RAVINE GARDENS STATE PARK

UNIT MANAGEMENT PLAN

APPROVED

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Division of Recreation and Parks
OCTOBER 17, 2008

TABLE OF CONTENTS

RESOURCE MANAGEMENT COMPONENT

LAND USE COMPONENT

TABLE

LIST OF ADDENDA

ADDENDUM 5

ADDENDUM 6

ADDITIONAL INFORMATION

MAPS

INTRODUCTION

Ravine Gardens State Park is located in Putnam County (see Vicinity Map) within the city limits of Palatka. The vicinity map also reflects significant land and water resources existing near the park. Access to the park is from U.S. Highway 17 south (see Reference Map) on Moseley Avenue and one block east on Twigg Street.

The park consists of 67.33 upland acres and 78.55 wetland/submerged acres, for a total of 145.88. On January 1, 1970, the Board of Trustees of the Internal Improvement Trust Fund (Trustees) obtained title to the property that is Ravine Gardens. The property was donated from the City of Palatka, Florida.

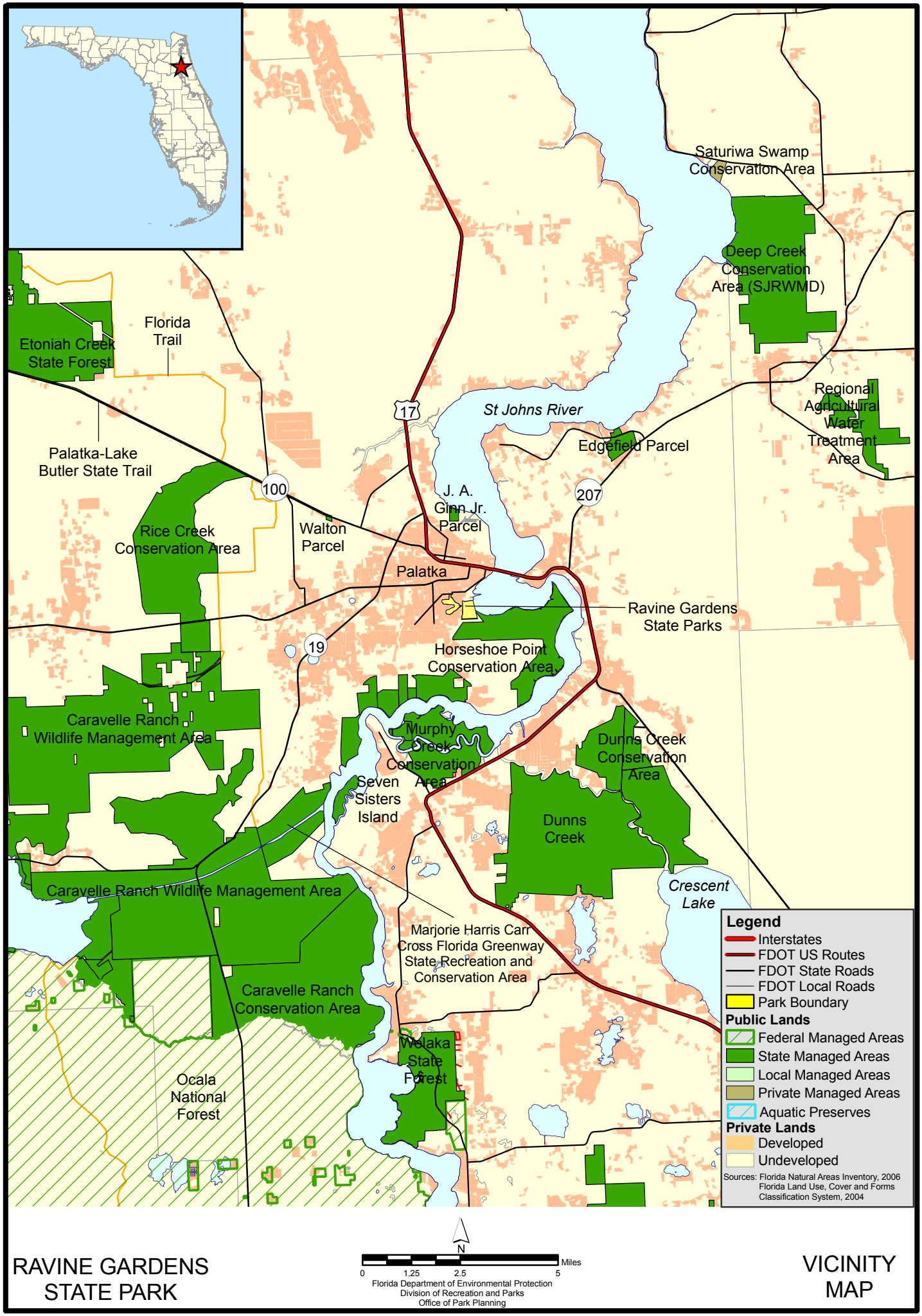
At Ravine Gardens State Park, public outdoor recreation is the designated single use of the property (see Addendum 1). There are no legislative or executive directives that constrain the use of this property.

PURPOSE AND SCOPE OF THE PLAN

This plan serves as the basic statement of policy and direction for the management of Ravine Gardens 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 May 3, 2000 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



RAVINE GARDENS STATE PARK

VICINITY MAP

RAVINE GARDENS STATE PARK

N

0 250 500 1,000 Feet

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DIVISION OF RECREATION AND PARKS
OFFICE OF PARK PLANNING

REFERENCE MAP

types of facilities and volume of use to be provided.

In the development of this plan, the potential of the park to accommodate secondary management purposes (multiple uses) was analyzed. These secondary purposes were considered within the context of the Division's statutory responsibilities and an analysis of the resource needs and values of the park. This analysis considered the park natural and cultural resources, management needs, aesthetic values, visitation and visitor experiences. For this park, it was determined that no secondary purposes could be accommodated in a manner that would not interfere with the primary purpose of resource-based outdoor recreation and conservation. Uses such as water resource development projects, water supply projects, stormwater management projects, linear facilities and sustainable agriculture and forestry (other than those forest management activities specifically identified in this plan) are not consistent with this plan or the management purposes of the park.

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

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 Manual (OM) 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 Ravine Gardens State Park, emphasis is placed on the maintenance and enhancement of the gardens. Recreational uses are generally passive, related to the aesthetic enjoyment of the gardens and ravine system. Development in the park has been limited to a civic center, the garden infrastructure, a trail system, an amphitheater, roads, and necessary support facilities. Park programs emphasize interpretation of the natural and cultural attributes of the park.

Park Goals and Objectives

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

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

Natural and Cultural Resources

1. Maintain historic landscape structures, fountains, terracing and stonework in the WPA-era cultural landscape.
2. Continue stormwater retrofit program to control erosion and protect natural habitats.
3. Develop a Cultural Landscape Master Plan for the park.
4. Restore the slope forest in the ravine near the amphitheater to a more natural state.
5. Develop a comprehensive exotic removal program, which prioritizes species and zones for removal. It should be adjusted annually, as needed.
6. Seek funding through grants and other sources to hire private contractors to treat and remove invasive and exotic plant species.
7. Continue to re-vegetate areas that have been impacted by erosion via stormwater runoff.
8. Update the parks plant and animal lists.
9. Conduct additional vertebrate surveys focusing on aquatic species.
10. Develop monitoring measures for the recorded cultural sites in the park.

Recreational Goals

1. Continue to provide quality resource based outdoor recreational and interpretive programs and facilities at the state park.
   - **A.** Maintain the garden paths and ravine trail system.
   - **B.** Continue special community functions and interpretive activities.
   - **C.** Renovate park facilities to enhance visitor services.
2. 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.** Provide trail enhancements for erosion prone areas of the ravines.
   - **B.** Enhance interpretive programs and facilities.
   - **C.** Relocate the gift shop.
   - **D.** Improve traffic circulation and parking in the civic center area.
   - **E.** Support trail connections to the Water Works facility and Palatka Greenway, if feasible.
   - **F.** Explore the possibility of providing access to the river.

Park Administration/Operations

1. Provide efficient and effective management of park resources and facilities while maintaining a high level of visitor service.
   - **A.** Maintain high maintenance standards and conduct routine safety inspections to provide clean safe facilities and use areas.
   - **B.** Seek funding to accomplish goals and objectives set forth in this plan.
   - **C.** Provide universally accessible public facilities to the extent possible.
   - **D.** Assure compliance with Division, state and federal safety guidelines and training requirements by providing training to all staff in visitor services, park

information and emergency services.

E. Recruit and maintain volunteer support to assist park staff with the maintenance of park facilities, protection of park resources and implementation of park programs.

F. Develop a new shop area.

G. Maintain effective park boundaries through fencing and posting of signs.

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 DEP, 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.

The City of Palatka owns the historic Old Palatka Water Works building and property. Due to its architectural and historical significance, the City of Palatka and the Water Works Committee has restored the historic building and is working to restore the historic water storage tanks. The City plans to utilize the building as an environmental education center and natural history museum. The site is contiguous with the main park property, and a pedestrian trail is planned to link the two sites.

Currently there is no public access to the river tract. Division staff and the City of Palatka are exploring the options available to the Division in creating a safe, grade-separated, pedestrian crossing across the CSX railroad tracks. If such a pedestrian crossing is made available, a boardwalk trail to the river and an additional connection from the park to the Old Palatka Water Works site may be established.

Division staff will coordinate with the City of Palatka and the St. Johns River Water Management District on hydrological restoration and exotic plant removal in reflecting pool area of the park, and its connection to the Old Palatka Water Works site. In addition, Division staff will coordinate with the City of Palatka on exotic plant removal along the joint park boundary, the municipal golf course and the Water Works site.

Public Participation

The Division provided an opportunity for public input by conducting a public meeting on Tuesday, April 15, 2008. The purpose of the meeting was to present the draft management plan to the public.

Other Designations

Ravine Gardens State Park has not been designated as an area of critical State concern as defined in section 380.05, Florida Statutes. Currently it is not under study for such designation. The park is a component of the Florida Greenways and Trails System.

All waters within the unit have been designated as Outstanding Florida Waters, pursuant to Chapter 62-302 Florida Administrative Code. Administered by the Department of Environmental Protection, this program was created by Section 403.061, Florida Statutes, and protects lakes, rivers and streams against degradation of existing ambient water quality. Surface waters in this unit are also classified as Class I waters by DEP. This unit is not designated as an aquatic preserve under provision of the Florida Aquatic Preserve Act of 1975 (section 258.35, Florida Statutes).

RESOURCE MANAGEMENT COMPONENT

INTRODUCTION

The Division of Recreation and Parks has implemented resource management programs for preserving for all time the natural and cultural resources of statewide significance under its administration. This component of the unit plan describes the natural and cultural resources of this park and identifies the methods that will be employed to manage them. When necessary to support statements made in this plan, published and non-published sources have been cited. These references are contained in Addendum 2.

The guiding management philosophy for natural resources is natural systems management. Primary emphasis is on restoring and maintaining the natural processes that shape the structure, function, and species composition of the State's diverse natural communities as they occurred in the state's original domain. Single species management is implemented when the recovery or persistence of a species is problematic, provided it is compatible with natural systems management or does not seriously compromise park values.

The Division also implements ecosystem management through the greenline program, which identifies the ecosystems of the unit and activities that may adversely impact the natural, cultural, recreational, aesthetic or economic values of the park. The Division maintains these greenlines and list of potential activities of concern.

