogchoker	*Trinectes maculatus*	48, 53
Tilapia*	*Tilapia* spp.	48, 53
	AMPHIBIANS	
Eastern lesser siren	*Siren intermedia*	53
Greater siren	*Siren lacertina*	24, 29, 32, 48, 53

*** Non-native Species**
(plants identified with FLEPPC classification)

Myakka River State Park
Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Everglades dwarf siren	*Pseudobranchus striatus belli*	24, 29, 32, 48, 53
Peninsula newt	*Notophthalmus viridescens-piaropicola*	11,24,29,32,35,48,53
Two-toed amphiuma	*Amphiuma means*	24, 29, 32, 48, 53
Dwarf salamander	*Eurycea quadridigitata*	24, 29, 32
Southern toad	*Bufo terrestris*	35
Oak toad	*Bufo quercicus*	8
Greenhouse frog*	*Eleutherodactylus planirostris*	MTC
Pinewoods treefrog	*Hyla femoralis*	8, 11
Barking treefrog	*Hyla gratiosa*	8, 11
Squirrel treefrog	*Hyla squirella*	8, 11, 35
Green treefrog	*Hyla cinerea*	8
Little grass frog	*Limnaoedus ocularis*	11
Cuban treefrog*	*Osteopilus septentrionalis*	11, 35, 82
Florida cricket frog	*Acris gryllus dorsalis*	MTC
Florida chorus frog	*Pseudacris nigrita*	6, 11
Eastern narrowmouth toad	*Gastrophryne carolinensis*	35
Eastern spadefoot toad	*Scaphiopus holbrooki*	11, 29
Bullfrog	*Rana catesbeiana*	24, 48, 53
Pig frog	*Rana grylio*	24, 29, 32
Southern leopard frog	*Rana sphenocephala*	11, 35, 82
Florida gopher frog	*Rana capito aesopus*	6, 8, 15
	REPTILES	
American alligator	*Alligator mississippiensis*	24, 29, 32, 48, 53
Florida snapping turtle	*Chelydra serpentina osceola*	24, 29, 32, 48, 53
Stinkpot	*Sternotherus odoratus*	24, 29, 32, 48, 53
Striped mud turtle	*Kinosternon bauri palmarum*	24, 29, 32, 48, 53
Florida mud turtle	*Kinosternon subrubrum*	24, 29, 32, 48, 53
Florida box turtle	*Terrapene carolina bauri*	6, 8, 11, 35
Peninsula cooter	*Pseudemys floridana peninsularis*	48, 53
Florida redbelly turtle	*Pseudemys nelsoni*	48, 53
Gopher tortoise	*Gopherus polyphemus*	6, 8, 15
Burmese brown tortoise*	*Manouria emys*	82
Florida softshell	*Trionyx ferox*	24, 29, 32, 48, 53
Green anole	*Anolis carolinensis carolinensis*	MTC
Cuban brown anole*	*Anolis sagrei sagrei*	82
Northern curly-tailed lizard*	*Leiocephalus carinatus*	82
Mediterranean gecko*	*Hemidactylus turcicus turcicus*	82
Indo-Pacific gecko*	*Hemidactylus garnotii*	82
Eastern glass lizard	*Ophisaurus ventralis*	MTC

*** Non-native Species**
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Myakka River State Park
Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Eastern slender glass lizard	*Ophisaurus attenuatus longicaudus*	MTC
Island glass lizard	*Ophisaurus compressus*	8
Six-lined racerunner	*Cnemidophorus sexlineatus*	15
Peninsula mole skink	*Eumeces egregius*	11, 35
Five-lined skink	*Eumeces fasciatus*	11, 35
Southeastern five-lined skink	*Eumeces inexpectatus*	11, 35
Broadhead skink	*Eumeces laticeps*	35
Ground skink	*Scincella laterale*	11
Striped crayfish snake	*Regina allen*	24, 29, 32, 48, 53
Green water snake	*Nerodia cyclopion cyclopion*	48, 53
Red-bellied water snake	*Nerodia erythrogaster erythrogaster*	48, 53
Brown water snake	*Nerodia taxispilota*	48, 53
Banded water snake	*Nerodia fasciata fasciata*	24, 29, 32, 48, 53
Florida water snake	*Nerodia fasciata pictiventris*	24, 29, 32, 48, 53
Florida brown snake	*Storeria dekayi victa*	24, 29, 32
Eastern garter snake	*Thamnophis sirtalis sirtalis*	MTC
Blue-striped garter snake	*Thamnophis sirtalis similis*	MTC
Peninsula ribbon snake	*Thamnophis sauritus sackeni*	24, 29, 32, 48, 53
Pine woods snake	*Rhadinaea flavilata*	8
Southern ringneck snake	*Diadophis punctatus punctatus*	8
Eastern mud snake	*Farancia abacura abacura*	24, 29, 32, 48, 53
Southern black racer	*Coluber constrictor priapus*	MTC
Eastern coachwhip	*Masticophis flagellum*	6, 8, 15
Rough green snake	*Opheodrys aestivus*	MTC
Eastern indigo snake	*Drymarchon corais couperi*	MTC
Corn snake	*Elaphe guttata guttata*	8, 11, 35
Yellow rat snake	*Elaphe obsoleta quadrivittata*	8, 11, 35
Florida kingsnake	*Lampropeltis getulus floridana*	8, 11, 35
Scarlet kingsnake	*Lampropeltis triangulum elapsoides*	8, 11, 35
Florida scarlet snake	*Cemophora coccinea coccinea*	6, 8, 11, 35
Eastern cottonmouth	*Agkistrodon piscivorus piscivorus*	24, 29, 32, 48, 53
Florida cottonmouth	*Agkistrodon piscivorus conanti*	24, 29, 32, 48, 53
Dusky pigmy rattlesnake	*Sistrurus miliarius barbouri*	6, 8, 15
Eastern diamondback rattlesnake	*Crotalus adamanteus*	6, 8, 11, 15, 35
Eastern coral snake	*Micrurus fulvius*	8
	BIRDS	
Horned grebe	*Podiceps auritus*	48
Pied-billed grebe	*Podilymbus podiceps*	24, 29, 32, 48, 53

