Suwannee River State Park

Approved
Unit Management Plan

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Division of Recreation and Parks
December 16, 2016

Florida Department of Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Jonathan P. Steverson
Secretary

December 19, 2016

Ms. Sine Murray
Division of Recreation and Parks
Department of Environmental Protection
3900 Commonwealth Boulevard, MS 525
Tallahassee, Florida 32399-3000

RE: Long Key State Park (Lease #3672)
Curry Hammock State Park (Lease #3983)
Suwannee River State Park (Lease #3643)
Little Manatee River State Park (Lease #2806)

Dear Ms. Murray:

On **December 16, 2016**, the Acquisition and Restoration Council recommended approval of the above management plans. Therefore, the Division of State Lands, Office of Environmental Services, acting as agent for the Board of Trustees of the Internal Improvement Trust Fund, hereby approves the above mentioned management plans. The next management plan update for these plans is due December 16, 2026.

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

Sincerely,

Raymond V. Spaulding
Office of Environmental Services
Division of State Lands
Department of Environmental Protection

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INTRODUCTION

Suwannee River State Park is located in Suwannee County, Madison County, and Hamilton County (see Vicinity Map). Access to the park is from U.S. Highway 90 and State Road 132 (see Reference Map). The Vicinity Map also reflects significant land and water resources existing near the park.

Suwannee River State Park was initially acquired on November 6, 1945 by the Florida Board of Forestry. Currently, the park comprises 1,929 acres. The Board of Trustees of the Internal Improvement Trust Fund (Trustees) hold fee simple title to the park and on January 21, 1968, the Trustees leased (Lease Number 2324) the property to the DRP under a 99-year lease. In 1988, the Trustees assigned a new lease number (Lease Number 3643), without changing any terms or conditions. The current lease will expire on January 22, 2067.

Suwannee River State Park is designated single-use to provide public outdoor recreation and other park-related uses. There are no legislative or executive directives that constrain the use of this property (see Addendum 1).

Purpose and Significance of the Park

The purpose of Suwannee River State Park is to provide Florida residents and visitors with public access to Outstanding Florida Waters and high-quality natural areas for resource-based outdoor recreation, and to preserve wildlife habitat, geological resources and imperiled species in rural North Florida.

Park Significance

- The park protects important cultural resources representing portions of Florida history from the Paleo-Indian period to the historical era, including thirteen archaeological sites, resource groups representing old communities, and a Confederate Earthworks.

- The park protects eleven significant springs, including Seven Sisters Spring (Five Hole Spring), Little Sister Spring, three unnamed springs in Hamilton County, two unnamed springs in Suwannee County, Little Gem Springs, Lime Sink and numerous karst windows scattered throughout the park. Lime Sink is directly connected to one of the longest well-explored cave systems in the world, the Cathedral Falmouth system.

- The park protects fourteen types of natural communities providing habitat for rare and endemic species, such as the pallid cave crayfish (*Procambarus pallidus*), Suwannee mocassinshell (*Medionidus walkeeri*), and Suwannee cooter (*Pseudemys concinna suwanniensis)*, which are considered imperiled.

- The park also protects imperiled plants such as the Eastern sweetshrub (*Calycanthus floridus*), and Florida mountainmint (*Pycnanthemum floridanum*) that are vulnerable to extinction and rare within the range.

- The park provides access to the Suwannee and Withlacoochee rivers at their confluence and to numerous geological sites such as springs and karst features for resource-based outdoor recreation. The park also provides a window into the early history of Florida and life along the river.

Suwannee River State Park is classified as a state park in the DRP's unit classification system. In the management of a state park, a balance is sought between the goals of maintaining and enhancing natural conditions and providing various recreational opportunities. Natural resource management activities are aimed at management of natural systems. Development in the park is directed toward providing public access to and within the park, and to providing recreational facilities, in a reasonable balance, that are both convenient and safe. Program emphasis is on interpretation on the park's natural, aesthetic and educational attributes.

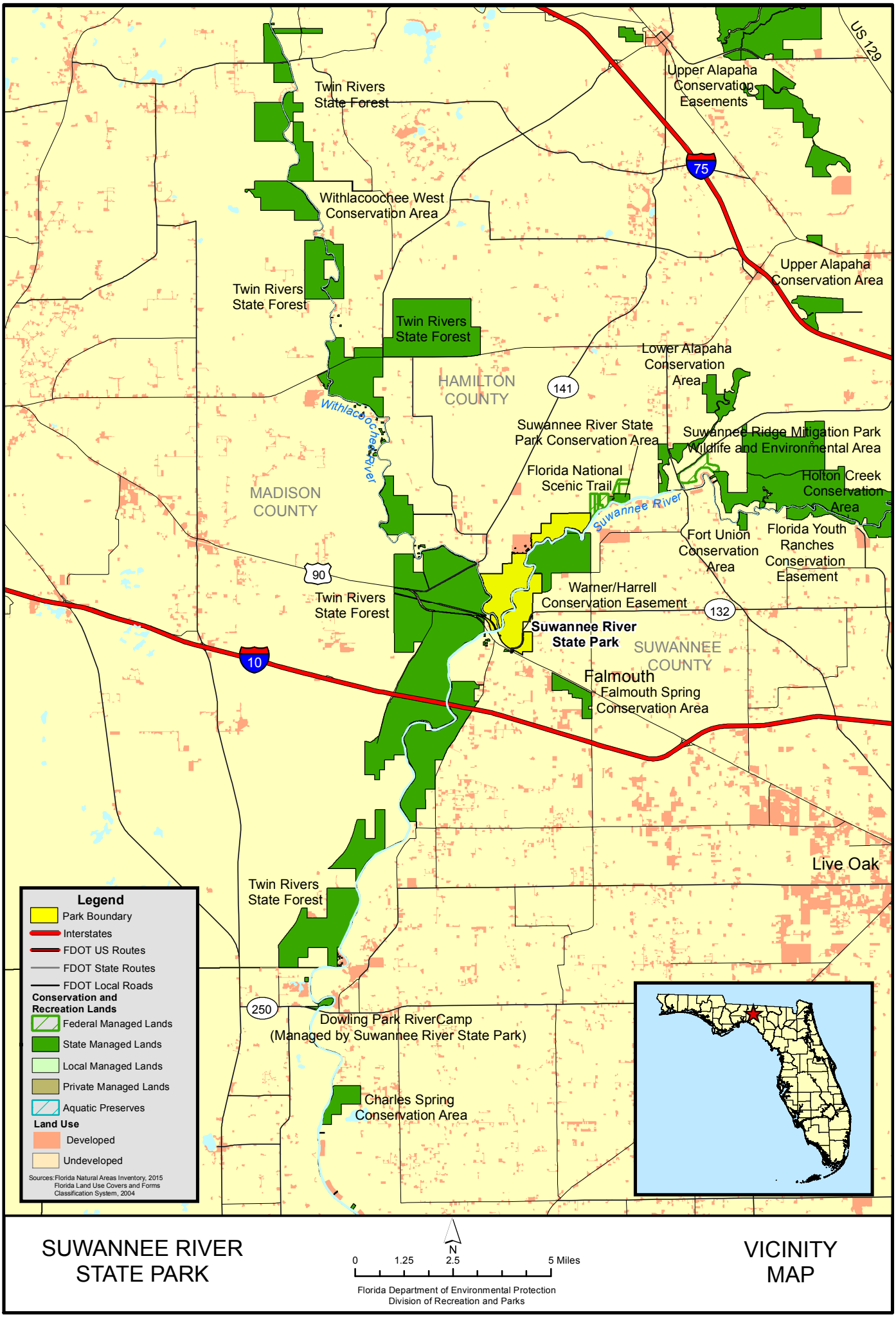
Purpose and Scope of the Plan

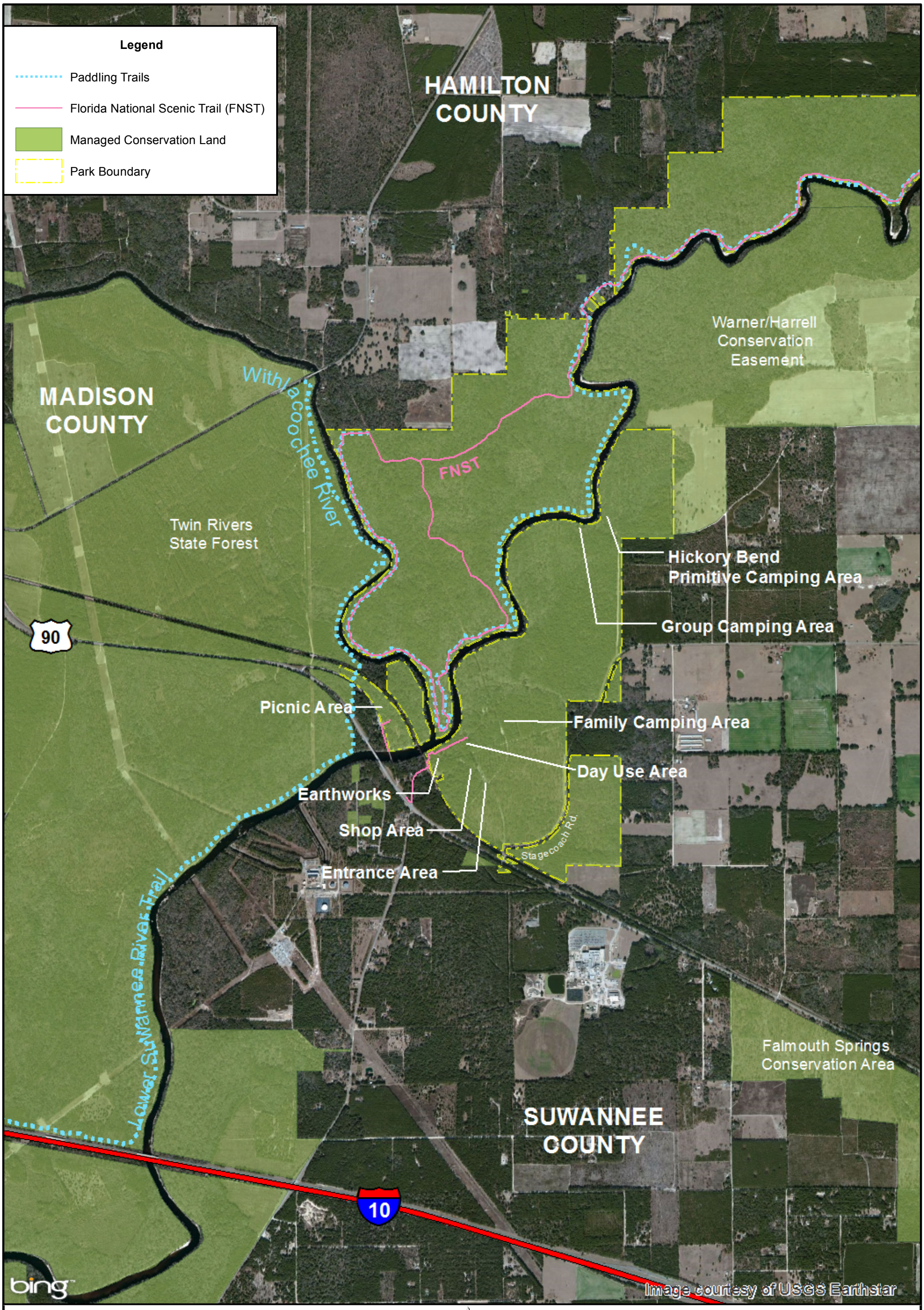
This plan serves as the basic statement of policy and direction for the management of Suwannee River State Park as a unit of Florida's state park system. It identifies the goals, objectives, actions and criteria or standards that guide each aspect of park administration, and sets forth the specific measures that will be implemented to meet management objectives and provide balanced public utilization. The plan is intended to meet the requirements of Sections 253.034 and 259.032, Florida Statutes, Chapter 18-2, Florida Administrative Code, and is intended to be consistent with the State Lands Management Plan. With approval, this management plan will replace the 2002 approved plan.

The plan consists of three interrelated components: the Resource Management Component, the Land Use Component and the Implementation Component. The Resource Management Component provides a detailed inventory and assessment of the natural and cultural resources of the park. Resource management needs and issues are identified, and measurable management objectives are established for each of the park's management goals and resource types. This component provides guidance on the application of such measures as prescribed burning, exotic species removal, imperiled species management, cultural resource management and restoration of natural conditions.

The Land Use Component is the recreational resource allocation plan for the park. Based on considerations such as access, population, adjacent land uses, the natural and cultural resources of the park, current public uses and existing development. Measurable objectives are set to achieve the desired allocation of the physical space of the park. These objectives identify use areas and propose the types of facilities and programs as well as the volume of public use to be provided.

The Implementation Component consolidates the measurable objectives and actions for each of the park's management goals. An implementation schedule and cost


Twin Rivers State Forest
Withlacoochee West Conservation Area
Twin Rivers State Forest
Twin Rivers State Forest
Twin Rivers State Forest
Twin Rivers State Forest
Upper Alapaha Conservation Easements
US 129
75
Upper Alapaha Conservation Area
Lower Alapaha Conservation Area
HAMILTON COUNTY
141
Withlacoochee River
Suwannee River State Park Conservation Area
Suwannee Ridge Mitigation Park Wildlife and Environmental Area
Florida National Scenic Trail
Holton Creek Conservation Area
MADISON COUNTY
Suwannee River
Fort Union Conservation Area
Florida Youth Ranches Conservation Easement
90
Warner/Harrell Conservation Easement
132
Suwannee River State Park
SUWANNEE COUNTY
10
Falmouth
Falmouth Spring Conservation Area
Live Oak
250
Dowling Park RiverCamp (Managed by Suwannee River State Park)
Charles Spring Conservation Area
Legend
Park Boundary
Interstates
FDOT US Routes
FDOT State Routes
FDOT Local Roads
Conservation and Recreation Lands
Federal Managed Lands
State Managed Lands
Local Managed Lands
Private Managed Lands
Aquatic Preserves
Land Use
Developed
Undeveloped
Sources: Florida Natural Areas Inventory, 2015
Florida Land Use Covers and Forms Classification System, 2004
SUWANNEE RIVER STATE PARK
N
0
1.25
2.5
5 Miles
Florida Department of Environmental Protection
Division of Recreation and Parks
VICINITY MAP



SUWANNEE RIVER STATE PARK

N

0 500 1,000 2,000 Feet

Florida Department of Environmental Protection
Division of Recreation and Parks
Date of aerial; 2011

REFERENCE MAP

estimates are included for each objective and action. Included in this table are (1) measures that will be used to evaluate the DRP's implementation progress, (2) timeframes for completing actions and objectives and (3) estimated costs to complete each action and objective.

All development and resource alteration proposed 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.

In the development of this plan, the potential of the park to accommodate secondary management purposes was analyzed. These secondary purposes were considered within the context of the DRP's statutory responsibilities and the resource needs and values of the park. This analysis considered the park's natural and cultural resources, management needs, aesthetic values, visitation and visitor experiences. For this park, it was determined that mulching, hardwood chipping, fuel wood, wiregrass seed, and timbering of offsite hardwoods to improve conditions for prescribed burning could be accommodated in a manner that would be compatible and not interfere with the primary purpose of resource-based outdoor recreation and conservation. These compatible secondary management purposes are addressed in the Resource Management Component of the plan. Uses such as water resource development projects, water supply projects, stormwater management projects, linear facilities and sustainable agriculture and forestry (other than those forest management activities specifically identified in this plan) are not consistent with this plan or the management purposes of the park.

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 that mulching, hardwood chipping, fuel wood, wiregrass seed, and timbering of offsite hardwoods to improve conditions for prescribed burning would be appropriate at this park as additional sources of revenue for land management since they are compatible with the park's primary purpose of resource-based outdoor recreation and conservation.

The DRP may provide the services and facilities outlined in this plan either with its own funds and staff or through an outsourcing contract. Private contractors may provide assistance with natural resource management and restoration activities or a concessionaire may provide services to park visitors in order to enhance the visitor experience. For example, a concessionaire could be authorized to sell merchandise and food and to rent recreational equipment for use in the park. A concessionaire may also be authorized to provide specialized services, such as interpretive tours, or overnight accommodations when the required capital investment exceeds that which the DRP can elect to incur. Decisions regarding outsourcing, contracting with the private sector, the use of concessionaires, etc. are made on a case-by-case basis in accordance with the policies set forth in the DRP's Operations Manual (OM).

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 (DRP) 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 Board of Trustees of the Internal Improvement Trust Fund (Trustees) has granted management authority of certain sovereign submerged lands to the DRP 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 affect public recreational uses.

Many operating procedures are standardized system-wide and are set by internal direction. These procedures are outlined in the OM that covers such areas as personnel management, uniforms and personal appearance, training, signs, communications, fiscal procedures, interpretation, concessions, public use regulations, resource management, law enforcement, protection, safety and maintenance.

Park Management Goals

The following park goals express the DRP's long-term intent in managing the state park:

- Provide administrative support for all park functions.
- Protect water quality and quantity in the park, restore hydrology to the extent feasible and maintain the restored condition.
- Restore and maintain the natural communities/habitats of the park.

- Maintain, improve or restore imperiled species populations and habitats in the park.
- Remove exotic and invasive plants and animals from the park and conduct needed maintenance-control.
- Protect, preserve and maintain the cultural resources of the park.
- Provide public access and recreational opportunities in the park.
- Develop and maintain the capital facilities and infrastructure necessary to meet the goals and objectives of this management plan.

Management Coordination

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

The Florida Department of Agriculture and Consumer Services (FDACS), Florida Forest Service (FFS), assists DRP staff in the development of wildfire emergency plans and provides the authorization required for prescribed burning. The Florida Fish and Wildlife Conservation Commission (FWC) assists staff in the enforcement of state laws pertaining to wildlife, freshwater fish and other aquatic life existing within the park. In addition, the FWC aids the DRP with wildlife management programs, including imperiled species management. The Florida Department of State (FDOS), Division of Historical Resources (DHR) assists staff to ensure protection of archaeological and historical sites.

Public Participation

The DRP provided an opportunity for public input by conducting a public workshop and an Advisory Group meeting to present the draft management plan to the public. These meetings were held on July 26, 2016 and July 27, 2016, respectively. Meeting notices were published in the Florida Administrative Register, July 15, 2016 Volume 42 Number 137, included on the Department Internet Calendar, posted in clear view at the park, and promoted locally. The purpose of the Advisory Group meeting is to provide the Advisory Group members an opportunity to discuss the draft management plan (see Addendum 2).

Other Designations

Suwannee River State Park is not within an Area of Critical State Concern as defined in Section 380.05, Florida Statutes, and it is not presently under study for such designation. The park is a component of the Florida Greenways and Trails System, administered by the Department's Office of Greenways and Trails.

All waters within the park have been designated as Outstanding Florida Waters, pursuant to Chapter 62-302, Florida Administrative Code. Surface waters in this park are also classified as Class III waters by the Department. This park is not within or adjacent to an aquatic preserve as designated under the Florida Aquatic Preserve Act of 1975 (Section 258.35, Florida Statutes).

RESOURCE MANAGEMENT COMPONENT

Introduction

The Florida Department of Environmental Protection (DEP), Division of Recreation and Parks (DRP) in accordance with Chapter 258, Florida Statutes, has implemented resource management programs for preserving for all time the representative examples of natural and cultural resources of statewide significance under its administration. This component of the unit plan describes the natural and cultural resources of the park and identifies the methods that will be used to manage them. Management measures expressed in this plan are consistent with the DEP's overall mission in ecosystem management. Cited references are contained in Addendum 3.

The DRP's philosophy of resource management is natural systems management. Primary emphasis is placed on restoring and maintaining, to the degree possible, the natural processes that shaped the structure, function and species composition of Florida's diverse natural communities as they occurred in the original domain. Single species management for imperiled species is appropriate in state parks when the maintenance, recovery or restoration of a species or population is complicated due to constraints associated with long-term restoration efforts, unnaturally high mortality or insufficient habitat. Single species management should be compatible with the maintenance and restoration of natural processes, and should not imperil other native species or seriously compromise park values.

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

Because park units are often components of larger ecosystems, their proper management can be affected by conditions and events that occur beyond park boundaries. Ecosystem management is implemented through a resource management evaluation program that assesses resource conditions, evaluates management activities and refines management actions, and reviews local comprehensive plans and development permit applications for park/ecosystem impacts.

The entire park is divided into management zones that delineate areas on the ground that are used to reference management activities (see Management Zones Map). The shape and size of each zone may be based on natural community type, burn zone, and the location of existing roads and natural fire breaks. It is important to note that all burn zones are management zones; however, not all management zones include fire-dependent natural communities. Table 1 reflects the management zones with the acres of each zone.

Table 1. Suwannee River State Park Management Zones			
Management Zone	**Acreage**	**Managed with Prescribed Fire**	**Contains Cultural Resources**
SR-1a	22.73	Y	Y
SR-1b	28.71	Y	Y
SR-1c	17.46	Y	Y
SR-2	100.40	Y	Y
SR-3a	57.82	Y	Y
SR-3b	31.82	Y	Y
SR-3c	10.45	Y	N
SR-3d	1.15	Y	N
SR-4a	272.20	Y	Y
SR-4b	5.74	N	N
SR-5	99.06	Y	N
SR-6a	28.69	Y	Y
SR-6b	14.21	Y	Y
SR-6C	21.27	Y	Y
SR-7	414.44	Y	N
SR-8an	65.67	Y	N
SR-8as	153.26	Y	Y
SR-8b	326.91	Y	N
SR-8c	211.12	Y	N
SR-8d	1.81	N	N
SR-9a	18.67	N	Y
SR-9b	31.38	N	Y

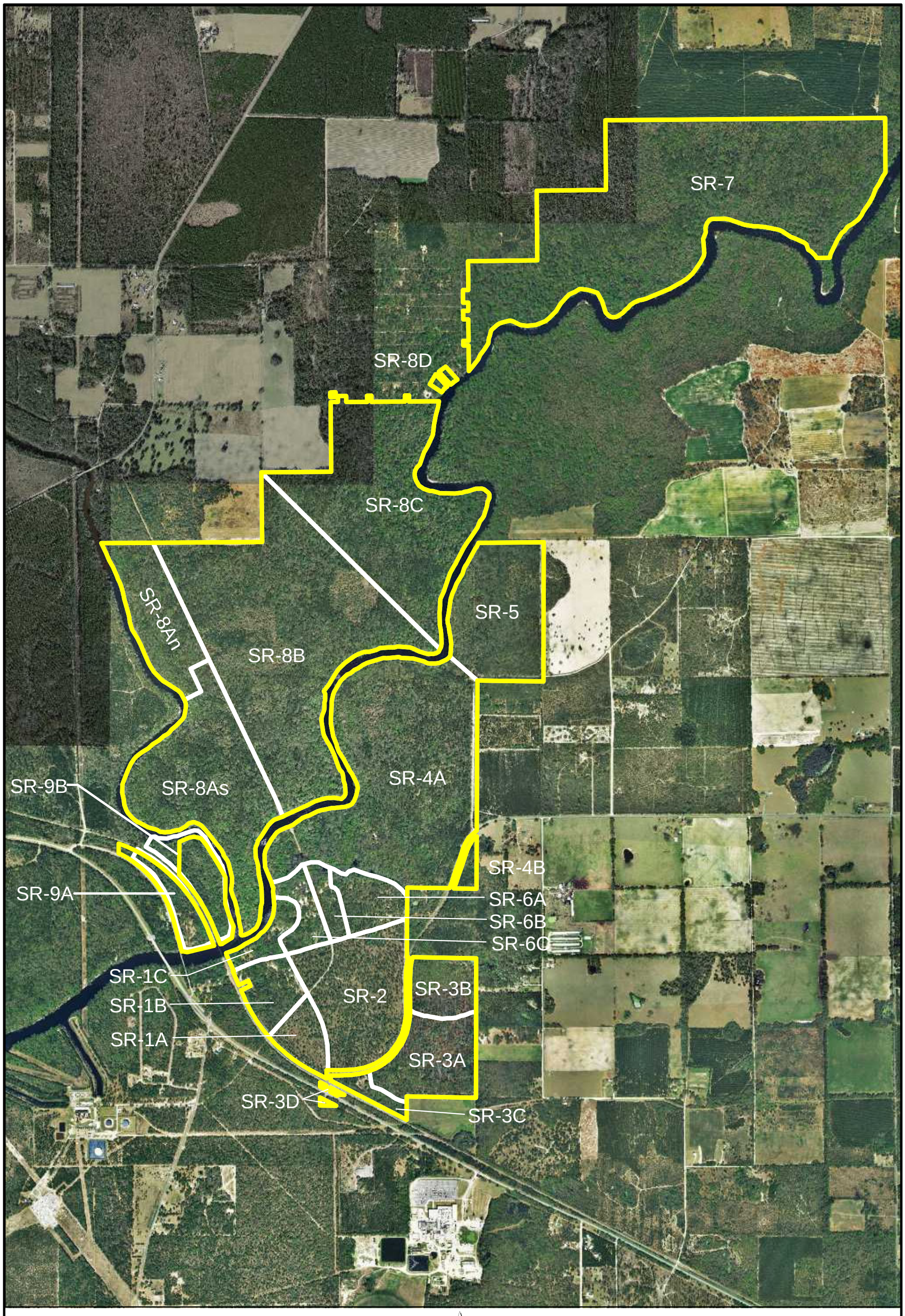
Resource Description and Assessment

Natural Resources

Topography

Suwannee River State Park is located within the northernmost section of the Gulf Coastal Lowlands physiographic province of Florida. Geologists describe this region as a low karst plain with elevations typically less than 100 feet above mean sea level (msl) (White 1970). Complete and rapid infiltration of surface water runoff is characteristic of the drainage within the Gulf Coastal Lowlands. Exposed limestone features are numerous, with many well-developed sinkholes and a high degree of interconnection between surface water and groundwater systems. This region contains the River Valley Lowlands, a major floodplain terrace that parallels the Suwannee, Withlacoochee and Alapaha Rivers and encompasses most of the park (Ceryak et al. 1983).

Immediately north of the park is the Northern Highlands region, consisting of uplands capped by relatively impermeable, clay-rich sediments. The Northern Highlands are relatively flat and elevations are typically greater than 150 feet above



SUWANNEE RIVER STATE PARK

N

0 750 1,500 3,000 Feet

Florida Department of Environmental Protection
Division of Recreation and Parks
Date of Aerial; 2010

MANAGEMENT ZONES MAP

msl. Karst development is minor. A high degree of surface runoff and a more extensive development of lakes and wetlands characterize the drainage in this region (Champion and Upchurch 2003).

The transitional zone between these two physiographic regions is an important karst feature known as the Cody Escarpment, familiarly known as the Cody Scarp (Puri and Vernon 1964). Ancient marine shoreline processes have significantly shaped this visible landscape feature, where topographic relief can range up to 80 feet. The scarp area has an abundance of sinkholes, sinkhole lakes and sinking streams (swallets) that profoundly influence the hydrology of the region. A large portion of the surface runoff from the Northern Highlands drains across the Cody Scarp and becomes groundwater as it rapidly infiltrates subsurface limestone conduits of the Upper Floridan aquifer.

Topographic relief within Suwannee River State Park is variable. Many areas are nearly level, others are gently rolling, and a few are steeply sloped. Elevations range from over 70 feet to less than 40 feet msl. Among the numerous karst features in the park are caves, springs, sinkholes, and karst windows, including a unique area called Seven Sisters Spring (also known as Five Hole Spring by cave divers), which is located in zone SR-7 in the northernmost section of the park. The most significant topographic feature in the park is a deep, limestone solution ravine containing a spring run called Lime Sink Run (also known as Dry Run). Other notable topographic features include the natural levees that generally parallel the edges of the Suwannee and Withlacoochee Rivers.

Historic alterations of the natural topography, including borrow sites and power/gas utility lines, are evident throughout the park. Riverbank erosion caused by unauthorized and excessive foot traffic has occurred in the Seven Sisters Spring area.

Geology

Geologic deposits underlying Suwannee River State Park, in descending order (youngest to oldest), consist of unnamed and undifferentiated marine terrace deposits, the Hawthorn Group, St. Marks Formation, Suwannee Limestone, Ocala Limestone, Avon Park Limestone, Lake City Limestone, Oldsmar Limestone and Cedar Key Formation (Ceryak et al. 1983). Apparently, there has been no alteration of the geologic formations in the park.

The marine terrace deposits in the park are of Pleistocene and Pliocene age and were formed because of sea level fluctuations. These deposits consist of fine to medium-grained sands and contain clay lenses (Howell and Williams 1990). In some areas, particularly where they have been scoured by rivers, these deposits are absent, so limestone outcrops may occur.

The Hawthorn Group, of Miocene age, is present only in the northern part of the park where it underlies the sandy deposits of the marine terraces. The Hawthorn Group is generally composed of phosphatic sand, clay and dolostone (Johnson

1989). Its thickness varies widely, from very thin to 142 feet thick (Howell and Williams 1990).

The St. Marks Formation, also of Miocene origin, occurs sporadically in the region and may underlie the Hawthorn Group in some areas of the park. This formation consists of very pale orange, sandy, silty, occasionally fossiliferous and micritic limestone. The maximum thickness of this formation in Madison County is 20 feet (Howell and Williams 1990). This deposit occurs infrequently along the Withlacoochee River and within deep sinkholes in its vicinity.

Suwannee Limestone, of Oligocene age, underlies the St. Marks Formation, or may directly underlie the Hawthorn Group where the St. Marks Formation is absent, or may occur as outcrops along the Suwannee River. Such outcrops are common along the Suwannee from White Springs to Ellaville. The maximum thickness recorded for this deposit is 157 feet (Howell and Williams 1990). Suwannee Limestone is a white, fossiliferous, calcarenitic limestone to brown dolostone (Johnson 1989).

The Ocala Limestone, of Eocene age, is typically composed of three limestone formations of similar character. In this region, however, only two formations are distinguished, the uppermost Crystal River Formation and the Williston Formation (Ceryak et al. 1983). Both formations are characterized as very pure foraminiferal, calcarenitic limestone (Johnson 1989).