RESOURCE DESCRIPTION AND ASSESSMENT

Natural Resources

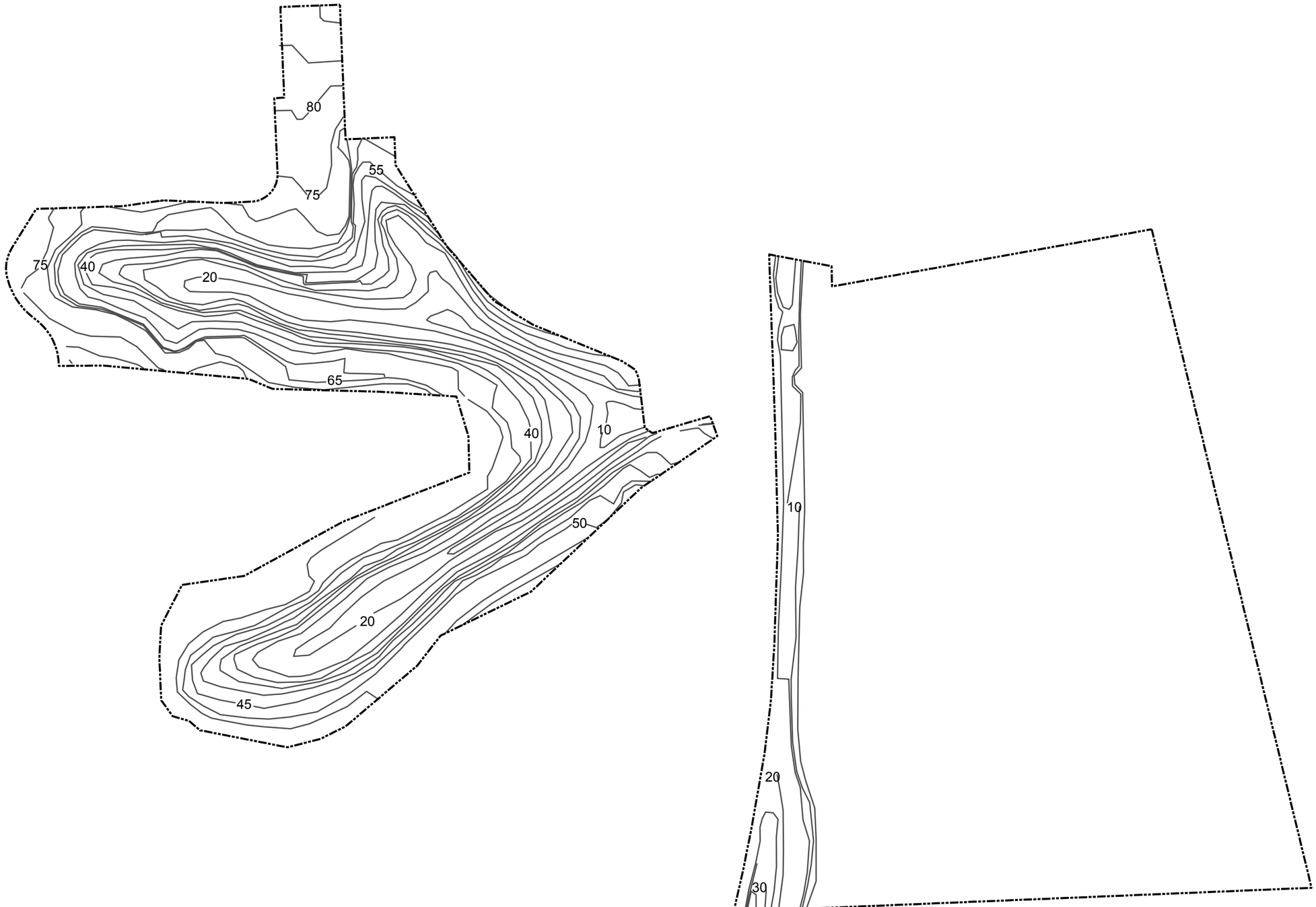
Topography

Ravine Gardens State Park is comprised of two, nearly adjacent parcels located within the Eastern Flatwoods Physiographic District (Brooks, 1981a). The western parcel is divided into the Palatka Relic Hills division, which is characterized by having residual hills composed of sand, silt, and clay of Plio-Pleistocene Age. It is located on the southeastern end of the Palatka Hill and the eastern side of the Penholoway Terrace. Elevations range from 15 to 75 feet above sea level.

The eastern parcel is divided into the Crescent Lake Basin division. This division is characterized as lowland underlain by estuarine and lagoonal silt, clay, and fine sand. It is located on the St. Johns River offset of the Pamlico Terrace with elevations averaging 2 feet above sea level (see Topographic Map).

Geology

The unit is underlain by two different geological formations, which are Plio-Pleistocene and Pleistocene deposits. The first formation, found in the western parcel, is



LEGEND

Park Boundary

Contour Lines

N

0 150 300 600 Feet

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

RAVINE GARDENS STATE PARK

TOPOGRAPHIC MAP

characterized as having preglacial Pleistocene lagoonal and prograded, with unlithified Coastal shelly sand, and silty gray to greenish-gray sand. In northeast Florida, sand and clayey sand are deeply weathered, orange and red, with some heavy mineral concentrations (Brooks, 1981b).

The second formation, located in the eastern parcel, is characterized as having slope beach and dune sand and shell with silty sand, silt, and clay representing lagoonal and estuarine facies (Brooks, 1981b).

Soils

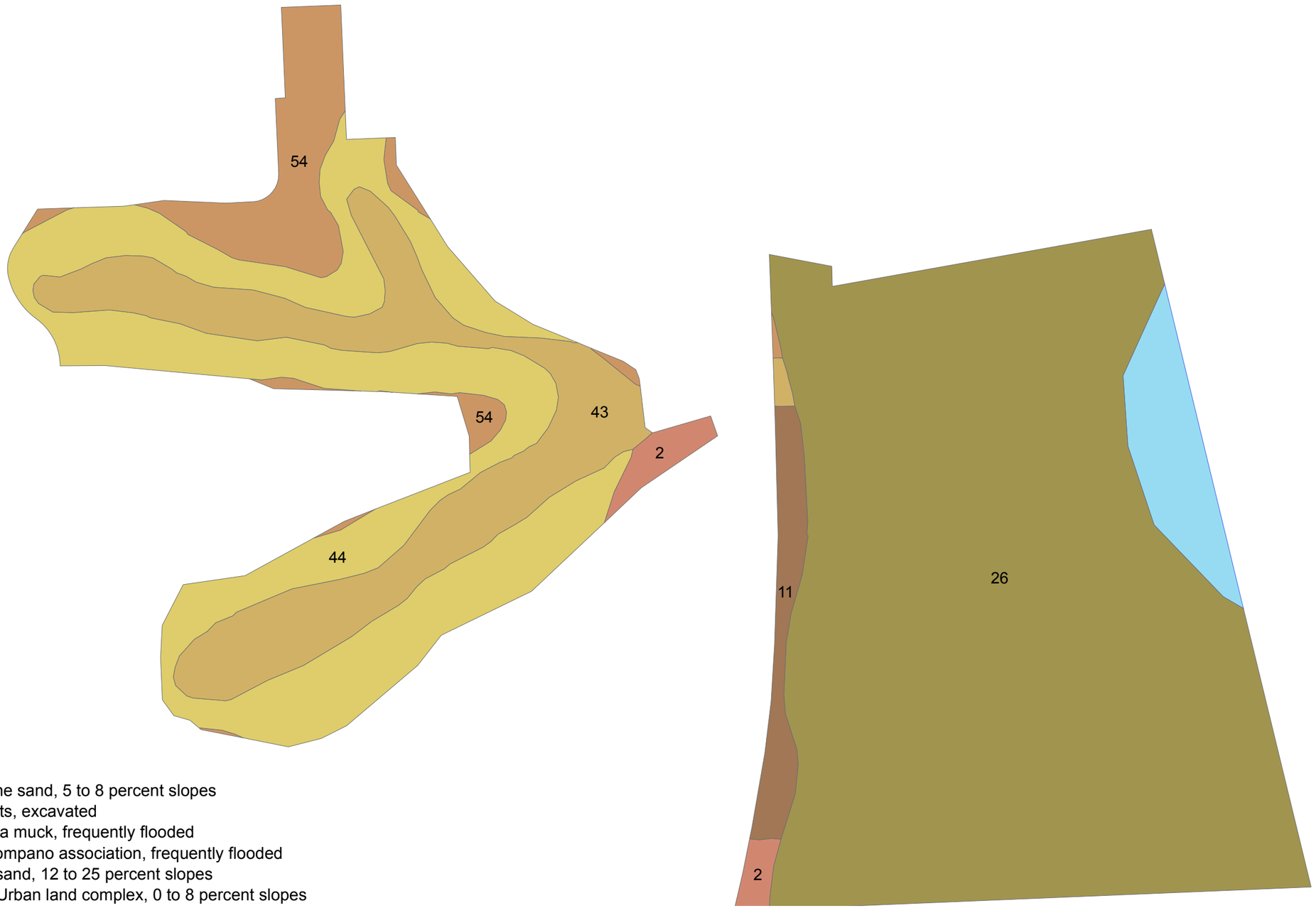
The Natural Resources Conservation Service (formerly the U.S. Soil Conservation Service) identified four soil types in Ravine Gardens State Park in the soil survey of Putnam County (Readle 1980). The locations of these soil types within the unit are shown on the Soils Map. Addendum 3 contains detailed descriptions of the soil types within this unit.

The Candler fine sand series is found in the higher elevations of the sandhill community on 15 to 25 percent slopes. This moderately steep to steep, excessively drained soil has a high water table below a depth of 80 inches. Typically, the surface layer is a dark grayish brown fine sand about 4 inches thick. The hydrologic soil group is A (Readle 1980).

The lower elevations at the bottom of the ravine consist of Placid-Pompano association. This nearly level, very poorly drained association of soils has a high water table that is within 10 inches of the soil surface for more than six months in most years. It is frequently flooded for brief periods with water found above the soil surface. The Pompano soils make up about 30 percent of the association, the Placid soils make up 55 percent, with the remaining percentage being made up by other soils. The hydrologic soil groups are D (Readle 1980).

The eastern portion of the unit is located in the 100-year flood prone area and is considered predominantly a wetland. The soil type found in this area is called Terra-Ceia muck. This very poorly drained soil is found on floodplains along the St. Johns River and its tributaries. The high water table is above the soil surface during the rainy season. During dry periods, the water table is found at or near the soil surface. Typically, the soil is dark reddish brown muck to 28 inches and black muck to 80 inches or more. The hydrologic soil group is B/D.

Finally, the udorthents soil type is found along the railroad track and the residence area on the east side of the tracks. This soil type is typical in areas that have been disturbed by excavation. This area may have been used as a borrow site when the gardens were under construction. It is now used mainly as a residence site.



LEGEND

- 2-Candler fine sand, 5 to 8 percent slopes
- 11-Udorthents, excavated
- 26-Terra Ceia muck, frequently flooded
- 43-Placid-Pompano association, frequently flooded
- 44-Candler sand, 12 to 25 percent slopes
- 54-Candler-Urban land complex, 0 to 8 percent slopes
- Water

RAVINE GARDENS
STATE PARK

N

0 150 300 600 Feet

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

SOILS
MAP

Soil erosion resulting from poor stormwater management is a major concern at this unit. The first phase of a stormwater management plan has been completed with positive results. The areas with the highest erosion need to be stabilized with appropriate vegetation. Management activities will follow generally accepted best management practices to prevent soil erosion and conserve soil and water resources on site.

Minerals

No deposits of commercially valuable minerals are known from this unit.

Hydrology

Ravine Gardens State Park is located approximately one quarter of a mile from the St. Johns River, which is the drainage basin for this portion of Putnam County. The park is associated with the Floridan aquifer and serves as a recharge and discharge area (Hyde 1965).

The groundwater supply comes mostly from rainfall and, therefore, is considered a non-artesian aquifer. At the bottom of the ravine, the groundwater becomes surface water through numerous groundwater seeps before emptying into the St. Johns River (Hand et. al. 1996).

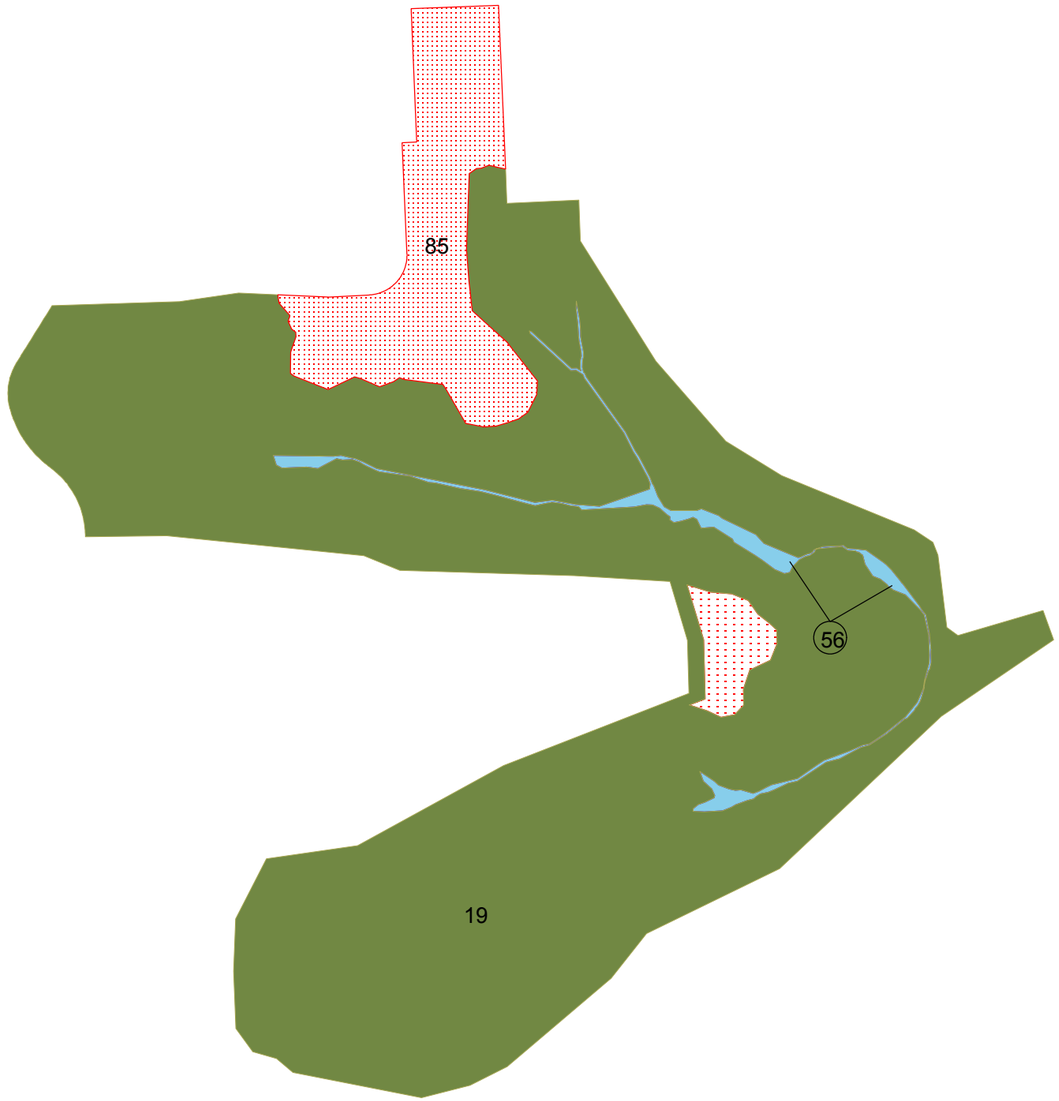
The steephead streams have been severely altered by stormwater runoff and its resultant erosion from surrounding land use modifications. In addition, Federal Works Program Administration (WPA) alterations have lengthened the hydroperiod in the lower portions of the streams.