*** Non-native Species**
(plants identified with FLEPPC classification)

Myakka River State Park
Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
American white pelican	*Pelecanus erythrorhynchos*	48
Brown pelican	*Pelecanus occidentalis*	48
Great cormorant	*Phalacrocorax carbo*	48
Double-crested cormorant	*Phalacrocorax auritus*	48
Anhinga	*Anhinga anhinga*	48
Magnificent frigatebird	*Fregata magnificens*	OF
Great white heron	*Ardea herodias occidentalis*	24, 29, 32, 48, 53
Great blue heron	*Ardea herodias*	24, 29, 32, 48, 53
Green heron	*Butorides virescens*	24, 29, 32, 48, 53
Cattle egret	*Bubulcus ibis*	24, 29, 32, 48, 53
Little blue heron	*Egretta caerulea*	24, 29, 32, 48, 53
Reddish egret	*Egretta rufescens*	24, 29, 32, 48, 53
Great egret	*Ardea alba*	24, 29, 32, 48, 53
Snowy egret	*Egretta thula*	24, 29, 32, 48, 53
Tricolored heron	*Egretta tricolor*	24, 29, 32, 48, 53
Black-crowned night heron	*Nycticorax nycticorax*	24, 29, 32, 48, 53
Yellow-crowned night heron	*Nyctanassa violacea*	24, 25, 29, 32, 48, 53
Least bittern	*Ixobrychus exilis*	24, 29
American bittern	*Botaurus lentiginosus*	24, 29
Wood stork	*Mycteria americana*	48, 53
Glossy ibis	*Plegadis falcinellus*	24, 29, 32, 48, 53
White ibis	*Eudocimus albus*	MTC
Roseate spoonbill	*Ajaia ajaja*	48, 53
Greater flamingo*	*Phoenicopterus ruber*	48
Canada goose	*Branta canadensis*	48, 53
Great white-fronted goose	*Anser albifrons*	48, 53
Snow goose	*Aen caerulescens*	48, 53
Fulvous whistling-duck	*Dendrocygna bicolor*	48, 53
Black-bellied whistling-duck*	*Dendrocygna autumnalis*	35, 48, 53
Mallard	*Anas platyrhynchos*	48, 53
American black duck	*Anas rubripes*	48, 53
Mottled duck	*Anas fulvigula*	48, 53
Gadwall	*Anas strepera*	48, 53
Northern pintail	*Anas acuta*	48, 53
White-cheeked pintail	*Anas bahamensis*	48, 53
Green-winged teal	*Anas crecca*	48, 53
Blue-winged teal	*Anas discors*	48, 53
Cinnamon teal	*Anas cyanoptera*	48, 53
Eurasian wigeon	*Anas penelope*	48, 53
American wigeon	*Anas americana*	48, 53
Northern shoveler	*Anas clypeata*	48, 53
Wood duck	*Aix sponsa*	25, 35, 48, 53
Redhead	*Aythya americana*	48, 53

*** Non-native Species**
(plants identified with FLEPPC classification)

Myakka River State Park
Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Ring-necked duck	*Aythya collaris*	48, 53
Canvasback	*Aythya valisineria*	48, 53
Lesser scaup	*Aythya affinis*	48, 53
Bufflehead	*Bucephala albeola*	48, 53
Ruddy duck	*Oxyura jamaicensis*	48, 53
Hooded merganser	*Lophodytes cucullatus*	48, 53
Common merganser	*Mergus merganser*	48, 53
Red-breasted merganser	*Mergus serrator*	48, 53
Muscovy duck*	*Cairina moschata*	81, 82
Turkey vulture	*Cathartes aura*	MTC
Black vulture	*Coragyps atratus*	MTC
White-tailed kite	*Elanus leucurus*	24, 29, 32
Swallow-tailed kite	*Elanoides forficatus*	6, 8, 24, 29, 32, 48
Snail kite	*Rostrhamus sociabilis*	24, 29, 32
Sharp-shinned hawk	*Accipiter striatus*	8, 11, 35
Cooper's hawk	*Accipiter cooperii*	8, 11, 35
Red-tailed hawk	*Buteo jamaicensis*	6, 8
Red-shouldered hawk	*Buteo lineatus*	MTC
Broad-winged hawk	*Buteo platypterus*	8, 11, 35
Short-tailed hawk	*Buteo brachyurus*	MTC
Golden eagle	*Aquila chrysaetos*	24, 29, 32
Southern bald eagle	*Haliaeetus leucocephalus*	MTC
Northern harrier	*Circus cyaneus*	6, 24, 29
Osprey	*Pandion haliaetus*	MTC
Crested caracara	*Caracara plancus*	6
Peregrine falcon	*Falco peregrinus tundrius*	MTC
Merlin	*Falco columbarius*	6, 24, 29
American kestrel	*Falco sparverius*	6, 8, 24, 29, 32
Southeastern American kestrel	*Falco sparverius paulus*	6, 24, 29, 32
Northern bobwhite	*Colinus virginianus*	6, 8
Wild turkey	*Meleagris gallopavo*	MTC
Ring-necked pheasant*	*Phasianus colchicus*	81
Sandhill crane	*Grus canadensis*	6, 8, 24, 29, 32
Florida sandhill crane	*Grus canadensis pratensis*	6, 8, 24, 29, 32
Limpkin	*Aramus guarauna*	32, 48, 53
King rail	*Rallus elegans*	24, 29, 32
Virginia rail	*Rallus limicola*	24, 29, 32, 81
Sora	*Porzana carolina*	24, 29, 32, 81
Clapper rail	*Rallus longirostris*	24, 29
Purple gallinule	*Porphyrula martinica*	32, 48, 53
Common moorhen	*Gallinula chloropus*	24, 29, 32, 48, 53
American coot	*Fulica americana*	48, 53
American oystercatcher	*Haematopus palliatus*	48
Semipalmated plover	*Charadrius semipalmatus*	81