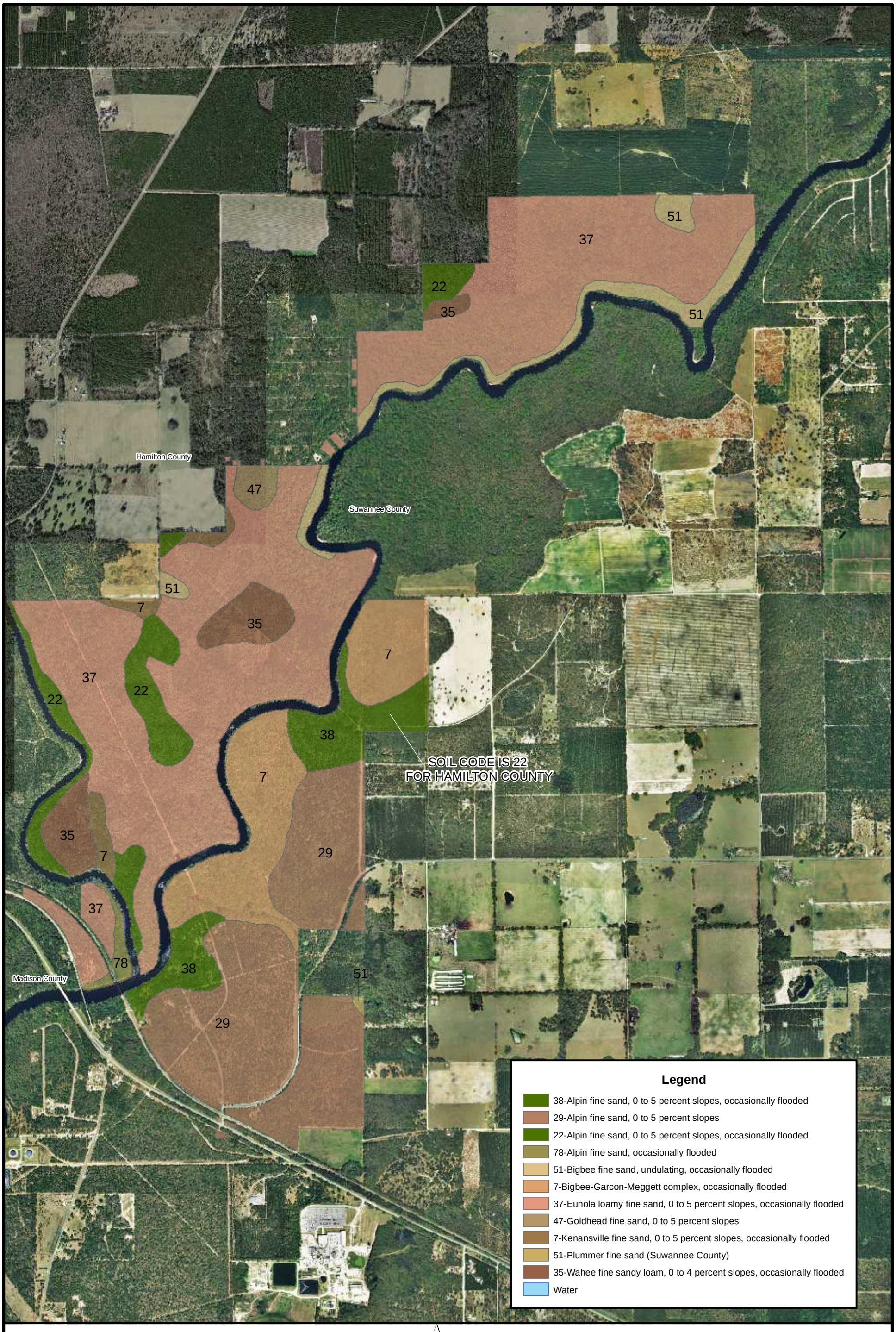
Other Eocene deposits include the Avon Park Limestone, Lake City Limestone and Oldsmar Limestone. In vicinity of the park, Avon Park Limestone occurs primarily as a dolomite with numerous molds and casts of foraminifera. Lake City Limestone is predominantly a gray-brown dolomite with occasional thin beds of limestone, chert and carbonaceous material, often impregnated with anhydrite and gypsum. Lastly, Oldsmar Limestone is essentially composed of dolomite and limestone, with anhydrite, gypsum and glauconite present in lesser amounts (Ceryak et al. 1983).

The Cedar Keys Formation, a Paleocene deposit, underlies the Oldsmar Limestone. It occurs as a slightly gypsiferous and foraminiferous dolomite (Ceryak et al. 1983).

Soils

Soils within Suwannee River State Park range from the frequently flooded soils of floodplains near the river to the well-drained sandy soils of the uplands (see Soils Map). There are 17 mapped soil types at the park. Eight of these occur in Hamilton and Madison Counties (Weatherspoon et al. 2001, Howell and Williams 1990). The remaining nine occur in Suwannee County (Houston et al. 1965). The soil classification scheme used in Suwannee County is an older one, however. It differs somewhat from that used in Hamilton and Madison Counties, so there is a potential for overlap between the two classification schemes, making it likely that the total number of bona fide soil types in the park is actually less than 17.

Soil disturbance and erosion from surface water runoff can be highly detrimental to the erosion prone, steep-sided banks of the Suwannee River and to sensitive karst



SUWANNEE RIVER STATE PARK

SOILS MAP

features in the park. Continual exposure to this type of environmental stress may eventually lead to serious degradation. Areas within the park that are most prone to significant soil erosion include service roads, footpaths, and areas of high visitor use around karst features such as Seven Sisters Spring. Despite attempts at mitigation, the foot trails along Lime Sink Run continue to be among the most eroded in the park. The park routinely monitors susceptible areas for changes in erosion patterns. Management activities will continue to follow accepted best management practices to minimize or prevent additional soil erosion and to protect the park's soil and water resources.

Surface water runoff is naturally laden with eroded materials that may flow directly into nearby sinkholes and depressions. Large openings into the Floridan aquifer, such as those at Seven Sisters Spring and Lime Sink Run, are particularly vulnerable to possible contamination from runoff. Especially during strong storm events, runoff that does not have an opportunity to filter through underlying soils may flow directly into these openings, causing increased turbidity and sedimentation and decreased water quality in the aquifer. In addition, unauthorized use of a service road near Seven Sisters has caused significant erosion and disruption of sheetflow into adjacent bottomland forest.

The burial of a gas pipeline along an easement through the park has caused some of the most severe soil disturbance in the park. In 2016, a third major gas pipeline has been proposed to bisect the northern portion of the park in management zone SR-8c. This proposed development entails no above ground disturbance, but instead will be an underground boring that will cross under the park and the Suwannee River. It is unknown what level of soil or karst feature disturbance that will be created by this new development, especially in such close proximity to the Cathedral Falmouth aquatic cave system that will be discussed below.

A source of limited disturbance is the broad, shallow ditches that were cut over the years by utility personnel, presumably to facilitate drainage along easements. A Resource Management Evaluation conducted by the Florida Department of Natural Resources in 1990 recommended that these ditches be eliminated or modified (Younker 1990).

An inactive borrow pit and debris dump, located in zone SR-2 in the southern part of the park, is the site of some relatively recent soil disturbance. Older, historical soil disturbances include the Confederate earthworks excavated near the Suwannee River and the stagecoach road that passes through the southern end of the park. Past agricultural activities in various parts of the park, especially in zones SR-2, SR-3a, SR-4a, 6a, and 6b, have also caused extensive soil disturbance.

Minerals

Phosphate is mined in eastern Hamilton County, while limestone is quarried in Suwannee County. Whether any deposits of commercial value exist within the confines of the park is currently unknown.

Hydrology

Suwannee River State Park is uniquely positioned at the confluence of the Suwannee River (Reach 2) and Withlacoochee River near Ellaville, Florida. The two rivers are the park's most prominent hydrologic features. The State of Florida owns and the Florida Park Service manages much of the upland and shoreline acreage along both sides of the Suwannee River for nearly six miles upstream from the Withlacoochee. The exception is a sizeable stretch of riverfront property in Suwannee County north of zone SR-5 and across the river from zone SR-7 where the Suwannee River Water Management District (SRWMD) has purchased a conservation easement on property known as the Warner/Harrell Tract.

The Suwannee and Withlacoochee river systems and their tributaries, along with the Alapaha River (located about eight miles upstream from the park), constitute a majority of the Upper Suwannee River Basin. The basin encompasses a 7,056 square mile surface watershed (Hornsby et al. 2003). Of significance is that over 50% of that vast watershed lies in Georgia (Farrell and Upchurch 2005). All three of these rivers are Class III waters, and the Suwannee River is designated an Outstanding Florida Water in Rule 62-302.700(9) (i), Florida Administrative Code.

From its headwaters in the Okefenokee Swamp in southeastern Georgia, the Suwannee River meanders along a more or less southwesterly course for about 245 miles before emptying into the Gulf of Mexico (Ham and Hatzell 1996). The Suwannee's mean annual flow rate, measured at Ellaville below the mouth of the Withlacoochee, is 6279 cubic feet per second (cfs) (USGS 2011). In the Upper Suwannee, stream flow is primarily dependent on surface water inputs, while further downstream the river is increasingly fed by groundwater. In fact, during periods of low surface water flows in the Middle Suwannee region below the park, river discharge consists almost entirely of groundwater from springs and from other significant karst features located within the river bottom (Pittman et al. 1997). This phenomenon is evident even in Suwannee River State Park, which is situated just above the Middle Suwannee area. When low water levels occur in the park, a greater proportion of river flow is contributed by springs, and this can trigger significant changes in water chemistry and clarity.

During flood stage of the Suwannee, however, the opposite occurs. As river levels rise, springs and other karst features begin to act as "siphons" or inflow points into the Upper Floridan aquifer (Gulley et al. 2011). This inflow, as surface waters and groundwater mix, causes substantial changes in groundwater quality, including the input of significant loads of nutrients into the aquifer (Katz et al. 1999; Katz and Hornsby 1998; Berndt et al. 1998). The result is a rather rapid and potentially large-scale change within the usually stable aquatic cave environment. One consequence of such insurgence events may be a notable die-off of troglobite fauna (Streever 1991). High troglobite diversity and abundance is considered a strong measure of spring ecosystem health (see Imperiled Species section for additional information). Interestingly, previously documented flow reversals at a nearby site, Wes Skiles Peacock Springs State Park, have indicated that there is a clear pattern of die-off and recovery episodes radically affecting populations of cave

invertebrates (Streever 1991, 1992a, and 1992b). It is currently unknown if invertebrate populations in aquatic caves at Suwannee River State Park experience similar episodes (Franz et al. 1994). Given that lack of information, the Division should initiate a program to monitor flow reversals at some of the park's more important springs.

Important Karst Features

Eleven significant springs are located in the park, including Seven Sisters Spring (Five Hole Spring), Little Sister Spring (discovered 2010), three unnamed Hamilton County springs (HAM923972, HAM923973 and one discovered in 2010), two unnamed Suwannee County springs (SUW923971, and SUW923972), Little Gem Spring (also known as Lime Spring), Lime Sink, an unnamed karst window (DEP FGS-224), and Suwanacoochee Spring. Numerous karst windows are scattered throughout the park, but by far the largest concentration occurs in zone SR-7 in the northern section of the park. Four karst features equally important to the hydrology of Suwannee River State Park, but occurring outside the park on adjacent public or private lands, are Falmouth Spring, Ellaville Spring (also known as Edwards Spring), Giant Hole, and Stevenson Spring.

In the Summer of 2014, FDEP and SRWMD conducted an initial dye trace study to delineate the springshed for Cathedral-Falmouth Canyon cave system (Scott et al. 2004; Rosenau et al. 1977; FDEP 2011a; Greenhalgh et al. 2016). The groundwater flow modeling for this region will likely be as complex as that for the Middle Santa Fe River and its associated springs (Upchurch et al. 2008). Additional springshed research that has been conducted within the park or in this region is exploration of underground cave systems by certified cave divers. Based on a large body of work, it appears that the Upper Floridan water supply for numerous karst features in the region of Suwannee River State Park could be derived from at least two separate springsheds (unpublished research, D2 files). Correspondingly, there appears to be at least four significant spring clusters located either inside the park or nearby, including Lime Sink Run, Suwanacoochee Spring, Seven Sisters Spring, and Stevenson Spring (see below for details).

Lime Sink, which has a first magnitude discharge, is a major component of one of the better studied spring clusters associated with the park. The spring itself is located on the park's eastern boundary, and it feeds the 3000-foot Lime Sink Run (Dry Run), a spring-run stream that flows westerly through the park in a deep limestone ravine before discharging into the Suwannee River. The flow in Lime Sink Run is intermittent, which may have been the impetus many years ago to construct a dam across the lower part of the run to impound water and create a more permanent swimming area. The dam may not have totally served its purpose, however, since an undependable water supply and stagnation problems caused the Florida Park Service in the 1970s to shut down the facility. Although there is no record of the actual date of abandonment of the swimming area, efforts by the park to restore the site to its natural condition took place in the ensuing years. The restoration project resulted in removal of much of the dam structure, but the base of the dam persists to some degree even today. The remnants of the dam do not appear to have a significant effect on water flow, but a more thorough investigation

of the site's local hydrology could help determine if that assumption is valid.

Lime Sink is the apparent endpoint for one of the longest interconnected aquatic cave systems in the world, the Cathedral-Falmouth Canyon, which is a very well explored system (Exley 1994). Cave divers have mapped nearly fifty thousand feet of conduits within the Cathedral/Falmouth/Lime Sink Run cave system, which ranks as one of the top fifteen longest caves in the world (Gulden and Coke 2011). After more than 20 years of exploration, divers have mapped a series of strategic cave connections using a number of key entry points (i.e. karst windows) along this very complex and lengthy system. They have discovered that cave conduits trend to the southeast away from the park and toward the city of Live Oak. Completing the delineation of springshed boundaries for the Lime Sink Run cluster should be a top priority for the Division. Another priority should be a continuation of efforts to acquire the east side of Lime Sink and the adjacent Giant Hole Sink to protect groundwater in the park and to preserve for the public a primary access point to the Cathedral/Falmouth/Lime Sink Run aquatic cave system.

Adjacent to the Suwannee River and associated with Lime Sink Run are two additional springs, Little Gem and SUW923971. Divers have not yet fully explored them, but these springs appear to have significant connections with the Lime Sink Run cluster. Little Gem Spring is a second magnitude spring vent, whereas SUW923971 is a fourth magnitude vent.

Suwanacoochee Spring and Ellaville Spring are both second magnitude springs that comprise a second spring cluster. Suwanacoochee Spring is on state park property in Madison County. It has a short spring run that flows through the remnant masonry of a historic bathhouse structure before discharging into the Withlacoochee River just above its confluence with the Suwannee River. Ellaville Spring is on a private parcel along the Suwannee River, adjacent to the park's west boundary and immediately across from the above-mentioned confluence with the Withlacoochee. The underground cave systems of these two springs are interconnected, and they have a long history of exploration by cave divers. In 2016, dye trace work has indicated a connectivity between Lime Sink Spring, mentioned above, and Suwanacoochee and Ellaville Springs (Greenhalgh et al. 2016).

Seven Sisters Spring (third magnitude) and two unnamed Hamilton County springs (HAM923972 and HAM923973) constitute a third spring cluster, this one located in zone SR-7 in the northern portion of the park. Seven Sisters Spring contains a series of five, twenty-foot deep limestone openings, all connected to a primary karst window that leads into an extensive aquatic cave system. There is a long history of cave exploration here as well. The two unnamed Hamilton County spring vents, HAM923973 (third magnitude) and HAM923972 (fourth magnitude), located upstream of Stevenson Spring (see below), were only recently identified. Both springs flow directly into the Suwannee River at the outfall of a riparian area that follows a north-south aligned floodplain corridor through the western third of zone SR-7. Several unique karst windows are situated along this corridor. Severe soil erosion has occurred adjacent to Seven Sisters, along the high banks of the Suwannee River in zone SR-7.

Stevenson Spring and an unnamed Suwannee County Spring (SUW923972) comprise the fourth spring cluster associated with the park. Stevenson Spring, also known as Lineater, is a large second magnitude spring located on SRWMD conservation easement property across the river from the Seven Sisters Spring area. It has been reported that during times of high flow, Stevenson Spring flows as a first magnitude system (Stevenson 2016). This spring is a large karst vent that emerges from the river bank on the south side of the Suwannee River; it has a substantial boil area, but no spring run. The unnamed spring, SUW923972, is fourth magnitude and is located over a mile downstream from Seven Sisters Spring on park property. It appears likely that this spring and Stevenson Spring may share the same springshed, however delineation of the springshed boundary has not yet occurred.

Water Quantity

Water managers know that springshed boundaries can change naturally over time, but they also realize that consumptive overuse and contamination of groundwater within a springshed can be especially detrimental to the springs within it (Upchurch and Champion 2004). Recent research has revealed that a significant area of groundwater supply in the eastern part of the SRWMD, considered a groundwater divide of sorts between the SRWMD and the SJRWMD, has declined to the extent that a westward shift in groundwater potentiometric contours has occurred (Grubbs and Crandall 2007). The shift appears to be in response to the artificial depletion of groundwater reserves caused by large-scale pumping in northeast Florida and southeast Georgia (SRWMD 2010). This regional drawdown may be partially responsible for shrinking springsheds and declining spring flows within western portions of the SRWMD. Strong scientific evidence supports the hypothesis that the cessation of flow at an upper Suwannee spring, White Sulphur Springs, and a significant decrease in average discharge at a lower Santa Fe tributary, the Ichetucknee River, is due to this unfettered drawdown of regional groundwater levels (Mirti 2001; Grubbs 2011).

Many water management experts acknowledge that the current long-term drought and an increased consumptive use of groundwater have combined to cause a significant lowering of water tables and decreased spring flows all across north Florida (Swihart 2011; Still 2010). In October 2011, the SJRWMD, SRWMD and FDEP signed an interagency agreement that outlined closer coordination in the management of north Florida water supplies. The two water management districts are now required to address the issue of decreased groundwater resources in their district water supply planning efforts (SRWMD 2010; SJRWMD 2011). In October 2011, the SRWMD designated several areas within its regulatory boundary as “Water Resources Caution Areas”, including the Upper Suwannee River region. This designation means that groundwater sources in those areas are not adequate to meet future needs over a 20-year planning period.

Water resources within Suwannee River State Park may also be threatened by large-scale withdrawals from surface or groundwater systems that are hydraulically connected to systems within the park. The SRWMD is responsible for issuing water use permits in the region, and in doing so must ensure that proposed uses are in

the public interest, which includes the conservation of fish and wildlife habitat and the protection of recreational values. Additionally, the SRWMD is responsible for prioritizing and establishing Minimum Flows and Levels (MFLs) for water bodies within its boundaries (SRWMD 2004). It is currently developing an MFL for the Upper Suwannee River that includes all first and second magnitude springs; the scheduled completion date is 2015. Water bodies in the park that are part of this schedule include two Lime Sink Run springs, Suwanacoochee Spring, and the Upper Suwannee River.

Water Quality

The main water quality issues that most influence the park's water resources are 1) erosion/sedimentation along the banks of the Suwannee River and within sensitive karst features, and 2) regional groundwater contamination. As described above in the Soils section, erosion and sedimentation in the park are the heaviest in several areas along the Suwannee River and around sensitive karst features such as Seven Sisters and Lime Sink Run. At present, there seems to be little danger that surface water runoff originating within the park itself will cause significant groundwater pollution in the park's springs and caves. Since the Floridan aquifer in the area is unconfined, however, the park should remain vigilant about possible pollution sources. Highly vulnerable karst features within the park have the potential to funnel contaminated surface waters into high quality groundwater resources (Cichon et al. 2004). Outside the park, there are potential sources of groundwater pollution as well. Large-scale chicken farming operations located north of the park could one day pose a threat to the quality of local groundwater and surface water resources. Currently there are no dairy operations near the park.

Nitrogen enrichment has contaminated most of the upper Floridan aquifer in the northern region of the state. Nitrates specifically have increased by an order of magnitude or more over the past 50 years (Cohen et al. 2007). Human activity, especially the use of inorganic fertilizers, has long been the leading cause of this enrichment, and it may be particularly detrimental to springsheds in the park.

State water managers have monitored groundwater quality in numerous types of wells over the past 25 years. Near the park, over 120 different wells are an integral part of a mechanism to track groundwater quality (FDEP 2011b). Some wells were associated with the Very Intense Study Area (VISA) monitoring conducted during the 1990s, while others have served to document changes associated with known contaminated sites (Maddox et al. 1998).

FDEP monitors at least three types of contaminated groundwater wells within the Suwannee River State Park region, including Restoration wells, Class V wells, and VISA wells. In the town of Live Oak, approximately 10 miles southeast of the park, there are at least 46 wells of this type that are used to monitor aquifer contamination (FDEP 2011b). Past sampling of these wells has shown that some sites have exceeded the state's primary drinking water standards for maximum contaminant levels. Additionally, there are at least 13 groundwater monitoring wells located near the park that provide a background data set for the upper Floridan aquifer. The SRWMD and FDEP are cooperatively conducting a long-term trend

analysis on three of these groundwater wells, # 011011002, # 021231001, and # 021332004 (FDEP 2011e).

Groundwater contamination from high nutrient loading has significantly influenced the ecological health of several other spring ecosystems across the state (Cohen et al. 2007; WSI 2010). Studies suggest that one of the primary water quality issues within these karst systems is unhealthy levels of nitrate-nitrogen (Jones et al. 1996). Nitrate concentrations (NO3 as N) measured at the seven known springs in Suwannee River State Park have ranged from 0.02 mg/L to nearly 0.77 mg/L (FDEP 2011b). These levels are far below the concentrations found at other springs in the state (Harrington et al. 2010). However, known nitrate concentrations within some wells near the park have measured greater than 5 mg/L, so caution and continuous assessment are warranted. Naturally occurring background levels for nitrates should be less than 0.01 mg/L (Cohen et al. 2007).

There is a vast set of water quality data available for many of the springs and karst features in the park, as well as for the two rivers that flow through the park (Hornsby and Ceryak 1998; Scott et al. 2004). Much of the hydrological information that has been collected, stored, and managed by state water management agencies can now be accessed through a variety of web-based filters (USGS 2011; SRWMD 2011; FDEP 2011a, FDEP 2011b).

The Suwannee, Alapaha and Withlacoochee Rivers have a number of pollution sources along their courses (Berndt et al. 1998; Katz et al. 1999). Water quality in the Alapaha River is affected by runoff from extensive agricultural lands in Georgia and by outfall from numerous municipal wastewater treatment plants situated along its course. Numerous point sources of pollution also occur along the Withlacoochee River. These include effluent discharge from industrial and domestic wastewater treatment plants, a paper mill, and an aluminum manufacturing plant.

Along the upper Suwannee River, the operation of a major phosphate mine (PCS Swift Creek Chemical Complex) and effluent discharge from various wastewater treatment facilities have contributed to an increase in levels of phosphorus, organic nitrogen, sulfates, fluorides and coliform bacteria in the river (Hand et al. 1996). In December 2009, an unforeseen sinkhole collapse on PCS property caused the unexpected release of 84 million gallons of processed water containing gypsum acid into the Upper Floridan aquifer (FDEP 2011c). Management of this release was apparently contained onsite, but officials have significantly increased the water quality monitoring at private and public wells within the region.

The SRWMD maintains numerous surface water quality monitoring stations along the upper Suwannee River, plus three on the Withlacoochee River and three on the Alapaha River. Four of these stations are near Suwannee River State Park (Jenkins et al. 2010).

The water quality measured at these stations generally falls in the good to fair range, although inputs from episodic rainfall and runoff events may influence them variably (Hand et al. 1996). Interestingly, the water quality of the Suwannee River

near the park is better below the inputs of the Withlacoochee and Alapaha Rivers than above, partly because of the dilution of the Suwannee by rivers of better water quality and partly because of dilution from spring discharges (Hand et al. 1996).

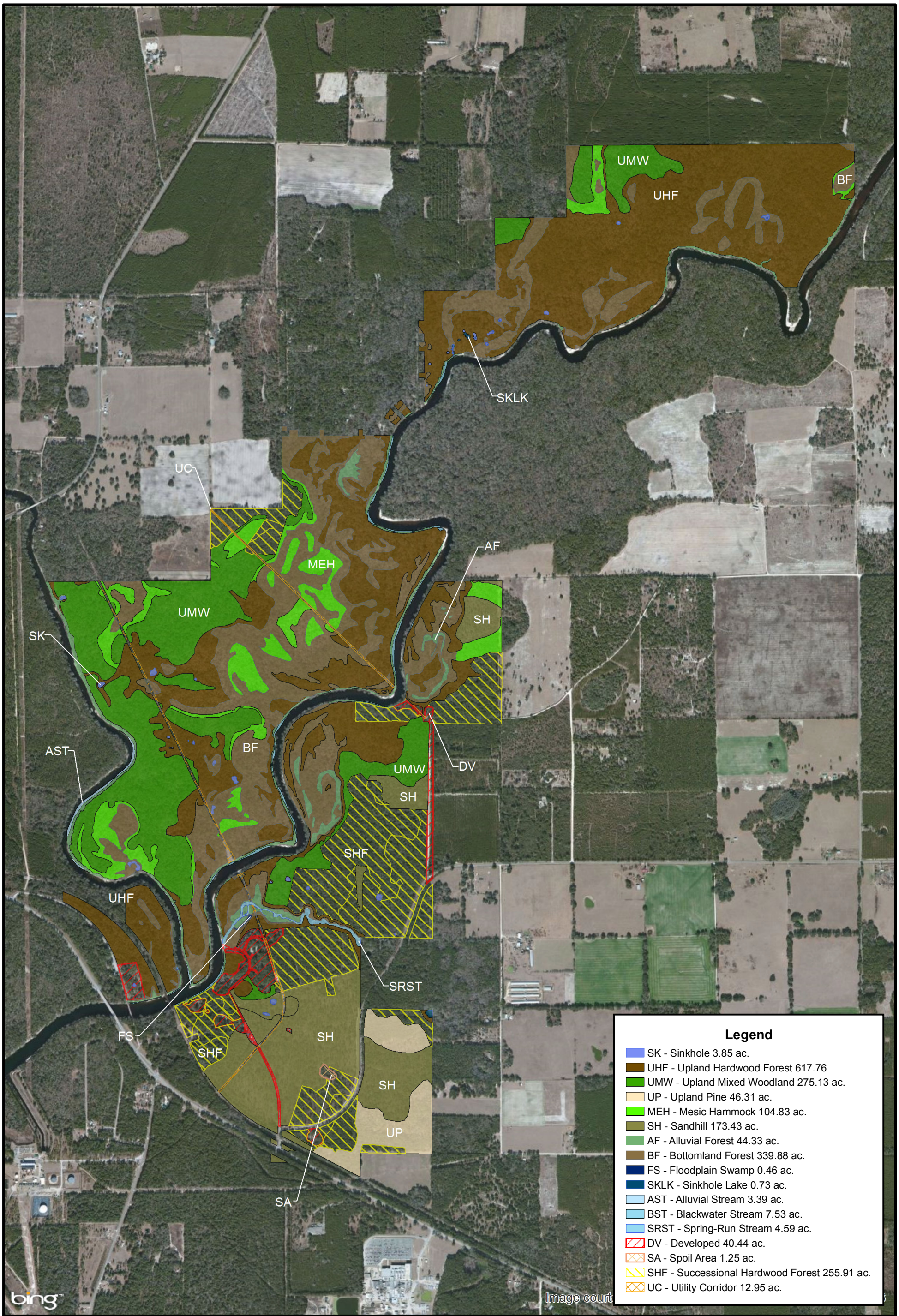
As of 2011, FDEP's Total Maximum Daily Load (TMDL) program, which targets surface water quality improvements along the Suwannee River, has focused mainly on the Middle and Lower Basins (Hallas and Magley 2008, FDEP 2011d; FDEP 2009). The Upper Suwannee River currently has no targeted TMDL requirements, despite the fact that there are numerous potential threats to groundwater quality within the region (Silvanima 2008).

Natural Communities

This section of the management plan describes and assesses each of the natural communities found in the state park. It also describes of the desired future condition (DFC) of each natural community and identifies the actions that will be required to bring the community to its desired future condition. Specific management objectives and actions for natural community management, exotic species management, imperiled species management are discussed in the Resource Management Program section of this component.

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 that are similar with respect to those factors will tend to have natural communities with similar species compositions. Obvious differences in species composition can occur, however, 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. Some physical influences, such as fire frequency, may vary from FNAI's descriptions for certain natural communities in this plan.

When a natural community within a park reaches the desired future condition, it is considered to be in a "maintenance condition." Required actions for sustaining a community's maintenance condition may include, maintaining optimal fire return intervals for fire dependant communities, ongoing control of non-native plant and animal species, maintaining natural hydrological functions (including historic water flows and water quality), preserving a community's biodiversity and vegetative structure, protecting viable populations of plant and animal species (including those that are imperiled or endemic), and preserving intact ecotones linking natural communities across the landscape.



SUWANNEE RIVER STATE PARK

N

0 750 1,500 3,000 Feet

Florida Department of Environmental Protection
Division of Recreation and Parks
Date of Aerial; 2010

NATURAL COMMUNITIES MAP
EXISTING CONDITIONS

The park contains fourteen distinct natural communities as well as four different types of altered landscapes (see Natural Communities Map). A list of known plants and animals occurring in the park is contained in Addendum 5.

Mesic Hammock

Desired future condition: Mesic hammock is a well-developed evergreen hardwood and/or palm forest which can occur, with variation, through much of peninsular Florida. The often dense canopy will typically be dominated by live oak (*Quercus virginiana*) with cabbage palm (*Sabal palmetto*) mixed into the understory. Southern magnolia (*Magnolia grandiflora*) and pignut hickory (*Carya glabra*) can be common components in the subcanopy as well. The shrubby understory may be dense or open, tall or short, and will typically be composed of saw palmetto (*Serenoa repens*), beautyberry (*Callicarpa americana*), American holly (*Ilex opaca*), gallberry (*Ilex glabra*) and sparkleberry (*Vaccinium arboreum*). The groundcover may be sparse and patchy but generally contains panicgrasses (*Panicum* spp.), switchgrass (*Panicum virgatum*), sedges, as well as various ferns and forbs. Abundant vines and epiphytes will occur on live oaks and cabbage palms and other subcanopy trees. Mesic hammocks will generally contain sandy soils with organic materials and may have a thick layer of leaf litter at the surface. Mesic hammocks will be rarely inundated and not considered to be fire-adapted communities and will typically be shielded from fire.

Description and assessment: Mesic hammocks in the park occur mainly on the north side of the Suwannee River and are associated with slopes and plateaus above the bottomland forests. The dominant species in the canopy are live oak and laurel oak, but unlike bottomland forests, the mesic hammocks typically also have a shrub layer dominated by saw palmetto, sparkleberry, deerberry (*Vaccinium stamineum*) and highbush blueberry (*Vaccinium corymbosum*). Slender woodoats (*Chasmanthium laxum*) are common in the groundcover. Infrequent inundation by floodwaters of the Suwannee and Withlacoochee Rivers undoubtedly affects the species composition of the mesic hammocks in this area.