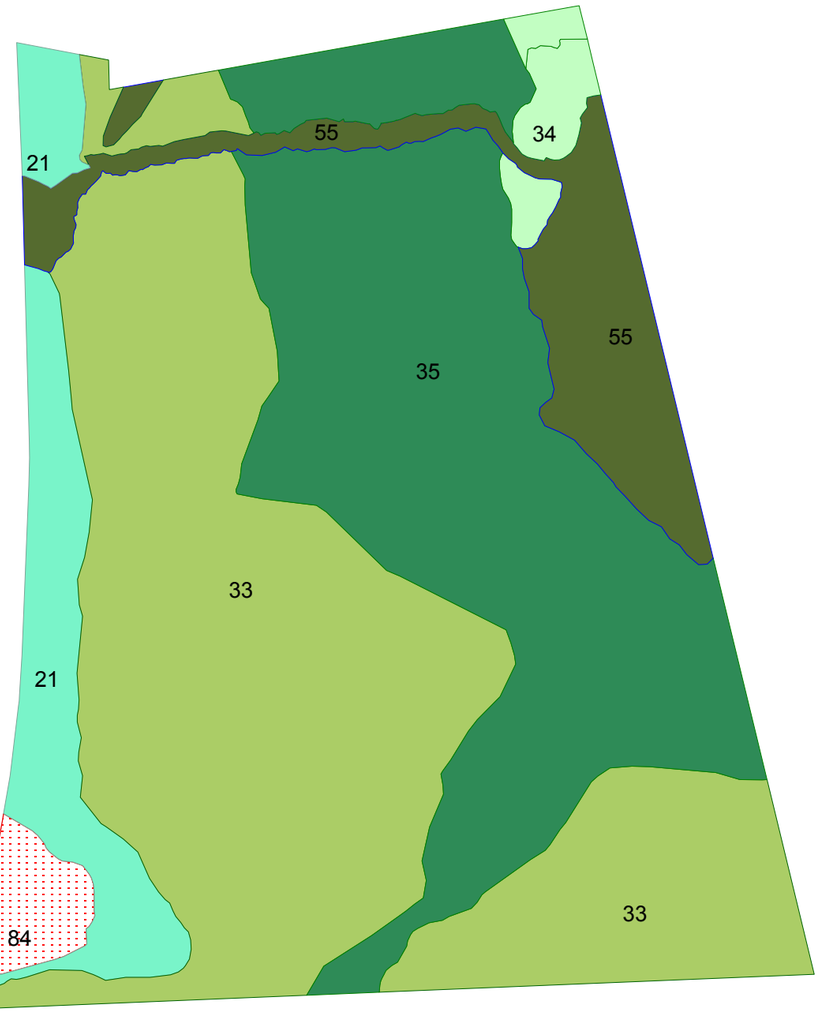
A stormwater management plan has been completed for the park. The plan includes constructing retention ponds on the golf course and the park to handle rainfall from a 25-year storm. Continued implementation of this plan will greatly reduce the effects from stormwater and erosion on the resources of the park.

Natural Communities

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

The park contains seven distinct natural communities (see Natural Communities Map) in addition to ruderal and developed areas. The Natural Communities Map is a graphic





LEGEND

- 19 - Slope Forest-50.48 ac.
- 21 - Upland Hardwood Forest-7.64 ac.
- 33 - Floodplain Forest-42.39 ac.
- 34 - Floodplain marsh-1.89 ac.
- 35 - Floodplain Swamp-31.77 ac.
- 55 - Blackwater Stream-8.21 ac.
- 56 - Seepage Stream-1.04 ac.
- 84 - Ruderal-2.81 ac.
- 85 - Developed-6.40 ac.

N

0 150 300 600 Feet

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RAVINE GARDENS STATE PARK

NATURAL COMMUNITIES MAP

representation of the existing vegetative conditions in the park at the time this management plan was developed. 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.

Slope forest. The slope forest community has been highly disturbed by the construction of the formal gardens in the 1930s. Invasive exotic plants, such as air potato (*Dioscorea bulbifera*), have invaded the slopes and shaded out portions of the understory vegetation (both native and ornamental). This community is in very poor condition and requires extensive exotic removal, ground stabilization, and re-planting with both native and non-invasive ornamental plants. The upper slopes of the ravines have been developed into paved park drive and surrounding suburban uses. This has altered the microclimate of the slope forest community and has created huge erosion problems on the slopes from stormwater runoff.

Upland hardwood forest. A patchy fringe of upland hardwood forest on upland soil occurs on the western boundary of the river tract, adjacent to the railroad bed. This area is in poor condition based on the amount of invasion by air potato, the fill borrow activity, and other physical disturbances.

Floodplain forest and floodplain swamp. The floodplain forest and floodplain swamp communities represent the largest areas of natural vegetation in the park. They are located on the river tract, east of the railroad bed and are in fair condition. Disturbances to the area include logging, construction of an old causeway road running to the river, and an infestation of air-potato and Chinese tallow (*Sapium sebiferum*). The integrity of this area should be maintained and passive recreation should be limited to bird watching, canoeing and possibly a boardwalk.

Floodplain marsh. There is a small fringe of floodplain marsh extending out to the St. John's River in the northeast corner of the property. It appears to be in good condition.

Blackwater stream. White Water Branch becomes a blackwater stream, east of the railroad tracks. It flows directly into the St. Johns River. In addition, a small section of the St. John's River, considered a blackwater stream, occurs along the eastern boundary.

Seepage stream. At this unit, seepage streams collectively called White Water Branch have been altered due to dredging, channelization, damming and invasion by exotic plants, sedimentation and eutrophication. This natural community is in poor condition. The actual steepheads have been overrun by exotic plants, which have shaded out the ornamental and native understory. With an aggressive exotic removal program and re-vegetation with non-invasive ornamental and native plants, these areas could be restored.

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.

The only listed vertebrate species known to be a permanent resident at the park is the gopher tortoise (*Gopherus polyphemus*). Alligators (*Alligator mississippiensis*), otters (*Lutra canadensis*), the eastern indigo snake (*Drymarchon corais couperi*), and the Florida pine snake (*Pituophis melanoleucus mugitus*) have been seen on occasion. The bald eagle (*Haliaeetus leucocephalus*), osprey (*Pandion haliaetus*), various species of wading birds and the bobcat (*Felis rufus*) are commonly seen in the area.

The listed plant species are mainly found in the floodplain forest. A systematic survey of the unit is needed for both plants and animals. It is possible that further survey work will identify listed species using the seepage slopes and streams. If found, management recommendations will be developed.

Special Natural Features

The unique natural features of the park consist of a steephead ravine system with numerous seeps. Although the ornamental plantings and subsequent invasion by exotics such as air potato, bamboo (*Bambusa sp.*), goldenrain-tree (*Koelreuteria formosana*), and camphor tree (*Cinnamomum camphora*) has altered the native plant composition in the ravine; this system is still a significant geological and natural feature. Native plants should be used when there are damaged or when exotic ornamentals die. The Cultural Landscape Master Plan will help guide where and what to plant in designated areas of the park.

Cultural Resources

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

Ravine Gardens State Park, located in the City of Palatka, was created as a botanical garden in 1933 by the WPA. It is centered on deep steephead ravines naturally created by water seeping from beneath the sandy ridges that flank the west shore of the St. Johns River. The park was listed on the National Register of Historic Places in 1999.

The Florida Master Site File (FMSF) lists two recorded sites in the park: 8PU00091, Palatka Azalea Ravine Garden, which encompasses the ravines and outbuildings, and 8 PU01215, Rundle Site, a possible Archaic campsite. Staff and local residents have frequently found potshards and flakes in the ravines (Alogna 1994).

There are also two recorded sites nearby off park property, 8PU00103, Palatka Waterworks and 8PU842, Wilson Cypress Company (Florida Department of State, 8PU103 and 8PU842). These sites fall within the current optimum boundary for the gardens.

The park is also thought to be the site of an 1862 Civil War encampment of the 5th Florida Volunteers (Infantry). Known as "Camp Call," the site was documented in the letters of a soldier, Isaac McQueen Auld, to be located in a steep ravine at the head of a stream that emptied into the St. Johns River.

In 1997, a Phase I archaeological survey was conducted. The survey addressed the location of the alleged Camp Call site as well as the overall management needs of the park.

Before development, the deep steephead ravines of this unit were a distinctive, high quality natural resource. The Palatka ravines are as deep as 90 feet with some slopes that are north facing. These ravines are isolated from other major ravine systems in the state. Given the sources of fresh water and the cool microclimate in the ravines, it is probable that there are significant archaeological sites.

Steephead ravines are naturally prone to erosion. Various human-caused impacts in the late 1800s to early 1900s accelerated erosion in the ravines to the degree that by the 1930s, it was considered a serious problem and a threat to Palatka's drinking water, which had been White Water Branch (the main steephead stream). Development of the Ravines began in earnest in March 1933 with Federal Emergency Relief Administration (FREA) support. A design drawing from the 1930s exists, but the degree to which it was implemented is not known. The plans called for construction of an administration building, concession building, entrance station, limestone fountain and gardens, dams, rustic benches, a sprinkler system, terracing, construction of retaining walls, and improvement of existing roads.

Numerous limestone walls were constructed to stabilize the ravines and prevent further erosion of its steep sides. Brick retention walls and gullies were also constructed to

protect areas where heavy erosion had occurred. Palmetto log terracing was used to stabilize the sink, and in other areas not accessible to the public. Three suspension bridges were constructed to provide access to the ravine interior without disturbing the lower slopes. The municipal golf course, which was at least partially constructed during the 1930s, posed a threat to the ravines. City records indicate that golfers often hit balls into the ravines, and disturbed its slopes while chasing after them. Fences eventually were established to protect the ravines. It seems probable that most pre-1930s cultural resources would have been largely obliterated by development of the gardens.

The gardens proper were developed during the Great Depression of the 1930s as a joint effort between the WPA, the City of Palatka, and private individuals. Roads were constructed around and into the ravines, the slopes were terraced, the understory was essentially denuded, tons of Ocala fieldstone were brought in for landscaping, a dragline was used to alter the ravine bottoms and stream channels, about 250,000 ornamental plants (azaleas, palms, bamboo, camellias, Japanese magnolias, camphor trees, etc.) were planted, and upper ravine slopes and surrounding uplands were converted from the original natural vegetation to a golf course. The work crew at the gardens numbered around 200 people (600 at the high point). By 1937, when the site was turned over to the city to manage, a large formal garden surrounded by a 9-hole golf course had been created, and the site became a major tourist attraction.

During World War II, the site began to degrade, and during the 1950s, it was essentially abandoned. During this period, local citizens reportedly took numerous plants, stones, and fountain ornaments from the site. In 1956, the City constructed a civic center. By 1970, the City realized that it could not adequately manage the gardens, civic center, and golf course, and the gardens and civic center were turned over to the state.

The overall condition of the ravine portion of the gardens is presently poor. The major reasons for this are extensive invasion by exotic plants (primarily air potato), formation of erosion gullies, and crumbling WPA rockwork. Under FPS management, the site has never had the staffing needed to manage the site; indeed, it would never be feasible to provide staffing and funding to manage the entire ravine system as a formal ornamental garden.

1. **Court of States; good condition.** The Court of States, twin rows of paired limestone pillars rising fifteen feet and exhibiting the same trellis configuration as the fountain, was completed in November 1934. Beginning in 1935, flags representing each state in the Union were displayed on official holidays. It is assumed that 48 columns were constructed in the 1930s. A recent restoration of the Court of States was completed in 2003.
2. **Fountains; good condition.** By 1934, the Azalea Fountain and Rock Garden areas had been developed. The limestone fountain, spanning approximately forty feet,

was set in a quadrangle of paired limestone pillars rising fifteen feet in height and supporting overhead palmetto log trellises. These trellises deteriorated but were restored during the 2003 restoration project. All of the historic fountains have been restored, including the fountains in the Court of States and the Azalea Fountain.