*** Non-native Species**
(plants identified with FLEPPC classification)

Myakka River State Park
Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Killdeer	*Charadrius vociferus*	24, 29, 32, 53
Black-bellied plover	*Pluvialis squatarola*	48
American woodcock	*Scolopax minor*	24, 29, 32, 81
Common snipe	*Gallinago gallinago*	24, 29, 32, 53
Spotted sandpiper	*Actitis macularia*	32, 48
Solitary sandpiper	*Tringa solitaria*	48
Greater yellowlegs	*Tringa melanoleuca*	24, 29, 32, 48, 81
Lesser yellowlegs	*Tringa flavipes*	24, 29, 32, 48, 81
Willet	*Catoptrophorus semipalmatus*	32, 48
Pectoral sandpiper	*Calidris melanotos*	24, 29, 32, 81
Least sandpiper	*Calidris minutilla*	32, 48
Dunlin	*Calidris alpina*	32, 48
Semipalmated sandpiper	*Calidris pusilla*	24, 29, 32, 81
Western sandpiper	*Calidris mauri*	24, 29, 32, 81
Stilt sandpiper	*Calidris himantopus*	32, 48
Short-billed dowitcher	*Limnodromus griseus*	32, 48
American avocet	*Recurvirostra americana*	32, 48
Black-necked stilt	*Himantopus mexicanus*	32, 48
Herring gull	*Larus argentatus*	32, 48
Ring-billed gull	*Larus delawarensis*	32, 48
Laughing gull	*Larus atricilla*	32, 48
Bonaparte's gull	*Larus philadelphia*	32, 48
Gull-billed tern	*Sterna nilotica*	32, 48
Forster's tern	*Sterna forsteri*	32, 48
Common tern	*Sterna hirundo*	32, 48
Least tern	*Sterna antillarum*	32, 48
Royal tern	*Sterna maxima*	32, 48
Sandwich tern	*Sterna sandvicensis*	32, 48
Caspian tern	*Sterna caspia*	32, 48
Black tern	*Chlidonias niger*	32, 48
Black skimmer	*Rynchops niger*	32, 48
White-crowned pigeon	*Columba leucocephala*	82
Rock dove*	*Columba livia*	81, 82
Mourning dove	*Zenaida macroura*	6, 8, 81, 82
Eurasian collared dove*	*Streptopelia decaocto*	81, 82
Ringed turtle-dove*	*Streptopelia risoria*	81, 82
Common ground-dove	*Columbina passerina*	6, 8, 81, 82
Cockatiel*	*Nymphicus hollandicus*	82
Yellow-billed cuckoo	*Coccyzus americanus*	11, 35
Barn owl	*Tyto alba*	11, 35
Eastern screech-owl	*Otus asio*	8, 11, 35
Great horned owl	*Bubo virginianus*	8
Florida burrowing owl	*Athene cunicularia floridana*	6
Barred owl	*Strix varia*	11, 24, 29, 35

*** Non-native Species**
(plants identified with FLEPPC classification)

Myakka River State Park
Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Chuck-will's-widow	*Caprimulgus carolinensis*	6, 8
Whip-poor-will	*Caprimulgus vociferus*	6, 8, 11, 35
Common nighthawk	*Chordeiles minor*	6, 8
Chimney swift	*Chaetura pelagica*	MTC
Ruby-throated hummingbird	*Archilochus colubris*	MTC
Belted kingfisher	*Ceryle alcyon*	24, 29, 32, 48, 53
Northern flicker	*Colaptes auratus*	8, 11, 35, 81, 82
Pileated woodpecker	*Dryocopus pileatus*	8, 11, 35
Red-bellied woodpecker	*Melanerpes carolinus*	8, 11, 35
Red-headed woodpecker	*Melanerpes erythrocephalus*	8, 11, 35
Yellow-bellied sapsucker	*Sphyrapicus varius*	11, 35
Southern hairy woodpecker	*Picoides villosus audubonii*	11, 35, 81
Downy woodpecker	*Picoides pubescens*	11, 35, 81
Red-cockaded woodpecker	*Picoides borealis*	8
Eastern kingbird	*Tyrannus tyrannus*	MTC
Gray kingbird	*Tyrannus dominicensis*	32, 48
Western kingbird	*Tyrannus verticalis*	6, 81, 82
Scissor-tailed flycatcher	*Tyrannus forficatus*	81, 82
Great crested flycatcher	*Myiarchus crinitus*	11, 35
Eastern phoebe	*Sayornis phoebe*	11, 32, 35
Acadian flycatcher	*Empidonax virescens*	25, 30, 35
Eastern wood-pewee	*Contopus virens*	11, 35
Olive-sided flycatcher	*Contopus borealis*	11, 35
Vermilion flycatcher	*Pyrocephalus rubinus*	11, 35
Tree swallow	*Tachycineta bicolor*	MTC
Bank swallow	*Riparia riparia*	MTC
Northern rough-winged swallow	*Stelgidopteryx serripennis*	MTC
Barn swallow	*Hirundo rustica*	MTC
Cliff swallow	*Hirundo pyrrhonota*	MTC
Purple martin	*Progne subis*	MTC
Blue jay	*Cyanocitta cristata*	MTC
Florida scrub-jay	*Aphelocoma coerulescens*	15
American crow	*Corvus brachyrhynchos*	MTC
Fish crow	*Corvus ossifragus*	32, 48
Tufted titmouse	*Parus bicolor*	11, 35
White-breasted nuthatch	*Sitta carolinensis*	8
Red-breasted nuthatch	*Sitta canadensis*	8
Brown-headed nuthatch	*Sitta pusilla*	8
House wren	*Troglodytes aedon*	81, 82
Carolina wren	*Thryothorus ludovicianus*	8, 11, 35
Marsh wren	*Cistothorus palustris*	32
Sedge wren	*Cistothorus platensis*	32
Northern mockingbird	*Mimus polyglottos*	MTC
Gray catbird	*Dumetella carolinensis*	81