Mesic hammocks may also contain scattered loblolly pines, particularly where there have been past disturbances. Mesic hammocks typically lack the high diversity of canopy tree species seen in adjacent upland hardwood forests. Most of the examples of mesic hammock in the park are in good condition. Past disturbances caused by logging operations to control southern pine beetle outbreaks have reduced some mesic hammock areas to poor condition.

General management measures: Little active management of mesic hammocks is required beyond control of feral hog populations. Areas impacted by pine beetle outbreaks will be allowed to succeed back to mesic hammock. It is likely that the intermittent flood events along the Suwannee contribute to the differentiation of mesic hammock from adjacent upland hardwood forests.

Sandhill

Desired future condition: In north Florida, the dominant pine will be longleaf pine (*Pinus palustris*). Herbaceous cover will be 80% or greater, typically of wiregrass

(*Aristida beyrichiana*), and is less than 3 feet in height. In addition to groundcover and pines characteristics, there will be scattered individual trees, clumps, or ridges of onsite oak species (usually turkey oaks (*Quercus laevis*), sand post oak (*Quercus margaretta*), and blue-jack oak (*Quercus incana*)). In old growth conditions, sand post oaks will commonly be 150-200 years old, and some turkey oaks will be over 100 years old. The Optimal Fire Return Interval for this community is 1-3 years.

Description and assessment: Sandhill is the dominant natural community in the part of the park that lies south and east of the Suwannee River. This community has responded well to restoration efforts such as the prescribed burning initiated in the 1970s and the hardwood girdling and herbiciding begun in the 1980s. Because of these efforts, much of the system now resembles typical sandhill and is considered to be in good condition. In the southern pine beetle invasion of 1996-97, only a few pines in the sandhills were killed, none of them longleafs.

In some areas, however, particularly in zones SR-3, SR-4, SR-5, and SR-6, fire-intolerant species that have invaded the sandhill from adjacent communities continue to thrive. Most of the sandhills in these zones are currently labeled successional hardwood forest, an altered landcover type, due to previous clearing of the native vegetation for agricultural pursuits. Most of these zones were used as fields or pastures and subsequently abandoned. The remnants of sandhill within these disturbed areas are considered to be in poor condition. Restoration of the previously cleared areas to sandhill will be challenging, particularly where pastures grasses remain. In addition, a few acres of non-indigenous slash pines (*Pinus elliottii*) that were planted several decades ago remain in part of zone SR-6. A natural gas pipeline right-of-way also bisects the sandhills of the park in zones SR-1, SR-2 and SR-6.

General management measures: Continued use of prescribed fire in the park's sandhills will be essential to maintaining community structure and ecological integrity. Those zones that require sandhill restoration but retain some native groundcover species will receive a higher priority than degraded sites now devoid of characteristic species. Additional lightning season fires will no doubt continue to improve the sandhills that are already in fair to good condition. Some areas of sandhill will need additional offsite hardwood removal to improve conditions for prescribed burning and facilitate groundcover recovery.

<u>Sinkhole</u>
Desired future condition: Sinkholes are characterized by cylindrical or conical depressions with limestone or sand walls. Sinkholes do not contain standing water for long periods of time as do sinkhole lakes. Depending upon the age of the sinkhole, the vegetation of sandy sinkholes may represent a well developed forest including southern magnolia (*Magnolia grandiflora*), sweetgum (*Liquidambar styraciflua*), wax myrtle (*Myrica cerifera*), grape vines (*Vitis* sp.), Virginia creeper (*Parthenocissus quinquefolia*), water oak (*Quercus nigra*) and pignut hickory (*Carya glabra*). Sinkholes with vertical limestone walls may be covered by a variety of mosses, liverworts, ferns and small herbs. Sinkholes will generally have a very moist microclimate due to seepage and being buffered by the lower elevation and a

tree canopy. Desired future conditions include limiting unnatural erosion and protecting the microclimate from disturbance.

Description and assessment: Because of the extent of underlying limestone, much of the park is dotted with sinks and depressions characteristic of karst topography. The park's sinkholes range from relatively young ones with exposed limestone to more gradually sloping sinks containing mature vegetation typical of the surrounding natural communities.

Most sinkholes in the park are in good condition. However, foot traffic on sinkhole slopes occasionally causes erosion, soil compaction, and trampling of groundcover. Recreational use of the Seven Sisters Spring area in the western side of zone SR-7 has caused severe erosion in and around the sinkholes that are associated with the spring. Portions of the Florida Trail that pass through this area have also experienced significant erosion. Sinkholes here and in zone SR-9 have also been used in the past as trash disposal sites. Several sinkholes in zones SR-7 and SR-8 have infestations of an exotic plant, the Japanese climbing fern (*Lygodium japonicum*), that is currently undergoing herbicide treatment.

General management measures: Sinkhole management must emphasize protection. The edges of sinkholes need to be protected from impacts that could accelerate erosion and sedimentation problems. Access to these areas is often restricted. As an erosion prevention measure, the park will reroute the Florida Trail in the Seven Sisters Spring area away from sensitive slopes above sinkholes. The park will also limit direct public access to sensitive karst windows and sinkholes in that area by erecting strategically located fencing around the sinkhole field associated with Seven Sisters Spring. Regular monitoring of sinkholes in the park for the presence of invasive plant and animal species will also be necessary.

Upland Hardwood Forest

Desired future condition: Upland hardwood forest is a mature, closed canopy hardwood forest typically occurring on slopes and rolling hills with generally mesic conditions. Overstory tree species may consist of Southern magnolia (*Magnolia grandiflora*), pignut hickory (*Carya glabra*), sweetgum (*Liquidambar styraciflua*), live oak (*Quercus virginiana*), laurel oak (*Quercus laurifolia*), Florida maple (*Acer saccharum* subsp. f*loridanum*), spruce pine (*Pinus glabra*) and swamp chestnut oak (*Quercus michauxii*). Understory species will include trees and shrubs such as American holly (*Ilex opaca*), flowering dogwood (*Cornus florida*), Eastern hophornbeam (*Ostrya virginiana*), American hornbeam (*Carpinus caroliniana*), Eastern redbud (*Cercis canadensis*), red bay (*Persea borbonia*), horse sugar (*Symplocos tinctoria*), and beautyberry (*Callicarpa americana*). Ground cover will be comprised of shade tolerant herbaceous species, sedges and vines.
Description and assessment: This community occurs naturally on levees along the Suwannee River and Withlacoochee River and in the less hydric portions of the river floodways. It is usually found within the 10-year floodplain, but does not frequently flood. Upland hardwood forest is most common on the north side of the Suwannee River, where elevations tend to be lower than on the south side of the river and where the fire-shadow effects of the Suwannee and Withlacoochee Rivers exert a

dominant influence on the fire regime. Upland hardwood forest is typically located between the upland mixed woodlands or sandhills of the uplands and the bottomland forests of the floodplains.

Portions of this community in zones SR-7 and SR-8 were severely impacted by southern pine beetle outbreaks in which loblolly pines and spruce pines were attacked. Regularly maintained utility rights-of-way in zone SR-8 fragment this community by creating treeless and shrubless zones where there would ordinarily be closed canopy forest. These utility easements include a natural gas pipeline and an electric power transmission line.

Finally, in some areas where upland hardwood forest grows on steeper slopes, minor erosion may occur on recreational trails that traverse the slopes. The most obvious such erosion is along the loop trail that follows Lime Sink Run. Despite these negative influences, the condition of this community in the park is generally good to excellent.

General management measures: To prevent erosion within this community, staff will need to implement corrective measures such as stabilizing disturbed areas and possibly modifying visitor-use patterns. Where southern pine beetle outbreaks have disturbed areas, successional processes should suffice to restore the upland hardwood forests.

Upland Mixed Woodland

Desired future condition: Dominant tree species will include longleaf pine (*Pinus palustris*), Southern red oak (*Quercus falcata*), sand post oak (*Quercus margaretta*), and mockernut hickory (*Carya alba*). Hardwood tree species are frequently dominant or co-dominant with pines (*Pinus* spp.). Flowering dogwoods (*Cornus florida*) and pignut hickory (*Carya glabra*) may be present. Subcanopy species include sparkleberry (*Vaccinium arboreum*). Percent herbaceous cover will be comparable to sandhill and is 3-4 feet in height during spring and summer. In some areas, grasses and forbs may reach heights of 6-8 feet or more during the fall (due to blooming of taller grass species such as yellow indiangrass (*Sorghastrum nutans*), silver plumegrass (*Saccharum alopecuroides*), and big bluestem (*Andropogon gerardii*)). In old growth conditions, oaks and hickories are commonly 150-200 years old. The Optimal Fire Return Interval for this community is 2-5 years, depending on adjacent natural communities.

Description and assessment: Upland mixed woodland often serves as a transition zone between upland pine or sandhill and adjacent upland hardwood forest or mesic hammock. Similar to upland pine, upland mixed woodland is a fire-adapted community with longleaf the dominant pine species. Southern red oaks and mockernut hickories maintain a strong presence in the canopy as well. However, upland mixed woodland typically lacks wiregrass as a dominant groundcover, and the oaks and hickories may be co-dominant with the longleaf pines. Being a transitional community, upland mixed woodland is very susceptible to succession to upland hardwood forest when there is a lack of fire. As a result, very few intact examples of upland mixed woodland exist in north central Florida.

Higher ridges of upland hardwood forest parallel both sides of the Suwannee River. Just above the upland hardwood forest, particularly in zones SR-4 and SR-8, are bands of upland mixed woodland. It is likely that all of the longleaf pines were removed from this area prior to 1900, and subsequent fire suppression has caused the majority of the herbaceous species to be shaded out by hardwoods. A majority of the upland mixed woodland slopes downward into an area of upland hardwood forest before grading into bottomland forest. Natural fires in the sandhill or upland pine would have slowly burned down slope into adjacent upland mixed woodland. The dense hardwood growth and a lack of frequent enough fire make it difficult to distinguish many of these areas from upland hardwood forest.

Many decades of fire exclusion have led to a partial disintegration of this community. Former agricultural practices appear to have modified this community, particularly in zone SR-4, by depleting species diversity. Additionally, southern pine beetle outbreaks within zone SR-8 in the late 1990s affected several acres of the best remaining example of upland mixed woodland in the park. The beetle invasion was so virulent that professional loggers had to be contracted to clear cut the infested trees and haul them out of the park. Not only was the pine canopy removed, but heavy logging equipment also impacted many other components of the system, including remnant groundcover species.

Prescribed burning of most of this community was first attempted in the late 1980s when zones SR-7 and SR-8 were burned during the winter. While parts of zone SR-8 have since received growing season burns, the results were less than satisfactory, indicating that additional hardwood treatment may be required to restore this area successfully. At present, this community's condition is rated as fair.

General management measures: Restoration and improvement of the upland mixed woodland community will entail the reintroduction of fire and the removal of offsite hardwood species. The park will postpone the planting of longleaf pines until the canopy is sufficiently open to allow longleaf seedlings to survive. Staff will need to conduct additional field surveys to verify the historic extent of the upland mixed woodland and to continue documentation of the distribution of remnant species.

Upland Pine

Desired future condition: Dominant tree species will usually be longleaf pine (*Pinus palustris*). Herbaceous cover will be less than 3 feet in height and is comparable to sandhill, but may have a higher density of understory shrubs and saplings. An intermittent subcanopy of smaller hardwood trees will be scattered throughout (usually Southern red oak (*Quercus falcata*), sand post oak (*Quercus margaretta*), mockernut hickory (*Carya alba*), flowering dogwood (*Cornus florida*), bluejack oak (*Quercus incana*), and sassafras (*Sassafras albidum*)). In old growth conditions, oak trees and hickories are commonly 150-200 years old. Groundcover may be dominated by wiregrass (*Aristida stricta* var. *beyrichiana*), with little bluestem (*Schizachyrium scoparium*), broomsedge bluestem (*Andropogon virginicus*), and indiangrass (*Sorghastrum* spp.). Other typical forbs include narrowleaf silkgrass (*Pityopsis graminifolia*), bracken fern (*Pteridium aquilinum*), goldenrod (*Solidago* spp.), squarehead (*Tetragonotheca helianthoides*), soft greeneyes (*Berlandiera*

pumila), and yellow jessamine (*Gelsemium sempervirens*). The Optimal Fire Return Interval for this community is 2-3 years.

Description and assessment: The only substantial amount of upland pine community found at Suwannee River State Park is in zone SR-3. Many decades of fire exclusion have led to the decline of this community, with only very few indicator species remaining. Often only scattered individuals of characteristic upland pine species such as longleaf pine, southern red oak (*Quercus falcata*), bluejack oak (*Quercus incana*), and sparkleberry (*Vaccinium arboreum*) persist. The dominant canopy species in this degraded upland pine is now typically loblolly pine. The park will need to employ alternative restoration techniques as a supplement to the prescribed burning program in order to achieve successful restoration of this community. At present, the upland pine community is considered to be in poor to fair condition.

General management measures: Continued application of prescribed fire and supplemental plantings of longleaf pines and groundcover species will be the primary management measures for the areas of upland pine currently undergoing restoration. Overgrown areas may need additional hardwood removal to make prescribed fires more effective in restoring the native components of this community.

Alluvial Forest

Desired future condition: Alluvial forests are hardwood forests found in river floodplains on ridges or slight elevations above floodplain swamp and are flooded for one to four months of the year during the growing season. Typical overstory trees may include overcup oak (*Quercus lyrata*), laurel oak (*Q. laurifolia*), water hickory (*Carya aquatica*), American elm (*Ulmus americana*), and red maple (*Acer rubrum*). Understory species may include swamp dogwood (*Cornus foemina*), willow species (*Salix* spp.), and American hornbeam (*Carpinus caroliniana*). Presence of groundcover will be variable. Species such as netted chain fern (*Woodwardia areolata*) and other shade tolerant herbaceous species may be present.

Description and assessment: Alluvial forest occurs principally below the 45' contour in low floodplains of the Suwannee River and Withlacoochee River. This community grades into bottomland forest and floodplain swamp, both of which also commonly occur in the floodplains of the Suwannee and Withlacoochee rivers. Alluvial forest also occurs along the lower slopes of the primary levees and on point bars that form on the inside curves of river meanders. Distinctions among these communities are often blurred, making accurate categorization difficult. The only known negative impacts on this community in the park are some rooting by feral hogs and minor erosion associated with visitor use of trails.

General management measures: Alluvial forest requires little active management other than protection from erosion impacts and control of invasive exotic species. The park will monitor river access points and visitor use areas within the alluvial forest and will mitigate erosion impacts as they appear.

Bottomland Forest

Desired future condition: Bottomland forest is a fairly low lying, mesic to hydric community prone to periodic flooding. Vegetation will consist of a mature closed canopy of deciduous and evergreen trees. It is typically found on terraces and levees in river floodplains and in shallow depressions. Overstory species may consist of species such as sweetgum (*Liquidambar styraciflua)*, sweetbay *(Magnolia viginiana)*, swamp laurel oak (*Quercus laurifolia*), water oak (*Quercus nigra*) , live oak (*Quercus virginiana*), swamp chestnut oak (*Quercus michauxii*), loblolly pine (*Pinus taeda*), and spruce pine (*Pinus glabra*). Red maple (*Acer rubrum*) and bald cypress (*Taxodium distichum*) may also be present. Understory may be open or dense. Understory species will typically include wax myrtle (*Myrica cerifera*), dwarf palmetto (*Sabal minor*), and swamp dogwood (*Cornus foemina*). Drier areas may include American holly (*Ilex opaca*), Gulf Sebastian bush (*Sebastiania fruticosa*) and sparkleberry (*Vaccinium arboreum*). Presence of groundcover is variable and may consist of witchgrass (*Dicanthelium* sp.) and various sedges (*Carex* spp.).

Description and assessment: Over 75 percent of the park falls within the 10-year floodplain of the Suwannee River and Withlacoochee River. Bottomland forest occurs in broad, winding depressions that ultimately drain to the river channels. The bottomland forest is found mainly at elevations below the 50' contour. It is located in the lower areas of the river floodway, below the upland hardwood forests found along the primary levees and below the mesic hammocks within the floodway. The main negative impact on the bottomland forest of the park is the fragmentation of this community by utility rights-of-way that create treeless and shrubless zones in places where there would ordinarily be closed canopy forest. These utility easements include a natural gas pipeline and an electric power transmission line. An additional impact is the rooting of feral hogs, especially in the forests located between the Withlacoochee and Suwannee rivers in zones SR-7 and SR-8. Despite these impacts, this community remains in good to excellent condition.

General management measures: Maintenance of a natural hydrological regime is critical to the long-term health of bottomland forest communities. Many of the efforts detailed in the Hydrology section above designed to protect the spring-run stream, also apply to the bottomland forest. Monitoring for impacts from invasive plant species and feral hogs will also continue.

Floodplain Swamp

Desired future condition: Floodplain swamp will be a frequently or permanently flooded community in low lying areas along streams and rivers. Soils will consist of a mixture of sand, organics, and alluvial materials. The closed canopy will typically be dominated by bald cypress (*Taxodium distichum*) but commonly includes tupelo species (*Nyssa* spp.) as well as water hickory (*Carya aquatica*), red maple (*Acer rubrum*) and overcup oak (*Quercus lyrata*). Trees bases are typically buttressed because of frequent inundation. Understory and groundcover will typically be sparse.

Description and assessment: This community is found in depressions or along

channels in low floodplains below the 40' contour. The floodplain swamp of the park experienced selective logging in the past; cypress was the main species targeted. Revegetation of the community, particularly through resprouting from stumps, has progressed sufficiently that complete recovery seems assured. A small area in the lower reaches of Lime Sink Run that was cleared and bulkheaded a number of years ago to create a swimming spot has been partially reclaimed. Trees of various species have been planted to revegetate the area. No additional impacts on this community have been observed. The community should continue to flourish barring inordinate changes in the local hydrology.

General management measures: Floodplain swamps require little active management other than protection from erosion impacts and control of invasive exotic species. Staff will monitor river access points and visitor use areas within the floodplain swamp for erosion issues and will mitigate impacts as needed.

Sinkhole Lake

Desired future condition: Sinkhole lakes are relatively permanent and typically deep lakes characterized with a high mineral content formed in depressions within a limestone base. Some sinkhole lakes are geologically referred to as "karst windows" if they contain a distinct wide opening into the Floridan aquifer. Vegetative cover may range from being completely absent, consist of a fringe of emergent species or be completely covered with floating plants. Typical plant species may include smartweed (*Polygonum* sp.), duckweed (*Lemna* sp.), bladderwort (*Utricularia* sp.), and rushes (*Juncus* sp.). Desired conditions include minimizing disturbances that cause unnatural erosion and sedimentation that can increase several water quality contaminants directly into the local aquifer system.

Description and assessment: Because of the extent of underlying limestone, much of the park is dotted with sinks and depressions characteristic of karst topography. Sinkhole lakes are scattered throughout the park, but zone SR-7 in the north appears to have the greatest concentration of those that are actually karst windows with direct groundwater connections. Due to the extreme variations in water levels of both the Suwannee River and the surficial aquifer, the sinkhole lakes hold water for varying lengths of time. Some are continuously flooded, but some may go dry as water levels drop. The actual number of sinkhole lakes in the park is difficult to determine accurately. Only those that are known to normally contain water are indicated on the natural community map as sinkhole lakes.

Most sinkhole lakes in the park are in good condition, however foot traffic on sinkhole slopes occasionally causes erosion, soil compaction, and trampling of ground cover. Heavy foot traffic near the Seven Sisters Spring in the western end of zone SR-7 has caused significant erosion in and around the sinkhole lakes associated with the spring. Portions of the Florida Trail that pass through this area have also experienced erosion.

General management measures: Management of sinkhole lakes must emphasize protection. The edges of sinkhole lakes need to be protected from impacts that could accelerate erosion and sedimentation problems. Increased erosion can cause

a decline in water quality, especially if a karst window is present. Access to sinkhole lakes is often restricted except for legitimate research purposes or park management activities. Protective measures recommended for the sinkholes/sinkhole lakes in the Seven Sisters Spring area and for similar sites in the park are described above under the Sinkhole section of the Natural Communities section of this plan.

Alluvial Stream

Desired future condition: Alluvial streams are perennial or intermittent stream with a wide range of flow rates, generally including a high concentration of suspended particles as a result of flushing nutrients and detritus from floodwaters of adjacent uplands. Streams will have some emergent vegetation along with willows (*Salix* sp.) found along the banks.

Description and assessment: The Withlacoochee River (north) is one of the few alluvial streams occurring in Florida. Most of Florida's alluvial streams originate in the clayey uplands of Georgia and then follow a southerly course until they reach the Gulf of Mexico. The Withlacoochee River, however, only flows 84 miles from its headwaters near Tifton, Georgia to its junction with the Suwannee River at Suwannee River State Park. The park has approximately two miles of frontage on the Withlacoochee. For the last half-mile of the river's course, state park lands border each bank.

Although land use within the Withlacoochee River basin is predominantly agricultural, the stream has several substantial point sources of domestic or industrial wastewater discharge along its course. Of these point sources, five are municipal sewage treatment plants. The most significant source of pollution in recent history has been a pulp mill that operates in Georgia but discharges its wastewater directly into Jumping Gully Creek, a minor tributary of the Withlacoochee River at the state line. State agencies in both Florida and Georgia have made a concerted effort in recent years to monitor this situation. Despite these potentially significant upstream sources of pollution, the water quality of the Withlacoochee River as it enters the park remains good.

General management measures: Monitoring of water quality, particularly of tributaries affected by industrial operations, is an important management measure. This will be primarily accomplished in cooperation with the FDEP and SRWMD. Monitoring and mitigation of any riverbank erosion is also a priority.

Blackwater Stream

Desired future condition: Blackwater stream can be characterized as perennial or intermittent watercourses originating in lowlands where extensive wetlands with organic soils collect rainfall and runoff, discharging it slowly to the stream. The stained waters will be laden with tannins, particulates, and dissolved organic matter derived from drainage through adjacent swamps resulting in sandy bottoms overlain by organic matter. Emergent and floating vegetation (including golden club (*Orontium aquaticum*), smartweeds (*Polygonum* spp.), grasses and sedges) may occur but is often limited by steep banks and dramatic seasonal fluctuations in

water levels. Desired conditions include minimizing disturbance and alterations and preserving adjacent natural communities.

Description and assessment: Because of its outstanding scenic and historic attributes, the Suwannee River is renowned worldwide. In that sense, it is the most notable example of blackwater stream in existence. In the ordinary sense, however, it exhibits all the typical characteristics of blackwater streams elsewhere. The park has over five miles of frontage on the Suwannee River; for the last two miles of that stretch, both banks lie within park boundaries.

As previously noted, there are several substantial point sources of domestic or industrial wastewater discharge within the upper Suwannee River basin, including municipal sewage treatment plants. The quality of the river water upstream from the park all the way to the entry point of Swift Creek is currently rated as only fair. The main reason for the lower water quality is the discharge by PCS Phosphate of significant loads of phosphorus and fluorides into Swift Creek and other tributaries of the Suwannee (see discussion under the Hydrology section). Increased coliform levels attributable to the wastewater treatment plants also contribute to the problem.

General management measures: Monitoring of water quality, particularly of tributaries affected by industrial operations, is an important management measure. This will be primarily accomplished in cooperation with the FDEP and SRWMD. Monitoring and mitigation of any riverbank erosion is also a priority.

Spring-Run Stream

Desired future condition: Spring-run streams are perennial water courses which derive most, if not all, of their water from limestone artesian openings from the underground aquifer. The waters will be typically cool, clear, and circumneutral to slightly alkaline. These factors allow for optimal sunlight penetration and minimal environmental fluctuations which promote plant and algae growth. However, the characteristics of the water can change significantly downstream as surface water runoff becomes a greater factor. Areas of high flow will typically have sandy bottoms while organic materials concentrate around fallen trees and limbs and slow moving pools. Typical vegetation will include tapegrass (*Valisneria americana*), arrowheads (*Sagittaria* spp.), southern naiad (*Najas guadalupensis*), and pondweeds (*Potamogeton* spp.).

Description and assessment: Eleven known springs are located within the park; details about them are provided in the Hydrology section above. There are four different spring-run streams in the park, including Lime Sink Run, Seven Sisters Spring, Suwanacoochee Spring, and Little Gem Spring. The latter two springs are located immediately adjacent to the Suwannee River; consequently, they have extremely short spring runs.

Lime Sink Run, also known as Dry Run, is a spring-run stream that flows through a deep ravine system in the southern portion park for approximately 3000 feet before discharging to the Suwannee River. The flow of this highly intermittent stream

follows a westerly course. The origin of the stream is at Lime Sink, a karst window located partially outside the park boundary. When the stream does flow, numerous additional karst windows are intersected along its course. There are as many as nine known karst windows in this system, and divers use these entry points into the Floridan aquifer to map aquatic cave systems. When Lime Sink Run dries up completely, large expanses of limestone boulders and discontinuous karst windows are the only visible features along its entire path.

Lime Sink Run was considerably altered in the past when a segment of it was dammed and dredged in order to create a swimming area. The facility was later abandoned for a number of reasons, chief among them being insufficient water levels. The park has partially restored the natural hydrology of the area, but some debris from two former dams persists.

Seven Sisters Spring, located in zone SR-7 in the northern portion of the park, has a 230-foot long spring-run stream that also discharges into the Suwannee. This stream is associated with a series of five interconnected, 20-foot deep, conical-shaped sinkholes. The spring has continuous flow.

The volume of flow from the spring-run streams fluctuates dramatically with groundwater levels, and is largely dependent on the relationship between river stage and the potentiometric surface of the aquifer. When the Suwannee River stage increases, there is a corresponding rise in the waters of the all four spring-run systems, and when the river stage exceeds the potentiometric surface of the aquifer, backflow of river water into the karst windows and spring occurs. In general, the spring-run streams in the park are in good condition.

General management measures: The Division will continue to work with the SRWMD and other appropriate agencies in seeking ways to improve water quality and quantity in the Lime Sink Run system. The park will also monitor and mitigate any erosion occurring adjacent to the spring.

Aquatic Cave

Desired future condition: Characterized as cavities below the ground surface in karst areas, a cave system may contain portions classified as terrestrial caves and portions classified as aquatic caves. The latter vary from shallow pools highly susceptible to disturbance, to more stable, totally submerged systems. Desired future conditions include protecting against alterations that may increase pollution in aquatic systems.

Description and assessment: The three separate aquatic cave systems in the park that have had extensive exploration by divers include Cathedral-Falmouth Canyon, Suwanacoochee/Edwards, and Seven Sisters. One entrance into the Cathedral-Falmouth Canyon is located on park property at the head of Lime Sink Run. This entrance is a significant exsurgence point for groundwater flowing through the Cathedral system. The vast majority of karst windows into this cave system are located far outside the park boundary. In total, there are nearly 20 additional entry points into this world-renowned cave system.

Another significant exsurgence point along the Lime Sink Run cave system, called Little Gem Spring, is located on the east side of the Suwannee River just upstream from the mouth of Lime Sink Run. Cave divers have explored this cave sufficiently to know that its length exceeds 1,200 feet and that it has depths of over 150 feet. However, a clear definitive link of this cave to the Lime Sink Run cave system has not yet been established. Nonetheless, current research indicates that these two cave systems are most likely part of the same springshed.

The second aquatic cave system, Suwanacoochee Spring, has a spring-run stream that discharges directly into the Withlacoochee River just above its confluence with the Suwannee River. This extensive cave system has a direct connection with Ellaville Spring, which was described earlier in the Hydrology section.

Some of the most spectacular karst features in the park, including Seven Sisters Spring, are located in zone SR-7. This area is underlain with numerous aquatic caves that are often associated with springs located along the banks of the Suwannee River. Seven Sisters is among the most studied springs in this region. Over the past 10 years, divers have explored over 8,000 feet of cave passages in the system.

Most of the aquatic caves in Suwannee River State Park provide habitat for troglobitic invertebrates. However, the only species recorded in the caves and actually identified, as of 2011, was the pallid cave crayfish (*Procambarus pallidus*) (Franz et al. 1994). Very little is known about the population dynamics or ecology of these organisms, although their populations can vary greatly over time and space. Some troglobite populations in the park appear to have experienced a die-off in the late 1980s that might have been attributable to herbicide use on treated timberlands on a nearby private property (Younker 1990).

General management measures: Protection of the numerous springsheds from excessive groundwater withdrawals and contamination are important management measures for the aquatic caves in the park, as well as for the spring-run streams. Even though no springshed research has occurred at any of the park's springs, the boundaries of these systems undoubtedly lie outside of state authority. As with the spring-run stream, park staff will continue to work with other agencies and researchers on issues that extend beyond the park boundary. Current research projects in the caves include mapping to determine the extent of the underground passages and troglobite survey and identification to species. Monitoring and mitigation of erosion on slopes above the springs must also be an integral part of cave management in order to prevent siltation of the aquatic caves.

Altered Landcover Types

Developed

The developed areas include staff residences, maintenance structures, paved roads and recreational facilities such as campgrounds, picnic areas, and boat ramp. A complete list of all the developed areas may be found in the Land Use Component. Also classified as developed is the picnic area located south of the former roadside

park on old U.S. Highway 90.

Priority invasive plant species (FLEPPC Category I and II species) will be removed from all developed areas. Other management measures will include the use of proper stormwater management techniques for developed areas and the designing of future development so that it is compatible with prescribed fire management in adjacent natural areas.

Successional Hardwood Forest

Previous agricultural areas that were cleared for crops or pasture are considered successional hardwood forest. Most were likely to have once been either sandhill, upland pine or upland mixed woodland. The Optimal Fire Return Interval in these areas should be 2-5 years. Some smaller areas are likely to have been either mesic hammock or upland hardwood forest and are not considered fire-type areas. The long term desired future condition for successional hardwood forest is to restore this altered landcover type to the respective previous natural community type. Please see the desired future condition statement for that natural community above.

Spoil Area

A limited area in zone SR-2 was used as a dumpsite for concrete debris and other refuse in the 1970s. It may have also served as a borrow site in the 1950s and 1960s. The area has been partially restored, but some debris still remains on site and native groundcover is still lacking. The long-term desired future condition for spoil area is to restore the altered landcover type to sandhill. Please see the desired future condition statement for that natural community above.

Utility Corridor

A natural gas pipeline right-of-way passes through the park within Management zones 1, 2, 4, 6, and 8. The right-of-way is maintained as a permanently cleared area and in most cases serves as a management zone boundary or firebreak. A cleared power line right-of-way passes through zone SR-8 and between zones SR-4 and SR-5. It is unlikely that these corridors will be restored to their previous natural community types.