3. **Entrance Gate; good condition.** The entrance station to the ravines was constructed in 1934. It incorporated the same rustic architecture as the administration building. Large limestone piers support a gable roof that employs large cypress log trusses and purlings covered with cypress shakes. Four gable dormers adorn the roof. Pecky cypress exterior wall fabric covers the central unit where admission fees continue to be collected. It is sprayed annually for mildew and is treated monthly for insect control.
4. **Terrace; poor condition.** A terraced garden comprising three sections extended from the Azalea Fountain down into the ravine. Those gardens served as the entrance to the ravine proper, though other concrete vernacular steps were constructed leading up to the road that encircled the site. Limestone retaining walls several feet high formed the garden terraces and were placed in many locations throughout the ravines. The stone blocks were laid on sand and mortared in between. Stormwater washes down this structure, washing out sand and causing sections of stones to periodically collapse. This situation is difficult to rectify. The section may need to be entirely taken up and rehabilitated while redirecting stormwater away from the area.
5. **Administration Building (maintained by the Palatka Garden Club); good condition.** This structure was completed in November 1934. Its design emulated the cypress building featured at the Century of Progress Exposition, which was part of the 1933 World's Fair in Chicago. Constructed of cypress, the significant architectural details of the building included a cruciform design with gable roof with wood framing, a large entrance porch, pecky cypress half-round exterior wall fabric, four gable dormers accenting doorway and window openings, exposed rafter ends, limestone chimney, and casement windows. Contemporary master plans and picture post cards suggest that the building was originally located at the south end of the Court of States, rather than at its present location on the east side of that historic landscape design.
6. **FDR Obelisk; good condition.** A limestone obelisk, sixty-five feet in height, commemorating Franklin D. Roosevelt, was constructed at the north end of the Court of States. Notable architectural features include its limestone surfaces with concrete block quoins. The monument retains much of its original integrity, although it originally had an aluminum cap and had a light(s) in the top that shined out through openings on the four faces. The aluminum cap is gone and the entrance to the structure has been walled in. Pigeons were noted to be roosting in the top during the August 1997 resource management evaluation. Their impact is unknown.
7. **Visitors Center; no longer extant.** A rustic two-story visitor's center/concession

building had been constructed in the park by the WPA. While efforts to locate the plans for this building have thus far been unsuccessful, historic photographs of the building do exist. The structure was made of pecky cypress and cabbage palm trunks, with a large distinctive cupola/dome. By the time the Division took over management in 1970, the structure was in a dilapidated condition and was torn down.

The Roy Campbell Civic Center, constructed in 1956, sits between the Court of States and the terraced gardens on the original site of the administration building. The administration building was moved to its present location east of the Court of States when the Civic Center was built. The demolished concession building was located immediately west of the Civic Center in what today is a support area. The Civic Center is a vernacular addition to the New Deal era cultural landscape at Ravine Gardens. However, it is a continuation of a twentieth century trend of government management of this site. It represents a nearly fifty-year old example of civic architectural design that was extensively renovated in 2002.

8. **Amphitheater; fair condition.** Construction of an amphitheater, comprising a stage and terraced seats, was completed in 1939. The seating area was arranged in a series of five terraces defined by limestone walls. The stage, with its back to the ravines, was elevated with fill dirt and trimmed with limestone walls. Steps were constructed on each side of the stage. A water fountain was built at the south end of the stage. Notable architectural features include its obelisk shape and limestone construction. Both the amphitheater and the water fountain retain much of their original integrity.
9. **Reflecting Pools; poor condition.** All of the original reflecting pools have sediment loads, probably largely due to erosion caused by runoff from the surrounding golf course and ball field. A working committee was formed in 2005 to evaluate the feasibility of removing the sediment from the pools. It was determined that the material could be removed in a manner to cause the least amount of disturbance to the plants and animals in the pools. The material should be removed to restore the pools to their historic condition.
10. **Suspension Bridges; good condition.** Three suspension bridges were built in 1934. Notable architectural features include their reinforced concrete masks, square hewn timbers for the span, steel suspension cables, and limestone cable anchors. The two extant bridges where restored in 2005. The third bridge was removed several years ago due to unsafe conditions. The concrete bases are still in their original location and are visible.

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.

A timber management analysis was not conducted for this site. The total acreage of the site falls below the 1,000-acre threshold required by Florida Statutes.

Management Needs and Problems

The ravines are in need of erosion and exotic plant control. Azaleas planted along some portions of the slope have either been impacted by erosion or killed by herbicides used to control the air potato and bamboo infestations. The historic character of the site and the associated structures needs to be restored to match the original gardens that were constructed in the 1930s to the fullest extent possible. The Cultural Landscape Master Plan will help guide which areas are restorable to the original character and which areas are not.

An inventory of native plants and animals needs to be conducted. Emphasis should be placed on the seepage slopes and streams that could harbor rare plants and aquatic animals.

A stormwater management plan has been developed for the park, golf course, and associated ball fields. The plan calls for retention ponds to be built on the golf course and the ball fields. The retention ponds will limit the amount of stormwater runoff, provide an increased level of treatment, and decrease the effects from erosion.

There is an aggressive exotic removal program already in place. Fighting invasive exotics at the park is an ongoing battle and will continue to be as long as there is an outside seed source. Exotics should continue to be systematically removed according to their invasiveness. Air potato, goldenrain-tree, Chinese tallow, cat-claw vine, coral ardisia (*Ardisia crenata*), hydrilla (*Hydrilla verticillata*), and camphor tree should remain the main targets for removal as well as queen palm (*Syagrus romanzoffiana*) and Yew podocarpus (*Podocarpus macrophyllus*). Hydrilla will be extremely difficult to remove due to its location on stream and reflecting pool bottoms. Other exotic plant species that that should be removed due to their aggressive reproductive behavior and tropical appearance are the banana tree (*Musa x paradisiaca*) and elephant-ear (*Xanthosoma sagittifolium*). Nine-banded armadillos (*Dasypus novemcinctus*) are an ongoing problem at this unit. Feral hogs (*Sus scrofa*) are seen occasionally in the gardens, but are mainly found on the golf course. An ongoing hog removal program is in place at the golf

course; however, hogs can still enter the park from the floodplain of the St. Johns River.

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.

The following management objectives have been identified:

1. Maintain historic landscape structures, fountains, terracing and stonework in the WPA-era cultural landscape.
2. Continue stormwater retrofit program to control erosion and protect natural habitats.
3. Develop a Cultural Landscape Master Plan for the park.
4. Restore the slope forest in the ravine near the amphitheater to a more natural state.
5. Develop a comprehensive exotic removal program, which prioritizes species and zones for removal. It should be adjusted annually, as needed.
6. Seek funding through grants and other sources to hire private contractors to treat and remove invasive and exotic plant species.
7. Continue to re-vegetate areas that have been impacted by erosion via stormwater runoff.
8. Update the parks plant and animal lists.
9. Conduct additional vertebrate surveys focusing on aquatic species.
10. Develop monitoring measures for the recorded cultural sites in the park.

Management Measures for Natural Resources

Hydrology

The park will continue to implement the stormwater management plan while coordinating with the City of Palatka, the Water Works Committee, and other state agencies. As the cultural landscape is restored, the park will address removing or modifying water control structures that have modified the hydroperiod of the lower portions of the seepage streams.

All management actions will use best management practices to maintain or improve the existing water quality on-site and will take measures to prevent soil erosion or other impacts to water resources.

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 unit is partitioned into burn zones, and burn programs are implemented for each zone. These programs are periodically reviewed and maintained in the unit's burn plan. All prescribed burns are conducted under permit from the Department of Agriculture and Consumer Services, Division of Forestry (DOF).

Since the typical fire dependent natural communities are not present, prescribed fire will not be utilized as a management tool at Ravine Gardens State Park at this time.

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.

At this time, no management activities are recommended for designated species protection at this unit. If sensitive, listed species are discovered during the plant and animal survey of the park, appropriate management action(s) will be developed.

Exotic Species Control

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

The park will make efforts to coordinate with the City of Palatka, the Water Works Committee and other state agencies to remove exotic plant species from Ravine Gardens.

Major emphasis is put on the management of exotic plant species at this unit. There are many exotic plants at this park since it is an ornamental garden. The removal program at this park focuses on invasive exotic plant species. Using the Exotic Pest Plant Council's list of invasive species, 16 species of Category I and 7 species of Category II plants are known to occur in the park. The following discussion lists the exotic species in priority order of their perceived degree of threat.

Infestations of air potato on the ravine slopes and at the bottom of the ravine have shaded out understory and ground cover species. Although herbicide and hand removal has been successful in reducing the numbers of this plant in the gardens, huge areas along the slopes were left nearly bare, creating erosion problems. These areas should be re-planted with either azaleas or native understory species. Efforts to remove

this species must be continued in order to keep this plant under control. An air potato roundup is conducted annually at the park where visitors pick up and collect the seeds of the plant.

Goldenrain-tree and camphor tree are the next two most invasive exotics in the ravines. Saplings are treated with herbicide and/or removed by hand. Large areas of the ravine bottoms have been overtaken by exotic bamboo. Recent efforts have eradicated a large area of bamboo, but it has since then regrown. Follow-up treatment in this area will be necessary with a contractor and park staff. Although occurring in smaller numbers, coral ardesia, cat's claw vine and Japanese climbing fern should be removed immediately when found. All of the above listed plant species are as invasive as air potato and could pose a major problem if ignored. Other less invasive exotics such as paper mulberry, giant elephant-ear, banana and Caesar-weed (*Urena lobata*) should be removed when possible. An exotic removal plan will be developed annually.

The reflecting pond and associated seepage stream are infested with hydrilla. A specific removal plan will be developed for this species. In addition, Chinese tallow has invaded the river tract in the floodplain swamp and floodplain forest communities. The extent of the infestation is unknown at this time but will be surveyed and treated within the scope of this plan. Park and district staff will work with Bureau of Invasive Plant Management staff to assess this infestation and provide control efforts.

Feral hogs do occur in the floodplain forest and swamp and on the adjacent golf course, which has an informal agreement with local trappers to have them removed. They rarely occur in the ravine. Nine-banded armadillos occur in the park and will be removed whenever they are encountered.

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. Management must devise measures that balance designated species protection with problem species control.

Carolina laurel cherry (*Prunus caroliniana*) is considered a nuisance species in the park. It is fast growing, can form thick stands, and can block scenic vistas. Saplings are thinned in areas of concern. Queen palm and Yew podocarpus, both exotic ornamental species, are spreading throughout the park and are blocking the view of the ravine from the driving trail. These plants should not be planted except as directed by the Cultural Landscape Master Plan, and should be removed from all other locations.

Management Measures for Cultural Resources

The management of cultural resources is often complicated because these resources are irreplaceable and extremely vulnerable to disturbances. The advice of historical and

archaeological experts is required in this effort. Managers of state lands must coordinate any land clearing or ground disturbing activities with the Division to allow for review and comment on the proposed project. Recommendations may include, but are not limited to approval of the project as submitted, pre-testing of the project site by a certified archaeological monitor, cultural resource assessment survey by a qualified professional archaeologist, modifications to the proposed project to avoid or mitigate potential adverse effects.

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

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

The general objective for the management of the cultural resources of Ravine Gardens State Park is to protect, preserve and interpret the known cultural resources, and to protect and preserve any as-yet-unidentified prehistoric and historic resources. Because of the known prehistoric archaeological resources near the park and known historic resources within the park, management measures for cultural resources should include continuing the monitoring of identified archaeological and historic resources.

A Level I archaeological survey was conducted to locate and identify prehistoric or historic cultural resource sites. Management measures should be developed for a phased plan for managing the resources in the context of their surroundings. This should include developing a workable written plan for the physical management of the identified resources. This should outline approved methodologies for executing the plan and training staff and volunteers in managing the cultural resources of the park.

Management of the cultural landscape at Ravine Gardens is predicated upon a thorough understanding of the theme and design of the New Deal era gardens and landscape improvements. Protection of the cultural landscape features from invasive exotics, erosion, deterioration of structures, landscape features and activities that will adversely affect the historic integrity is a priority. A Cultural Landscape Master Plan should be developed to guide management activities.

The park currently has a sufficient number of staff who have been trained and certified as archaeological monitors. As the composition of park staff changes over time, efforts should be made to insure that there is always at least one staff member certified as an

archaeological monitor.

Management considerations for the restoration of the cultural landscape at Ravine Gardens should include the following:

1. Restoration of New Deal era garden landscapes through good horticultural practices, pruning of azaleas and replanting appropriate, documented historic plant species.
2. Reconstruction of New Deal era garden landscape structures: brick dams, historic waterwheels, footbridges, missing suspension bridge and the concession building.
3. Restoration of scenic vistas into the ravine by selective removal of invasive native and non-native vegetation along the paved perimeter loop road trails and slopes of the ravine.
4. Removal of enveloping and encroaching vegetation from New Deal era limestone terraces, retaining walls and fountains.
5. Develop a Cultural Landscape Master Plan, which includes a professional assessment of each New Deal Era structure and landscape feature.
6. Research is needed to better define the types of plant materials and the garden layouts used in the gardens when it was constructed.

Research Needs

Natural Resources

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

The following research needs have been identified.

1. Funds should be solicited to support additional archaeological and historic investigations. An in depth literature review of the documented history of Ravine Gardens would add to the knowledge of the vernacular history of the site. Very little is known of the site before the New Deal era development of the site as gardens.
2. Research is needed to determine the design and modifications necessary to restore the historic WPA era dams and waterwheels.
3. A more in-depth flora and fauna list is needed. Particular attention to the seepage slopes and streams is recommended.
4. Research is needed to investigate techniques and options to restore and rehabilitate deteriorating WPA limestone terraces, walls and structures without loss of the historic value of the structures.

5. Due to the large number of invasive plant species at this park, research should be utilized to develop better control technologies on some of the lesser-known species.

Resource Management Schedule

The priority schedule and estimated costs for conducting management activities are contained in Addendum 6. In addition, these priority management activities are based on the most cost-effective methods and recommendations that are currently available.

Land Management Review

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

Ravine Gardens State Park was subject to a land management review on February 9, 1998. The review team determined:

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.