*** Non-native Species**
(plants identified with FLEPPC classification)

Myakka River State Park
Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Brown thrasher	*Toxostoma rufum*	81
American robin	*Turdus migratorius*	MTC
Wood thrush	*Hylocichla mustelina*	25
Hermit thrush	*Catharus guttatus*	11, 35
Swainson's thrush	*Catharus ustulatus*	11, 35
Gray-cheeked thrush	*Catharus minimus*	11, 35
Veery	*Catharus fuscescens*	11, 35
Eastern bluebird	*Sialia sialis*	6, 8
Blue-gray gnatcatcher	*Polioptila caerulea*	11, 35
Golden-crowned kinglet	*Regulus satrapa*	8, 25, 30
Ruby-crowned kinglet	*Regulus calendula*	11, 35
American pipit	*Anthus rubescens*	32, 48, 81
Cedar waxwing	*Bombycilla cedrorum*	11, 35
Loggerhead shrike	*Lanius ludovicianus*	MTC
European starling*	*Sturnus vulgaris*	MTC
White-eyed vireo	*Vireo griseus*	MTC
Yellow-throated vireo	*Vireo flavifrons*	11, 35
Blue-headed vireo	*Vireo solitarius*	11, 35
Red-eyed vireo	*Vireo olivaceus*	11, 35
Black and white warbler	*Mniotilta varia*	8, 11, 35
Prothonotary warbler	*Protonotaria citrea*	25, 30, 35
Worm-eating warbler	*Helmitheros vermivorus*	11, 35
Orange-crowned warbler	*Vermivora celata*	11, 35
Nashville warbler	*Vermivora ruficapilla*	11, 35
Northern parula	*Parula americana*	11, 35
Yellow warbler	*Dendroica petechia*	25, 81
Magnolia warbler	*Dendroica magnolia*	25
Cape May warbler	*Dendroica tigrina*	11, 35, 82
Black-throated blue warbler	*Dendroica caerulescens*	11, 35
Yellow-rumped warbler	*Dendroica coronata*	MTC
Black-throated green warbler	*Dendroica virens*	MTC
Yellow-throated warbler	*Dendroica dominica*	8, 11, 35
Blackpoll warbler	*Dendroica striata*	11, 35, 81, 82
Pine warbler	*Dendroica pinus*	8
Prairie warbler	*Dendroica discolor*	11, 35
Palm warbler	*Dendroica palmarum*	MTC
Ovenbird	*Seiurus aurocapillus*	11, 35
Northern waterthrush	*Seiurus noveboracensis*	32, 48
Connecticut warbler	*Oporornis agilis*	11, 35
Common yellowthroat	*Geothlypis trichas*	6, 8, 24, 29, 32
Hooded warbler	*Wilsonia citrina*	11, 35
American redstart	*Setophaga ruticilla ruticilla*	MTC
Bobolink	*Dolichonyx oryzivorus*	24, 29, 32
Eastern meadowlark	*Sturnella magna*	6, 81

*** Non-native Species**
(plants identified with FLEPPC classification)

Myakka River State Park
Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Yellow-headed blackbird	*Xanthocephalus xanthocephalus*	81
Red-winged blackbird	*Agelaius phoeniceus*	24, 29, 32
Baltimore oriole	*Icterus galbula*	81, 82
Rusty blackbird	*Euphagus carolinus*	11, 24, 29, 32, 35
Brewer's blackbird	*Euphagus cyanocephalus*	11, 24
Boat-tailed grackle	*Quiscalus major*	24, 29, 32, 48, 81
Common grackle	*Quiscalus quiscula*	48, 81
Brown-headed cowbird	*Molothrus ater*	MTC
Northern cardinal	*Cardinalis cardinalis*	8, 11, 35
Rose-breasted grosbeak	*Pheucticus ludovicianus*	8, 11, 82
Blue grosbeak	*Guiraca caerulea*	8, 11
Indigo bunting	*Passerina cyanea*	81
Painted bunting	*Passerina ciris*	8, 11, 81
Dickcissel	*Spiza americana*	6, 81, 82
Eastern towhee	*Pipilo erythrophthalmus*	6, 8
Savannah sparrow	*Passerculus sandwichensis*	6, 81
Grasshopper sparrow	*Ammodramus savannarum*	6
Florida grasshopper sparrow	*Ammodramus savannarum floridanus*	6
Saltmarsh sharp-tailed sparrow	*Ammodramus caudacutus*	32
Vesper sparrow	*Pooecetes gramineus*	6, 8, 81
Lark sparrow	*Chondestes grammacus*	6, 8
Bachman's sparrow	*Aimophila aestivalis*	8
Chipping sparrow	*Spizella passerina*	6, 81, 82
Field sparrow	*Spizella pusilla*	6, 81
White-crowned sparrow	*Zonotrichia leucophrys*	8, 81
White-throated sparrow	*Zonotrichia albicollis*	MTC
Swamp sparrow	*Melospiza georgiana*	11, 35
Song sparrow	*Melospiza melodia*	6, 81
Purple finch	*Carpodacus purpureus*	25, 30, 81, 82
American goldfinch	*Carduelis tristis*	11, 35
Lapland longspur	*Calcarius lapponicus*	81
House sparrow*	*Passer domesticus*	81, 82
	MAMMALS	
Virginia opossum	*Didelphis virginiana*	MTC
Southeastern shrew	*Sorex longirostris longirostris*	MTC
Short-tailed shrew	*Blarina brevicauda*	11, 35
Least shrew	*Cryptotis parva*	81
Eastern mole	*Scalopus aquaticus*	6, 8
Evening bat	*Nycticeius humeralis*	MTC
Brazilian free-tailed bat	*Tadarida brasiliensis*	82
Nine-banded armadillo*	*Dasypus novemcinctus*	MTC
Marsh rabbit	*Sylvilagus palustris*	6, 24, 29