With only 1,870 acres of uplands protected within its boundaries, Suwannee River State Park is a relatively small natural area, but it is one with many distinct natural communities packed into it. Rarely does an upland natural community in the park cover more than a couple hundred acres without encountering some form of discontinuity. The discontinuities may be natural; after all, two major rivers flow through the park and their floodplains are extensive. More often, however, the discontinuities are human-derived. For example, the park contains a considerable number of utility easements, roads and visitor facilities. On top of that, just outside the park boundary are agricultural fields, pine plantations and home sites. One effect of this fragmentation of the landscape over time is the gradual loss from natural communities of some of their definitive plant and animal species. This effect is most noticeable in communities that happen to be fire-maintained.

Fortunately, within a reasonable distance of the park are additional protected lands that are managed by other state agencies, Twin Rivers State Forest for example. If the DRP expeditiously restores the park's natural communities to their optimum condition and then maintains them at that level over the long term, and if the DRP manages the park's natural areas within a regional ecosystem context through improved coordination with other land management agencies, then prospects for the long-term survival of those communities will be favorable.

Imperiled Species

Imperiled species are those that are (1) tracked by FNAI as critically imperiled (G1, S1) or imperiled (G2, S2); or (2) listed by the U.S. Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FFWCC) or the Florida Department of Agriculture and Consumer Services (FDACS) as endangered, threatened or of special concern.

Imperiled plants of particular note include Florida mountainmint (*Pycnanthemum floridanum*) and eastern sweetshrub (*Calycanthus floridus*). The Florida mountainmint has been documented in both the Madison County and Hamilton County portions of the park and appears to prosper in areas of disturbance such as the edges of service roads. The eastern sweetshrub, a species that naturally occurs in the Florida panhandle, was recorded at an old home site in the park in 1993, apparently a holdover ornamental.

Although not listed as imperiled in Florida, the cedar elm is a distinctive species with a restricted range in the state. It is a species common in the Mississippi River Valley that is also found in disjunct populations along the Suwannee River Valley. Cedar elms typically occur in bottomland forests and alluvial forests in the Hamilton County and Suwannee County portions of Suwannee River State Park.

Most of the imperiled animal species range beyond the park boundary on a regular basis. Only a few of these species, the gopher tortoise (*Gopherus polyphemus*) for example, have populations that are probably able to fulfill their needs entirely within the park. The Sherman's fox squirrel (*Sciurus niger shermani*), on the other hand, which occupies the same longleaf pine ecosystem as the gopher tortoise, has quite a large home range and needs relatively extensive tracts of fire-maintained habitat to survive. Maintaining a viable population of fox squirrels within the park over the long term would probably require many more acres of suitable habitat than currently exists.

The southeastern kestrel (*Falco sparverius paulus*) population in the park appears to be smaller than might be expected. While it is recognized that some of the park's sandhill and upland pine landscapes will need to be opened more before they will become attractive to kestrels, it is not known if the habitat that is already in good condition sustains an optimal population of kestrels. District and park staffs have long cooperated with FWC concerning appropriate habitats to monitor (i.e. nest boxes) Southeastern American Kestrels.

Suwannee River State Park is at the extreme northern limit of the range for Florida mice (*Podomys floridanus*). Trapping surveys by the FFWCC at Suwannee River State Park have failed to document Florida mice although appropriate habitat occurs within the park (Doonan 2002). Subsequent trapping surveys by DRP staff in 2005 also failed to capture any Florida mice, although old field mice (*Peromyscus polionotus*) and cotton mice (*Peromyscus gossypinus*) were abundant in the sandhills. Surveys by Stout and Corey (1995) documented Florida mice at Suwannee River State Park in 1986-1988, but no voucher specimens were taken. The previous record for the Florida mouse in the area is from a specimen housed in the U.S. National Museum that was collected in 1947 at "Falmouth." This is presumed to be from the vicinity of Falmouth Spring about 2 miles southeast of the park. In a letter to DRP staff in 1980, James Layne states that according to staff at the U.S. National Museum, the "Falmouth" specimen is labeled as "not typical," so there may be some question about the identification of the specimen (Layne 1980). Additional surveys for Florida mice at Suwannee River State Park are needed either by DRP staff or in cooperation with FFWCC staff. Continued improvement of the sandhills and upland pine in the park through prescribed fire and hardwood control is also a priority. Enhancement of the gopher tortoise population will also serve to benefit any Florida mouse populations that may be extant.

The gopher tortoise, Suwannee cooter, and alligator snapping turtle were historically harvested for meat in the region. All of these species are currently protected from harvest, and possession is prohibited without a permit from the FFWCC. Recent regulation changes have also prohibited the sale of all freshwater turtles taken from the wild. The harvest of all wildlife, with the exception of fish, is prohibited along the length of the Suwannee River and Withlacoochee rivers where the rivers pass through, or along the boundary of, Suwannee River State Park. The area under jurisdiction of the park includes a 400-foot zone from the edge of mean high water along sovereign submerged lands of the Suwannee River and Withlacoochee rivers. Where emergent wetland vegetation exists, the zone extends water-ward 400 feet beyond the vegetation.

Although the impact of roads is felt by nearly all wildlife species, road kills can have particularly harmful effects on imperiled species that already suffer from reduced population levels. The gopher tortoises of the park and Sherman's fox squirrels are at particular risk since several public and park roads pass through sandhill and upland pine communities. Monitoring of road kills is an important part of the management of imperiled species and other wildlife. Collecting road kill data can help define wildlife-crossing zones and can provide records for rare species that otherwise would have gone unnoticed.

Table 2 contains a list of all known imperiled species within the park and identifies their status as defined by various entities. It also identifies the types of management actions that are currently being taken by DRP staff or others, and identifies the current level of monitoring effort. The codes used under the column headings for management actions and monitoring level are defined following the table. Explanations for federal and state status as well as FNAI global and state rank are provided in Addendum 6.

Table 2. Imperiled Species Inventory						
Common and Scientific Name	**Imperiled Species Status**				**Management Actions**	**Monitoring Level**
	FFWCC	USFWS	FDACS	FNAI		
PLANTS						
Eastern sweetshrub Calycanthus floridus			LE	G5,S2	10	Tier 1
Angle Pod Gonolobus suberosus			LT		10	Tier 1
Florida Mountainmint Pycnanthemum floridanum			LT	G3,S3	1,6,9	Tier 1
Treat's Rain Lily *Zephyranthes* atamasca			LT		4	Tier 1
INVERTEBRATES						
Pallid Cave Crayfish Procambarus pallidus				G2G3, S2S3	4,10,13	Tier 2
Simple Cebrionid Beetle Selonodon simplex				G1,S1	1	Tier 1
Dusky Roadside-Skipper Amblyscirtes alternate				G3G4, S1	1,13	Tier 1
Suwannee Moccasinshell Medionidus walkeri				G1,S1	4,10	Tier 1
FISH						
Gulf Sturgeon Acipenser oxyrinchus desotoi	FT	T		G3T2,S2	4,9,13	Tier 1
REPTILES						
American Alligator Alligator mississippiensis	FT(S/A)	T(S/A)		G5,S4	4,10	Tier 1
Eastern Indigo Snake Drymarchon couperi	FT	T		G3,S3	1,6,7	Tier 1
Gopher Tortoise Gopherus polyphemus	ST	C		S3	1,6,7, 10,12	Tier 1
Alligator Snapping Turtle Macrochelys temminckii	SSC			G3G4, S3	4,9	Tier 1
Suwannee Cooter Pseudemys concinna suwanniensis	SSC			G5T3,S3	4,9	Tier 1
BIRDS						
Little Blue Heron Egretta caerulea	SSC			G5,S4	4,13	Tier 1

Table 2. Imperiled Species Inventory						
Common and Scientific Name	**Imperiled Species Status**				**Management Actions**	**Monitoring Level**
	FFWCC	USFWS	FDACS	FNAI		
White Ibis Eudocimus albus	SSC			G5,S4	4,13	Tier 1
Southeastern American Kestrel Falco sparverius paulus	LT			G5T4,S3	1,6	Tier 1
MAMMALS						
Sherman's Fox Squirrel Sciurus niger shermani	SSC			G5T3,S3	1,6,7	Tier 1
Florida Mouse Podomys floridanus	SSC			G3, S3	1,6,7, 8	Tier 2
Florida Black Bear Ursus americanus floridanus	ST			G5T2,S2	1,6,7	Tier 1

Management Actions

1 Prescribed Fire
2 Exotic Plant Removal
3 Population Translocation/Augmentation/Restocking
4 Hydrological Maintenance/Restoration
5 Nest Boxes/Artificial Cavities
6 Hardwood Removal
7 Mechanical Treatment
8 Predator Control
9 Erosion Control
10 Protection from visitor impacts (establish buffers)/law enforcement
11 Decoys (shorebirds)
12 Vegetation planting
13 Outreach and Education

Monitoring Level

Tier 1. Non-Targeted Observation/Documentation: includes documentation of species presence through casual/passive observation during routine park activities (i.e. not conducting species-specific searches). Documentation may be in the form of *Wildlife Observation Forms*, or other district specific methods used to communicate observations.

Tier 2. Targeted Presence/Absence: includes monitoring methods/activities that are specifically intended to document presence/absence of a particular species or suite of species.

Tier 3. Population Estimate/Index: an approximation of the true population size or population index based on a widely accepted method of sampling.

Tier 4. Population Census: A complete count of an entire population with demographic analysis, including mortality, reproduction, emigration, and immigration.

Tier 5. Other: may include habitat assessments for a particular species or suite of species or any other specific methods used as indicators to gather information about a particular species.

Detailed management goals, objectives and actions for imperiled species in this park are discussed in the Resource Management Program section of this component and the Implementation Component of this plan.

Exotic and Nuisance Species

Exotic species are plants or animals not native to Florida. Invasive exotic species are able to out-compete, displace or destroy native species and their habitats, often because they have been released from the natural controls of their native range, such as diseases, predatory insects, etc. If left unchecked, invasive exotic plants and animals alter the character, productivity and conservation values of the natural areas they invade.

While much of Suwannee River State Park is free of invasive exotic plants, the park does have several exotic species scattered about in various areas. The species of greatest concern at this point is Japanese climbing fern (*Lygodium japonicum*), which is found primarily along the banks of the Suwannee and Withlacoochee rivers as well as in some upland areas where disturbance has occurred in the past. The most severe infestations are located along an active railway corridor that divides zone SR-9a from SR-9b, at the salvage harvest site of a large pine beetle outbreak in the 1990s (zone SR-9a), and in zone SR-8B. Chinese wisteria (*Wisteria sinensis*), chinaberry (*Melia azedarach*), mimosa (*Albizia julibrissin*), and camphortree (C*innamomum camphora*) occur around old house sites and along some park boundaries. Nandina (*Nandina domestica*) and Japanese honeysuckle (*Lonicera japonica*) are found near an old dumpsite. Another invasive species that showed up recently at one location in the park is winged yam (*Dioscorea alata*), which may have been introduced during river flooding events.

Because Japanese climbing fern potentially infests a large number of river miles and floodplain acres in the park, it would be extremely difficult for staff alone to control this species in house. In that regard, the park has been fortunate over the years to receive regular funding for contract work to control the species, with grants currently coming from the FFWCC, and previously from the Bureau of Invasive Plant Management (BIPM). The District 2 exotic plant rover and park staff have augmented the contract work by conducting follow-up treatments of known Japanese climbing fern infestations and by surveying for new sites throughout the park. They have provided in-house primary treatment of various other species as well.

Since adoption of the previous version of the Unit Management Plan in 2002, 198 acres of exotic plants have been treated at the park. In 2007, District 2 biological staff assisted FNAI personnel in a comprehensive multi-agency effort to survey the banks of the Withlacoochee and Suwannee rivers for Japanese climbing fern. All observed populations were mapped at that time. District and park staffs have supplemented that effort by regularly surveying all areas of the park for occurrences of exotic plants, particularly the most invasive species.

Table 3 contains a list of the Florida Exotic Pest Plant Council (FLEPPC) Category I and II invasive exotic plant species found within the park (FLEPPC 2011). The table also identifies relative distribution for each species and the management zones in which they occur. An explanation of the codes is provided following the table. For an inventory of all exotic species found within the park, see Addendum 5.

Table 3. Inventory of FLEPPC Category I and II Exotic Plant Species			
Common and Scientific Name	**FLEPPC Category**	**Distribution**	**Management Zone**
PLANTS			
Camphortree Cinnamomum camphora	I	1	SR-9a
Japanese climbing fern Lygodium japonicum	I	1	SR-1b
Japanese climbing fern Lygodium japonicum	I	2	SR-1c, SR-3a, SR-5, SR-6a, SR-6b, SR-6c, SR-7, SR-8an, SR-8as, SR-8c, SR-8d, SR-9b
Japanese climbing fern Lygodium japonicum	I	3	SR-8b, SR-9a
Japanese honeysuckle Lonicera japonica	I	1	SR-1b
Mimosa Albizia julibrissin	I	1	SR-2, SR-6c
Nandina Nandina domestica	I	1	SR-1b
Winged yam Dioscorea alata	I	1	SR-9a
Chinaberry Melia azedarach	II	1	SR-9a
Chinese wisteria Wisteria sinensis	II	2	SR-3b, SR-4b
Chinese wisteria Wisteria sinensis	II	3	SR-4a

Distribution Categories

0 No current infestation: All known sites have been treated and no plants are currently evident.
1 Single plant or clump: One individual plant or one small clump of a single species.
2 Scattered plants or clumps: Multiple individual plants or small clumps of a single species scattered within the gross area infested.
3 Scattered dense patches: Dense patches of a single species scattered within the gross area infested.
4 Dominant cover: Multiple plants or clumps of a single species that occupy a majority of the gross area infested.
5 Dense monoculture: Generally, a dense stand of a single dominant species that not only occupies more than a majority of the gross area infested, but also covers/excludes other plants.
6 Linearly scattered: Plants or clumps of a single species generally scattered along a linear feature, such as a road, trail, property line, ditch, ridge, slough, etc., within the gross area infested.

Exotic animal species include non-native wildlife species, free ranging domesticated pets or livestock, and feral animals. Because of the negative impacts to natural systems attributed to exotic animals, the DRP actively removes exotic animals from state parks, with priority being given to those species causing the greatest ecological damage.

In some cases, native wildlife may also pose management problems or nuisances within state parks. A nuisance animal is an individual native animal whose presence or activities create special management problems. Examples of animal species from which nuisance cases may arise include raccoons, venomous snakes and alligators that are in public areas. Nuisance animals are dealt with on a case-by-case basis in accordance with the DRP's Nuisance and Exotic Animal Removal Standard.

Exotic, or non-indigenous animals, and nuisance animals are removed from the park as necessary to protect native wildlife populations and preserve the integrity of natural communities. Feral hogs (*Sus scrofa*) are actively removed in the park, particularly in zones 8an, 8as, 8b, and 8c. Isolated incidents of hog damage have been reported, especially in the lower, flood prone areas. Feral hogs tend to travel along river corridors and they may not be continually present in the park. Trained members of the park staff have conducted hog removal efforts for a sustained period. Nine-banded armadillos (*Dasypus novemcinctus*) are occasionally removed as well. Armadillos may cause extensive ground disturbance and are a threat to ground nesting birds and small reptiles and amphibians. Feral cats and dogs are removed from the park on an as-needed basis. Coyote (*Canis latrans*) populations in the park seem to be increasing. Research on the ecological impacts of coyotes in north Florida would benefit many natural areas. Detailed management goals, objectives and actions for management of invasive exotic plants and exotic and nuisance animals are discussed in the Resource Management Program section of this component.

Special Natural Features

The geologic history of the park is most evident when river water levels are low, allowing weathered limestone and dolomite outcrops along the Suwannee and Withlacoochee Rivers and Lime Sink Run to be exposed. These outcrops have a sculpted look, enhancing the picturesque scenery that awaits visitors who hike the various trails in the area. At the end of one such trail along the Suwannee, a large "balanced rock" formation perches high above the riverbank. There are some other interesting physical features along the Suwannee and Withlacoochee Rivers that are not of karst origin, including the natural levees and sandbars characteristic of these rivers. The configuration of these features is highly variable since they are subject to change whenever floods occur.

An outstanding feature of both rivers is the numerous springs that gush forth from the riverbanks. The most notable spring in the park is Suwanacoochee Spring, a second magnitude spring that discharges directly to the Withlacoochee River. Most of the springs in the park are very small, however. One notable example is Seven Sisters Spring located near a portion of the Florida Trail that follows the west bank of the Suwannee River. Here a series of small sinkholes, essentially karst windows, enable one to view a short underground channel that funnels spring water to the river.

Another spring, Little Gem Spring, which is located along the Suwannee River just upstream from the mouth of Lime Sink Run, has an extensive aquatic cave system

associated with it. Lime Sink Run contains a series of picturesque, steep-walled sinkholes/sinkhole lakes along its course. These features are visible from the loop trail that follows the rim of the ravine.

Cultural Resources

This section addresses the cultural resources present in the park that may include archaeological sites, historic buildings and structures, cultural landscapes and collections. The Florida Department of State (FDOS) maintains the master inventory of such resources through the Florida Master Site File (FMSF). State law requires that all state agencies locate, inventory and evaluate cultural resources that appear to be eligible for listing in the National Register of Historic Places. Addendum 7 contains the FDOS, Division of Historical Resources (DHR) management procedures for archaeological and historical sites and properties on state-owned or controlled properties; the criteria used for evaluating eligibility for listing in the National Register of Historic Places, and the Secretary of Interior's definitions for the various preservation treatments (restoration, rehabilitation, stabilization and preservation). For the purposes of this plan, significant archaeological site, significant structure and significant landscape means those cultural resources listed or eligible for listing in the National Register of Historic Places. The terms archaeological site, historic structure or historic landscape refer to all resources that will become 50 years old during the term of this plan.

Condition Assessment

Evaluating the condition of cultural resources is accomplished using a three-part evaluation scale, expressed as good, fair and poor. These terms describe the present condition, rather than comparing what exists to the ideal condition. 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 assessment is usually a cause for concern. Poor describes 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 is needed to reestablish physical stability.

Level of Significance

Applying the criteria for listing in the National Register of Historic Places involves the use of contexts as well as an evaluation of integrity of the site. A cultural resource's significance derives from its historical, architectural, ethnographic or archaeological context. Evaluation of cultural resources will result in a designation of NRL (National Register or National Landmark Listed or located in an NR district), NR (National Register eligible), NE (not evaluated) or NS (not significant) as indicated in the table at the end of this section.

There are no criteria for use in determining the significance of collections or archival material. Usually, significance of a collection is based on what or whom it may represent. For instance, a collection of furniture from a single family and a particular era in connection with a significant historic site would be considered highly significant. In the same way, a high quality collection of artifacts from a significant archaeological site would be of important significance. A large herbarium collected from a specific park over many decades could be valuable to resource management efforts. Archival records are most significant as a research source. Any records depicting critical events in the park's history, including construction and resource management efforts, would all be significant.

The following is a summary of the FMSF inventory for the park. In addition, evaluations of level of significance are included.

Prehistoric and Historic Archaeological Sites

Desired future condition: All significant archaeological sites within the park that represent Florida's cultural periods or significant historic events or persons are preserved in good condition in perpetuity, protected from physical threats and interpreted to the public.

Description: The sixteen archaeological sites, one historic cemetery, and two resource groups currently known to occur in the park are all recorded with the Florida Master Site File. Seven of the park's archaeological sites have aboriginal components. Most of the known archaeological sites in the park are historic, dating from the 19th Century or early 20th Century.

The confluence of the Suwannee and Withlacoochee Rivers was a strategic location in the 19th and early 20th centuries. In 1841, an enterprising man named David Platt bought land just south of the union of these two rivers and, in 1846, began to operate a ferry (SU00401) (Mainer 1972). The town of Columbus (SU00199), on the east bank of the Suwannee River, became the first chartered community in Suwannee County when it received a post office in 1842. River transport of cotton and timber was a significant part of the town's economy in the 1800s. The boundaries of this site were expanded in 1997 based on work by Tesar and Harp (1997). The site now constitutes a resource group that encompasses the Columbus Cemetery, the Confederate Earthworks and the well site.

It may be advisable to expand the resource group boundary even further to include at least the newly listed sites SU00402 (sawmill) and SU00405 (steamboat landing). The sawmill and its associated log-landing areas, where timber was pulled ashore from the river, were located in the town of Columbus. The steamboat landing (SU00405), located on the east side of the Suwannee River, served not only Columbus but also Ellaville later on. In the 1800s, steamboats en route from Cedar Key on the Gulf of Mexico to Ellaville regularly plied the Suwannee. During the Civil War, Confederate troops constructed earthworks (SU00035, SU00200) on the east bank of the Suwannee to protect the railroad bridge that crossed the river. The Columbus Cemetery (SU00362) served the town from at least 1862. An old stagecoach road (SU00367) runs through the southern portion of the park.

Eventually, in 1903, a vehicular bridge crossing the Suwannee River was constructed and the importance of the ferry and boat traffic diminished. All that remains of that bridge today are its abutments (SU00403).

In the late 19th Century, as the importance of cotton was decreasing and that of timber increasing, the town of Ellaville (MD00058) was founded in Madison County along the west bank of the Withlacoochee River near its confluence with the Suwannee. The town contained a sawmill (MD00279), schools and a railroad car factory. In 1942, the town's post office moved back across the river to its former location in the town of Columbus, and Ellaville relocated with it. Near the original Ellaville site is Suwanacoochee Spring. Remnants of a concrete wall (MD00236) separate the spring from the Withlacoochee River. The spring once supplied the town of Ellaville with drinking water. The exact boundaries of the Ellaville site are still undetermined, but part of the site is on land managed by the Florida Forest Service.

The scattered remnants of St. Paul's Church (SU00417) are located near Lime Sink Run, but the site lies north of the run and away from the town sites of Ellaville or Columbus. It is unknown if there was a graveyard associated with the church. SU00404 (Suwannee Scatter) is 20th Century and appears to be associated with a pre-1959 house site.

Four pre-historic aboriginal sites have been identified at the park (SU00201, SU00343, SU00355 and SU00365). One of the sites was a campsite and another was a pre-historic quarry. The quarry site (SU00355) appears unaltered but lacks cultural features (SouthArc 2003). A third site may be a dwelling site and the final site does not contain sufficient diagnostic features to identify it adequately. During the documentation of SU00365, the recorders examined only a limited area (SouthArc 2006). It should be determined if the site actually extends beyond its current boundaries.

There may be another archaeological site in the park, but it is yet to be recorded. A 1937 aerial photograph shows what appears to be a structure in what is now zone SR-4b. Park staff should ground-truth that zone and record any cultural resources discovered.

The park has submitted all known archaeological sites, except for the possible one in zone SR-4b, to the FMSF. A predictive model for the park was completed in 2011.

Condition Assessment: All of the archaeological sites within the park are in good condition with the exception of the Columbus Cemetery (SU00362), Lime Sink Youth Area (SU00343), Confederate Earthworks (SU00035) and Sam's Pond (SU00201) sites, which are in fair condition. All 16 archaeological sites and all other cultural sites should be monitored at least annually.

The Columbus Cemetery may contain gravesites that are unmarked and outside the cemetery walls. The park needs to determine the actual extent of the cemetery and

the location of any unmarked graves so that they can receive adequate protection. The cemetery's concrete and brick wall has areas along the cap that are damaged. A mold of the existing caps is needed so that they can be duplicated and used to replace the damaged caps. The wrought iron fences and gates need a protective coating and preventative maintenance so that they do not deteriorate further. Some of the old headstones are metal, and they are rusting.

The Sam's Pond site (SU00201) has the potential to be disturbed by plowing. People have also collected there in the past. This site needs to be monitored regularly to prevent further collecting activities.

The Lime Sink Youth Area (SU00343) has a road running through it to the youth camp, thus it is subject to continued disturbance. The site needs to be monitored regularly.

The extent of the town of Ellaville (MD00058) is unknown, individual features have not been mapped, and it is not entirely on park property. To protect the site, its boundaries need to be determined, and building remains and other features need to be recorded. If the site contains sufficient resources, it may warrant recordation as a Resource Group. The park should collaborate with the Florida Forestry Service in this effort.

The Confederate Earthworks site (SU00035) is in fair condition. The earthworks have several large trees growing on them that could affect their condition. The earthworks had experienced previous disturbance when a house was built in the center of the site in the early 1900s. The Division eventually moved this house, which became the Suwannee River Ranger Residence (SU00416), away from the earthworks to a more suitable location within the park.

The log landing site (SU00402), where timber was pulled ashore from the river, is in good condition, but it could act as a conduit for erosion. To lessen this possibility, the vegetation at the upper end of the log landing should not be mowed. Staff will need to delineate the desired footprint of the mowed footpath, and reduce the size of the mowed area.

The St. Paul's Church site (SU417) is in good condition. At some point in the past, a fire plow had disturbed the site, but there have been no apparent impacts since then.

Level of Significance: Archaeological sites in the park have not been evaluated by the SHPO for NRHP eligibility. However, in 2006, a professional archaeologist determined that the Stage Coach Road (SU367) was potentially NRHP eligible. The road is likely significant for the role it played as a major transportation corridor for goods and people in the area in the mid to late 19th Century. Additionally, the road retains a substantial level of physical integrity. The park also contains archaeological sites associated with early historic development of the area that may prove to be significant upon further evaluation (e.g. the old town sites of Ellaville and Columbus).

General management measures: All cultural sites should be checked regularly so that problems caused by erosion, looting, vegetation, fire lines and other impacts are detected before resources are damaged. The park should develop a monitoring plan that includes a schedule and a protocol for recording concerns and needed actions at the time of each visit.

The Confederate Earthworks site (SU00035) requires extensive vegetation management. Some large senescent trees are currently growing on the earthworks, and if they happen to topple, significant ground disturbance will result. Staff should carefully consider appropriate methods of removing these trees without disturbing the site any more than necessary. Roots should be left in place. The park also needs to remove smaller trees and prevent additional trees from establishing on the site. Refer to the FPS Guidelines for Managing Earthen Structures.

The Columbus Cemetery (SU00362) needs a maintenance plan to prevent further deterioration of the fences, wall and grave markers. The extent of the cemetery should be determined with ground penetrating radar.
The Division needs to determine the full extent of MD00058, SU00365 and SU199. Individual features of MD00058 should be recorded. Collaboration with the Florida Forest Service, the adjacent landowner, would be beneficial.

Historic Structures
Desired future condition: All significant historic structures and landscapes that represent Florida's cultural periods or significant historic events or persons are preserved in good condition in perpetuity, protected from physical threats and interpreted to the public.

Description: There are eleven known historic structures in the park recorded with the FMSF, all of them dating from the 20th Century. The state park formally opened in 1951, and the structures were built in the 1950s and 1960s during the early years of park operation. All the structures are still in use today, with most of them functioning in their original capacity.

The first structure built in the park was the Suwannee River Ranger Residence (SU00416). Formerly known as the Hinely Cottage, it was named after its builder, Florida Senator Hinely. The exact construction date has not yet been determined, but it was likely between 1920 and 1937. The structure has heart pine flooring. At one time, it was inhabited by a Civilian Conservation Corps (CCC) member who monitored river levels. Its original location was in the center of the Confederate earthworks, and it remained there until at least 1955. After serving as a CCC residence, it functioned as a bar and then was moved to its present location. Currently, it is in adaptive reuse as a ranger residence.

The Suwannee River Pavilion 2 (SU00410) and the Suwannee River Pavilion 3 (SU00411) were the first structures built (about 1955) that were associated with the park's opening in the 1950s. The Suwannee River Laundry-Camp (SU00412) followed in 1960, with the Suwannee River Workshop (SU00413) and Suwannee River Pumphouse (SU00414) appearing in 1961. The park entrance, Suwannee

River Entrance Wall (SU00415), was built in 1965 using cement and limestone. The park constructed the Suwannee River Residence – Mgr. (SU00407) in 1966 and the Suwannee River Storage -Equip (SU00406) in 1964. The two remaining structures, Suwannee River Restroom - Group Area (SU00408) and Suwannee Pumphouse/Storage (SU00409) were built in 1968. All historic structures have been submitted to the FMSF.

Condition Assessment: Three of the historic structures in the park are in good condition (SU00407, SU00415, and SU00416), one is in poor condition (SU00408), and the rest are in fair condition.
Suwannee River Restroom - Group Area (SU00408) is not ADA compliant. It needs a new roof and new floor tiles, and the interior is in poor condition. The Division should document this building and replace it.

The two residences (SU00407 and SU00416) need continued regular maintenance to remain in good condition. While the Suwannee River Entrance Wall (SU00415) is in good condition, it does have some exposed, rusting rebar in the pillars. Staff will need to select and implement the best techniques of preventative maintenance in order to prevent further deterioration.

The structures discussed below are all in fair condition. Pavilions 2 and 3 (SU00410 and SU00411) need upgrades to meet ADA requirements. According to the local fire marshal, the wiring in each pavilion is not up to code. Squirrels and woodborers have attacked the posts and railings in both pavilions; consequently, they need replacing. The Suwannee River Workshop (SU00413) has its original board and batten siding, which is still in good condition. The wiring does need to be upgraded, however. The character of the building should be retained as repairs are made since the style represents the early period of the Florida Park Service. The roof beams of the Suwannee River Storage – Equip. (SU00406) need bracing. Its characteristic appearance should be retained while making the space more usable. The fire marshal reports that the wiring in the Suwannee River Pumphouse (SU00414) needs to be brought up to code. The Pumphouse needs its roof replaced as well. The roof and T-111 siding for the Suwannee Pumphouse/Storage (SU00409) also need replacing. The Suwannee River Laundry-Camp (SU00412) needs upgraded wiring and a new roof.

Level of Significance: The Suwannee River Pavilion 2 (SU00410), the Suwannee River Pavilion 3 (SU00411), and the Suwannee River Entrance Wall (SU00415) are considered as potentially eligible for inclusion in the National Register of Historic Places. Pavilions 2 and 3 are excellent remaining examples representative of early Florida Park Service designed combination picnic shelters. Shelters of this type, which combine a covered picnic area with enclosed offices and/or restrooms, were popular in parks in the 1940s through the early 1960s, but over the years, many have been replaced or altered. The Suwannee River Pavilion 2 (SU00410) and the Suwannee River Pavilion 3 (SU00411) both retain a high degree of design and construction integrity and reflect the sensitivity of early Florida Park Service architects toward creating serviceable park buildings that reflected the natural setting in which they were located. The Suwannee River Entrance Wall (SU00415),

which will become 50 years of age during the ten-year period covered by this UMP, is notable for its distinctive limestone and wood construction which provides an attractive and appropriate entry into a park that is noted for its historic and scenic vistas.