Ravine Gardens State Park is located within Putnam County, near downtown Palatka in northeast Florida. The population of Putnam County has seen moderate growth in recent years while the adjacent St. Johns, Flagler and Clay Counties have experienced tremendous growth. Collectively, the populations of these four counties have increased 60 percent since 1990, and are projected to grow an additional 50 percent by 2020 (BEBR, University of Florida, 2005). The median age for Putnam County is 41.6 years, which is slightly older than the state average of 39.6 years (BEBR, University of Florida, 2005). Over 1.6 million people reside within 50 miles of the park, which includes the cities of Palatka, Jacksonville, St. Augustine, Gainesville, Ocala and Daytona Beach (Census, 2000).

Ravine Gardens State Park recorded 139,504 visitors in fiscal year 2005/2006. By Division estimates, these visitors contributed $6.25 million in direct economic impact and the equivalent of 125 jobs to the local economy (Florida Department of Environmental Protection, 2006). Park visitation peaks when the azaleas are in bloom, which usually occurs from late February to early April. Year round, the park is popular with locals who like to walk, jog and bike along the park loop road.

Existing Use of Adjacent Lands

The park is composed of two properties, the ravine tract and the river tract. The ravine tract contains the ravine system and formal gardens that the park visitors explore. This property is surrounded by a residential development, the Palatka Southside Historic District; the historic, city-owned "Azalea Bowl" sports and recreation complex; and the historic City of Palatka Municipal Golf Course. The historic 1887 Palatka Water Works facility and the CSX Railroad right-of-way separate the ravine tract from the eastern, river tract. The river tract is bordered on the north side by the old Wilson Cypress Mill, a vacant, disturbed wetland. In addition, the river tract is bound by the St. Johns River to the east and by the St. Johns River Water Management District (SJRWMD) property to the south.

Planned Use of Adjacent Lands

Land uses adjacent to Ravine Gardens is generally planned to remain at current levels, and it is unlikely that the character of the surrounding land uses will change appreciably. Future residential development is possible to the north of the river tract, increasing the potential for visual and audio disturbances, and some degradation in water quality.

The City of Palatka owns the historic Old Palatka Water Works building and property. Due to its architectural and historical significance, the City of Palatka and the Water Works Committee is working to restore the historic building and tanks. The City plans to utilize the building as an environmental education center and natural history museum. The site is contiguous with the park, and a pedestrian trail connection is planned to link the two sites. A second trail connection is proposed to link the site to the park's river tract with a hiking trail.

PROPERTY ANALYSIS

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

Recreation Resource Elements

This section assesses the unit's recreation resource elements those physical qualities

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

Land Area

The park is divided into two tracts that are separated by a CSX Railroad right-of-way. The western, ravine tract is the site of the historic gardens. The ravine may be viewed from a 1.8 mile, one-way loop road, or from the extensive trail system. The ravine azalea gardens have deteriorated from their original condition in the 1930s. The gardens are heavily visited during the peak flowering season, in March and April. Due to the garden's long history, a number of native and ornamental trees and shrubs have achieved specimen size, some of which are now champions.

The primary recreational resource of this park is the historic ornamental garden in the ravine, the Court of States entrance and the formal garden area between it and the Civic Center. The unique status of Ravine Gardens as a garden park has wide-ranging implications for the Division's day-to-day operations, resource management and visitor management activities. Since acquiring the park in 1970, the Division has continuously worked to improve the facilities of the park, alleviate public safety hazards, reduce environmental impacts and enhance aesthetic quality.

The river tract is a forested wetland along the St. Johns River, consisting of floodplain swamp and hydric hammock communities, and contains about 1,200 lineal feet of shoreline along the St. Johns River, though there is no public access to the river from the park at this time

Water Area

Several seepage streams traverse the ravine tract, meeting at a series of reflecting ponds at the easternmost portion of the ravines. The united stream, White Water Branch, then flows through the 1887 Palatka Water Works, under the CSX right-of-way, through a brick culvert, through the river tract, and into the St. Johns River. The course of this stream has been altered by past activities.

Natural Scenery

The unique natural features of the park consist of a steephead ravine with numerous seeps and springs at the bottom. This significant geological feature has been altered by the historic development of the ornamental gardens in the 1930s.

Archaeological and Historical Features

The ornamental gardens started as a ravine beautification project, begun by the City of Palatka in the early 1930s. Lack of funds led the City to seek New Deal financial aid, and the project was completed by the Works Program Administration (WPA) laborers.

The ornamental ravine gardens consisted of the azalea gardens, garden terraces, trails, suspension bridges, springs, streams, waterwheels and pools at the floor of the ravines. One hundred thousand (100,000) azaleas and more than a quarter million sub-tropical shrubs and flowers were planted in the ravines. The original plantings included dogwoods, bougainvillea, oleanders, Japanese magnolias, roses, hibiscus, petunias, Easter lilies, flame vines, palms, wild plums and other ornamentals. The streams at the base of the ravines were dammed to form reflecting pools; concrete and brick channels directed the flow to two ornamental waterwheels; and numerous garden trails with arched bridges over the streams provided access for park visitors.

The garden's entrance area, the Court of States, is a long formal entrance, with a pair of limestone and cypress log trellises covered with flowering vines. The fountains were located in the area between the two trellises. The court's 48 pairs of columns sported flags of the 48 states on special occasions. At the north end of the court, a 65-foot limestone obelisk commemorating Franklin Roosevelt was constructed.

A freestanding fountain and formal garden, between the Court of States and the Civic Center, were added later by the City of Palatka. Several additional sites of pre-historic and historic importance are included in the Florida Site File for park, as noted in the Cultural Resources section.

Assessment of Use

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

Past Uses

As detailed in the Cultural Resources section, the ornamental gardens were developed in the 1930s by the WPA. The City of Palatka maintained this property and the gardens until 1970, when ownership was transferred to the State.

Recreational Uses

The primary recreational use of the property is the aesthetic appreciation of the ornamental gardens. Guided group tours are available on request. A fitness trail and picnic areas are also available in the park. The paved, loop road provides scenic views of the ravines and is frequently used by pedestrians and cyclists.

The river tract is relatively inaccessible, and public use of the site is not encouraged at this time.

Other Uses

One of the historic WPA era structures, the former administration building, is occupied by the Palatka Garden Club through a long-term lease. The 1950s era public pool building is leased by the Friends of Ravine Gardens Citizens Support Organization.

TWIGG ST

ENTRANCE STATION

FORMER POOL HOUSE

ARBORS

GARDEN CLUB CENTER

FITNESS COURSE

SHOPS

CIVIC CENTER

PAVILION

GAZEBO

PICNIC AREA

STORAGES

RESIDENCE

AMPHITHEATER

RESTROOM

PLAYGROUND

MOSELEY AVE

PICNIC AREAS

STORAGE

GREENHOUSE

RESIDENCE

LEGEND

- Park Boundary
- County Road
- Park Road Paved
- Park Road Unpaved
- Hiking Trail
- Structures
- Parking Lots

N

0 150 300 600 Feet

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

RAVINE GARDENS STATE PARK

BASE MAP

The Roy E. Campbell Civic Center contains an auditorium and additional meeting rooms that are available for rent.

A 100-foot wide powerline right-of-way cuts across the property from north to south at the westernmost edge of the ravine tract. This right-of-way crosses a steephead and is maintained by the power company. A utility and drainage easement crosses the northernmost portion of the river tract from west to east, roughly following the course of White Water Branch.

Protected Zones

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

At Ravine Gardens the historic gardens as well as the slope forest, seepage streams, floodplain swamp and floodplain forest natural communities have been designated as protected zones as delineated on the Conceptual Land Use Plan.

Existing Facilities

Recreation Facilities

Court of States

- Trellises (2)
- Obelisk

Civic Center

- Auditorium with stage
- Ravine Room and deck
- Meeting Room South with kitchenette
- Meeting Room North
- Conference Room North
- Conference Room South
- Commercial style kitchen and serving room
- Boardroom
- Restrooms
- Park administration office
- Parking (104 vehicles)

Formal Garden Area

- Historic ornamental garden
- Fountain
- Picnic pavilion
- Tables and grills

The Ravine Garden

- Bamboo Spring Trail (1.5 mi.)
- Ravine Pond Trail (2 mi.)
- Parcourse Trail (1.8 mi.)
- Garden terraces and walls
- Foot bridges (3)
- Suspension bridges (2)

Reflecting pools

Amphitheater Area

Amphitheater seating
Gazebo
Picnic shelter
Playground
Restroom

Support Facilities

Entrance Station

Shop

Shop building
Equipment shelters (2)

Roads

Park drive, one-way (2 mi.)

Residences (2)
Garden Club Center

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

The existing recreational activities provided to the public at Ravine Gardens are

NEW SHOP AREA

RECONFIGURE PARKING LOT & TRAFFIC CIRCULATION

INTERPRETIVE IMPROVEMENTS

CULTURAL LANDSCAPE MASTER PLAN FOR ENTIRE PARK

ENGINEERING STUDY FOR PARK ROAD

UPGRADE ELECTRICAL SERVICE AT AMPHITHEATER

RAILROAD TRAIL CROSSING

TRAIL CONNECTION TO WATER WORKS

Legend

- PROPOSED FACILITIES
- PROPOSED BOARDWALK
- ROAD
- WATER
- PARK BOUNDARY
- PROTECTED ZONE

RAVINE GARDENS STATE PARK

N

0 205 410 820 Feet

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

CONCEPTUAL LAND USE PLAN

appropriate, and should be continued at existing levels of visitation. As with many of the state park system's older units, improvements to park facilities and infrastructure are needed for the Division to fulfill its responsibilities to provide outdoor recreation, protect, and enhance the natural and cultural resources of the park.

While renovations, replacements and other improvements are recommended by this plan, cultural resource protection will remain a priority for any future site modifications. As noted previously in the Cultural Resources section, a comprehensive plan for preservation of the historic gardens and structures is needed.

Recreation Facilities

Civic Center. In addition to serving as rental space for meetings and events, a portion of the civic center should provide passive interpretation of the more inaccessible park facilities, such as the ravines and slopes as well as the WPA era. When the City's Water Works project is complete, coordination between the educational programs offered at the park and in that educational facility is recommended.

Formal Garden Area. The formal garden area has been changed several times since the original WPA design was implemented. As discussed in the Resource Management Component, this plan recommends developing a cultural landscape master plan for the park that would provide professional guidance for future restoration efforts while taking into consideration the National Registry guidelines as well as the present day realities of stormwater/erosion issues and visitor use patterns. In addition to the formal garden area, this master plan should also address the historic landscape of the ravine garden.

The Ravine Garden. The proposed cultural landscape master plan should provide guidance and direction for future restoration efforts in the ravine garden. The master plan should address the historic features, ornamental plantings, fountains, terracing, stonework and the reflecting pools. In regards to the reflecting pools, the master plan should identify what restoration work is advisable and how it should be accomplished. This water quality improvement project should be coordinated with SJRWMD and the City of Palatka.

To improve the recreational experience provided along the trails in the Ravine Garden, and to reduce erosion on some of the steeper slopes; boardwalks, ramps and stairs are recommended at the appropriate locations. Where necessary, trails should also be re-routed or closed. Consideration should also be given to the condition of the two suspension bridges. Recently, one of the bridges was fully restored while the other was partially restored. An engineering study is recommended to evaluate the long-term stability of these suspension bridges to ensure its safe use by visitors.

To complement the other environmental programs and activities that occur at the park,

additional interpretive signage is recommended at locations throughout the trail system. These signs will inform the public regarding resource management activities occurring at the park and incorporating the larger preservation, stewardship, land use, and cultural resource issues related to this plan.

Erosion control measures and additional plantings on the slopes are needed as the azaleas have either been washed away or killed by the herbicides used to control the invasive plant infestations. These measures, undertaken in conjunction with the stormwater management plan developed for the park, golf course, and associated ball fields will eventually limit the amount of stormwater runoff and decrease the effects from erosion.

It is also recommended that the electrical service in the amphitheater area be upgraded to support special events.

Water Works Connection. The City of Palatka and the Water Works Committee is working to restore the historic building and tanks at the historic Old Palatka Water Works. The City plans to utilize the building as an environmental education center and natural history museum. Once achieved, a pedestrian trail connection is recommended to link the park to the Water Works site.

There is also potential to link the park to the proposed Palatka Greenway. The Water Works Committee has been brainstorming how to connect the Cross Florida Greenway to the Water Works site and potentially Ravine Gardens. The Division supports trail connections to local greenways; however, it is the responsibility of the local governments to determine the routes of these proposed trails leading to the park. When a possible connection to the park is identified, the Division will support their ideas upon considering the sensitivity of the natural and cultural resources of the property and concerns related to park operations.

The River Tract. Currently, there is no public access to the river tract. Over the next couple of years, Division staff and the City of Palatka will explore the options available to the Division in creating a safe, grade-separated, pedestrian crossing across the CSX railroad tracks. If such a pedestrian crossing is available, a boardwalk trail to the river may be established.

Support Facilities

Parking and Circulation. Because of decades of piecemeal development in the area between the park entrance and the formal gardens, traffic circulation and parking around the civic center is currently confusing and inefficient. The parking lot and traffic circulation should be reevaluated and plans should be developed to enhance the use of this area while being sensitive to the historic, cultural landscape.