*** Non-native Species**
(plants identified with FLEPPC classification)

Myakka River State Park
Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Eastern cottontail	*Sylvilagus floridanus*	6, 8
Gray squirrel	*Sciurus carolinensis*	11, 35, 81, 82
Sherman's fox squirrel	*Sciurus niger shermani*	8, 11
Marsh rice rat	*Oryzomys palustris*	24, 29
Eastern harvest mouse	*Reithrodontomys humulis*	8
Old-field mouse	*Peromyscus polionotus*	6
Cotton mouse	*Peromyscus gossypinus*	11, 35
Hispid cotton rat	*Sigmodon hispidus*	6, 8
Eastern woodrat	*Neotoma floridana*	11, 35
Round-tailed muskrat	*Neofiber alleni*	24, 29
House mouse*	*Mus musculus*	81, 82
Coyote*	*Canis latrans*	MTC
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*	24, 25, 29, 32
Long-tailed weasel	*Mustela frenata olivacea*	8, 11, 35
Eastern spotted skunk	*Spilogale putorius*	15
Striped skunk	*Mephitis mephitis*	6, 8, 15
Florida panther	*Felis concolor coryi*	MTC
Bobcat	*Felis rufus*	MTC
Wild pig*	*Sus scrofa*	MTC
White-tailed deer	*Odocoileus virginianus*	MTC

*** Non-native Species**
(plants identified with FLEPPC classification)

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

Lacustrine—Continued

46 Flatwood/Prairie Lake
47 Marsh Lake
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)

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.

CE = Commercially Exploited

Myakka River State Park

Designated Species

Plants

Common Name/ *Scientific Name*	**Designated Species Status** FDA	USFWS	FNAI
Grass pink			
Calopogon multiflorus	LE	MC	G2G3, S2S3
Butterfly orchid			
Encyclia tampensis	CE		
Tampa vervain			
Glandularia tampensis	LE		G2, S2
Chapman's skeletongrass			
Gymnopogon chapmanianus			G3, S3
Threadroot orchid			
Harrisella porrecta	LT		
Catesby’s lily; Pine lily			
Lilium catesbaei	LT		
Nodding clubmoss			
Lycopodiella cernua	CE		
Cinnamon Fern			
Osmunda cinnamomea	CE		
Royal fern			
Osmunda regalis var. *spectabilis*	CE		
Long lip ladiestresses			
Spiranthes longilabris	LT		
Giant wild-pine			
Tillandsia utriculata	LE		
Rain-lily			
Zephyranthes simpsonii	LT		G2G3, S2S3

Myakka River State Park

Designated Species

Animals

Common Name/ *Scientific Name*	Designated Species Status FFWCC	USFWS	FNAI
AMPHIBIANS			
Florida gopher frog *Rana capito*	LS		G3G4, S3
REPTILES			
American alligator *Alligator mississippiensis*	LS	LT(S/A)	G5, S4
Gopher tortoise *Gopherus polyphemus*	LS		G3, S3
Eastern indigo snake *Drymarchon corais cooperi*	LT	LT	G4T3, S3
Eastern diamondback rattlesnake *Crotalus adamanteus*			G5, S3
BIRDS			
Eastern brown pelican *Pelecanus occidentalis*	LS		G4, S3
Magnificent frigatebird *Fregata magnificens*			G5, S1
Great white heron *Ardea herodias*			G5T2, S2
Little blue heron *Egretta caerulea*	LS		G5, S4
Reddish egret *Egretta rufescens*	LS		G4, S2
Great egret *Ardea alba*			G5, S4
Snowy egret *Egretta thula*	LS		G5, S3
Tricolored heron *Egretta tricolor*	LS		G5, S4
Black-crowned night heron *Nycticorax nycticorax*			G5, S3
Yellow-crowned night heron *Nyctanassa violacea*			G5, S3
Least bittern *Ixobrychus exilis*			G5, S4
Wood stork *Mycteria americana*	LE	LE	G4, S2
Glossy ibis *Plegadis falcinellus*			G5, S3
White ibis			

Myakka River State Park

Designated Species

Animals

Common Name/ *Scientific Name*	Designated Species Status FFWCC	USFWS	FNAI
Eudocimus albus	LS		G5, S4
Roseate spoonbill			
Ajaia ajaja	LS		G5, S2
White-tailed kite			
Elanus leucurus			G5, S1
Snail kite			
Rostrhamus sociabilis	LE	LE	G4G5T2, S2
Cooper's hawk			
Accipiter cooperii			G5, S3
Short-tailed hawk			
Buteo brachyurus			G4G5, S1
Southern bald eagle			
Haliaeetus leucocephalus	LT	LT	G4, S3
Osprey			
Pandion haliaetus			G5, S3S4
Crested caracara			
Caracara cheriway	LT	LT	G5, S2
Peregrine falcon			
Falco peregrinus	LE		G4, S2
Merlin			
Falco columbarius			G5, S2
Southeastern American kestrel			
Falco sparverius	LT		G5T4, S3
Florida sandhill crane			
Grus canadensis	LT		G5T2T3, S2S3
Limpkin			
Aramus guarauna	LS		G5, S3
American oystercatcher			
Haematopus palliatus	LS		G5, S2
American avocet			
Recurvirostra americana			G5, S2
Least tern			
Sterna antillarum	LT		G4, S3
Royal tern			
Sterna maxima			G5, S3
Sandwich tern			
Sterna sandvicensis			G5, S2
Caspian tern			
Sterna caspia			G5, S2
Black skimmer			
Rynchops niger	LS		G5, S3
White-crowned pigeon			
Columba leucocephala	LT		G3, S3
Florida burrowing owl			