The remaining historic structures in the park do not meet the criteria for potential inclusion in the National Register. Although the Suwannee River Ranger Residence (SU00416) is the oldest structure in the park, it has been altered and was moved from its original location, thus affecting its potential for National Register eligibility. The rest of the historic structures in the park are standard park structures of differing designs, and are not exceptional in design or construction.

General management measures: Park staff should inspect the historic structures regularly to identify potential threats or damage and plan necessary repairs. The DHR should be consulted about any rehabilitation treatments proposed.

Collections

Desired future condition: All historic, natural history and archaeological objects within the park that represent Florida's cultural periods, significant historic events or persons, or natural history specimens are preserved in good condition in perpetuity, protected from physical threats and interpreted to the public.

Description: The collection at Suwannee River State Park contains archaeological, historic, and natural history items. The historic items are primarily from the late 19th Century and are associated with the river traffic and timber removal activities prevalent in that era.

The historic collection contains machinery, photographs and original blueprints. A flywheel, a cart, and associated railroad tracks are located on the site of the old sawmill (SU402) and were part of that operation. The cart was probably used to haul timber along the railroad tracks.

Another historic item, a boat gunnel, is displayed outside near the Confederate earthworks (SU35). The gunnel is reported to be from a ferry owned by Charles Dean. This ferry probably docked at Platt's Ferry Landing (SU401). After the vehicular bridge was constructed over the river, Mr. Dean sailed the ferry downstream to the Highway U.S. 90 Bridge and sank it.

The park also has approximately 20 historic photographs from the 1950s - 1960s periods, shortly after it officially opened. It also has the original blueprints for the early construction that occurred in the park, including the park entrance wall, the park manager's residence, and pavilions 2 and 3.

Archaeological items discovered at the park over the years are displayed in a five cubic foot area of the camper registration building. Among the collection are stone points and pottery sherds.

The natural history collection consists of several taxidermy items from the park, as

well as turtle shells and the skeleton of a large alligator snapping turtle. The taxidermy items include two barred owls, one fox squirrel, and one bobcat. The natural history collection is located in the ranger station and occupies about 75 square feet.

Condition Assessment: In general, the park's collection items are in good condition. The boat gunnel does need to be relocated and placed under some sort of cover that will provide better protection. It should also be displayed and interpreted in a more accessible area. The flywheel, cart and rails need regular treatment with a protective coating to prevent deterioration caused by exposure to the elements. Previously, the park has painted them as a protective measure. At this time, they are still in good condition, but they will soon need treatment to prevent them from rusting.

The taxidermy animals are in good condition, but staff will need to assess them regularly to detect the presence of moths and other insects. All items except those in interpretive exhibits outdoors are displayed or stored in climate-controlled buildings that are locked when they are unoccupied.

Level of Significance: All of the collection items were retrieved either inside the park or from the adjacent Suwannee River. They therefore have significance in interpreting the park's history and natural resources. The value of the objects lies in their interpretive, educational and research potential in relation to the cultural and natural history of the park and the surrounding area.

General management measures: The Park does not have a Scope of Collections Statement or a complete inventory of the collection items. A collection management assessment has not been completed. The park should develop a housekeeping and record keeping system for cyclical maintenance of the collection, particularly with regard to prevention of pest problems and the protection of the items exhibited outdoors.

Detailed management goals, objectives and actions for the management of cultural resources in this park are discussed in the Cultural Resource Management Program section of this component. Table 4 contains the name, reference number, culture or period, and brief description of all the cultural sites within the park that are listed in the Florida Master Site File. The table also summarizes each site's level of significance, existing condition and recommended management treatment. An explanation of the codes is provided following the table.

Table 4. Cultural Sites Listed in the Florida Master Site File					
Site Name and FMSF #	**Culture / Period**	**Description**	**Significance**	**Condition**	**Treatment**
HA000575 FL-811	Aboriginal 1000 – 700 B.C., Non-aboriginal Twentieth century American	Archaeological site	NS	G	P
MD00058 Old Ellaville	Aboriginal and non-aboriginal, 19th Century	Archaeological Site	NE	G	P
MD00236 Suwanacoochee Springs	Historic, 19th Century	Archaeological Site	NE	G	P
MD00279 Drew Bucky Sawmill Complex	Historic, 19th and 20th century American	Archaeological Site	NE	G	P
SU00035 Confederate Earthworks	Historic, 19th Century	Archaeological Site	NE	F	P
SU00199 Old Columbus/ Ellaville Community	Historic, 19th Century Pre-historic	Resource Group	NE	G	P
SU00200 Confederate Earthworks	Historic, 19th Century	Archaeological site	NRL	G	P
SU00201 Sam's Pond	Aboriginal and non-aboriginal	Archaeological Site	NE	F	P
SU00343 Lime Sink Youth Area	Archaic	Archaeological Site	NE	F	P
SU00355 Suwannee River Cabins	Archaic	Archaeological Site	NS	G	P
SU00362 Columbus Cemetery	Historic, Mid-19th Century	Historic Cemetery	NE	F	P
SU00365 Well Site	Archaic	Archaeological Site	NE	G	P
SU00367 Stage Coach Road	Historic, 19th Century	Resource Group	NR	G	P

Table 4. Cultural Sites Listed in the Florida Master Site File					
Site Name and FMSF #	**Culture / Period**	**Description**	**Significance**	**Condition**	**Treatment**
SU00401 Platts Ferry Landing	Historic, 19th Century	Archaeological Site	NE	G	P
SU00402 Columbus Sawmill	Historic, 19th Century	Archaeological Site	NE	G	P
SU00403 Ellaville Bridge	Historic, late 19th – early 20th Century	Archaeological Site	NE	G	P
SU00404 Suwannee Scatter	Historic, 20th Century	Archaeological Site	NE	G	P
SU00405 Columbus/ Ellaville Steamboat Landing	Historic, 19th Century	Archaeological Site	NE	G	P
SU00406 Suwannee River Storage – Equip.	20th Century, 1964	Historic Structure	NE	F	RH
SU00407 Suwannee River Residence – Mgr.	20th Century, 1966	Historic Structure	NE	G	RH
SU00408 Suwannee River Restroom - Group Area	20th Century, 1968	Historic Structure	NE	P	R
SU00409 Suwannee Pump-house/Storage	20th Century, 1968	Historic Structure	NE	F	RH
SU00410 Suwannee River Pavilion 2	20th Century, 1955	Historic Structure	NR	F	RH
SU00411 Suwannee River Pavilion 3	20th Century, 1955	Historic Structure	NR	F	RH
SU00412 Suwannee River Laundry-Camp	20th Century, 1960	Historic Structure	NE	F	RH
SU00413 Suwannee River Workshop	20th Century, 1961	Historic Structure	NE	F	RH

Table 4. Cultural Sites Listed in the Florida Master Site File					
Site Name and FMSF #	**Culture / Period**	**Description**	**Significance**	**Condition**	**Treatment**
SU00414 Suwannee River Pump House	20th Century, 1961	Historic Structure	NE	F	RH
SU00415 Suwannee River Entrance Wall	20th Century, 1965	Historic Structure	NE	G	RH
SU00416 Suwannee River Ranger Residence	20th Century	Historic Structure	NE	G	RH
St. Paul's Church SU00417	Early 20th Century, Unknown	Archaeological Site	NE	G	P

Significance
NRL – National Register listed
NR – National Register eligible
NE – Not evaluated
NS – Not significant

Condition
G – Good
F – Fair
P – Poor
NA – Not accessible
NE – Not evaluated

Recommended Treatment
RS – Restoration
RH – Rehabilitation
ST – Stabilization
P – Preservation
R – Removal
N/A – Not applicable

Resource Management Program

Management Goals, Objectives and Actions

Measurable objectives and actions have been identified for each of the DRP's management goals for Suwannee River State Park. Please refer to the Implementation Schedule and Cost Estimates in the Implementation Component of this plan for a consolidated spreadsheet of the recommended actions, measures of progress, target year for completion and estimated costs to fulfill the management goals and objectives of this park.

While, the DRP utilizes the ten-year management plan to serve as the basic statement of policy and future direction for each park, a number of annual work plans provide more specific guidance for DRP staff to accomplish many of the resource management goals and objectives of the park. Where such detailed planning is appropriate to the character and scale of the park's natural resources, annual work plans are developed for prescribed fire management, exotic plant management and imperiled species management. Annual or longer- term work plans are developed for natural community restoration and hydrological restoration. The work plans provide the DRP with crucial flexibility in its efforts to generate and

implement adaptive resource management practices in the state park system.

The work plans are reviewed and updated annually. Through this process, the DRP's resource management strategies are systematically evaluated to determine their effectiveness. The process and the information collected is used to refine techniques, methodologies and strategies, and ensures that each park's prescribed management actions are monitored and reported as required by Sections 253.034 and 259.037, Florida Statutes.

The goals, objectives and actions identified in this management plan will serve as the basis for developing annual work plans for the park. The ten-year management plan is based on conditions that exist at the time the plan is developed, and the annual work provide the flexibility needed to adapt to future conditions as they change during the ten-year management planning cycle. As the park's annual work plans are implemented through the ten-year cycle, it may become necessary to adjust the management plan's priority schedules and cost estimates to reflect these changing conditions.

Natural Resource Management

Hydrological Management

Goal: Protect water quality and quantity in the park, restore hydrology to the extent feasible and maintain the restored condition.

The natural hydrology of most state parks has been impaired prior to acquisition to one degree or another. Florida's native habitats are precisely adapted to natural drainage patterns and seasonal water level fluctuations, and variations in these factors frequently determine the types of natural communities that occur on a particular site. Even minor changes to natural hydrology can result in the loss of plant and animal species from a landscape. Restoring state park lands to original natural conditions often depends on returning natural hydrological processes and conditions to the park. This is done primarily by filling or plugging ditches, removing obstructions to surface water "sheet flow," installing culverts or low-water crossings on roads, and installing water control structures to manage water levels.

Objective: Conduct/obtain an assessment of the park's hydrological restoration needs.

Significant hydrological features in the park include two major rivers and seven springs, as well as multiple karst windows scattered throughout the property. Preservation of surface water and groundwater quality, as well as control of erosion and sedimentation along riverbanks and within the numerous karst features, will remain top priorities for the Division. The following are hydrological assessment actions recommended for the park.

The Division of Recreation and Parks will continue its tradition of close cooperation with state and federal agencies and independent researchers engaged in

hydrological research and monitoring programs within the park and the adjacent Suwannee River, and it will encourage and facilitate additional research in those areas. Agencies such as the SRWMD, USGS, and FDEP will be relied upon to keep the Division apprised of any declines in surface water quality or any suspected contamination of groundwater in the region. District staff will continue to monitor Environmental Resource Permit (ERP) and Water Use Permit (WUP) requests for the region in order to provide timely and constructive comments that promote protection of the park's water resources. Additional cooperative efforts may include facilitating the review and approval of research permits and providing researchers with assistance in the field, including orientation to park resources. Recommendations derived from these monitoring and research activities will be essential to the decision making process during management planning. One potential activity worthy of Division support is establishment of a monitoring program within at least one of the park's springs to document the ecological impacts of flow reversals.

The proximal sources of flow from the Floridan aquifer to the park's seven springs are still unknown. To remedy that, the Division will encourage hydrological studies designed to delineate the entire springsheds of the four spring clusters associated with the park, particularly the Lime Sink Run spring cluster (as discussed under the Hydrology section above). In addition, if the SRWMD is to establish meaningful MFLs for Suwanacoochee Spring and Little Gem Spring, it must first identify their up-gradient sources. In order for water managers to be able to protect water quality and potentially restore spring flows to their historic volumes, it will be essential that they understand the extent of the springsheds involved. To facilitate that process, the Division will seek funding for dye trace studies to determine the groundwater sources for the spring systems in the park. Previous dye trace studies in other managed springsheds in Florida have provided park management with invaluable information about the various sources of springs and the timing of surface to groundwater interactions that potentially affect important surface water bodies.

Staff will continue to monitor land use or zoning changes within lands bordering the park. Major ground disturbances on neighboring properties or inadequate treatment of runoff into local streams could ultimately cause significant degradation of park resources. When appropriate, District 2 staff will provide comments to other agencies regarding proposed changes in land use or zoning that may affect the park. In addition, district staff will closely monitor the major phosphate mining operations in the Suwannee watershed upstream of the park for significant changes that may adversely affect park resources.

The Division will continue to work closely with the SRWMD to ensure that MFLs developed for the Upper Suwannee River, Suwanacoochee Spring and Little Gem Spring are implemented conscientiously and that historic spring flows are protected. As another protective measure, the Division will continue efforts to acquire the private property at the head of Lime Sink Run.

Objective: Restore natural hydrological conditions and functions to approximately 5 acres of Bottomland Forest and 3.5 acres of Spring-run Stream natural communities.

Bottomland forests adjacent to utility easements may experience some disruption of natural sheet flow due to the following activities: filling of low spots along the easements, excavation of shallow ditches to facilitate drainage, and wallowing out of low, moist areas by heavy equipment during regular maintenance of easement corridors. Remnants of an old dam from a former swimming area in the lower part of the Lime Sink Run may still be impeding flow along the run. The following are hydrological restoration actions recommended for the park.

Park and district staffs will investigate potential impacts of the gas pipeline and other utility easements on natural sheet flow in the park's bottomland forests. If impacts are considered to be significant, staff will seek the cooperation of utility companies to mitigate them and restore natural hydrological function to about five acres of bottomland forest. The park will also evaluate other alterations in the park that may have negatively affected the natural hydrology. If necessary, staff will initiate corrective actions such as the installation of low water crossings or culverts in appropriate locations.

Park and district staffs will evaluate impacts of the remnant dam structure on the natural hydrology of Lime Sink Run. If the dam at the former swimming area still impedes flow in the stream, or alters the spring-run natural community in some other significant manner, then the park will renew efforts to restore the area to natural grade, which would result in restoration of about 3.5 acres of spring-run stream.

Objective: Evaluate and mitigate the impacts of soil erosion in the park.

Several areas in the park that are popular with visitors, particularly Lime Sink Run and Seven Sisters Spring, continue to have significant erosion issues despite past corrective measures. The following are erosion control actions recommended for the park.

The Division will investigate best management options for additional mitigation of erosion at public access points such as hiking trails along the Suwannee River shoreline, the boat launch area, and the Seven Sisters Spring area. Staff will regularly monitor areas of the park that are subject to significant erosion. Wherever necessary, the park will implement corrective measures that reduce the impacts of soil erosion on water resources.

The park will assess the extent of erosion attributable to excessive or unauthorized visitor access to the Seven Sisters springs area. It may be necessary to exclude visitors from the site at least temporarily to allow healing of erosion scars. The parking area associated with the authorized trail to the spring may need additional water bars designed to minimize erosion during strong storm events by diverting storm water into surrounding woodlands to encourage natural infiltration. The

access road to the site may also need additional work, possibly including the installation of low water crossings. The Division will also explore alternative options for providing visitor access to the Seven Sisters site. Parking and trail system improvements would enable proper interpretation of this resource.

Park staff will identify unauthorized trails along river levees elsewhere in the park and eliminate visitor access to them where necessary. In the canoe launch area, despite significant progress in mitigating key erosion issues, certain spots will require additional stabilization measures. Staff will continue to monitor points of significant erosion along the Lime Sink Run trail system and mitigate the problem areas as needed.

Natural Communities Management

Goal: Restore and maintain the natural communities/habitats of the park.

As discussed above, the DRP practices natural systems management. In most cases, this entails returning fire to its natural role in fire-dependent natural communities. Other methods to implement this goal include large-scale restoration projects as well as smaller scale natural communities' improvements. Following are the natural community management objectives and actions recommended for the state park.

Prescribed Fire Management

Prescribed fire is used to mimic natural lightning-set fires, which are one of the primary natural forces that shaped Florida's ecosystem. Prescribed burning increases the abundance and health of many wildlife species. A large number of Florida's imperiled species of plants and animals are dependent on periodic fire for their continued existence. Fire-dependent natural communities gradually accumulate flammable vegetation; therefore, prescribed fire reduces wildfire hazards by reducing these wild land fuels.

All prescribed burns in the Florida state park system are conducted with authorization from the FDACS, Division of Forestry (DOF). Wildfire suppression activities in the park are coordinated with the DOF.

Objective: Within 10 years, have 650 acres of the park maintained within the optimum fire return interval

Table 5 contains a list of all fire-dependent natural communities found within the park, their associated acreage and optimal fire return interval, and the annual average target for acres to be burned.

Table 5. Prescribed Fire Management		
Natural Community	**Acres**	**Optimal Fire Return Interval (Years)**
Sandhill	174	1-3
Upland Mixed Woodland	275	2-5
Upland Pine	46	2-3
Successional Hardwood Forest	256	2-5
Annual Target Acreage*	200 - 550	
*Annual Target Acreage Range is based on the fire return interval assigned to each burn zone. Each burn zone may include multiple natural communities.		

The park is partitioned into management zones including those designated as burn zones (see Management Zones Table and Map). Prescribed fire is planned for each burn zone on the appropriate interval. The park's burn plan is updated annually because fire management is a dynamic process. To provide adaptive responses to changing conditions, fire management requires careful planning based on annual and very specific burn objectives. Each annual burn plan is developed to support and implement the broader objectives and actions outlined in this ten-year management plan.

There are three fire-maintained natural communities in Suwannee River State Park, namely sandhill, upland mixed woodland and an area of upland pine in zone SR-3. Some adjacent natural communities that border these fire-maintained habitats may also be affected by fire, such as upland hardwood forests. The park has nine resource management zones, eight of which contain fire-maintained communities (see Management Zones Map). Some zones are subdivided based on current firebreaks that allow park staff more an efficient tool to accomplish safe and productive burns. As these zones approach maintenance condition, zone breaks will be evaluated and potentially closed if appropriate.

Despite a prescribed burn program at the park that spans more than three decades, further restoration of natural communities is needed. While the sandhill community in zones SR-1 and SR-2 is in good condition because of more frequent prescribed burning and other resource management efforts, there are still pockets dominated by invasive hardwoods. A significant edge effect has resulted in a dense overgrowth of small diameter hardwoods along many zone boundaries. Mechanical or chemical treatment may need to be implemented to open these areas enough for prescribed fire to be successful.

Management zones SR-1 and SR-6 have been exposed to significantly more prescribed burns than zones SR-7 and SR-8. Park staff has introduced lightning season burns to all areas except zones SR-7 and SR-8, but the frequency of burning should be increased in all zones according to the recommended fire return intervals.

Only zone SR-2 and the southern portion of zone SR-1 have improved to the point that they are nearing maintenance condition. The sandhill, upland pine and upland mixed woodland communities in zones SR-3, SR-4, SR-5, and SR-6, however, are in considerably worse shape because of past agricultural activities and historic fire suppression. The 1937 aerial of this region clearly depicts severe agriculture alterations in most of these zones. The intense land use disturbance during that time virtually eliminated the herbaceous groundcover in large areas of these zones. Many of these areas are currently classified as successional hardwood forest. Significant restoration and improvement efforts will be required to restore lost components of the sandhill, upland pine, and upland mixed woodland communities.

Offsite hardwoods were removed from zones SR-3a and SR-3b in 2004 using a contractor. These zones were subsequently burned and in 2011 a portion of the area was planted with longleaf pines. Additional and more frequent prescribed fires will be needed to improve the condition of these zones.

Upland mixed woodland dominates large areas of zones SR-8 and SR-4a, and is a transitional zone between sandhills and non-fire type communities throughout the park. Upland mixed woodland was formerly combined with upland pine and called upland pine forest in the 1990 FNAI Guide to Natural Communities. The recent (2010) update splits upland mixed woodland from upland pine based on canopy and groundcover differences. Upland mixed woodland is a declining natural community in North Florida due to disturbance and fire suppression. Restoration of a natural fire return interval to this rare community type will be essential in restoration and improvement efforts.

A special effort will be made to increase the burn frequency of zones that have been neglected, particularly in zone SR-8. Prescribed burns will be conducted at fire return intervals appropriate for the community type. Given the small size of the park staff, there must be increased reliance upon assistance from other parks and from District 2 staff. Improved coordination with other land management agencies that operate in the vicinity will also be important.

Fire-maintained natural communities in the park have become susceptible to invasion by southern pine beetles due to the increased numbers of off-site loblolly pine that seeded into disturbed areas and abandoned fields or pastures coupled with fire suppression and historical logging of longleaf pines. The beetle infestations have been especially severe in the upland mixed woodland, where several areas had to be clear-cut.

Many animal and plant species are adapted to natural communities that periodically burn. Species such as the gopher tortoise and the many commensals that share their burrows require fire-maintained habitats. At Suwannee River State Park, these areas include the sandhill, upland pine and upland mixed woodland natural communities. Maintenance of the gopher tortoise population in the park requires regular prescribed fire to maintain a diverse herbaceous groundcover under an open canopy of pines and scattered hardwoods. Certain mammal species, such as the Florida mouse and Sherman’s fox squirrel, also depend on fire.

Standing dead trees (i.e. snags) with cavities are an important ecological component for forest management. Snags provide critical nesting and roosting habitat for a suite of invertebrates as well as vertebrates like woodpeckers, American kestrels, eastern bluebirds (*Sialia sialis*), and flying squirrels. Many of these species cannot exist without an adequate number of snags. Snags (standing dead trees) that do not pose a hazard to facilities or visitors will be protected for wildlife habitat. Snags that are smoldering after a prescribed fire will be extinguished without delay. Protection of snags demonstrates a high degree of management sensitivity.

In order to track fire management activities, the DRP maintains a statewide burn database. The database allows staff to track various aspects of each park's fire management program including individual burn zone histories and fire return intervals, staff training/ experience, backlog, if burn objectives have been met, etc. The database is also used for annual burn planning which allows the DRP to document fire management goals and objectives on an annual basis. Each quarter the database is updated and reports are produced that track progress towards meeting annual burn objectives.

Natural Communities Restoration

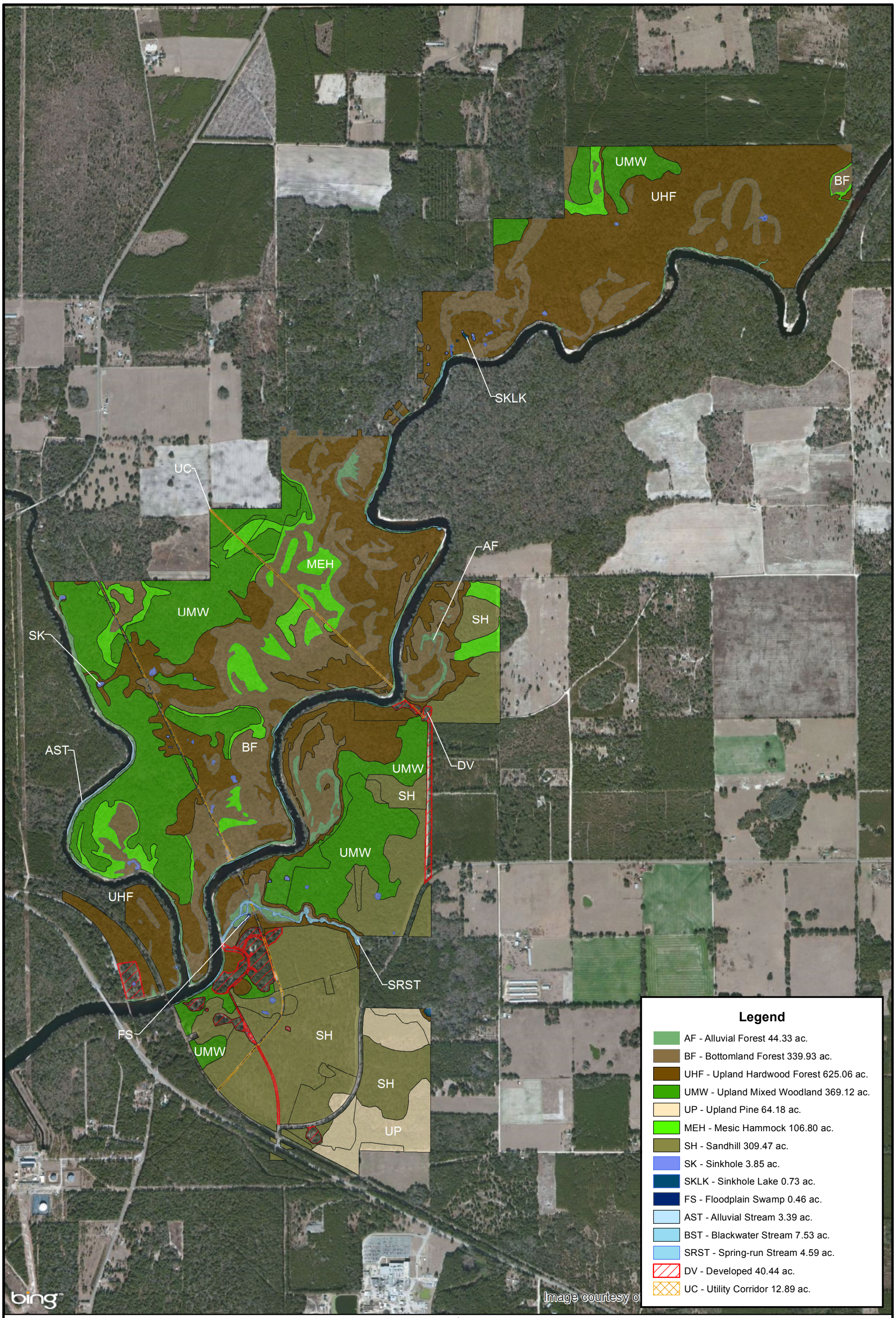
In some cases, the reintroduction and maintenance of natural processes is not enough to reach the natural community desired future conditions in the park, and active restoration programs are required. Restoration of altered natural communities to healthy, fully functioning natural landscapes often requires substantial efforts that may include mechanical treatment of vegetation or soils and reintroduction or augmentation of native plants and animals. For the purposes of this management plan, restoration is defined as the process of assisting the recovery and natural functioning of degraded natural communities to desired future condition, including the re-establishment of biodiversity, ecological processes, vegetation structure and physical characters.

Examples that would qualify as natural communities restoration, requiring annual restoration plans, include large mitigation projects, large-scale hardwood removal and timbering activities, roller-chopping and other large-scale vegetative modifications. The key concept is that restoration projects will go beyond management activities routinely done as standard operating procedures such as routine mowing, the reintroduction of fire as a natural process, spot treatments of exotic plants, and small-scale vegetation management.

Following are the natural community/habitat restoration and maintenance actions recommended to create the desired future conditions in the sandhill and upland mixed woodland communities at Suwannee River State Park.

Objective: Conduct habitat/natural community restoration activities on 25 acres of sandhill and upland mixed woodland communities.

Zone SR-4a contains a 25-acre stand of loblolly pines growing on former agricultural fields. Fringes of the stand may retain elements of the original natural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SH
UP
Legend
AF - Alluvial Forest 44.33 ac.
BF - Bottomland Forest 339.93 ac.
UHF - Upland Hardwood Forest 625.06 ac.
UMW - Upland Mixed Woodland 369.12 ac.
UP - Upland Pine 64.18 ac.
MEH - Mesic Hammock 106.80 ac.
SH - Sandhill 309.47 ac.
SK - Sinkhole 3.85 ac.
SKLK - Sinkhole Lake 0.73 ac.
FS - Floodplain Swamp 0.46 ac.
AST - Alluvial Stream 3.39 ac.
BST - Blackwater Stream 7.53 ac.
SRST - Spring-run Stream 4.59 ac.
DV - Developed 40.44 ac.
UC - Utility Corridor 12.89 ac.
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Image courtesy of
SUWANNEE RIVER STATE PARK
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Florida Department of Environmental Protection
Division of Recreation and Parks
Date of Aerial; 2010
NATURAL COMMUNITIES MAP
DESIRED FUTURE CONDITIONS

community, however. The District 2 staff needs to survey the northern and western portions of the zone for remnant populations of upland mixed woodland species and map any remaining patches of natural community discovered.

Offsite loblolly pines in the zone will need to be removed or thinned and longleaf pines planted in their place. Offsite hardwoods will need to be treated mechanically or chemically, or both. Prescribed burning will be important in controlling the sprouting of invasive hardwoods on the site and in hindering invasion by old-field types of vegetation. The results of the remnant species survey will indicate if there is a need to plant southern red oaks and other appropriate hardwood species in the upland mixed woodland portions of the zone. Groundcover species may need restocking as well. Old aerial photographs indicate that much of this area had once been used for agriculture, so it is unlikely that many groundcover species representative of the original community remain. District 2 staff will conduct a vegetation survey of the area before deciding whether groundcover restoration is necessary. Maintenance activities for the restoration area will consist of follow-up treatments of offsite hardwood sprouts and the regular application of prescribed fire.

Natural Communities Improvement

Improvements are similar to restoration but on a smaller, less intense scale. This typically includes small-scale vegetative management activities or minor habitat manipulation. Following are the natural community/habitat improvement actions recommended for Suwannee River State Park.

Objective: Conduct natural community/habitat improvement activities on 5 acres of upland pine community.

Several areas of upland pine community in the park are now overgrown with offsite hardwoods due to a lack of frequent fire. Some restoration actions, such as chemical hardwood control and planting of longleaf pines, have already taken place in these areas, particularly in zones SR-3b and SR-3a. The northern portions of zone SR-3b, however, still need to be surveyed for remnant upland pine species. In addition, zone SR-1b has not yet received any chemical or mechanical treatments.

Improvement treatments should focus on connecting previously treated areas to areas where remnant species continue to be present. Invading hardwoods such as laurel oak and live oak will need mechanical and/or chemical treatments. Fire will be an important part of the process to control hardwood re-sprouting and stimulate the recovery of remnant groundcover species. Planting of longleaf pines will be necessary. It may also be necessary to plant some groundcover species. Maintenance activities will include prescribed fire, retreatment of offsite hardwood sprouts, and supplemental planting of longleaf pines as needed.

Park and district staffs have surveyed all zones damaged by pine beetles in the past 20 years and have mapped the areas that were clear-cut to control pine beetle infestations. The DRP will gradually reestablish the longleaf pine overstory and herbaceous groundcover in fire-maintained natural communities that were impacted

by the beetles, and will restore the natural species composition. Restoration and maintenance of these communities should suffice to discourage future outbreaks of southern pine beetles.