Due to the location of the park loop road along the naturally eroding edges of active steephead ravines, the long-term stability and safety of the road needs attention. An engineering study is recommended to evaluate what needs to be done to stabilize and extend the life of the park loop road.

The overhead powerlines along the park's western boundary detract from the scenic quality of the park. All overhead transmission lines in the park should be buried, where possible.

Shop Area. The existing shop buildings are located between the entrance to the Ravine Garden loop road and the civic center. The current shop area also takes up space that could otherwise be used for additional parking at the civic center. This plan recommends relocating the shop facilities to an area that will separate maintenance and operation activities from visitor use areas. Recently, the City donated the old swimming pool building and the land behind it to the State for the relocation of the shop area. Recommended maintenance facilities include a shop building, 3-bay equipment shelter, and flammable storage building.

Gift Shop. The current gift shop that is maintained by the Friends of Ravine Gardens is located within the old pool house building. Once the shop buildings are relocated to this area, the gift shop will need to be moved to another location. Possible solutions include placing the gift shop inside the civic center or pursuing an arrangement to use the Garden Club Center.

Facilities Development

Preliminary cost estimates for the following list of proposed facilities are provided in Addendum 6. These cost estimates are based on the most cost-effective construction standards available at this time. The preliminary estimates are provided to assist the Division in budgeting future park improvements, and may be revised as more information is collected through the planning and design processes.

Recreation Facilities

Civic Center
Interpretive improvements

Formal Garden Area
Cultural landscape master plan

The Ravine Garden
Trail improvements
Engineering study for suspension bridge
Interpretive signage
Upgrade electrical services at amphitheater

River Tract
Trail connection to Water Works
Off-grade railroad crossing to river tract
Boardwalk trail (1000ft.)

Support Facilities

Park Road and Parking

Reconfiguration of traffic circulation and parking lot

Engineering study for loop road

Bury electrical lines

Shop Area

Shop Building

Equipment Shelter (3-bay)

Flammable Storage Building

Gift Shop

Relocate gift shop

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.

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 Carrying Capacity

	Existing Capacity		Proposed Additional Capacity		Estimated Optimum Capacity	
Activity/Facility	One Time	Daily	One Time	Daily	One Time	Daily
Gardens	200	600			200	600
Trails						
Hiking Trails	100	400			100	400
Park Road	40	160			40	160
Picnicking	96	192			96	192
Civic Center	434	868			434	868
TOTAL	**870**	**2,220**	**0**	**0**	**870**	**2,220**

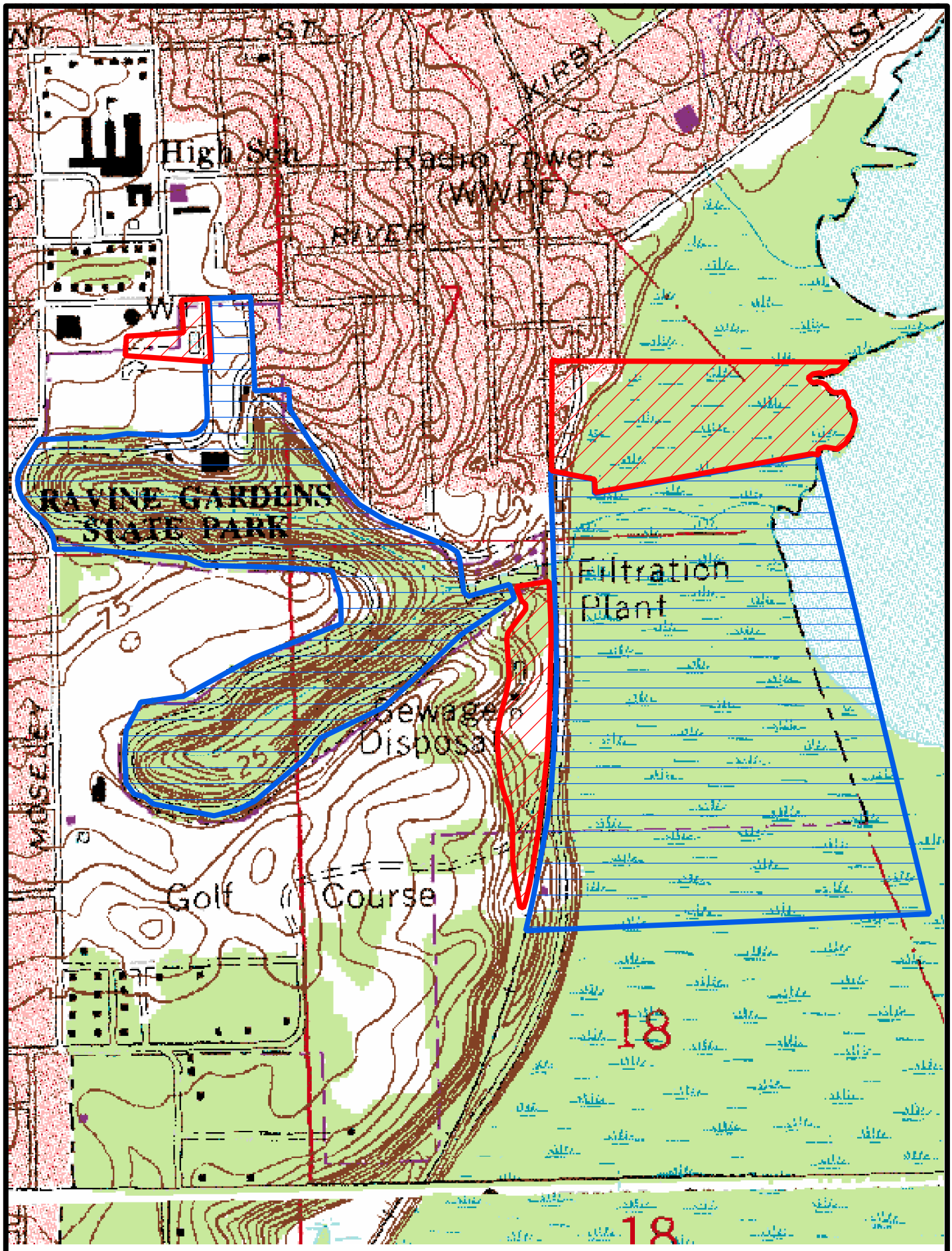
Optimum Boundary

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

Identification of lands on the optimum boundary map is solely for planning purposes and not for regulatory purposes. A property's identification on the optimum boundary map is not for use by any party or other government body to reduce or restrict the lawful right of private landowners. Identification on the map does not empower or require any government entity to impose additional or more restrictive environmental land use or zoning regulations. Identification is not to be used as the basis for permit denial or the imposition of permit conditions.

The optimum boundary map reflects lands identified for direct management by the Division as part of the park. These parcels may include public as well as privately owned lands that improve the continuity of existing park lands, provide additional natural and cultural resource 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 Optimum Boundary Map reflects lands identified as the most advantageous boundary for Ravine Gardens. The identified parcels would enhance the resource base of the park, allow for future expansion of the recreational and interpretive activities offered to park visitors, provide linkage between the ravine tract and the river tract and provide a site for the relocation of the shop facilities.



RAVINE GARDENS
STATE PARK

N

0 250 500 1,000 Feet

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

LEGEND

Optimum Boundary

Park Boundary

OPTIMIUM BOUNDARY MAP

Addendum 1 — Acquisition History

Sequence of Acquisition

On January 1, 1970, the Board of Trustees of the Internal Improvement Trust Fund (Trustees) obtained title to the property that is Ravine Gardens State Park. The property was donated from the City of Palatka, Florida. On June 8, 1971, the Trustees conveyed management authority of Ravine Gardens State Park to the Department of Environmental Protection (DEP), Division of Recreation and Parks (Division), under Lease No. 2531.

Title Interest

The Trustees hold fee simple title to Ravine Gardens State Park and the Division manages the property under Lease No. 2531. The lease is for a period of ninety-nine (99) years and will expire on June 8, 2070.

Out Outstanding Reservations

The lease from the Trustees stipulates that all the property be used for public outdoor recreation and related purposes. 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.

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

Instrument: .....Fee Simple Deed
Instrument Holder: .....The City of Palatka
Beginning Date:.....January 1, 1970
Ending Date:.....No ending date is given
Outstanding Rights, Uses, Etc.: .....If the subject land ceases to be used as state facility, the title to the property reverts to and invests in the instrument holder.

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Addendum 3—Soils Descriptions

Udorthents, excavated (11) - This soil type consists of excavated areas from which soil and geologic material have been removed mainly for use in road construction and as fill material. Spoil material is usually scattered around the area of excavation. These soils have little or no agricultural or woodland value.

Terra Ceia muck (26) - This soil is formed in organic material and very poorly drained. It is found on broad to narrow floodplains along the St. Johns River and its tributaries. Slopes are concave or smooth with the gradient less than 1 percent.

Typically, the soil is black muck to a depth of about 64 inches or more. The water table is as much as 2 feet above the surface at times during the rainy season. It is at or above the surface for 6 to 9 months in most years and is seldom below a depth of 10 inches except during extended dry periods. Permeability is rapid throughout, but the internal drainage is impeded by the high water table. The available water capacity is high, natural fertility is moderate, and the organic matter content is high.

Many areas of this soil border streams or lakes. Altering the natural vegetation and artificially draining this soil could have a detrimental effect on the quality of adjacent bodies of water. This soil is a natural habitat for wetland wildlife.

Placid-Pompano association, frequently flooded (43) - The soils in this association are nearly level and very poorly drained. These soils are in regular and repeating patterns in narrow to broad drainageways on the flatwoods and uplands. The slopes range from 0 to 2 percent.

Both Placid and Pompano fine sand are poorly drained soils. The soils have a seasonal high water table within a depth of 12 inches for 4 to 6 months during most years. The soils in this association in their native state have severe limitations for cultivated crops because of excessive wetness and periodic flooding. The natural vegetation consists of sweetgum, red maple loblolly bay, cabbage palm, wax myrtle and greenbriar. The understory is sparse.

Candler sand (2,44,54) - This soil is strongly sloping to steep and excessively drained. This soil has a high water table at a depth of more than 80 inches. The available water capacity is very low or low in the surface layer and upper part of the subsurface layer. The permeability is rapid. Rainfall is rapidly absorbed, but runoff is rapid in areas without vegetation during intense rains. If a vegetation cover crop is not left on the surface, the hazard of erosion is severe. Most of the acreage of this soil is in natural vegetation that includes turkey oak and scrub live oak and a few longleaf pine. The understory vegetation includes pineland threeawn and bluestem.

Addendum 4—Plant and Animal List

Ravine State Gardens Plants

Common Name	*Scientific Name*	Primary Habitat (for designated species)
Southern red maple	*Acer rubrum*	
Garden maidenhair fern	*Adiantum capillus-veneris*	
Century plant*	*Agave sp.*	
Silk tree, mimosa*	*Albizia julibrissin*	
Bastard indigo, false indigo	*Amorpha fruticosa*	
Pepper vine	*Ampelopsis arborea*	
Coral vine*	*Antigonon leptopus*	
Groundnut	*Apios americana*	
Devil's-walkingstick	*Aralia spinosa*	
Coral ardisia*	*Ardisia crenata*	
Pawpaw	*Asimina xnashii.*	
Commom asparagus-fern*	*Asparagus setaceus*	
Salt myrtle/Sea myrtle	*Baccharis halimifolia*	
Bamboo*	*Bambusa sp.*	
Orchid tree*	*Bauhinia sp.*	
Soft greeneyes	*Berlandiera pumila*	
Beggarticks	*Bidens alba*	
Water shield	*Brasenia schreberi*	
Paper mulberry*	*Broussonetia papyrifera*	
Gum bumelia	*Bumelia lanuginosa*	
Western buckthorn	*Bumelia reclinata*	
Pindo palm*	*Butia capitata*	
American beautyberry	*Callicarpa americana*	
Erect bottlebrush*	*Callistemon rigidus*	
Common camellia*	*Camellia japonica*	
Trumpet-vine	*Campsis radicans*	
American Hornbeam	*Carpinus caroliniana*	
Mockernut hickory	*Carya alba*	
Pignut hickory	*Carya glabra*	
Sicklepod*	*Cassia obtusifolia*	
Chinquapin	*Castanea pumila*	
Australian-pine*	*Casuarina equisetifolia*	
Hackberry	*Celtis laevigata*	
Spurred butterfly-pea	*Centrosema virginianum*	
Buttonbush	*Cephalanthus occidentalis*	
Redbud	*Cercis canadensis*	
Partridge pea	*Chamaecrista fasciculata*	
White fringe-tree	*Chionanthus virginica*	
Goldenaster	*Chrysopsis gossypina*	
Camphor-tree*	*Cinnamomum camphora*	
Citrus*	*Citrus sp.*	