Myakka River State Park

Designated Species

Animals

Common Name/ *Scientific Name*	Designated Species Status FFWCC	USFWS	FNAI
Athene cunicularia	LS		G4T3, S3
Southern hairy woodpecker *Picoides villosus*			G5, S3
Red-cockaded woodpecker *Picoides borealis*	LT	LE	G3, S2
Florida scrub-jay *Aphelocoma coerulescens*	LT	LT	G2, S2
White-breasted nuthatch *Sitta carolinensis*			G5, S2
Worm-eating warbler *Helmitheros vermivorus*			G5, S1
American redstart *Setophaga ruticilla*			G5, S2
Florida grasshopper sparrow *Ammodramus savannarum*	LE	LE	G5T1, S1
Bachman's sparrow *Aimophila aestivalis*			G3, S3
MAMMALS			
Sherman's fox squirrel *Sciurus niger shermani*	LS		G5T3, S3
Round-tailed muskrat *Neofiber alleni*			G3, S3
Florida black bear *Ursus americanus floridanus*	LT		G5T2, S2
Florida long-tailed weasel *Mustela frenata peninsulae*			G5T3, S3
Florida Panther *Puma concolor coryi*	LE	LE	G5T1, S1

Addendum 6—Timber Management Analysis

Statement of management goals. Dry prairie restoration will be enhanced through the removal of planted North Florida slash pine (Stand 1) north of the Upper Myakka Lake. Complete removal of North Florida slash and selective removal of South Florida slash will yield predominately pulpwood and chip-n-saw with a few sawtimber products. The Florida Division of Forestry will be consulted for assistance with the timber sale. Prior to timber harvest, the park will conduct a gopher tortoise survey of the North Florida slash pine stand and will work with the Florida Fish and Wildlife Conservation Commission to make recommendations concerning their management.

Size of stand and description. The stand is approximately a 200 acre tract of planted North Florida slash pine. A 40 year lease was granted in 1948 to the local chapter of Future Farmers of America. No records could be located on actual planting dates but increment core readings taken on April 16, 1999, revealed the sampled trees to be approximately 30 years old. There are 15 trees per acre although these are not evenly spaced; large areas with no trees do exist. The pines range in dbh from 10 to 30 inches with an average dbh of 14 inches. Tree height is 44 to 52 feet and the estimated basal area is 16 square feet per acre. The slash pines are mostly pulpwood size trees with the rest chip-n-saw. Since 1990, prescribed burns have occurred at a frequency of every two to three years. Understory growth consists of saw palmetto, gallberry and large patches of herbaceous plants. Gopher tortoise burrows and hog damage have been observed throughout the stand. Two wetlands occur within this stand: one on the northwest portion and one in the middle of the stand. Both wetlands can be avoided during a timber harvest. Access to the stand is via a fire lane and service road at the northeast and south boundaries of the pine stand.

Beetle problem. No beetle problem is anticipated based on previous harvests of planted pine in the park.

Management recommendation. Timber harvest will help achieve dry prairie/pine flatwood restoration and will be a one time activity. Efforts will be made to achieve desirable stand density equivalent to historic aerial photography (not less than 20 - 40 square feet per acre).

Addendum 7—Priority Schedule And Cost Estimates

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

Resource Management

1. Mechanical roller chopping of a minimum of 1,000 acres per year for the next 5 years.

Estimated Cost: Equipment rental to expedite acres chopped per day (SK250 + 12 Ft. duplex chopper) = $12,000.00/mo. including diesel fuel for 3 months = $36,000.00/yr. Preferred Option - Acquisition of minimum 130 hrs. and tractor @ $65,000.00 with OPS funding to operate 3 months per year - cost of chopping with labor @ $12.00/hr. and fuel and operational costs of $4,875.00/yr. = $11,696.96/yr.

Subtotal: Rental - $180,000.00 over 5 years
Tractor Acquisition & OPS - $123,484.00 over 5 years

2. "Mowing" of heavy palmetto and shrub growth too high to safely operate a chopper - 1,500 acres.

Estimated Cost: 100 acres per year at 10-20 acres per day outsourced at $65.00/hr 5 days per year = $2,600/yr. Alternate method - hire OPS labor at $12.00/hr. and mow 100 acres in one year. Labor @ $2,584.00 and operational costs of $1,875.00.

Subtotal : Outsourcing - $13,000.00 over 5 years
OPS Funded - $12,920.00 over 5 years

3. Hydrologic restoration - re-establishment of historic sheetflow and elimination of ditching, diking and road channeling.

Estimated Cost: a) Reduce elevation of old railroad grade occupied by the FPL powerline. Contracting of heavy equipment to "push" elevated portions of grade ((5 miles) into adjacent ditches created when grade was constructed and level grade to permit travel. Tractor-crawler work @ $130.00/hr. @ .2 mile progress/day = 20 days x $1040 =$20,800.

b) Filling of incised roads, fire plow lanes, ditches connecting wetlands and canal spoil leveling to permit historic flow patterns equates to 30 days of tractor-crawler work ($800.00/day), 20 days rework harrow disking ($520.00/day) and 1,000 cu. yd. of fill for incised roads ($6,000.00).

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

Subtotal: $58,800.00 over 5 years
(*actions less expensive if done in one year as individual projects)

4. Preparation for proper application of fire at intervals required to sustain dry prairie

Estimated Cost: Preparation of 50 miles of fire lane and fuel bed for the Rx burning of 12,000-18,000 acres per year. 3 miles of rototilling and 4 pass mowing per day outsourced at $65.00/hr. ($520.00/day) = $8,668.40

Subtotal: $43,342.00 over 5 years

5. Application of fire at appropriate frequency. "Average" of 14,500 acres per year (20- 30 burn days).

Estimated Cost: 25 ground burns using 6 people + equipment for 10 hours ea. burn - Labor $600.00/burn; operational costs $100.00/burn. Two aerial burns per year @ $1,100 each time for chopper (includes staff costs), Aerial Ignition Devices ($180.00/burn) and 8 person ground crew @ 4 hrs./burn ($320.00/burn) + operational costs of $75.00/burn. Yearly cost $20,850.00 ($1.44/acre).