Objective: Conduct natural community/habitat improvement activities on 14 acres of sandhill community.

Zone SR-5 contains 14 acres of fire-suppressed sandhill. It is not known how much native groundcover remains in the zone. Staff biologists will conduct field surveys for native groundcover before determining supplemental planting needs. Invading hardwoods will require mechanical and/or chemical treatment. Fire will be a critical part of follow-up improvement and habitat maintenance actions to stimulate groundcover and control hardwood sprouts. Chemical retreatment of hardwood sprouts and longleaf pine planting may also be necessary.

Objective: Assess impacts of human-derived fragmentation on the park's natural communities.

An evaluation of the ecological impact of human-derived fragmentation of the park's natural communities will be conducted. The DRP will strive to reduce the effects of fragmentation and isolation of natural communities in the park and improve their condition. Staff will seek the cooperation of utility companies in reducing the harmful effects of maintained rights-of-way on natural communities through which they pass. The DRP will abandon non-essential service roads and fire lanes in the park and restore them to the appropriate natural community.

Imperiled Species Management

Goal: Maintain, improve or restore imperiled species populations and habitats in the park.

The DRP strives to maintain and restore viable populations of imperiled plant and animal species primarily by implementing effective management of natural systems. Single species management is appropriate in state parks when the maintenance, recovery or restoration of a species or population is complicated due to constraints associated with long-term restoration efforts, unnaturally high mortality or insufficient habitat. Single species management should be compatible with the maintenance and restoration of natural processes, and should not imperil other native species or seriously compromise park values.

In the preparation of this management plan, DRP staff consulted with staff of the FFWCC's Imperiled Species Management or that agency's Regional Biologist and other appropriate federal, state and local agencies for assistance in developing imperiled animal species management objectives and actions. Likewise, for imperiled plant species, DRP staff consulted with FDACS. Data collected by the USFWS, FFWCC, FDACS and FNAI as part of their ongoing research and monitoring programs will be reviewed by park staff periodically to inform management of decisions that may have an impact on imperiled species at the park.

Ongoing inventory and monitoring of imperiled species in the state park system is necessary to meet the DRP's mission. Long-term monitoring is also essential to ensure the effectiveness of resource management programs. Monitoring efforts must be prioritized so that the data collected provides information that can be used to improve or confirm the effectiveness of management actions on conservation priorities. Monitoring intensity must at least be at a level that provides the minimum data needed to make informed decisions to meet conservation goals. Not all imperiled species require intensive monitoring efforts on a regular interval. Priority must be given to those species that can provide valuable data to guide adaptive management practices. Those species selected for specific management action and those that will provide management guidance through regular monitoring are addressed in the objectives below.

Objective: Update baseline imperiled species occurrence inventory lists for plants and animals.

Additional surveys for imperiled plant and animal species are needed for Suwannee River State Park to ensure that all imperiled species are documented. The Division will enlist the assistance of academic researchers and staff from other agencies during development of species occurrence inventory lists, especially where necessary for certain taxonomic groups.

Objective: Monitor and document 4 selected imperiled animal species in the park.

The aquatic cave system at Suwannee River State Park provides essential habitat for at least one cave-dwelling invertebrate, the pallid cave crayfish. The troglobyte fauna associated with aquatic cave systems is dependent upon a stable environment that experiences few fluctuations in water temperature or quality. Drastic decreases in troglobite populations that have been recorded periodically have been interpreted by some observers to be the result of flooding of the cave system by the Suwannee River. However, very little research has been conducted to confirm this hypothesis. Analysis of on-going cave faunal monitoring may help to delineate trends associated with arthropod fluctuations.

District and park staffs will continue to coordinate with cave divers in the region to conduct routine monitoring of this cave-dwelling species. District and park staffs will also continue to cooperate with other researchers who are monitoring or sampling aquatic cave-dwelling invertebrates.

The status of the Florida mouse within the park needs to be confirmed. Since this area is at the far northern edge of the historic range, it would be useful to know if the Florida mouse is still present. Florida mouse population trends may also be influenced by restoration efforts in the sandhill and upland pine natural communities. District 2 staff will consult and work with FFWCC staff to survey for Florida mice in the park. In addition, park staff will record sightings of Sherman's fox squirrels within the park.

District and park staffs will continue to cooperate with FWC concerning appropriate habitats to monitor (i.e. nest boxes) Southeastern American Kestrels.

Objective: Monitor and document 2 selected imperiled plant species in the park.

Staff will conduct additional surveys for Florida mountainmint and Angle pod. Timing of the surveys will consider flowering phenology of the two species to ensure proper identification.

Exotic Species Management

Goal: Remove exotic and invasive plants and animals from the park and conduct needed maintenance control.

The DRP actively removes invasive exotic species from state parks, with priority being given to those causing the ecological damage. Removal techniques may include mechanical treatment, herbicides or biocontrol agents.

Objective: Annually treat 22 acres of exotic plant species in the park.

The park will treat all known populations of Japanese climbing fern on an annual basis. Climbing ferns grow along rivers, spring runs, and sinkholes in the park and their spores may become waterborne, allowing easy translocation to other sites during periods of high water. As river levels drop, the ferns may colonize newly exposed soil and limestone. It is therefore imperative for the park to keep all known populations of climbing fern under strict control, which will require annual inspection and thorough treatment as needed, possibly several times a year. With the support of FFWCC funding to treat invasive exotic plants, the park is making good progress in controlling Japanese climbing fern. To maintain the current level of control, however, it will be important to apply to the FFWCC annually for project funds that target this species.

Nandina is one of several exotic species that occur at low levels in the park. This species is one that the park could actually eliminate with focused treatment efforts. Another invasive species, Chinese wisteria, grows at old home sites and is very persistent. Consequently, it will need long-term, continued treatment.

There is a new exotic plant threat at the park, a population of winged yam. This species should be treated aggressively on an annual basis since the population is still small and there is a chance that it can be eradicated before it spreads.

Objective: Develop and implement measures to prevent the accidental introduction or further spread of invasive exotic plants in the park.

Corridors such as highways and rivers often facilitate the spread of invasive exotic plants into new areas. Rivers in particular, and the flooding events associated with them, provide an excellent means of translocation of exotic plants into new

territories. Because two rivers flow through Suwannee River State Park, it is subject to repeated disturbances from flooding and must cope with the continual threat of new introductions of invasive exotic plants.

It is important to know what exotic species are present within the park, where they are located, and how severe their infestations are. It is also very important to know what zones or communities are currently free of exotics so that the park can continue to keep those areas exotics free. This is particularly true for high quality or ecologically important habitats.

To prevent new populations of invasive exotic plants from becoming established and expanding, the park will have to survey every zone for the occurrence of new invasive exotics at least twice within the next 10 years, and map any infestations discovered. By regularly surveying exotics-free zones, staff can discover new infestations at an early stage and eliminate them before they have a chance to increase in size significantly. Areas that serve as sources of particularly aggressive species, or of species that can dramatically change ecosystem function, may need to be scouted more frequently. Finding new populations of invasive exotic plants before they become established will help prevent larger infestations from developing. The focus should be on FLEPPC Category I and II species, while at the same time watching out for new species that exhibit aggressive tendencies.

Exotic plants often invade an area accidentally through preventable methods of entry. To limit accidental introduction and movement of exotic species, park staff will need to develop and practice preventative measures, including a protocol for equipment inspection and decontamination. Activities such as mowing, logging, fire line preparation, landscaping debris disposal and road building can introduce or redistribute exotics through contaminated equipment. Fill dirt, lime rock, potted horticultural plants and mulch are all potentially contaminated by exotics even if they are not readily visible at the time of entry into the park. Some new infestations of exotics may be preventable by ensuring that contractors clean their equipment before entering the park. The further spread of exotics already established in the park may be avoided by making sure that staff and contractors do not move equipment, landscaping debris or soil from a contaminated area to an exotic free area within the park. Particular care is needed when mowing. Known populations of invasive exotic plants should not be mowed because this can spread them to non-infested areas. Any equipment that is moved from a contaminated site to an exotics free area should be cleaned before moving it.

Objective: Implement control measures on 1 nuisance and exotic animal species in the park.

Feral hog populations at Suwannee River State Park tend to move along river corridors and can be transitory in nature. The park currently controls feral hogs on an as-needed basis and will continue to do so. Staff will establish and maintain monitoring procedures for areas where hog damage is occurring regularly.
The park will remove feral cats and dogs as they are encountered. Fortunately, because of the rural nature of the area, not many are present in the park. Staff will

occasionally remove nine-banded armadillos from the park when they pose a threat to ground nesting birds or small reptiles and amphibians.

Cultural Resource Management

Cultural resources are individually unique, and collectively, very challenging for the public land manager whose goal is to preserve and protect them in perpetuity. The DRP is implementing the following goals, objectives and actions, as funding becomes available, to preserve the cultural resources found in Suwannee River State Park.

Goal: Protect, preserve and maintain the cultural resources of the park.

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. All activities related to land clearing, ground disturbing activities, major repairs or additions to historic structures listed or eligible for listing in the National Register of Historic Places must be submitted to the FDOS, Division of Historical Resources (DHR) for review and comment prior to undertaking the proposed project. Recommendations may include, but are not limited to concurrence with 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 effect. In addition, any demolition or substantial alteration to any historic structure or resource must be submitted to DHR for consultation and the DRP must demonstrate that there is no feasible alternative to removal and must provide a strategy for documentation or salvage of the resource. Florida law further requires that the DRP consider the reuse of historic buildings in the park in lieu of new construction and must undertake a cost comparison of new development versus rehabilitation of a building before electing to construct a new or replacement building. This comparison must be accomplished with the assistance of DHR.

Objective: Assess and evaluate 27 of 27 recorded cultural resources in the park.

The park has located all of the cultural resources listed in Table 4. Park staff will assess all 27 known cultural resources in the park so that their condition and any threats can be identified and corrected. Staff should document site assessments in a written and photographic format. Any threats detected, including looting, erosion, fire line construction, building deterioration and others, should be documented during the assessments. Documentation should be consistent so that changes in site condition can be determined by comparing assessments made over the years. The park will prioritize future preservation and rehabilitation treatments based on the assessments. All cultural sites should be monitored at least annually.

The park will prepare Historic Structure Reports (HSRs) for Pavilions 2 and 3 (SU00410 and SU00411). The park will then prioritize the repairs and restoration

and rehabilitation projects identified by the HSRs.
To ensure the ongoing recognition, protection and management of cultural resources, there should always be at least one staff member at the park who is a certified archaeological monitor. In addition, park management should ensure that all personnel have sufficient training to provide adequate protection to the park's cultural resources, both documented and undocumented.

Objective: Compile reliable documentation for all recorded historic and archaeological resources.

A predictive model for the park will be completed by the end of 2011. Sites identified by the model are being submitted to the FMSF. The park will review the results of the predictive model and consult with the Division of Historic Resources' Public Lands Archaeology Program to determine priority areas for additional surveys including a Level 1 archaeological survey. Newly identified historic structures are also being submitted to the FMSF.

The park has some historic documents and photographs relating to the Suwannee River Ranger Residence (SU00416), Old Ellaville (MD00058) and the Drew Mansion (just outside park property), the Confederate Earthworks (SU00035), other cultural sites, and other structures built in the 1950s and early 1960s at the time the park formally opened. Staff will need to review these documents and submit pertinent information as updates to each site's FMSF form.

The individual components of Old Ellaville that remain visible should be mapped, including structural remains of the town and of the Drew Mansion and family cemetery that are not on park property. Since at least parts of the latter two sites occur on Florida Forest Service (FFS) property, park management should collaborate with the FFS to document components of the sites. Old Ellaville probably should be recorded as a resource group so that it can incorporate the various components.

The park needs to develop a Scope of Collections Statement based on interpretive themes. At least two themes are evident in items in the current collections, the natural history of the area and the impact of the river and the natural resources on the development of the area by early settlers from the mid-1800s to the early 1900s. The Scope of Collections Statement should clearly state the interpretive themes. This document should guide the development of any additional collections, the acceptance of any future donations, and interpretive efforts. Staff should review the Scope of Collections Statement regularly.

The park has documents pertaining to its administrative history that need organizing. Gaps in the historic record need to be identified. Oral history interviews may help fill in these gaps as well as help identify other, yet unknown cultural resources.

Objective: Bring 10 of 27 recorded cultural resources into good condition.

The park needs to develop and implement a cyclical maintenance plan that will guide staff in protective and preventative maintenance of the park's cultural resources. The plan should include a site visitation schedule and a process to identify and record issues that impact the condition of the resources. A method to prioritize repairs should be part of the plan.

Because the park has so many cultural resources, it will be necessary to prioritize their repair in order to bring them into good condition. The ability of the park to improve these resources to a good condition will also depend on the availability of funding. The following is a prioritized list of cultural resources in the park that need repairs: Confederate Earthworks (SU00035), Columbus Cemetery (SU00362), Suwannee River Pavilion 2 (SU00410), Suwannee River Pavilion 3 (SU00411), Suwannee River Workshop (SU00413), Suwannee River Storage – Equip (SU00406), Suwannee River Laundry-Camp (SU00412), Suwannee Pumphouse/Storage (SU00409), Suwannee River Pumphouse (SU00414), and the Suwannee River Restroom - Group Area (SU00408).

The highest priority for repair is the Confederate Earthworks (SU00035), which needs vegetation management. The park should remove the larger trees and prevent the establishment of smaller trees. Roots should be left in place to minimize soil disturbance. The park should consult with BNCR and follow the Florida Park Service and National Park Service guidelines for managing earthen structures.

The Columbus Cemetery (SU00362) needs to be surveyed with ground penetrating radar to determine the location of all the graves. The actual perimeter of the cemetery needs to be marked so that graves outside the enclosure are protected from disturbance. The park needs to develop and implement a preventative maintenance plan for the cemetery fences, walls and grave markers. These structures are currently in need of preventative management. The park should consult with BNCR during the plan development and follow Florida Park Service guidelines for managing cemeteries.

Suwannee River Pavilions 2 and 3 (SU00410 and SU00411) need upgraded wiring, post and railing replacements, and ADA upgrades. Suwannee River Workshop (SU00413) needs a wiring upgrade. Suwannee River Storage –Equip (SU00406) needs bracing for the roof beams. Suwannee River Laundry-Camp (SU00412) needs a new roof and upgraded wiring. Suwannee Pumphouse/Storage (SU00409) needs to have the roof and T111 siding replaced. Suwannee River Restroom - Group Area (SU00408) is in poor condition and should be evaluated for replacement or rehabilitation. If it is determined that replacement is necessary, the building should be removed whenever feasible.

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 DRP'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 those communities specifically managed as early successional.

A timber management analysis was conducted at the park in 2012 (see Addendum 8). Management zone SR-5 is an identified sandhill site in need of restoration work. The natural groundcover is in fair condition, but would improve with some removal of shrub and hardwood component. This area is not large enough to justify any type harvesting operation of the hardwood or less desirable pines. Timber stand 2 in zone SR-7 is an 18-year-old site prepared loblolly pine plantation. There are approximately 175 trees per acre with an average diameter of 8.8 inches. The average basal area is 75 square feet per acre. In those areas where longleaf pine is the preferred pine species it is recommended to heavily thin the loblolly pine and interplant with longleaf pine. Presently, the forested area of the park along the Suwannee River has only limited vehicular access thru the RV campground. Before any logging activities can take place, this access point will need improvement or a completely new access point established outside the campground area.

Arthropod Control Plan

All DRP lands are designated as "environmentally sensitive and biologically highly productive" in accordance with Ch. 388 and Ch. 388.4111 Florida Statutes. If a local mosquito control district proposes a treatment plan, DRP works with the local mosquito control district to achieve consensus. By policy of DEP since 1987, aerial adulticiding is not allowed, but larviciding and ground adulticiding (truck spraying in public use areas) is typically allowed. DRP does not authorize new physical alterations of marshes through ditching or water control structures. As of 2013, Suwannee River State Park did not have an Arthropod Control Plan. Mosquito control plans temporarily may be set aside under declared threats to public or animal health, or during a Governor's Emergency Proclamation.

Additional Considerations

The Division has management authority over a 400-foot zone from the edge of mean high water along the Suwannee and Withlacoochee rivers where they pass through or alongside the park. Where emergent wetland vegetation exists, the zone extends waterward 400 feet beyond the vegetation. Within this zone, staff will

enforce Division regulations. All wildlife within this zone, with the exception of fish, is protected from harvest, as stated above in the Imperiled Species section. In addition, pre-cut timber harvesting (deadhead logging) is prohibited within this zone.

Resource Management Schedule

A priority schedule for conducting all management activities that is based on the purposes for which these lands were acquired, and to enhance the resource values, is located in the Implementation Component of this management plan.

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 are being managed for the purposes for which they were acquired and in accordance with their approved land management plans. The DRP considered recommendations of the land management review team and updated this plan accordingly.

Suwannee River State Park was subject to a land management review on 14 December 2012. The review team made the following determinations:

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

LAND USE COMPONENT

Introduction

Land use planning and park development decisions for the state park system are based on the dual responsibilities of the Florida Department of Environmental Protection (DEP), Division of Recreation and Parks (DRP). 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. Additional input is received through public workshops, and through environmental and recreational-user groups. With this approach, the DRP 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 expressed 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

Suwannee River State Park is located in Suwannee, Hamilton, and Madison Counties where the Withlacoochee River meets the Suwannee River, about 14 miles east of the City of Madison and approximately 12 miles west of the City of Live Oak in the north central part of the state. The park is located on U.S. Highway 90 (U.S. 90) approximately 5 miles west of its intersection with Interstate 10 (I-10).

There are a number of resource-based recreation areas adjoining or near the park. The Twin Rivers State Forest, Warner/Harrell Conservation Easement, and the Florida National Scenic trail all adjoin the park. The Falmouth Springs

Conservation Area, Suwannee Ridge Mitigation Park Wildlife and Environmental Area, Withlacoochee West Conservation Area, and Upper Alapaha Conservation Area are all within close proximity to the park offering opportunities for hiking, wildlife viewing, horseback riding, biking, and fishing.

Existing Use of Adjacent Lands

The park is located within the jurisdiction of 3 rural counties: Suwannee, Hamilton and Madison, with the largest portions of the park located in Suwannee and Hamilton Counties. These are all rural counties with low populations and limited development. A number of publicly-owned state forests, conservation areas, and properties under conservation easements surround the park. The majority of the other uses in the area consist of agriculture and silviculture use. Residential and commercial development is very limited with most of this type of development occurring in the small rural communities and rural towns.

The park is approximately 5 miles west of the intersection of U.S. 90 and I-10. The proximity to I-10 serves as the park's best conduit to bring visitors to the park.

Planned Use of Adjacent Lands

The 3 counties that surround Suwannee River State Park have experienced very little population growth from 2010 to 2015. Suwannee County, where the majority of the park is located, has experienced a low rate of growth mostly in the unincorporated areas. Between 2010 and 2014, the county grew from 41,551 persons to 44,168, a 6% increase in population. Suwannee County is projected to grow at the rate of about 7% from 2014 to 2020 to 47,300 persons. Hamilton County has seen a population decrease of approximately 3% from 14,799 persons in 2010 to an estimated 14,351 persons in 2014. Hamilton County is anticipated to reach a population of 15,000 by 2020 (BEBR 2014). Madison County, which contains the smallest portion of the park of the 3 counties, has seen very small estimated increase in its population between 2010 when there were 19,224 persons living there to 19,303 persons in 2014. The population of Madison County is only anticipated to grow to a population of 19,500 by 2020 (BEBR 2014).

The Suwannee County and Hamilton County properties outside of the park share similar zoning and future land use designations. Adjacent land in Suwannee County is in the Environmentally Sensitive Areas (one du/acres), which is limited to non-intensive resource based activities, forestry, and single-family residential uses, and Agriculture-1 (one/du per 5 acres). Agriculture-1 is limited to non-intensive agriculture, forestry, sale of crops raised on site, churches, public/private schools. Most of the area that borders the park in Hamilton County has the classification of Environmentally Sensitive Area 2, which allows residential uses at one unit per 10 acres. There is an existing subdivision adjoining the northwestern part of the park that has the designation

of Environmentally Sensitive Area 3, which allows one residential unit per 5 acres (Hamilton County 2009).

The surrounding lands located in Madison County are designated as Conservation in the comprehensive plan. This future land use category encompasses the area adjacent to the park, which is owned by the Water Management District, and includes the state forest. There are portions of this land use category that are also located within the floodplains. The only other land use category within several miles of the park is the Agriculture 1. This category allows agricultural use and residential uses at one unit per 40 acres. Madison County does not have a separate zoning map, but relies on the Future Land Use Map. The adjacent lands fall within the Agriculture 1 category. The allowed uses in the zoning code mirror the uses allowed in the comprehensive plan (Madison County 2013).

Based on the slow growth rate anticipated for the 3 surrounding counties and the ownership patterns, the park is not anticipated to see a great deal of change regarding adjacent land uses in the next 10 years.

Florida Greenways and Trails System (FGTS)

The Florida Greenways and Trails System (FGTS) is made up of existing, planned and conceptual non-motorized trails and ecological greenways that form a connected, integrated statewide network. The FGTS serves as a green infrastructure plan for Florida, tying together the greenways and trails plans and planning activities of communities, agencies and non-profit organizations throughout Florida. Trails include paddling, hiking, biking, multi-use and equestrian trails. The Office of Greenways and Trails maintains a priority trails map and gap analysis for the FGTS to focus attention and resources on closing key gaps in the system.

In some cases, existing or planned priority trails run through or are adjacent to state parks, or they may be in close proximity and can be connected by a spur trail. State parks can often serve as trailheads, points-of-interest, and offer amenities such as camping, showers and laundry, providing valuable services for trail users while increasing state park visitation. Suwannee River State Park is currently a designated park along the system, offering overnight accommodations for paddlers.

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.

Recreational Resource Elements

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

Land Area

Suwannee River State Park is a 1,929-acre park located at the confluence of the Suwannee and Withlacoochee Rivers. The park contains diverse natural communities, allowing a wide range of natural and recreational experiences for park visitors. These activities can include camping, hiking, bird watching, nature study, and picnicking.

Water Area

The Suwannee River is the most significant natural feature of the park. Designated an Outstanding Florida Waters in 1980, this blackwater stream provides several miles of scenic shoreline within the park alone. Along its banks, numerous small springs contribute water to the river, and rock outcroppings demonstrate the ancient history of the river. The Withlacoochee River joins the Suwannee River within the boundaries of the park, creating scenic vistas and an opportunity for many water-based recreation opportunities, such as boating and paddling.

Shoreline

Suwannee River State Park has 5 miles of shoreline along the Suwannee River. The last two miles of shoreline are entirely within the park's boundary on both sides. Likewise, 2 miles of the Withlacoochee River flow along the park's boundary. High banks provide scenic vistas and an opportunity for land-based recreation, such as fishing.

Natural Scenery

The natural scenery of the park is accented not only by scenic river views and high bluffs, but also by the variety of natural communities located within the park. These views create opportunities for photography, nature study, picnicking, and wildlife viewing.

Significant Habitat

Many of the 14 natural communities located throughout the park provide significant habitat. Twenty state or federally designated plant and animal species have been found within the boundaries of Suwannee River State Park

allowing unique opportunities for birding, wildlife viewing, and nature study. These species include the gopher tortoise, Sherman's fox squirrel, Suwannee (river) cooter, pallid cave crayfish, Florida mountainmint, cedar angel pod, and numerous others.

Natural Features

The primary natural feature in the park is the Suwannee River. This world-renowned blackwater stream forms in the Okefenokee Swamp in Georgia and travels 167 winding miles until it empties into the Gulf of Mexico. The park is largely focused around the recreation opportunities that the Suwannee River provides. Other natural features that should be highlighted include the Withlacoochee River that joins the Suwannee River at the park, lime sink run, rock outcroppings, springs, and sinkholes, all of which were formed by the unique geology that has been occurred over thousands of years within the Suwannee River basin and change depending on the stage of the river. These natural features can be interpreted through educational tours and programming and visited along hiking trails.

Archaeological and Historical Features

Thirteen archaeological sites, one historic cemetery, and 2 resource groups are currently known to occur in the park. Six of the park’s archaeological sites have aboriginal components. Most of the known archaeological sites in the park are historic, dating from the 19th century or early 20th century and can be interpreted through displays or educational programs. They include Civil War earthworks, the first chartered community in the county, the town of Columbus, and an 1846 ferry landing for steamboats.

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

The park was initially purchased in 1936 and was formally opened in 1951. Portions of the park were used for agricultural and silvicultural production before acquisition by the state.

Future Land Use and Zoning

The DRP works with local governments to establish designations that provide both consistency between comprehensive plans and zoning codes and permit typical state park uses and facilities necessary for the provision of resource-based recreation.

The Suwannee River State Park is located within 3 different counties. The Suwannee County Comprehensive Plan designates the park as Recreation. The Recreation future land use category is limited to user-based and resource-based recreation uses, public access, and residential and non-residential uses necessary to manage such recreation uses. The park is zoned Environmentally Sensitive Area 2 (ESA-2), which allows public resource based recreation uses, non-intensive agriculture uses, single family and mobile home residential uses at 1 unit per 10 acres, churches, limited special exceptions and accessory uses and structures (Suwannee County 2013).

The Hamilton County Comprehensive Plan shows the portion of the park that is in Hamilton County in the Recreation future land use category. This category allows resource-based recreation, public access, and residential or non-residential uses required to manage the recreational uses of the property. The portion of the park within Hamilton County is zoned Environmentally Sensitive Area 2, which allows non-intensive agriculture and forestry operations, public resource-based recreational facilities, single family residential and mobile home dwellings at a minimum of one unit per 10 acres and limited special exceptions and accessory uses and structures. It prohibits intensive residential, recreational, and agricultural uses, as well as industrial and non-water dependent commercial development within the 100-year floodplain.

The small portion of the park located in Madison County, west of the old U.S. 90, is designated for Conservation in the comprehensive plan. This category is intended for public lands devoted to the conservation of unique natural functions but also allows agriculture activities conducted with best management practices and silviculture activities consistent with conservation. This land use category also allows public access and residential uses necessary to manage such conservation lands such as ranger stations, research stations, and park amenities. The land development regulations for the county also show the park in the Conservation zoning category. The allowed uses in the zoning code mirror the uses allowed in the comprehensive plan (Madison County 2013*).*

One of the corridors under consideration for the Sabal Trail pipeline project runs through a portion of Suwannee River State Park. DRP staff should be involved in all planning decisions that may affect the state park. The impacts to vegetative communities, listed plants and animals, and the visual resources within the park should be minimized through the planning and design processes for any future development.

Current Recreational Use and Visitor Programs

Resource-based recreation and natural and cultural resource interpretation are the primary recreational uses at Suwannee River State Park. Because of the two rivers and numerous springs in the park, water-based recreation is a large focus. The park offers activities such as kayaking and canoeing, in addition to picnicking, hiking, camping, cabins and historical interpretation.

The park serves as a hub for users of the Suwannee River Wilderness Trail (SRWT). The SRWT is a system of public and private recreation and visitor service sites along 160 miles of the Suwannee River making the region's outstanding outdoor recreation and heritage resources more available to the public. Recreational hubs provide bases from which visitors may explore the surrounding areas by canoe, boat, bicycle, horseback, or on foot, or enjoy local parks and cultural sites for activities such as picnicking, fishing, birding and wildlife observation, nature study, and interpretive programs.

Suwannee River State Park recorded 74,057 visitors in FY 2014/2015. By the DRP estimates, the FY 2014/2015 visitors contributed $6,606,298 in direct economic impact, the equivalent of adding 106 jobs to the local economy (FDEP 2015).

The Suwannee River State Park is one of nine Florida State Parks that contains a certified segment of the Florida National Scenic Trail (FNST). The FNST was designated in the park in June 2005, as part of the three-party certification agreement between the DRP, the U.S. Forest Service, and the Florida Trail Association. As prescribed by the agreement, the DRP and the FTA coordinate all programs and activities related to the trail.

Other Uses

There is a utility easement for natural gas lines and an electric power transmission line that runs through the park.

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 Suwannee River State Park, all wetlands and floodplain as well as the alluvial and bottomland forests, sandhill, blackwater stream, and sinkhole natural communities and known imperiled species habitat have been designated as protected zones. The park's current protected zone is delineated on the Conceptual Land Use Plan.

Existing Facilities

Existing recreational facilities at Suwannee River State Park include a boat launch for kayaking and canoeing on the Suwannee and Withlacoochee Rivers, hiking trails that take visitors through natural communities and the sinks and

springs, and a river overlook at the trailhead that starts at the earthworks area. Suwannee River contains a family camping area and primitive group camps, picnic pavilions/restrooms in the day use area, and interpretive displays that inform visitors about the natural and cultural resources in the park (see Base Map).

The support facilities consist of an entrance station, a shop/office area with a historic structure previously used as ranger residences, a maintenance shop and equipment shelter. Two other ranger residences are located in other areas of the park. There is a parking lot in the day use area and two pump houses. The park also has a bathhouse that serves the family camping area.