* Non-native Species

Common Name	*Scientific Name*	Primary Habitat (for designated species)
Pine-hyacinth	*Clematis baldwinii*	
Argentine trumpet vine*	*Clytostoma callistegioides*	
Tread softly	*Cnidoscolus stimulosus*	
Wild taro*	*Colocasia esculentum*	
Whitemouth day-flower	*Commelina erecta*	
Flowering dogwood	*Cornus florida*	
Rabbit-bells	*Crotalaria rotundifolia*	
Showy rattlebox*	*Crotalaria spectabilis*	
Italian cypress*	*Cupressus sempervirens*	
Sago palm*	*Cycas circinalis*	
Flatsedge*	*Cyperus sp.*	
Leatherwood; Titi	*Cyrilla racemiflora*	
Dwarf-poinciana, red locust*	*Daubentonia punicea*	
Giant white-top sedge	*Dichromena latifolia*	
Virginia buttonweed	*Diodia virginiana*	
Air-potato, Devil's potato*	*Dioscorea bulbifera*	
Persimmon	*Diospyros virginiana*	
Water hyacinth*	*Eichhornia crassipes*	
Silverthorn*	*Elaeagnus pungens*	
Tall elephant's-foot	*Elephantopus elatus*	
Fleabane	*Erigeron sp.*	
Loquat, Japanese plum*	*Eriobotrya japonica*	
Creeping eryngo	*Eryngium prostratum*	
Coralbean	*Erythrina herbacea*	
Eucalyptus*	*Eucalyptus sp.*	
Swampmahogany*	*Eucalyptus robusta*	
Strawberry bush	*Euonymus americanus*	
Pineapple guava*	*Feijoa sellowiana*	
Benjamin fig*	*Ficus benjamina*	
Creeping fig*	*Ficus pumila*	
Fig*	*Ficus sp.*	
Cottonweed	*Froelichia floridana*	
Blanket flower	*Gaillardia pulchella*	
Elliott's milk pea	*Galactia elliottii*	
Yellow jessamine	*Gelsemium sempervirens*	
Loblolly bay	*Gordonia lasianthus*	
Silkoak*	*Grevillea robusta*	
Witch-hazel	*Hamamelis virginiana*	
----------	*Hedyotis sp.*	
Spanish daisy; Bitterweed	*Helenium amarum*	
Carolina frostweed	*Helianthemum carolinianum*	

* Non-native Species

Common Name	*Scientific Name*	Primary Habitat (for designated species)
Camphorweed	*Heterotheca subaxillaris*	
Rose of Sharon*	*Hibiscus syriacus*	
Hydrilla*	*Hydrilla verticillata*	
Water pennywort	*Hydrocotyle bonariensis*	
Carolina holly; Sand holly	*Ilex ambigua*	
Chinese holly*	*Ilex cornuta*	
American Holly	*Ilex opaca*	
Yaupon holly	*Ilex vomitoria*	
Tievine	*Ipomoea cordatotriloba*	
Scarletcreeper	*Ipomoea hederifolia*	
Blue-flag	*Iris virginica*	
Virginia willow	*Itea virginica*	
Primrose jasmine*	*Jasminum mesnyi*	
Southern red cedar	*Juniperus silicicola*	
Red cedar	*Juniperus virginiana*	
Goldenrain-tree*	*Koelreuteria formosana*	
Crape myrtle*	*Lagerstroemia indica*	
Common lantana*	*Lantana camara*	
Trailing lantana*	*Lantana montevidensis*	
Duckweed	*Lemna aequinoctialis*	
Fetterbush	*Leucothoe racemosa*	
Blazing star	*Liatris sp.*	
Japanese privet*	*Ligustrum japonicum*	
Glossy privet*	*Ligustrum lucidum*	
Chinese privet*	*Ligustrum sinense*	
Blue toadflax	*Linaria canadensis*	
Sweetgum	*Liquidambar styraciflua*	
Japanese honeysuckle*	*Lonicera japonica*	
Coral honeysuckle	*Lonicera sempervirens*	
Primrose willow*	*Ludwigia peruviana*	
Japanese climbing fern*	*Lygodium japonicum*	
Rusty lyonia	*Lyonia ferruginea*	
Fetterbush	*Lyonia lucida*	
Cat-claw vine*	*Macfadyena unguis-cati*	
Southern magnolia	*Magnolia grandiflora*	
Sweet bay	*Magnolia virginiana*	
Saucer magnolia*	*Magnolia x soulangiana*	
Wax mallow; Turk's cap mallow*	*Malvaviscus arboreus*	
Barbara's buttons	*Marshallia tenuifolia*	
Chinaberry*	*Melia azedarach*	
Noyau vine*	*Merremia dissecta*	

* Non-native Species

Common Name	*Scientific Name*	Primary Habitat (for designated species)
Banana shrub*	*Michelia figo*	
Florida sensitive brier	*Mimosa quadrivalvis var. floridana*	
Partridge berry; Twinberry	*Mitchella repens*	
Horsemint; Spotted beebalm	*Monarda punctata*	
Indian pipe	*Monotropa uniflora*	
Red mulberry	*Morus rubra*	
Banana*	*Musa x paradisiaca*	
Wax myrtle	*Myrica cerifera*	
Heavenly bamboo*	*Nandina domestica*	
Tuberous sword fern	*Nephrolepis cordifolia*	
Boston fern	*Nephrolepis exaltata*	
Spatter-dock	*Nuphar advena ssp. advena*	
Spatter-dock	*Nuphar advena spp. orbiculata*	
Swamp tupelo	*Nyssa sylvatica var. biflora*	
Fire spike*	*Odontonema cuspidatum*	
Evening Primrose	*Oenothera sp.*	
----------	*Oldenlandia sp.*	
Prickly-pear cactus	*Opuntia humifusa*	
Golden club	*Orontium aquaticum*	
Wild olive	*Osmanthus americanus*	
Cinnamon fern	*Osmunda cinnamomea*	18,20/21,31
Royal fern	*Osmunda regalis*	18,20/21,31
Violet wood sorrel	*Oxalis violacea*	
Maidencane	*Panicum hemitomon*	
Jerusalem thorn*	*Parkinsonia aculeata*	
Virginia creeper	*Parthenocissus quinquefolia*	
Maypop;Passion flower	*Passiflora incarnata*	
Redbay	*Persea borbonia*	
Annual garden phlox*	*Phlox drummondii*	
Date palm*	*Phoenix dactylifera*	
Mistletoe	*Phoradendron leucarpum*	
Chinese photinia*	*Photinia serrulata*	
Fog-fruit; Carpetweed	*Phyla nodiflora*	
Pokeberry; Pokeweed	*Phytolacca americana*	
Longleaf pine	*Pinus palustris*	
Loblolly pine	*Pinus taeda*	
Japanese pittosporum*	*Pittosporum tobira*	
Planer tree	*Planera aquatica*	
Resurrection fern	*Pleopeltis polypodioides*	
Yew Podocarpus*	*Podocarpus macrophyllus*	
Pickerelweed	*Pontederia cordata*	

* Non-native Species

Common Name	*Scientific Name*	Primary Habitat (for designated species)
Chicksaw plum	*Prunus angustifolia*	
Carolina laurel cherry	*Prunus caroliniana*	
Peach*	*Prunus persica*	
Wild cherry	*Prunus serotina*	
Wafer ash	*Ptelea trifoliata*	
Bracken fern	*Pteridium aquilinum*	
Blackroot	*Pterocaulon pycnostachyum*	
Pomegranate*	*Punica granatum*	
Red firethorn*	*Pyracantha coccinea*	
Flame vine*	*Pyrostegia venusta*	
False dandelion	*Pyrrhopappus carolinianus*	
Chapman's oak	*Quercus chapmanii*	
Laurel oak; Diamond oak	*Quercus laurifolia*	
Small post oak	*Quercus margaretta*	
Myrtle oak	*Quercus myrtifolia*	
Water oak	*Quercus nigra*	
Live oak	*Quercus virginiana*	
Needle palm	*Rhapidophyllum hystrix*	31
Pale meadow beauty	*Rhexia mariana*	
Azalea*	*Rhododendron sp.*	
Swamp honeysuckle	*Rhododendron viscosum*	
Winged sumac	*Rhus copallina*	
Giant whitetop	*Rhynchospora latifolia*	
Rose	*Rosa sp.*	
Blackberry	*Rubus sp.*	
Wild-petunia	*Ruellia caroliniensis*	
Cabbage palm	*Sabal palmetto*	
Carolina willow	*Salix caroliniana*	
Lyre-leaved sage	*Salvia lyrata*	
Elderberry	*Sambucus nigra ssp. canadensis*	
Chinese tallow	*Sapium sebiferum*	
Lizard's-tail	*Saururus cernuus*	
Sensitive briar	*Schrankia microphylla*	
Sicklepod	*Senna obtusifolia*	
Saw palmetto	*Serenoa repens*	
Rattlebox*	*Sesbania punicea*	
Boxthorn*	*Severinia buxifolia*	
Gum bully	*Sideroxylon lanuginosum*	
Florida bully	*Sideroxylon reclinatum ssp. reclinatum*	
Earleaf greenbrier; Catbrier	*Smilax auriculata*	
Saw greenbrier; Catbrier	*Smilax bona-nox*	

* Non-native Species

Common Name	*Scientific Name*	Primary Habitat (for designated species)
Wild sarsaparilla	*Smilax glauca*	
Laurel greenbrier, Catbrier	*Smilax laurifolia*	
Sarsaparilla vine	*Smilax pumila*	
Horse-nettle	*Solanum carolinense var. carolinense*	
Goldenrod	*Solidago sp.*	
Spiraea*	*Spiraea sp.*	
Bird of paradise*	*Strelitzia sp.*	
Queen palm*	*Syagrus romanzoffiana*	
Bald cypress	*Taxodium distichum*	
Cape honeysuckle*	*Tecoma capensis*	
Carolina basswood	*Tilia americana var. caroliniana*	
Spanish moss	*Tillandsia usneoides*	
Poison ivy	*Toxicodendron radicans*	
Poison sumac	*Toxicodendron vernix*	
Confederate jasmine*	*Trachelospermum jasminoides*	
Forked blue curls	*Trichostema dichotomum*	
Venus looking-glass	*Triodanis perfoliata*	
American elm	*Ulmus americana*	
Caesar weed	*Urena lobata*	
Creeping signalgrass*	*Urochloa plantaginea*	
Sparkleberry	*Vaccinium arboreum*	
Highbush blueberry	*Vaccinium corymbosum*	
Deerberry	*Vaccinium stamineum*	
Possum haw	*Viburnum nudum*	
Muscadine grape	*Vitis rotundifolia*	
Washington palm*	*Washingtonia robusta*	
Chinese wisteria*	*Wisteria sinensis*	
Netted chain fern	*Woodwardia areolata*	
Elephant-ear*	*Xanthosoma sagittifolium*	
Youngia*	*Youngia japonica*	
Spanish dagger*	*Yucca aloifolia*	
Adam's needle	*Yucca filamentosa*	
Coontie	*Zamia pumila*	18,20/21,81/82
Hercules-club	*Zanthoxylum clava-herculis*	

* Non-native Species

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

INVERTEBRATES

Gulf fritillary	*Agraulis vanillae nigrior*	18, 81/82
Tawny emperor butterfly	*Asterocampa clyton*	18,20/21,31, 81/82
Great purple hairstreak	*Atlides halesus*	18,20/21, 81/82
Pipevine swallowtail	*Battus philenor*	18, 81/82
Polydamas swallowtail	*Battus polydamas*	81/82
Red-banded hairstreak	*Calycopis cecrops*	81/82
Southern dogface butterfly	*Colias cesonia*	81/82
Southern skipperling	*Copaeodes minimus*	81/82
Queen butterfly	*Danaus gillippus berenice*	81/82
Monarch or milkweed butterfly	*Danaus plexippus*	81/82
Pearly eye	*Enodia portlandia*	81/82
Silver-spotted skipper	*Epargyreus clarus*	18, 81/82
Horaces dusky wing	*Erynnis horatius*	18,20/21,31, 81/82
Juvenals dusky wing	*Erynnis juvenalis*	81/82
Zarucco dusky wing	*Erynnis zarucco*	81/82
Little wood satyr	*Euptychia cymela viola*	81/82
Barred sulphur butterfly	*Eurema daira*	81/82
Little sulphur butterfly	*Eurema lisa*	81/82
Sleepy orange butterfly	*Eurema nicippe*	81/82
Zebra swallowtail	*Eurytides marcellus*	31, 81/82
Zebra butterfly	*Heliconius charitonius tuckeri*	18,31, 81/82
Ceraunus blue	*Hemiargus ceraunus antibubastus*	81/82
Carolina Satyr	*Hermeuptychia sosybius*	81/82
Fiery skipper	*Hylephila phyleus*	81/82
Buckeye butterfly	*Junonia coenia*	81/82
Clouded skipper	*Lerema accius*	81/82
Snout butterfly	*Libytheana bachmannii*	31, 81/82
Viceroy	*Limenitus archippus*	31,33, 81/82
Red-spotted purple butterfly	*Limenitus astyanax*	81/82
Ocola skipper	*Panoquina ocola*	81/82
Giant swallowtail	*Papilio cresphontes*	81/82
Tiger swallowtail	*Papilio glaucus australis*	81/82
Palamedes swallowtail	*Papilio palamedes*	31,33
Black swallowtail	*Papilio polyxenes asterius*	81/82
Spice-bush swallowtail	*Papilio troilus*	18, 81/82
White-M hairstreak	*Parrhasius m-album*	18, 81/82
Cloudless sulphur butterfly	*Phoebis sennae eubule*	81/82
Phaon cresent butterfly	*Phyciodes phaon*	81/82
Seminole cresent butterfly	*Phyciodes texana seminole*	81/82