Subtotal: $104,250.00 over 5 years

6. Restore areas invaded by non-constituent hardwoods that have persisted despite frequent burns.

Estimated Cost: Clearing of old cattle activity related sites (10 acres) @ 2 ac/day outsourced @ $65.00/hr. - 5 days @ $520.00/day = $2,600.00). Removal of 1,000 live oaks from former prairie areas - OPS labor @ $12.00/hr. and 3 hrs./tree (including travel and downtime) - 3,000 hours = $38,760.00 (These are one year projects with one-time cost).

Subtotal: $41,360.00

7. Restore 600 acres abandoned bahia grass improved pasture.

Estimated Cost: Herbiciding of pasture @ $200.00/acre 3 times = $36,000.00. "Renovating/cultivating" to prepare for native vegetation 3 days @ $65.00/hr. = $1,560.00. Annual planting of native species for 5 years @ $2,500.00/yr. = $12,500.00.

Subtotal: $50,060.00 over 5 years.

8. Control of terrestrial invasive exotics.

Estimated Cost: Treatment of invasive exotic plants such as cogongrass, tropical soda apple, melaleuca, climbing fern and Brazilian pepper. One "full-time" OPS @ $12.00/hr and appropriate herbicides = $30,000 per year.

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

Subtotal: $150,000.00 over 5 years

9. Removal of invasive exotics in old sandpit.

Estimated Cost: Ten days of tractor-crawler work to root rake heavily infested areas of old spoil and level areas so subsequent maintenance and monitoring may occur. Crawler work one-time @ $100.00/hr. x 10 days = $8,000.00. Annual expenditure for herbicide/carrier - $570.00 with other associated costs absorbed as normal operation.

Subtotal: $10,850.00 over 5 years

10. Remove dike/weir below Upper Myakka Lake to reestablish seasonal fluctuation.

Estimated Cost: Ten days of tractor-crawler time on Vanderipe Slough to level dike via placing spoil in ditch dug to create dike in 1935 - $800.00/day x 10 = $8,000.00. Demolition of concrete weir at Upper Myakka Lake and Myakka River. Mat-boarding to gain access w/tracked backhoe or dragline with wrecker balling of weir and clamshell bucket removal - 3 days @ $2,500.00/day.

Subtotal: One-time project - $15,500.00

11. Dechannelize Clay Gully to reestablish historic flow of river and anastomosing pattern of Clay Gully as it enters the Upper Myakka Lake marsh.

Estimated Cost: Mat-boarding of path to channelized .1 miles and backhoeing of spoil to fill channel dug in late 1940s - 4 days with medium size tracked backhoe @ $1,500.00/day = $6,000.00.

Subtotal: One-time project - $6,000.00

12. Eliminate air potato from residences and facilities areas.

Estimated Cost: Hiring of an OPS employee for 6 months @ $8.50/hr. and herbicides/carrier agent to eradicate this exotic from 6 areas currently controlled in. $9,516.00 + $580.00 annually - $10,096.00.

Subtotal: $30,388.00 over 3 years

13. Research to gain more insight into management applications and BMP's.

Estimated Cost: a) Hydrologic study of Myakka River impediments to flow - SR7bridge, CR780 bridge, SR72 in general, Down's dam, Clay Gully bridge, bridges within park, etc. - 3 year study @ $75,000.00/yr. funding level.
b) Sheetflow study as recommended by previous cursory research (Duever/Sleszynski proposal, 1992) - $10,000.00 initial set-up then staff time (absorbed).

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

c) Grasshopper sparrow reintroduction and monitoring - $35,000.00 through 3 breeding seasons.
d) Fire effects on successional dry prairie/mesic flatwoods - $30,000.00/year through 3 fire intervals (5 years) with subsequent staff follow-up.
e) Effects of fire in isolated wetlands/slough/river marshes - $30,000.00/year through 2 fire intervals (5 years) with subsequent staff follow-up.
f) Herbicide methodologies for effective control of paragrass and West Indian marsh grass. $50,000.00 first year and $30,000.00 for 4 years.
g) Effects of motorized water craft on the spread and re-establishment of hydrilla. Two year study @ $45,000.00/yr.

Subtotal: $795,000 over 5 years

Total Resource Management Costs: **$1,498,550.00**

Visitor Services/Recreation

1. Staffing costs associated with routine maintenance, cleaning and other work to support visitor use and recreation.

Estimated cost: $45,454 per year.

Subtotal: $454,540 over 10 years

2. Continue to install fencing along SR72 to provide public view of restored dry prairie in cooperation with FDOT clearing of ROW.

Estimated Cost: Fencing of 2.4 miles per year (following ROW clearing by FDOT) with 3 strand barbed wire on metal posts with dual/braced 8" pull-posts every 250' = $9,492.48 annually.

Subtotal: $47,462.40 over 5 years

Total Visitor Services/Recreation Costs: **$502,002.00**

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

Myakka River State Park
Priority Schedule and Cost Estimate

Item	Quantity	Unit	Unit Price	Multiplier	Amount
		Capital Improvements			
Camping					
Standard Camping Area	1.250	ea.	$625,000.00	1.25	$781,250.00
Support Facilities					
Group Camp restroom	1.000	ea.	$155,000.00	1.25	$193,750.00
Campground Bathhouse	2.000	ea.	$250,000.00	1.25	$625,000.00
Ranger Residences	4.000	ea.	$165,000.00	1.25	$825,000.00
Demolition Costs	10.000	ea.	$10,000.00	1.25	$125,000.00
Clay Gully Restroom	1.000	ea.	$115,000.00	1.25	$143,750.00
Trails and Interpretation					
Visitor Center Exhibit Upgrades	1.000	LS	$70,000.00	1.25	$87,500.00
Interpretive Trail	3960.000	LF	$2.00	1.25	$9,900.00
Birdwalk Observation Platform	1.000	ea.	$70,000.00	1.25	$87,500.00
Upper Myakka Lake Use Area					
New Concession Building	1.000	ea.	$500,000.00	1.25	$625,000.00
Concession Parking Improvements	65.00	per 10	$20,000.00	1.25	$162,500.00
Boat Ramp Upgrade	1.000	ea.	$20,000.00	1.25	$25,000.00
			Sub-Total:		$3,691,150.00
			20 Percent Design, Permitting and Contingency Fee		$738,230.00
			Total:		**$4,429,380.00**

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.

Myakka River State Park
Priority Schedule and Cost Estimate

Item	Quantity	Unit	Unit Price	Multiplier	Amount

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.

ADDITIONAL INFORMATION

FNAI Descriptions

DHR Cultural Management Statement

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 Myakka River State Park (Lease No. 3636): November 4, 2003

Prepared by Division of State Lands Staff

William Howell, OMC Manager
Joseph Duncan, Administrative Assistant

For

Myakka River State Park Review Team

Final Report January 21, 2004

Land Manager:	DRP
Area:	28,850 acres
County:	Sarasota
Mngt. Plan Revised:	7/29/1999
Mngt. Plan Update Due:	7/29/2009

Management Review Team Members

Agency Represented	Team member Appointed	Team member In attendance
Division of Forestry	Bill Korn	Bill Korn
DEP Southwest District	Haven Whiteside	Haven Whiteside
Sarasota County	Belinda Perry	Belinda Perry
Conservation org.	Bill Lewis	Bill Lewis
Sarasota SWCD	Calvin Essex	Calvin Essex
Bureau of Parks	Andrea Bishop	Andrea Bishop
Manager	Bill Lewis	Bill Lewis

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 is 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 Myakka River State Park considered approximately 28,850 acres in Sarasota and Manatee Counties that are managed by the Division of Recreation and Parks (DRP). 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 management plan was approved on July 29, 1999, and the management plan update is due on July 29, 2009.

Review Team Determination

1. Is the land being managed for the purpose for which it was acquired? **All team members agreed that Myakka 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

1. The Team commends the manager for his emphasis on roller chopping, frequent fire return intervals, and overall restoration of the Dry Prairie communities.

Exceptional Management Actions

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

Exceptional management actions:

- Management and protection of the Mesic Flatwoods, Prairie Hammock, Dry Prairie, Dome, Scrubby Flatwoods, Basin Swamp, Baygall, Depression Marsh, Hydric Hammock, Blackwater Stream,.
- Protection, survey and preservation of cultural sites.
- Excellent size, quality, and frequency of the prescribed burns.
- Excellent restoration of the old railroad bed.
- Excellent monitoring of surface and groundwater quantity.
- Exceptional boundary surveys, gates/fencing and signage.
- Exceptional roads, parking, water access and recreational opportunities.
- Exceptional interpretive facilities and signs.
- Exceptional environmental education/outreach and interpretive programs.
- Exceptional sanitary facilities, buildings, equipment, staff and waste disposal program.

Recommendations and Checklist Findings

Recommendations

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

1. The team recommends that the next management plan update discuss the potential for connecting the state park to other conservation lands to the north and east.

Manager's Response: Agree. Both the Division of Recreation and Parks and the SWFWMD have identified lands north and east of the park as critical to the health of the Myakka River and hydrological functions with the basin. This fact is being included in the current revision of the UMP.

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.

0. Discussion in the management plan of the control of feral hog populations.(p).

Manager's Response: Agree. An aggressive feral hog program is necessary to minimize the numbers of this noxious, habitat destructive mammal. The park works in concert with Sarasota County that owns 24000+ acres abutting the south park boundary. It is essential that a resource sensitive hog removal contractor be afforded a long-term contract that permits heavy capital investment in permanent trap locations. Trapping should be conducted nearly every day of the year with abeyance occurring only when trapping productivity is nil and capture by dogs impractical or imprudent. The control of hogs is included in the current UMP revisions

0. Discussion in the management plan of the need for additional law enforcement presence (p).

Manager's Response: Disagree. There is no identified need nor circumstance that dictates a greater LE presence than that which exists now. Wildlife Officers of the FFWCC, Range Deputies employed by Sarasota and Manatee Counties and Florida Park Patrol Officers frequent the park with regularity. All staff interpret and enforce park regulations and our hog contractor travels extensively throughout the park, reporting any signs of illegal activities.

0. Discussion in the management plan of the need for or need to remove the dams (f).

Manager's response: Agree/Disagree. Although the removal of the concrete weir constructed by the CCC is desirable it is not going to solve any of the park's hydrologic woes. Removal is indicated as desired in the current UMP revision but a more important commentary is also included – that SR72 is a major, pejorative factor in the increasing incidence of flooding within the immediate floodplain and a sheetflow diversion that we need to mitigate. "Other dams," we assume are the earthen weir at the south end of Lower Myakka Lake, Chuck Downs' dam just below the southern boundary, and the dike which diverts Howard Creek and restricts flow from Upper Myakka Lake through Vanderipe Slough. The earthen weir has been breached for many years and does not restrict flow. Downs' dam restricts flow only at very low water levels but does not retain appreciable water. Its days are numbered as the anchoring rebar is failing and the mortar joints exhibiting increasing leakage. Removal of the Vanderipe Slough dike would assist in restoring the slough but must wait until the Division acquires the property

the dike “protects”. This is noted in the current UMP revision.

0. Discussion in the management plan of the need for a cultural resources survey (f).

Manager’s response: Disagree. A thorough CRS over the 58 square miles under park management is cost prohibitive. However, the current UMP revision does note that a Phase I Archaeological Survey, or at the very least a cursory Arch. Survey should be conducted to determine the extent of aboriginal utilization. This area was a very important one to the early cattle industry as well as a location where “progressive” agricultural techniques were explored by Mrs. Bertha Potter Palmer. A survey should also be conducted to document the activities of the first cattlemen and ranch endeavors. This too, is included in the current UMP revision.