***** **Non-native Species**

Common Name	*Scientific Name*	Primary Habitat (for all species)
Pearl cresent butterfly	*Phyciodes tharos*	81/82
European cabbage butterfly	*Pieris rapae*	81/82
Whirlabout	*Polites vibex*	81/82
Question mark butterfly	*Polygonia interrogationis*	31,33, 81/82
Checkered white butterfly	*Pontia protodice*	81/82
Buckeye butterfly	*Precis oenia*	13,14,41
Tropical checkered skipper	*Pyrgus oileus*	81/82
Gray hairstreak	*Strymon melinus*	81/82
Southern cloudy wing	*Thorybes bathyllus*	81/82
Long-tailed skipper	*Urbanus proteus*	81/82
Red admiral butterfly	*Vanessa atalanta*	81/82
American painted lady butterfly	*Vanessa virginiensis*	81/82

FISH

Grass carp	*Ctenopharyngodon idella*	*53*
Eastern mosquitofish	*Gambusia holbrooki*	53
Redbreast sunfish	*Lepomis auritus*	*53*
Bluegill	*Lepomis macrochirus*	53
Largemouth bass	*Micropterus salmoides*	53

AMPHIBIANS

Southern toad	*Bufo terrestris*	31,33,81/82
Green treefrog	*Hyla cinerea*	33
Southern spring peeper	*Pseudacris crucifer bartramiana*	18
Bronze frog	*Rana clamitans clamitans*	20/21
Florida leopard frog	*Rana utricularia sphenocephala*	31,33

REPTILES

Florida cottonmouth	*Agkistrodon piscivorus conanti*	31, 33, 53
American alligator	*Alligator mississippiensis*	53
Green anole	*Anolis carolinensis carolinensis*	18,20/21, 81/82
Florida scarlet snake	*Cemophora coccinea coccinea*	81/82
Florida snapping turtle	*Chelydra serpentina osceola*	53
Six-lined racerunner	*Cnemidophorus sexlineatus sexlineatus*	81/82
Southern black racer	*Coluber constrictor priapus*	18, 81/82
Eastern diamondback rattlesnake	*Crotalus adamanteus*	81/82
Florida chicken turtle	*Deirochelys reticularia chrysea*	53
Eastern indigo snake	*Drymarchon corais couperi*	18,20/21, 81/82

*** Non-native Species**

Common Name	*Scientific Name*	Primary Habitat (for all species)
Corn snake	*Elaphe guttata guttata*	18,20/21, 81/82
Yellow rat snake	*Elaphe obsoleta quadrivittata*	18,20/21, 81/82
Five-lined skink	*Eumeces fasciatus*	18,31,33, 81/82
Broad-headed skink	*Eumeces laticeps*	18,20/21,31
Gopher tortoise	*Gopherus polyphemus*	81/82
Eastern hognose snake	*Heterodon platyrhinos*	81/82
Striped mud turtle	*Kinosternon bauri*	53
Florida water snake	*Nerodia fasciata pictiventris*	31, 33, 53
Rough green snake	*Opheodrys aestivus*	18,20/21
Eastern glass lizard	*Ophisaurus ventralis*	18,20/21
Florida pine snake	*Pituophis melanoleucus mugitus*	81/82
Peninsula cooter	*Pseudemys floridana peninsularis*	53
Florida redbelly turtle	*Pseudemys nelsoni*	53
Southern fence lizard	*Sceloporus undulatus undulatus*	81/82
Ground skink	*Scincella lateralis*	18,20/21
Common musk turtle	*Sternotherus odoratus*	53
Florida box turtle	*Terrapene carolina bauri*	18,20/21
Eastern garter snake	*Thamnophis sirtalis sirtalis*	18,20/21, 81/82

BIRDS

Sharp-shinned Hawk	*Accipiter striatus*	flyover
Red-winged Blackbird	*Agelaius phoeniceus*	32
Cinnamon Teal	*Anas cyanoptera*	
Ruby-throated Hummingbird	*Archilochus colubris*	81/82
Great Egret	*Ardea alba*	32,53
Great Blue Heron	*Ardea herodias*	32,53
Cedar Waxwing	*Bombycilla cedrorum*	18,20/21,81/82
Great Horned Owl	*Bubo virginianus*	18,20/21
Cattle Egret	*Bubulcus ibis*	81/82
Red-tailed Hawk	*Buteo jamaicensis*	flyover
Red-shouldered Hawk	*Buteo lineatus*	flyover
Green Heron	*Butorides virescens*	32,53
Chuck-will's-widow	*Caprimulgus carolinensis*	20/21
Whip-poor-will	*Caprimulgus vociferus*	20/21
Northern Cardinal	*Cardinalis cardinalis*	18,20/21,81/82
American Goldfinch	*Carduelis tristis*	18,20/21
Turkey Vulture	*Cathartes aura*	flyover
Chimney Swift	*Chaetura pelagica*	81/82
Common Nighthawk	*Chordeiles minor*	18,20/21
Yellow-billed Cuckoo	*Coccyzus americanus*	18,20/21

***** **Non-native Species**

Common Name	*Scientific Name*	Primary Habitat (for all species)
Northern Flicker	*Colaptes auratus*	18,20/21
Northern Bobwhite	*Colinus virginianus*	20/21
Rock Dove*	*Columba livia*	81/82
Common Ground-Dove	*Columbina passerina*	18,81/82
Black Vulture	*Coragyps atratus*	flyover
American Crow	*Corvus brachyrhynchos*	81/82
Fish Crow	*Corvus ossifragus*	flyover
Blue Jay	*Cyanocitta cristata*	18,20/21,81/82
Black-throated Blue Warbler	*Dendroica caerulescens*	18,20/21
Cerulean Warbler	*Dendroica cerulea*	18,20/21
Yellow-rumped Warbler	*Dendroica coronata*	18,20/21
Prairie Warbler	*Dendroica discolor*	18,20/21
Yellow-throated Warbler	*Dendroica dominica*	18,20/21
Blackpoll Warbler	*Dendroica striata*	18,20/21
Pileated Woodpecker	*Dryocopus pileatus*	18,20/21
Gray Catbird	*Dumetella carolinensis*	18,20/21
Little Blue Heron	*Egretta caerulea*	32,53
Snowy Egret	*Egretta thula*	32,53
Tricolored Heron	*Egretta tricolor*	32,53
Swallow-tailed Kite	*Elanoides forficatus*	flyover
American Kestrel	*Falco sparverius*	flyover
Common Moorhen	*Gallinula chloropus*	32,53
Common Yellowthroat	*Geothlypis trichas*	18,20/21
Bald Eagle	*Haliaeetus leucocephalus*	flyover
Baltimore Oriole	*Icterus galbula*	flyover
Red-bellied Woodpecker	*Melanerpes carolinus*	18,20/21
Red-headed Woodpecker	*Melanerpes erythrocephalus*	18,20/21
Wild Turkey	*Meleagris gallopavo*	18,20/21,81/82
Northern Mockingbird	*Mimus polyglottos*	18,20/21,81/82
Black-and-white Warbler	*Mniotilta varia*	18,20/21
Brown-headed Cowbird	*Molothrus ater*	18,20/21
Great Crested Flycatcher	*Myiarchus crinitus*	18,20/21
Eastern Screech-Owl	*Otus asio*	18,20/21
Osprey	*Pandion haliaetus*	flyover
Northern Parula	*Parula americana*	18,20/21
Tufted Titmouse	*Parus bicolor*	18,20/21
House Sparrow	*Passer domesticus*	81/82
Downy Woodpecker	*Picoides pubescens*	18,20/21
Eastern Towhee	*Pipilo erythrophthalmus*	20/21
Scarlet Tanager	*Piranga olivacea*	18,20/21
Summer Tanager	*Piranga rubra*	18,20/21

*** Non-native Species**

Common Name	*Scientific Name*	Primary Habitat (for all species)
Blue-gray Gnatcatcher	*Polioptila caerulea*	18,20/21
Common Grackle	*Quiscalus quiscula*	18,20/21,32,53,81/82
Ruby-crowned Kinglet	*Regulus calendula*	18,20/21
Eastern Phoebe	*Sayornis phoebe*	18,20/21
Ovenbird	*Seiurus aurocapillus*	18,20/21
American Redstart	*Setophaga ruticilla*	18,20/21
Yellow-bellied Sapsucker	*Sphyrapicus varius*	18,20/21
Barred Owl	*Strix varia*	18,20/21
European Starling*	*Sturnus vulgaris*	81/82
Tree Swallow	*Tachycineta bicolor*	81/82
Carolina Wren	*Thryothorus ludovicianus*	18,20/21,32
Brown Thrasher	*Toxostoma rufum*	18,20/21
House Wren	*Troglodytes aedon*	81/82
American Robin	*Turdus migratorius*	81/82
White-eyed Vireo	*Vireo griseus*	18,20/21
Red-eyed Vireo	*Vireo olivaceus*	18,20/21
Mourning Dove	*Zenaida macroura*	18,20/21,81/82
White-throated Sparrow	*Zonotrichia albicollis*	flyover

MAMMALS

Southeastern Short-tail shrew	*Blarina carolinensis shermani*	
Coyote*	*Canis latrans*	18, 20, 21
Nine-banded armadillo*	*Dasypus novemcinctus*	18,20/21,31,81/82
Virginia opossum	*Didelphis virginiana*	20/21,31
Bobcat	*Felis rufus*	20/21
River otter	*Lutra canadensis*	53
Raccoon	*Procyon lotor*	18,20/21,31,81/82
Gray squirrel	*Sciurus carolinensis*	18,81/82
Wild pig*	*Sus scrofa*	18,20/21,32,81/82
West Indian manatee	*Trichechus manatus latirostris*	53
Gray fox	*Urocyon cinereoargenteus*	18,20/21

*** Non-native Species**

Ravine State Gardens Animals

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

* Non-native Species

Terrestrial

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

Palustrine

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

Lacustrine

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

Riverine

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

Estuarine

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

Marine

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

Subterranean

82. Aquatic Cave
83. Terrestral Cave

Miscellaneous

84. Ruderal
85. Developed

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

LEGAL STATUS

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

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

Raive Gardens State Park Designated Species—Plants

Common Name/ *Scientific Name*	**Designated Species Status** FDACS	USFWS	FNAI
Cinnamon fern			
Osmunda cinnamomea	LE		
Royal fern			
Osmunda regalis	LE		
Needle palm			
Rhapidophyllum hystrix	LE		
Coontie			
Zamia pumila	LE		

Ravine Gardens State Park Designated Species—Animals

Common Name/ *Scientific Name*	Designated Species Status FFWCC	USFWS	FNAI
REPTILES			
American alligator *Alligator mississippiensis*	LS	T(S/A)	S4
Eastern indigo snake *Drymarchon corais couperi*	LT	LT	S3
Gopher tortoise *Gopherus polyphemus*	LT		S3
Florida pine snake *Pituophis melanoleucus mugitus*	LS		S3
BIRDS			
Great Egret *Ardea alba*			S4
Little Blue Heron *Egretta caerulea*	LS		S4
Snowy Egret *Egretta thula*	LS		S3
Tricolored Heron *Egretta tricolor*	LS		S4
Swallow-tailed Kite *Elanoides forficatus*			S2
Bald Eagle *Haliaeetus leucocephalus*	LT	LT	S3
Osprey *Pandion haliaetus*	LS		S3S4
American Redstart *Setophaga ruticilla*			S2
MAMMALS			
West Indian manatee *Trichechus manatus latirostris*	LE	LE	S2

Addendum 6—Priority Schedule and Cost Estimates

1. Upgrade and relocate shop/service area facilities to provide shelter for vehicles and equipment. 0-10 years**. Estimated Cost: $250,000.**
2. Develop a Cultural Landscape Master Plan for the park. 0-10 years. **Estimated Cost: $40,000**.
3. Continue and expand the invasive exotic removal program. 0-10 years. **Estimated Cost: $20,000/year reoccurring**.
4. Continue program for hardwood removal to reduce density of sapling hardwoods in ravine azalea gardens. 0-10 years. **Estimated Cost: $20,000.**
5. Continue program to remove enveloping and encroaching vegetation from all New Deal Era limestone terraces, columns and structures. 0-10 years. **Estimated Cost: $2,000/year reoccurring.**
6. Replace or restore aging stormwater infrastructure in ravines. 0-10 years. **Estimated Cost: $500,000**.
7. Restore hiking trails in ravine: provide access with off grade boardwalks and stairs; and relocate trails if necessary to follow contours to minimize erosion impacts. 0-10 years. **Estimated Cost: $50,000.**
8. Restore ornamental water wheel and dams. 0-10 years**. Estimated Cost: $200,000.**
9. Prepare a bird list for the park. 0-10 years. **Estimated Cost: $2,000**.
10. Prepare a plant list for the park. 0-10 years. **Estimated Cost: $2,000.**
11. Prepare a vertebrate list for the park. 0-10 years. **Estimated Cost: $2,000.**
12. Establish monitoring measures to monitor recorded sites for erosion, animal and human activity. 2-3 years. **Estimated Cost: $1,000, and $1,000/year reoccurring**.
13. Establish scenic hiking trail/boardwalk in river tract with observation platform along the St. Johns River. 1-5 years. **Estimated Cost: $100,000**.

Total Estimated Cost: ..... $ 1,389,000.00

Capital Improvements

Development Area or Facilities	**Cost**
Formal Garden Area	50,000.00
Ravine Garden	275,000.00
River Tract	80,000.00
Park Road and Parking	130,000.00
Support Facilities	332,000.00
Total w/contingency	**$1,064,400.00**