Recreation Facilities

Day Use Area
Picnic area
Picnic shelters (2)
Playground
Columbus cemetery
Bathhouse

Entrance Area
Entrance station

Family Camping Area
Standard campground (30 sites)

Cabin Area
Cabins (5)

Hickory Bend Primitive Camping Area
Primitive campsite
Primitive group camps (2)

Earthworks
Boat ramp
Observation platform

Parkwide
Trails (17 miles)
Interpretive panels (4)

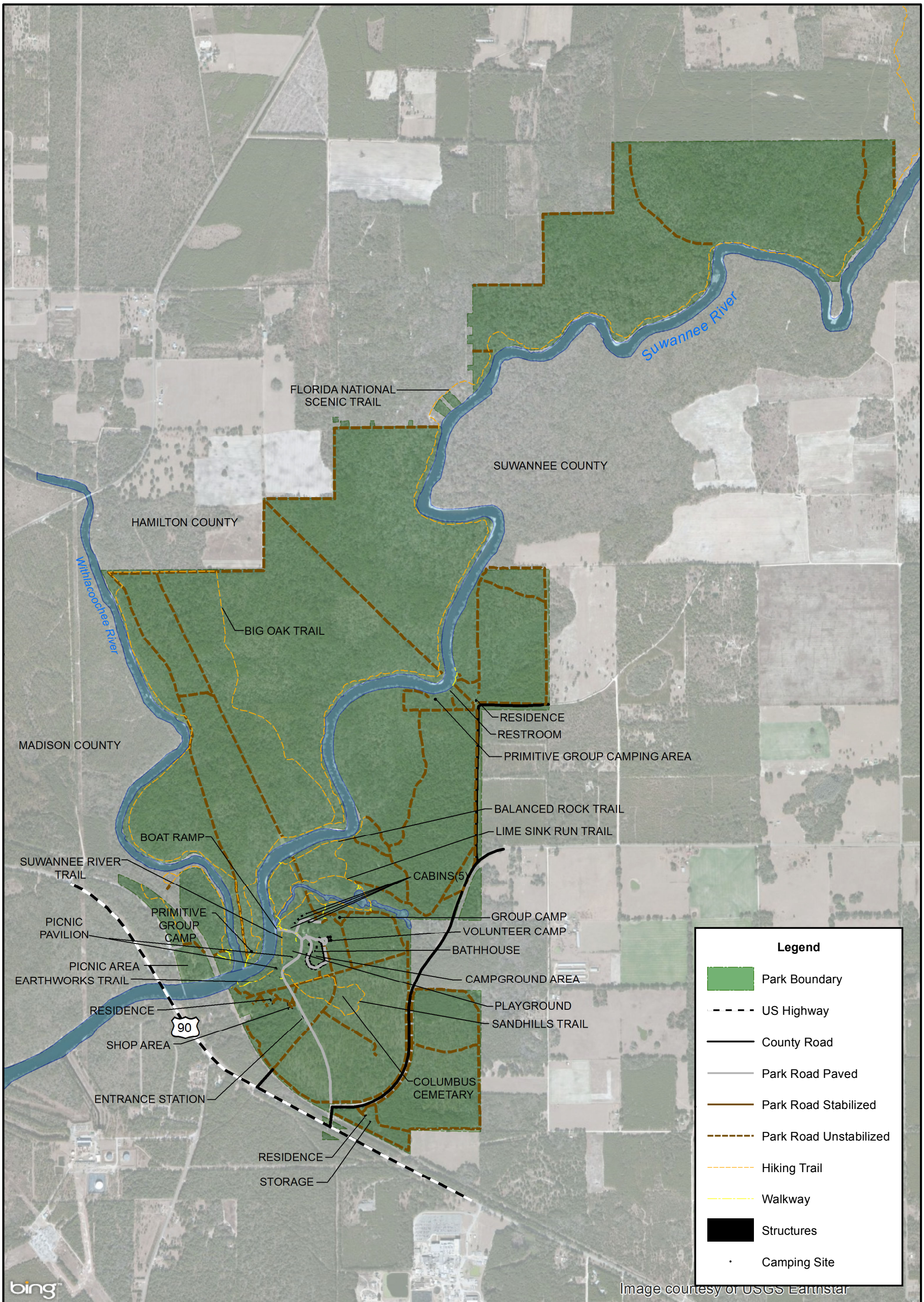
Support Facilities

Shop Area
Residences (2)
Restrooms (2)
Maintenance shop
Equipment shelter
Pump house (2)
Dump station

Parkwide
Parking (70 spaces)

Conceptual Land Use Plan

The following narrative represents the current conceptual land use proposal for this park. The conceptual land use plan is the long-term, optimal development plan for the park, based on current conditions and knowledge of the park's resources, landscape and social setting (see Conceptual Land Use Plan). The conceptual land use plan is modified or amended, as new information becomes available regarding the park's natural and cultural resources or trends in recreational uses, in order to adapt to changing conditions. Additionally, the acquisition of new parkland may provide opportunities for alternative or expanded land uses. The DRP develops a detailed



SUWANNEE RIVER STATE PARK

N

0 750 1,500 3,000 Feet

Florida Department of Environmental Protection
Division of Recreation and Parks
Date of aerial; 2011

BASE MAP

development plan for the park and a site plan for specific facilities based on this conceptual land use plan, as funding becomes available.

During the development of the conceptual land use plan, the DRP assessed the potential impact of proposed uses or development on the park resources and applied that analysis to determine the future physical plan of the park as well as the scale and character of proposed development. Potential resource impacts are also identified and assessed as part of the site planning process once funding is available for facility development. At that stage, design elements (such as existing topography and vegetation, sewage disposal and stormwater management) and design constraints (such as imperiled species or cultural site locations) are investigated in greater detail. Municipal sewer connections, advanced wastewater treatment or best available technology systems are applied for on-site sewage disposal. Creation of impervious surfaces is minimized to the greatest extent feasible in order to limit the need for stormwater management systems, and all facilities are designed and constructed using best management practices to limit and avoid resource impacts. Federal, state and local permit and regulatory requirements are addressed during facility development. 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, park staff monitors conditions to ensure that impacts remain within acceptable levels.

Potential Uses

Public Access and Recreational Opportunities

Goal: Provide public access and recreational opportunities in the park.

The existing recreational activities and programs of this state park are appropriate to the natural and cultural resources contained in the park and should be continued. New and improved activities and programs are also recommended and discussed below.

***Objective: Maintain the park's current recreational carrying capacity of 744 users per day*.**

Resource-based recreation and historic interpretation are the primary recreational uses at Suwannee River State Park. The park will continue to provide a range of day use opportunities and overnight accommodations. Hiking, boating, kayaking and canoeing, picnicking, biking, as well as camping, nature studies and historic interpretation are popular activities for park visitors.

Objective: Expand the park's recreational carrying capacity by 376 users per day.

Opportunities for camping will expand with a new 30-site family camping area, 10 tent-only sites, additional picnicking opportunities, trail improvements and

better signage, as well as more interpretive information at historic and cultural sites.

Objective: Continue to provide the current repertoire of 2 interpretive, educational and recreational programs on a regular basis.

Seasonal interpretive programs and ranger-led tours are offered at Suwannee River State Park. Past interpretive programs have included arts and crafts events, tram rides with narration of local history, and holiday themed activities for families. Additionally, self-guided interpretive signs and kiosks educate visitors about recreational opportunities at the park, significant local natural habitats, and wildlife.

Objective: Develop 2 new interpretive, educational and recreational programs.

There are a number of artifacts from an old sawmill and parts of a steamboat that need additional protection from the elements and can be features of interpretive displays. Interpretive displays will be updated at the earthworks, ferryboat landing/river confluence, and the Columbus Cemetery. These displays should highlight the history of the park, as well as the ecology of the river. A plan for wayfinding within the park to guide visitors to the trails, amenities, and historic features is recommended.

Proposed Facilities

Capital Facilities and Infrastructure

Goal: Develop and maintain the capital facilities and infrastructure necessary to implement the recommendations of the management plan.

The existing facilities of this state park are appropriate to the natural and cultural resources contained in the park and should be maintained. New construction, as discussed further below, is recommended to improve the quality and safety of the recreational opportunities, to improve the protection of park resources, and to streamline the efficiency of park operations. The following is a summary of improved or new facilities needed to implement the conceptual land use plan for Suwannee River State Park.

Objective: Maintain all public and support facilities in the park.

All capital facilities, trails, and roads within the park will be kept in proper condition through the daily or regular work of park staff and/or contracted help.

Objective: Improve/repair 7 existing facilities.

Major repair projects for park facilities may be accomplished within the ten-year term of this management plan, if funding is made available. These include the

modification of existing park facilities to bring them into compliance with the Americans with Disabilities Act (a top priority for all facilities maintained by the DRP). The following discussion of other recommended improvements and repairs are organized by use area within the park.

Recreational Facilities

Day Use Area
The primary day use area will have picnic pavilions and restrooms upgraded to meet ADA accessibility requirements. An additional small picnic pavilion is planned in the picnic area. All added structures should be located outside of the floodplain and should not interfere with the open vista of the river and landscape of the park.

Stormwater management is required at the parking areas and relocating the accessible parking spaces away from the storm drains is recommended. The parking lot storm drain should be redesigned to reroute the stormwater discharge away from the river. Accessible routes from the parking lot to the picnic pavilions and restrooms are planned.

Family Camping Area
A 30-site standard campground is planned to the northeast of the current 30-site campground loop. It should be set back a suitable distance from the rim of the Lime Sink Run ravine to avoid potential adverse environmental impacts. Ten sites for tent camping should be added within the existing camping area. This will also free up some of the larger existing sites that could accommodate RVs.

Primitive Group Camping Area
The existing primitive camping areas will have upgrades to the restrooms, shower facilities, and fire pits.

Earthworks
The boardwalk at the Confederate earthworks will be removed because it is difficult to maintain and poses significant safety concerns during inclement weather. Two observation platforms are planned along the trail to view the earthworks. A trail will be designed along the bottom of the earthworks berm, just offset from where the boardwalk currently runs to discourage visitors from walking on the actual earthworks. This area will also have additional interpretive displays to educate visitors about the earthworks. A structural assessment should be completed for the river overlook near the Confederate earthworks, as flooding could have affected the platform's structural integrity.

Support Facilities

Hickory Bend Primitive Group Camping Area
The ranger residence located near Hickory Bend will be removed, as it is subject to flooding. The historic structure near the ranger station can be repurposed to serve as a residence if needed in the future. Four volunteer RV sites will also be

added near the existing camping area, across the gas line easement. A study of on-site sewer capacity should be conducted.

Shop Area
A new two-bay maintenance shop and pole barn will be added in the support area for equipment storage. These facilities should be constructed west of the office where the historic building is currently located. The historic building could also be used for storage if not needed as a residence.

Parkwide
Trail infrastructure improvements are needed along several trails, including improved interpretation. The existing nature trail signage will be updated, as many signs are difficult to read. There is also a concern for erosion and visitors going off-trail to access the river, which affects steep slopes and exacerbates erosion. In order to mitigate erosion, a new access and platform will be built at Little Gem Springs. Bridge improvements are also recommended at the Lime Sink.

There is a need for a survey of the very northern portion of the park on the northwest boundary in order to enable fence installation. In this same western edge, a boundary survey will be conducted where the park boundary joins the existing subdivision in Hamilton County near the Five Sisters Springs area, which also needs to be fenced.

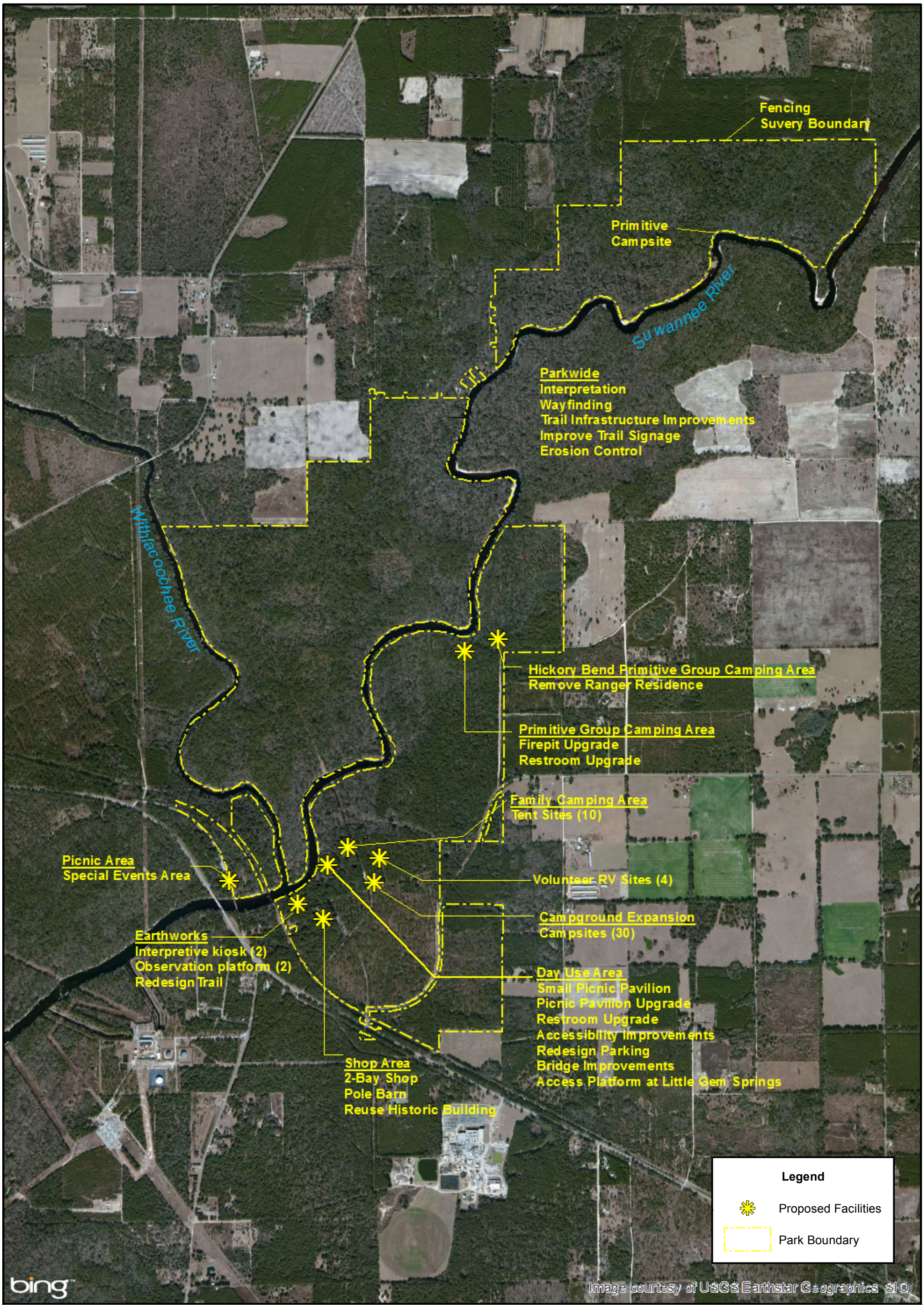
Objective: Construct 2 new facilities.

Picnic Area
Transforming the southwest parcel to the west of the Withlacoochee River into a special events area will increase usage in an otherwise disconnected portion of the park. Adding signage along the road will increase visibility. As the property is within the 100-year floodplain, it limits the use of permanent public facilities. This site is recommended for special events related to the river or planned primitive group camping events.

Hickory Bend Primitive Camping Area
An additional primitive campsite will be constructed on the western side of the Suwannee River towards the northern portion of the park to expand overnight opportunities.

Facilities Development

Preliminary cost estimates for these recommended facilities and improvements are provided in the Ten-Year Implementation Schedule and Cost Estimates (Table 7) located in the Implementation Component of this plan. The preliminary estimates are provided to assist the DRP in budgeting future park improvements, and may be revised as more information is collected through the planning and design processes. New facilities and improvements to existing facilities recommended by the plan include:



SUWANNEE RIVER STATE PARK

N

0 550 1,100 2,200 Feet

Florida Department of Environmental Protection
Division of Recreation and Parks
Date of aerial; 2011

CONCEPTUAL LAND USE PLAN

Recreational Facilities

Day Use Area
Small picnic pavilion
Volunteer RV sites (4)
Platform at Little Gem Springs
Upgrade picnic pavilion
Accessibility improvements
Redesign parking area
Improve bridge

Family Camping Area
Campsites (30)
Tent sites (10)
Firepit upgrades

Earthworks
Interpretive kiosk
Observation platforms (2)
Remove boardwalk

Primitive Group Camping Area
Restroom upgrades

Picnic Area
Develop special events area
Interpretive kiosks (2)

Hickory Bend Primitive Group Camping Area
Remove ranger residence

Parkwide
Primitive camping area
Fencing
Trail infrastructure improvements
Erosion control

Support Facilities

Shop Area
Two-bay shop
Polebarn
Reuse historic building

Recreational Carrying Capacity

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

most appropriate to the specific activity, the activity site and the unit's classification is selected (see Table 6).

Table 6. Recreational Carrying Capacity

Activity / Facility	Existing Capacity*		Proposed Additional Capacity		Estimated Recreational Capacity	
	One Time	Daily	One Time	Daily	One Time	Daily
Hiking	130	260			130	260
Camping						
Standard Camping	240	240	240	240	480	480
Tent Camping			80	80	80	80
Primitive Group Camping	8	8	8	8	16	16
Cabins	60	60			60	60
Group Camping	120	120			120	120
Boating-Limited Power	40	80			40	80
Canoeing/Kayaking	45	90			45	90
Shoreline Fishing	25	50			25	50
Picnicking	48	96	24	48	72	72
TOTAL	**586**	**744**	**352**	**376**	**938**	**1,048**

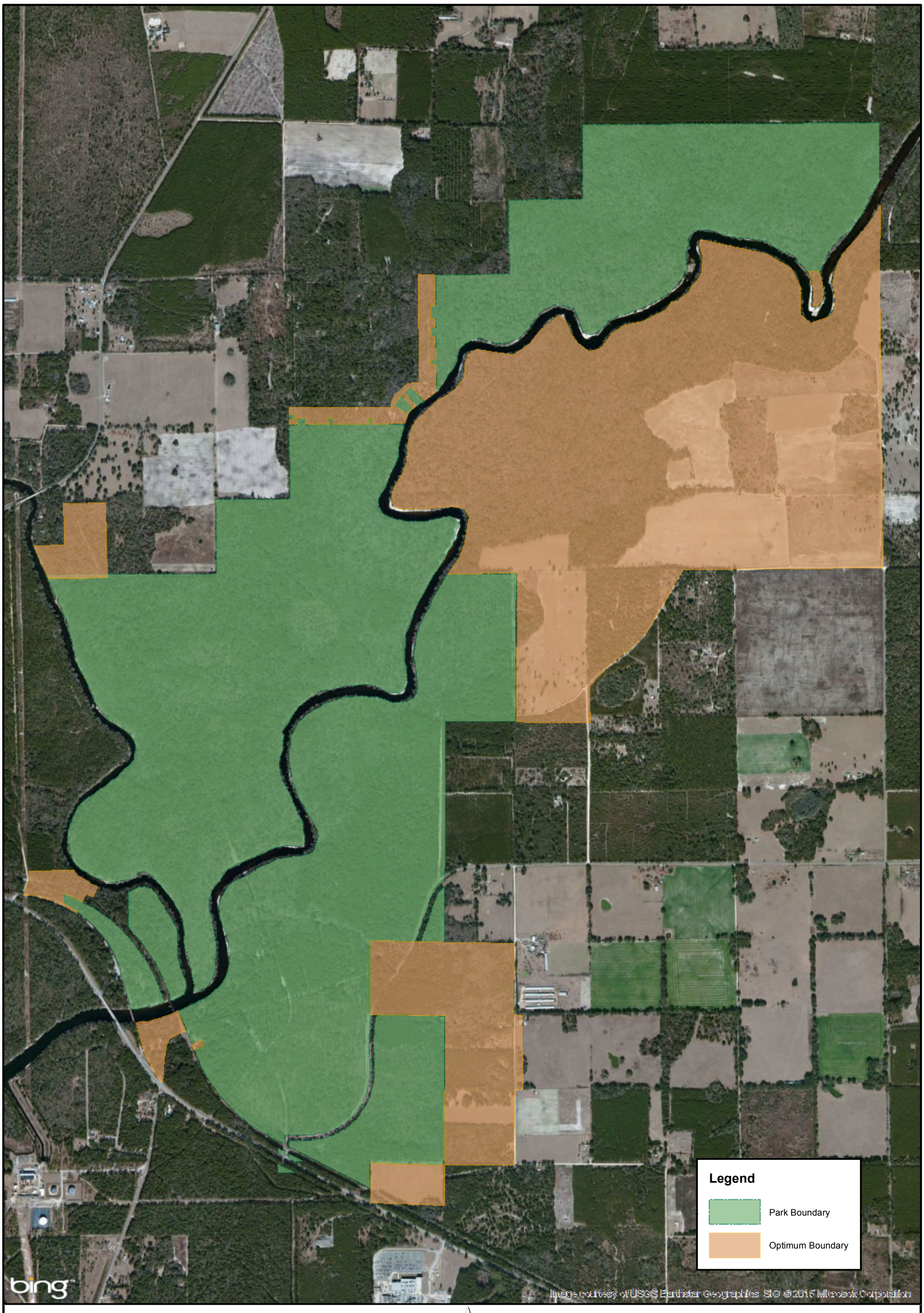
*Existing capacity revised from approved plan according to DRP guidelines.

The recreational 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 6.

Optimum Boundary

The optimum boundary map reflects lands considered desirable for direct management by the DRP as part of the state park. These parcels may include public or privately owned land that would improve the continuity of existing parklands, provide the most efficient boundary configuration, improve access to the park, provide additional natural and cultural resource protection or allow for future expansion of recreational activities. Parklands that are potentially surplus to the management needs of the DRP are also identified. As additional needs are identified through park use, development, and research, and as land use changes on adjacent property, modification of the park's optimum boundary may be necessary.

Identification of parcels on the optimum boundary map is intended solely for planning purposes. It is not to be used in connection with any regulatory purposes. Any party or governmental entity should not use a property's identification on the optimum boundary map to reduce or restrict the lawful



SUWANNEE RIVER STATE PARK

N

0 750 1,500 3,000 Feet

Florida Department of Environmental Protection
Division of Recreation and Parks
Date of aerial; 2011

OPTIMUM BOUNDARY MAP

rights of private landowners. Identification on the map does not empower or suggest that any government entity should impose additional or more restrictive environmental land use or zoning regulations. Identification should not be used as the basis for permit denial or the imposition of permit conditions.

About 170 undeveloped or rural parcels around Suwannee River State Park have been identified as desirable for acquisition (see Optimum Boundary Map). These include 126 parcels of a platted subdivision for mobile homes along the Suwannee River. The acquisition of these lands will add desirable natural resources and will enhance the unit's boundaries for management purposes. Acquisition of these lands will provide opportunities for expanded public recreational use and will help to maintain an adequate buffer from future private development.

IMPLEMENTATION COMPONENT

The resource management and land use components of this management plan provide a thorough inventory of the park's natural, cultural and recreational resources. They outline the park's management needs and problems, and recommend both short and long-term objectives and actions to meet those needs. The implementation component addresses the administrative goal for the park and reports on the Division of Recreation and Parks (DRP) progress toward achieving resource management, operational and capital improvement goals and objectives since approval of the previous management plan for this park. This component also compiles the management goals, objectives and actions expressed in the separate parts of this management plan for easy review. Estimated costs for the ten-year period of this plan are provided for each action and objective, and the costs are summarized under standard categories of land management activities.

Management Progress

Since the approval of the last management plan for Suwannee River State Park in 2002, significant work has been accomplished and progress made towards meeting the DRP's management objectives for the park. These accomplishments fall within three of the five general categories that encompass the mission of the park and the DRP.

Park Administration and Operations

- The park Citizen Support Organization dissolved around 2008, however, the park's volunteer program has been running strong with approximately 93,351 hours in assistance in park support such as facility repairs/improvements and public contact work.

Resource Management

Natural Resources

- Since acquisition, the Management Zones have been identified throughout the park and exotic vegetation have been mapped and logged in the exotic plant data base.
- Approximately 1200 acres of exotic plants have been treated.
- Prescribed burning has resulted in 1,256 acres being burned with most zones in maintenance condition.

Cultural Resources

- In 2014, an archaeology and historical survey was completed by the University of Florida.
- The park continues to actively monitor all known cultural sites.

Recreation and Visitor Services

- The park offers picnicking, camping, cabins, nature trails, group camping, playground and a boat launch.

- In conjunction with Paddle Florida, a non-profit organization, Suwannee River State Park hosts an annual paddling festival with the theme based around spring and water conservation.
- The park is working with Suwannee County Tourist Development to promote the park facilities and opportunities, and has participated in public outreach events such as Christmas on the Square and Suwannee County Wellness Fairs.
- The park also conducts guided hikes as well as annual First Day Hikes.

Park Facilities

- Upgrades to park facilities have consisted of the construction of a new ranger station, campground bathhouse, and paved campground loop. The campground electrical service was upgraded along with the addition of sewer at every campsite and septic system.
- Four new volunteer campsites were constructed each with sewer hook-ups and 20-30-50 amp electrical service.
- The parks interpretive exhibits are continuing to be upgraded and an additional 2 miles of trails have been added.
- The foot bridge over Lime Sink Run has been rebuilt along with the addition of interpretive and trail signage.
- Repairs to the picnic shelters have been made by replacing the posts and railings.
- An ADA Ramp has been constructed at pavilion 2 to increase access. The park is continuing to work on the park transition plan.

Management Plan Implementation

This management plan is written for a timeframe of ten years, as required by Section 253.034 Florida Statutes. The Ten-Year Implementation Schedule and Cost Estimates (Table 7) summarizes the management goals, objectives and actions that are recommended for implementation over this period, and beyond. Measures are identified for assessing progress toward completing each objective and action. A time frame for completing each objective and action is provided. Preliminary cost estimates for each action are provided and the estimated total costs to complete each objective are computed. Finally, all costs are consolidated under the following five standard land management categories: Resource Management, Administration and Support, Capital Improvements, Recreation Visitor Services and Law Enforcement.

Many of the actions identified in the plan can be implemented using existing staff and funding. However, a number of continuing activities and new activities with measurable quantity targets and projected completion dates are identified that cannot be completed during the life of this plan unless additional resources for these purposes are provided. The plan's recommended actions, time frames and cost estimates will guide the DRP's planning and budgeting activities over the period of this plan. It must be noted that these recommendations are based on the information that exists at the time the plan was prepared. A high degree of adaptability and flexibility must be built into this process to ensure that the DRP can adjust to changes in the availability of funds, improved understanding of the park's

natural and cultural resources, and changes in statewide land management issues, priorities and policies.

Statewide priorities for all aspects of land management are evaluated each year as part of the process for developing the DRP's annual legislative budget requests. When preparing these annual requests, the DRP considers the needs and priorities of the entire state park system and the projected availability of funding from all sources during the upcoming fiscal year. In addition to annual legislative appropriations, the DRP pursues supplemental sources of funds and staff resources wherever possible, including grants, volunteers and partnerships with other entities. The DRP's ability to accomplish the specific actions identified in the plan will be determined largely by the availability of funds and staff for these purposes, which may vary from year to year. Consequently, the target schedules and estimated costs identified in Table 7 may need to be adjusted during the ten-year management planning cycle.

Table 7
Suwannee River State Park Ten-Year Implementation Schedule and Cost Estimates
Sheet 1 of 4

NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.				
Goal I: Provide administrative support for all park functions.		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10-years)**
Objective A	**Continue day-to-day administrative support at current levels.**	**Administrative support ongoing**	**C**	**$691,441**
Objective B	**Expand administrative support as new lands are acquired, new facilities are developed, or as other needs arise.**	**Administrative support expanded**	**C**	**$349,438**
Goal II: Protect water quality and quantity in the park, restore hydrology to the extent feasible, and maintain the res		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10-years)**
Objective A	**Conduct/obtain an assessment of the park's hydrological needs.**	**Assessment conducted**	**ST or LT**	**$155,860**
Action 1	Continue to cooperate with other agencies and researchers regarding hydrological research and monitoring programs within the park springsheds, particularly Lime Sink Run spring cluster, Seven Sisters, and Suwanacoochee	Cooperation ongoing	C	$4,000
Action 2	Pursue funding for dye trace studies to determine the groundwater sources for spring systems in the park	Funding acquired	ST	$360
Action 3	Conduct dye trace studies of multiple springs in the park to facilitate delineation of springsheds	Study conducted	UFN	$90,000
Action 4	Continue to monitor, review and comment on proposed land use/zoning changes within lands bordering the park	Assessment ongoing	C	$15,000
Action 5	Continue to monitor mining operations in the Suwannee watershed for significant changes that might adversely affect park resources	Monitoring ongoing	C	$2,300
Action 6	Continue efforts to acquire the private property at the head of Lime Sink Run	Property acquired	UFN	$42,200
Action 7	Continue to cooperate with the SRWMD to ensure conscientious development and implementation of MFLs for the Upper Suwannee River	Cooperation ongoing	C	$2,000
Objective B	**Restore natural hydrological conditions and functions to approximately 5 acres of Bottomland Forest and 3.5 acres of Spring-run Stream natural communities.**	**Impacts determined, # of acres restored**	**UFN**	**$132,800**
Action 1	Assess hydrological impacts of the gas pipeline and other utility easements and potentially restore hydrology in areas where easement construction may have negatively affected natural sheet flow in adjacent bottomland forest	Assessments conducted	LT/UFN	$31,400
Action 2	Assess the effects of remnant dam structures on the natural hydrology of Lime Sink Run	Assessment conducted	UFN	$1,400
Action 3	Remove remnant dam structures in Lime Sink Run if hydrological assessment indicates a need for it	Restoration complete	UFN	$100,000
Objective C	**Evaluate and mitigate the impacts of soil erosion in the park.**	**Monitoring ongoing**	**C**	**$8,800**
Action 1	Develop and implement erosion control measures, using best management practices, for public access points such as hiking trails along the Suwannee River shoreline, boat launches and the Seven Sisters Spring area	Controls implemented	UFN	$4,200
Action 2	Develop and implement protocols for monitoring erosion caused by unauthorized visitor access to Seven Sisters Spring and its associated karst features	Protocols implemented	ST	$1,000
Action 3	Reroute or modify the trail to the Seven Sisters springs area using best management practices to minimize erosion and divert stormwater into surrounding woodlands	Trail reroute or modifications completed	ST	$2,200

* 2016 Dollars
ST = actions within 2 years
LT = actions within 10 years
C = long term or short term actions that are continuous or cyclical
UFN = currently unfunded need

Table 7
Suwannee River State Park Ten-Year Implementation Schedule and Cost Estimates
Sheet 2 of 4

NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.				
Action 4	Develop and implement protocols for monitoring erosion along authorized park trails, especially near Lime Sink Run, and identify and mitigate significant points of erosion	Protocols implemented	LT	$1,400
Goal III: Restore and maintain the natural communities/habitats of the park.		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10-years)**
Objective A	**Within 10 years, have 650 acres of the park maintained within optimal fire return interval.**	**# Acres within fire return interval target**	**LT**	**$279,140**
Action 1	Develop/update annual burn plan.	Plan updated	C	$16,000
	Manage fire dependent communities for ecosystem function, structure and processes by burning between 200 - 550 acres annually, as identified by the annual burn plan.	Average # acres burned annually	C	$245,300
Action 2	Increase frequency of prescribed burns in zones that are fire suppressed, particularly zones 8, 3A, and 3B	Burn frequency increased in fire suppressed zones	LT	$17,840
Objective B	**Conduct habitat/natural community restoration activities on 25 acres of Sandhill and Upland Mixed Woodland communities.**	**# of acres restored**	**LT**	**$33,600**
Action 1	Survey zone 4A for remnant populations of upland mixed woodland species and map any found	Survey completed	LT	$600
Action 2	Develop and implement a restoration plan for zone 4A that potentially includes removal of offsite hardwood and pine species and restocking of groundcover species	Restoration plan implemented	UFN	$33,000
Objective C	**Conduct natural community/habitat improvement activities on 5 acres of Upland Pine community.**	**# of acres improved**	**LT**	**$36,100**
Action 1	Survey the northern portion of zone 3B for remnant populations of upland pine species to define the boundary between sandhill and upland pine more clearly	Survey completed	ST	$400
Action 2	Reestablish the longleaf pine overstory and herbaceous groundcover in upland pine areas devastated by pine beetles	Plantings completed	UFN	$35,700
Objective D	**Conduct natural community/habitat improvement activities on 14 acres of Sandhill community.**	**# acres improved**	**LT**	**$100,600**
Action 1	Survey zone 5 for remnant populations of sandhill species and map any found	Survey completed	ST	$600
Action 2	Develop and implement a restoration plan for zone 5 that potentially includes removal of offsite hardwood and pine species and restocking of groundcover species	Restoration plan implemented	UFN	$100,000
Objective E	**Assess impacts of human-derived fragmentation on the park's natural communities**	**# acres improved**	**LT**	**$400**
Action 1	Evaluate the ecological impact of human-derived fragmentation of the park's natural communities	Evaluation complete	LT	$400
Goal IV: Maintain, improve or restore imperiled species populations and habitats in the park.		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10-years)**
Objective A	**Update baseline imperiled species occurrence inventory lists for plants and animals, as needed.**	**List updated**	**C**	**$2,000**
Action 1	Conduct surveys for imperiled animal species in the park to ensure that all imperiled species are documented	Survey completed	LT	$2,000
Objective B	**Monitor and document 4 selected imperiled animal species in the park.**	**# Species monitored**	**C**	**$8,642**
Action 1	Continue to cooperate with North Florida Springs Alliance divers and other cave divers to implement monitoring protocols for the Pallid Cave Crayfish	Protocols implemented	C	$3,250
Action 2	Continue to cooperate with FFWCC staff to survey for the Florida mouse and confirm if it exists in the park	Florida mouse survey completed	LT	$5,000
Action 3	Continue to record sightings of the Sherman's fox squirrel within the park.	# of sightings recorded	C	$392
Objective C	**Monitor and document 2 selected imperiled plant species in the park.**	**# Species monitored**	**C**	**$600**

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Table 7
Suwannee River State Park Ten-Year Implementation Schedule and Cost Estimates
Sheet 3 of 4

NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.				
Action 1	Conduct additional surveys for Florida mountain mint and angle pod	Surveys completed.	LT	$600
Goal V: Remove exotic and invasive plants and animals from the park and conduct needed maintenance-control.		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10-years)**
Objective A	**Annually treat 22 acres of exotic plant species in the park.**	**# Acres treated**	**C**	**$33,120**
Action 1	Annually develop/update exotic plant management work plan	Plan developed and updated	C	$16,200
Action 2	Implement annual work plan by treating 22 acres of exotic plants every year, particularly Japanese climbing fern, and continuing maintenance and follow-up treatments as needed	Plan implemented	C	$16,920
Objective B	**Develop and implement measures to prevent accidental introduction or spread of invasive exotic plants in the park.**	**# of new exotics identified**	**C**	**$350**
Action 1	Develop equipment maintenance protocol for the park and contractors to prevent the spread of exotic plants via contaminated vehicles/equipment	Protocol developed and implemented	ST	$350
Objective C	**Implement control measures on 1 exotic and nuisance animal species in the park.**	**# Species for which control measures implemented**	**C**	**$20,000**
Action 1	Establish and implement monitoring procedures for exotic and nuisance animals, particularly feral hogs, and remove them from the park as needed	Monitoring and removal procedures implemented	UFN	$20,000
Goal VI: Protect, preserve and maintain the cultural resources of the park.		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10-years)**
Objective A	**Assess and evaluate 27 of 27 recorded cultural resources in the park.**	**Documentation complete**	**C**	**$32,949**
Action 1	Assess all 27 known cultural resources and document them in written and photographic format. Documentation should be consistent so changes can be compared over the years	Assessments completed	LT	$2,149
Action 2	Prioritize future preservation and rehabilitation treatments based on the assessments.	Prioritization completed	LT	$800
Action 3	Prepare Historic Structure Reports (HSR) for Pavilions 2 and 3 (SU00410 and SU00411) and prioritize repairs and restoration as identified by the HSR	Repairs prioritized and reports complete	UFN	$30,000
Objective B	**Compile reliable documentation for all recorded historic and archaeological sites.**	**Documentation complete**	**LT**	**$80,391**
Action 1	Determine priority areas for Level 1 archaeological survey based on results of the recently completed predictive model (2012)	Assessment completed	UFN	$74,000
Action 2	Review historic documents and photos relating to the Ranger Station (SU00416), Old Ellaville (MD0058), the Confederate Earthworks (SU00035), the Drew Mansion (near the park), and other cultural sites and structures from the 1950s and 1960s, and update FMSF forms as needed	FMSF forms completed or updated.	LT	$3,762
Action 3	Develop a Scope of Collections Statement for the park	Scope of Collections Statement completed	ST	$2,629
Objective C	**Bring 10 of 27 recorded cultural resources into good condition.**	**# sites in good condition**	**LT**	**$50,013**
Action 1	Develop and implement a regular monitoring plan for protective and preventative maintenance of the Park's cultural resources	Monitoring plan developed and implemented	C	$2,213
Action 2	Create and implement a cyclical maintenance program for the park's cultural resources and implement repairs in the following order of priority: Confederate Earthworks (SU00035),Columbus Cemetery (SU00362), Pavilion 2 (SU00410), Pavilion 3 (SU00411), Workshop (SU00413), Storage/Equipment (000406), Laundry Camp (SU00412), Pumphouse/Storage (SU00409), Suwannee River Pumphouse (SU00414), Restroom-Group Areas (SU00408)	Programs implemented	UFN	$47,800

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Table 7
Suwannee River State Park Ten-Year Implementation Schedule and Cost Estimates
Sheet 4 of 4

NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.

Goal VII: Provide public access and recreational opportunities in the park.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Maintain the park's current recreational carrying capacity of 936 users per day.	# Recreation/visitor opportunities per day	C	$518,581
Objective B	Expand the park's recreational carrying capacity by 424 users per day.	# Recreation/visitor opportunities per day	LT	$262,078
Objective C	Continue to provide the current repertoire of 2 interpretive, educational and recreational programs on a regular basis.	# Interpretive/education programs	C	$10,000
Objective D	Develop 2 new interpretive, educational and recreational programs.	# Interpretive/education programs	LT	$14,000
Goal VIII: Develop and maintain the capital facilities and infrastructure necessary to meet the goals and objectives		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10-years)**
Objective A	Maintain all public and support facilities in the park.	Facilities maintained	C	$1,210,021
Objective B	Continue to implement the park's transition plan to ensure facilities are accessible in accordance with the American with Disabilities Act of 1990.	Plan implemented	LT	$55,000
Objective C	Improve and/or repair 5 existing facilities as identified in the Land Use Component.	# Facilities/Miles of Trail/Miles of Road	LT	$2,304,000
Objective D	Construct 2 new facilities as identified in the Land Use Component.	# Facilities/Miles of Trail/Miles of Road	LT	$1,224,000
Objective E	Expand maintenance activities as existing facilities are improved and new facilities are developed.	Facilities maintained	C	$611,516

Summary of Estimated Costs

Management Categories		Total Estimated Manpower and Expense Cost* (10-years)
Resource Management		$976,000
Administration and Support		$1,040,879
Capital Improvements		$3,583,000
Recreation Visitor Services		$2,626,197
Law Enforcement Activities		
	Note: Law enforcement activities in Florida State Parks are conducted by the FWC Division of Law Enforcement and by local law enforcement agencies.	

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UFN = currently unfunded need

Addendum 1—Acquisition History

LAND ACQUISITION HISTORY REPORT	
Park Name	Suwannee River State Park
Date Updated	12/8/2015
County	Madison, Hamilton and Suwannee counties, Florida
Trustees Lease Number	3643 (originally Lease No. 2324)
Current Park Size	1,928.90 acres.
Purpose of Acquisition	The State of Florida has acquired Suwannee River State Park for park purpose.

Acquisition History

Parcel Name or Parcel DM-ID	Date Acquired	Initial Seller	Initial Purchaser	Size in Acres	Instrument Type
MDID 11932	11/6/1945	Trustees of the Internal Improvement Fund of the State of Florida	Florida Board of Forestry and Parks	578.894	Deed
MDID 11931	6/14/1950	C.B. Warner and his wife Emma Warner	Florida Board of Parks and Historic Memorials (FBPHM)	279.171	Indenture
MDID 11930	12/18/1951	State of Florida	Florida Power Corporation	120.782	Warranty Deed
MDID 364650	6/16/1951	Pearl E Noegel charles R. Noegel and his wife Helen L. Noegel	State of Florida	23.67	Indenture
MDID 4394	1/31/1989	Jere L. Moore	The Board of Trustees of the Internal Improvement Trust Fund of the State of Florida (Trustees)	14.909	Warranty Deed
MDID 4395	1/31/1989	Jere L. Moore	Trustees	14.903	Indenture
MDID 4396	11/6/1987	Wendell M. Daniels and his wife Shirley Daniels	Trustees	11.61	Warranty Deed
MDID 364649	9/19/1949	Florida Board of Forestry	FBPHM	11.407	Dindenture

Management Lease

Parcel Name or Lease Number	Date Leased	Initial Lessor	Initial Lessee	Current Term	Expiration Date
Lease No. 2324	1/23/1968	Trustees of the Internal Improvement Fund of the State of Florida	The Florida Board of Parks and Historic Memorials	99	1/22/2067

Outstanding Issue	Type of Instrument	Brief Description of the Outstanding Issue	Term of the Outstanding Issue
There is no known deed restriction that applies to Suwannee River State Park.			

Addendum 2—Advisory Group Members and Summary Report

Local Government Representatives

The Honorable Clyde Fleming,
Suwannee County Board of
County Commissioners

Agency Representatives

Craig Liney, Manager
Suwannee River State Park

Terry Doonan, Biologist
Florida Fish and Wildlife
Conservation Commission

Doug Longshore, Forester
Florida Forest Service

Jason Williams, Chair
Suwannee County Soil and Water
Conservation District

Environmental and Conservation Representatives

Valerie Thomas, President
Four River Audubon

Tourism and Economic Development Representatives

Jim Norris, Executive Director
Suwannee River Chamber of
Commerce

Recreational User Representatives

Dale Nanny,
Suwannee Bike Association

Andre Marcil,
Florida Trail Association

Adjacent Landowners

Chris Mericle, Local Private
Property Owner

Citizens Support Organization

Mike Stine, President
North Florida Springs Alliance

The advisory group meeting to review the proposed unit management plan for Suwannee River State Park was held at the Suwannee River Water Management District Complex on July 27, 2016.

Commissioner Clyde Fleming represented Chairman Jason Bashaw. Andre Marcil represented Norm McDonald. Dale Nanny represented Sharon Shea. Jason Williams and Jim Norris were not in attendance. All other appointed advisory group members were present, as well as Edwin McCook and Michael Toffolo.

Attending Division of Recreation and Parks (DRP) staff were Clif Maxwell, Brian Fugate, Craig Liney, Rick Owen, Jason Mahon, and Tyler Maldonado.

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

Summary of Advisory Group Comments

Clyde Fleming (Suwannee County Board of County Commissioners) expressed his gratitude for being able to represent Suwannee County on the advisory group. He stated his concerns about the Sabal Trail pipeline that is due to be constructed underground below the park property. He inquired about the possible water quality impacts related to the use of herbicides in treating invasive plant species.

Doug Longshore (Florida Forest Service) pointed out that the timber assessment included in the plan was conducted in 2002 and suggested the timber assessment should be updated. He asked if there were any plans to improve access and develop infrastructure in the northern portions of the park. The operations and maintenance issues related to developing facilities in the northern portions of the park were stated, and the difficulty of monitoring visitor usage in this area was discussed. He commented on the historical interpretation opportunities at the park and suggested the park should include more interpretation of the historical and cultural resources. In regards to natural community restoration efforts, he recommended that restoration objectives should propose a larger number of acres to be restored in order to increase cost-effectiveness.

Terry Doonan (Florida Fish and Wildlife Conservation Commission) questioned the plan's ability to address uncertainty in future conditions related to climate change, adaptation, and funding. He stated the plan should detail how changing conditions will affect the management of the park. He commented that the acreage slated for natural community restoration seemed to be a small amount and suggested revising the figure to have a larger amount of acreage scheduled for restoration efforts. It was clarified that the acreage is an amount that is considered reasonably achievable, and the natural community restoration objective does not limit more acreage from being restored if it is determined that an increase is possible. He

stated that natural community restoration and habitat conservation should be top priorities for the park. He discussed the need to reexamine the exotic and invasive species list to rectify any possible misinterpretations of species that should not be considered an exotic or invasive species. He suggested there should be a key included in the imperiled plant and animal addendum to define the acronyms that indicate the natural communities in which the imperiled species can be found. He stated he would be interested in working with the DRP to update the imperiled species list to include bat species that may be found at the park. To conclude, he applauded the Florida Park Service on their management of the state parks.

Chris Mericle (Local Property Owner) expressed his satisfaction with the plan that he described as well thought-out and detailed. He commented on the in-depth descriptions of the soil types, natural communities, imperiled plant and animal species, hydrology, and archaeological sites. He stated his concern about the language in the plan that refers to revenue generation from secondary uses such as timber operations. He recommended the language should be restated to clarify how secondary uses are compatible with the park's single-use designation. It was explained that revenue generation from potential secondary uses is for resource management purposes, and the park's single-use designation will remain to provide public access for resource-based outdoor recreation while conserving natural resources. He inquired about the water quality impacts associated with spraying herbicides to remove invasive plant species and suggested that the plan should describe the potential environmental impacts of herbicide usage. He advised the DRP that the plan cannot be considered comprehensive without detailing the potential impacts the Sabal Trail pipeline may have on the park's resources. He discussed his concerns regarding the potential impact the pipeline could have on the springs at the park and in the surrounding area. He stated this infrastructure project will lead to further fragmentation of the park's ecosystem. As such, he recommended that the plan should list all of the potential impacts the pipeline could have on the park. Mr. Mericle also voiced his concern with the plan's proposal to add another camping loop and double the total number of campsites. He commented on the possible impacts the new campsites could have on water quality, erosion, and wildlife habitat degradation at the park. He added that increasing the number of campsites could also mean an increase in the amount of boats using the boat ramp, which would have an impact on the recreational carrying capacity. Lastly, he noted a few discrepancies in the plan that should be addressed.

Valerie Thomas (Four River Audubon) expressed her apprehension to the proposed addition of a new camping loop to include 30 RV campsites. She stated her concern that additional campsites would detrimentally impact the surrounding natural communities and would require an increase in the wastewater capacity that could potentially impact the park's water resources. Other than the potential environmental impacts associated with the proposed campsite additions, she applauded the DRP's emphasis on water quality. She noted that there is a perceived pressure for the state parks to increase the amount of revenue generated, and she worried that the secondary uses identified as possible sources of revenue generation could fundamentally alter the use of the park. She recommended that

the plan should propose methods that could be used to monitor the Southeastern American Kestrel population at the park.

Dale Nanny (Suwannee Bike Association) stated that he was pleased to represent the Suwannee Bike Association on the advisory group. Based on his experience around the country, he noted that he would like to see more biking trails in the Florida State Parks.

Andre Marcil (Florida Trail Association) asked if there were any plans to reroute the Florida National Scenic trail (FNST) and inquired about how the usage of the FNST in the northern portion of the park is monitored. He proposed that a cable bridge should be developed over the Suwannee River in order for hikers to access the Big Oak trail in the northern portion of the park. He noted that the park may be losing revenue as a result of visitors entering the park from the north in Hamilton County, and a cable bridge near the main day use area in Suwannee County could help capture some of this lost revenue. He stated that the current price for the campgrounds is too low compared to private campground facilities and suggested that there should be different prices for in-state and out-of-state visitors. He also recommended that the boat ramp should have a lower price for visitors who are only putting their boat in and are not using the camping facilities.

Michael Stine (North Florida Springs Alliance) noted that he was pleased to see the plan's emphasis on natural community restoration. Although cave diving is conducted for scientific purposes that results in a wealth of data and knowledge used by the DRP, Mr. Stine pointed out that the plan does not allow for recreational cave diving. He expressed his desire to have cave diving included as an allowable recreational activity at the park.

Summary of Written Comments from Advisory Group Members

There were no written comments submitted by advisory group members.

Summary of Public Comments

Edwin McCook discussed the ongoing issues associated with removing invasive plant species from the park. He noted that the Japanese climbing fern is especially prevalent along the river banks. He commented that the presence of this invasive plant species on private property and the park's inability to treat it on these properties is one of the main barriers to removing the Japanese climbing fern from park property. He recommended that there should be a coordinated effort among private land owners and public land management agencies to work together on the treatment of invasive plant species.

Michael Toffolo stated that he is a member of the Suwannee Bike Association and was only attending the advisory group meeting to observe.

Staff Recommendations

The staff recommends approval of the proposed management plans for Suwannee River State Park as presented, with the following significant changes:

- Discrepancies in resource management component related to the springs found at the park will be corrected, and the Southeastern American Kestrel will be added to the imperiled species monitoring objective.

- The Special Management Considerations section, which includes language on the timber assessment, arthropod control plan, and additional considerations, will be added to the resource management component.

- An updated timber assessment from 2012 will replace the outdated timber assessment addendum in the advisory group draft of the plan.

Notes on Composition of the Advisory Group

Florida Statutes Chapter 259.032 Paragraph 10(b) establishes a requirement that all state land management plans for properties greater than 160 acres will be reviewed by an advisory group:

"Individual management plans required by s. 253.034(5), for parcels over 160 acres, shall be developed with input from an advisory group. Members of this advisory group shall include, at a minimum, representatives of the lead land managing agency, co-managing entities, local private property owners, the appropriate soil and water conservation district, a local conservation organization, and a local elected official."

Advisory groups that are composed in compliance with these requirements complete the review of State park management plans. Additional members may be appointed to the groups, such as a representative of the park's Citizen Support Organization (if one exists), representatives of the recreational activities that exist in or are planned for the park, or representatives of any agency with an ownership interest in the property. Special issues or conditions that require a broader representation for adequate review of the management plan may require the appointment of additional members. The Division's intent in making these appointments is to create a group that represents a balanced cross-section of the park's stakeholders. Decisions on appointments are made on a case-by-case basis by Division of Recreation and Parks staff.

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Addendum 4 — Soil Descriptions

Hamilton County:

(7) Kenansville fine sand, 0 to 5 percent slopes, occasionally flooded – This very deep, well drained soil is on the flood plains of rivers and creeks. Typically, the surface layer is dark brown fine sand 9 inches thick. The subsurface layer extends to a depth of 23 inches and is yellowish brown fine sand. The subsoil reaches to 58 inches and is dark yellowish brown sandy loam in the upper parts and is yellowish brown sandy loam in the lower parts. Beneath this to 80 inches or more is light yellowish brown loamy sand that has yellowish brown loamy layers. The seasonal high water table is more than six feet below the surface and the soil will experience occasional flooding. Included in this mapping unit are small areas of Blanton and Ocilla soils, dissimilar soils, and soils with slopes of 5 to 8 percent having a loamy subsoil within a depth of 20 inches.

(22) Alpin fine sand, 0 to 5 percent slopes, occasionally flooded - This very deep, excessively drained soil is on river and creek terraces. Typically, the surface layer is dark grayish brown fine sand about 3 inches thick. To a depth of 15 inches is the upper part of the subsurface layer made up of light yellowish brown fine sand. The next layer of the subsurface soil to 50 inches is very pale brown grading to yellow fine sand and below this to 72 inches is very pale brown sand grading to white sand that has thin layers of very pale brown loamy sand. In the lower positions are small areas of Blanton soils that are included in this mapping. This Alpin fine sand has a 6 foot depth to the seasonal water table and has occasional flooding.

(35) Wahee fine sandy loam, 0 to 4 percent slopes - These are very deep, somewhat poorly drained soils on floodplains along rivers or creeks. Occasional flooding may occur for long periods following prolonged, high intensity rains. Typically, the surface layer is very dark gray fine sandy loam 5 inches thick underlain by brown grading to gray clay to a depth of 56 inches, and gray sandy clay loam to depths of 80 inches or more. Included with this soil in mapping are small areas of Eunola and Ocilla soils and of loamy soils and similar soils with sandy surface and subsurface layers more than 20 inches thick and a slope of 5 to 8 percent. Wahee soils have slow permeability and the seasonal high water table is at 6 to 18 inches for December through March during most years.

(37) Eunola loamy fine sand, 0 to 5 percent slopes, occasionally flooded - These are deep, moderately well drained soils along rivers and creeks. Typically, they have grayish brown loamy fine sand surface layers about 6 inches thick, underlain by a transition layer of light yellowish brown sandy loam to depths of 10 inches. Underlying this is a subsoil of dark yellowish brown grading to yellowish brown sandy clay loam to depths of 54 inches. Below this to 68 inches is a layer of brownish yellow fine sandy loam that is transitional to the substrata at 80 inches or more and is very pale brown loamy sand that has strata of sandy loam. Included with this soil in mapping are small areas with similar soils of Blanton, Ocilla, and Wahee and

small areas with sandy surface layers more than 20 inches thick and that have a slope of 5 to 8 percent. Eunola soils have a moderate permeability and the seasonal high water table is at 18 to 30 inches below the soil surface from November through March during most years.

(47) Goldhead fine sand, 0 to 5 percent slopes - This soil is very deep and poorly drained and is in the interstream divides of uplands. Typically, the surface layer is about 4 inches thick and black grading to dark gray fine sand. The subsurface layer is light gray fine sand to 36 inches. The subsoil is made up of dark gray sandy loam grading to very dark gray sandy loam to a depth of 80 inches. Included with this soil in mapping in the higher positions are areas of Albany and Wampee soils. Goldhead soils have moderate permeability and a seasonal high water table at the surface to a depth of 1 foot from July to March.

(51) Bigbee fine sand, undulating, occasionally flooded - This is a very deep, excessively drained soil on creek and river terraces. Typically, the surface layer is light brownish gray fine sand about 9 inches thick. Below this are layers of fine sand which to a depth of 20 inches is dark yellowish brown. Below this to 55 inches is pale brown grading to brown fine sand and to a depth of 80 inches is light gray fine sand. This Bigbee fine sand has a rapid permeability and an 80 inch depth to the seasonal high water table.

<u>Suwannee County</u>:

(7) Bigbee-Garcon-Meggett complex, occasionally flooded – This complex makes up 90 percent of the soil map unit. Chipley and Blanton soils make up the remaining 10 percent. The typical profile contains fine sand in the surface and subsurface layers. The subsoil layer is typically sandy loam and sandy clay. The parent materials are sandy, loamy, and clayey marine and fluvial sediments. This soil is occasionally flooded. The available water capacity is very low to low in the Bigbee and Garcon soils. Available water capacity is high in the Meggett soil. The depth to the water table ranges from 0 inches in the Garcon soil to 72 inches in the Bigbee soil.

(29) Alpin fine sand, 0 to 5 percent slopes – This map unit consists of 80 percent Alpin fine sand. Blanton and Chipley soils make up the remaining 20 percent of this unit. Typically, the profile contains fine sand to 80 inches. The parent materials are sandy marine deposits. The soil is excessively drained, and the available water capacity is very low. The depth to the water table is more than 6 feet.

(38) Alpin fine sand, 0 to 5 percent slopes, occasionally flooded – This unit consists of 91 percent Alpin fine sand. Typically, the profile contains fine sand to 80 inches. The parent materials are sandy marine deposits. The soil is occasionally flooded. The available water capacity is very low. The depth to the water table is more than 6 feet. Blanton and Foxworth soils make up the remaining 19 percent of this unit.

(51) Plummer fine sand – This is a nearly level sandy soil that is poorly drained and low in organic matter and natural fertility. The available water capacity is very low. Plummer and similar soils are the major components of the map unit (85 percent), whereas Albany and Sabelo soils are contrasting inclusions (the remaining 15 percent). A typical profile is a surface layer of 0 to 7 inches of black fine sand atop a subsurface of grayish brown/gray/light gray fine sand (7 to 55 inches). Yellowish brown mottles appear between 22 and 55 inches. Subsoil (55 to 80 inches) is typically a gray sandy clay loam that has white sand coatings and yellowish brown mottles. The parent materials are sandy and loamy marine sediments.

Madison County:

(78) Alpin fine sand, occasionally flooded – This soil is nearly level to gently sloping and is in excessively drained uplands adjacent to floodplains. Typically, the surface layer is dark brown fine sand about 4 inches thick. The subsurface layer has two parts. The upper part is light yellowish brown fine sand and below this to 55 inches is very pale brown fine sand. The subsoil below this to 80 inches is white fine sand that has horizontal bands of yellowish brown sand. The seasonal water table is below 72 inches of the surface. Included in this mapping unit are small areas of Eunola and Troup soils that have loamy subsoils from 20 to 40 inches.

(79) Eunola fine sand, occasionally flooded - This soil is nearly level to gently sloping and is a somewhat poorly drained soil of low river terraces. Typically, the surface layer is dark grayish brown fine sand about 7 inches thick. To 12 inches is the subsurface layer made up of pale brown loamy fine sand. Below this the subsoil reaches to 65 inches and occurs in the following sequence from upper to lower layers: yellowish brown sandy clay loam; strong brown sandy clay loam; strong brown sandy clay and sandy clay loam that have gray, red, and brown mottles; and brownish yellow loamy fine sand that has brown and red mottles. The substratum to about 80 inches is white fine sand that has brown mottles. The seasonal high water table is at 18 to 30 inches. Some soils occurring in this mapping unit are similar to this Eunola soil but have a sandy surface layer more than 20 inches thick.

Addendum 5—Plant and Animal List

Suwannee River State Park
Plants

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

PTERIDOPHYTES

Ebony spleenwort ..... *Asplenium platyneuron*
Southern lady fern ..... *Athyrium filix-femina* subsp. *asplenioides*
Southern grape-fern ..... *Botrychium biternatum*
Creeping bramble fern ..... *Hypolepis repens*
Japanese climbing fern ..... *Lygodium japonicum* *
Cinnamon fern ..... *Osmunda cinnamomea*
Royal fern ..... *Osmunda regalis* L. var. *spectabilis*
Resurrection fern ..... *Pleopeltis polypodioides* var. *michauxiana*
Tailed bracken ..... *Pteridium aquilinum* var. *pseudocaudatum*
Hairy maiden fern ..... *Thelypteris hispidula* var. *versicolor*

GYMNOSPERMS

Red cedar ..... *Juniperus virginiana*
Shortleaf pine; Yellow pine ..... *Pinus echinata*
Slash pine ..... *Pinus elliottii*
Spruce pine ..... *Pinus glabra*
Longleaf pine ..... *Pinus palustris*
Loblolly pine ..... *Pinus taeda*
Bald-cypress ..... *Taxodium distichum*

ANGIOSPERMS

MONOCOTS

Elliott's bluestem ..... *Andropogon gyrans*
Splitbeard bluestem ..... *Andropogon ternarius*
Greendragon ..... *Arisaema dracontium*
Wiregrass ..... *Aristida stricta* var. *beyrichiana*
Common carpetgrass ..... *Axonopus fissifolius*
Big carpetgrass ..... *Axonopus furcatus*
Long's sedge ..... *Carex longii*
Indian woodoats .. .. *Chasmanthium latifolium*
Slender woodoats ..... *Chasmanthium laxum*
Common dayflower ..... *Commelina diffusa*
Spring coralroot ..... *Corallorhiza wisteriana*
Bermudagrass ..... *Cynodon dactylon* *
Needleleaf witchgrass ..... *Dichanthelium aciculare*
Deertongue witchgrass ..... *Dichanthelium clandestinum*
Variable witchgrass ..... *Dichanthelium commutatum*
Cypress witchgrass ..... *Dichanthelium dichotomum*
Erectleaf witchgrass ..... *Dichanthelium erectifolium*
Eggleaf witchgrass ..... *Dichanthelium ovale*

*** Non-native species**

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Velvet witchgrass	*Dichanthelium scoparium*	
Roughhair witchgrass	*Dicanthelium strigosum*	
White yam	*Dioscorea alata*	
Green-fly orchid	*Epidendrum conopseum*	
Centipedegrass	*Eremochloa ophiuroides* *	
Michaux's cupgrass	*Eriochloa michauxii*	
Pinewoods fingergrass	*Eustachys petraea*	
Sweet tanglehead	*Heteropogon melanocarpus*	
Dotted duckweed	*Landoltia punctata* *	
Beaked panicum	*Panicum anceps*	
Redtop panicum	*Panicum rigidulum*	
Bahiagrass	*Paspalum notatum* *	
Thin paspalum	*Paspalum setaceum*	
Blackseed needlegrass	*Piptochaetium avenaceum*	
Dollarleaf	*Rhynchosia reniformis*	
Globe beaksedge	*Rhynchospora globularis*	
Dwarf palmetto	*Sabal minor*	
Cabbage palm	*Sabal palmetto*	
Narrow plumegrass	*Saccharum baldwinii*	
Cultivated rye	*Secale cereale* *	
Saw palmetto	*Serenoa repens*	
Narrowleaf blue-eyed grass	*Sisyrinchium angustifolium*	
Nash's blue-eyed grass	*Sisyrinchium nashii*	
Earleaf greenbrier	*Smilax auriculata*	
Saw greenbrier	*Smilax bona-nox*	
Cat greenbrier	*Smilax glauca*	
Laurel greenbrier	*Smilax laurifolia*	
Sarsaparilla vine	*Smilax pumila*	
Bristly greenbrier; Hogbrier	*Smilax tamnoides*	
Longleaf wedgescale	*Sphenopholis filiformis*	
Prairie wedgescale	*Sphenopholis obtusata*	
Common duckweed	*Spirodela polyrhiza*	
Smutgrass	*Sporobolus indicus* *	
Pineywoods dropseed	*Sporobolus junceus*	
Spanish moss	*Tillandsia usneoides*	
Eastern gamagrass	*Tripsacum dactyloides*	
Spanish bayonet	*Yucca aloifolia*	
Adam's needle	*Yucca filamentosa*	
Treat's zephyrlily	*Zephyranthes atamasca* var. *treatiae*	AF, BF

DICOTS

Red maple	*Acer rubrum*	
Red buckeye	*Aesculus pavia*	
Beach false foxglove	*Agalinis fasciculata*	

*** Non-native species**

Suwannee River State Park
Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Hammock snakeroot	*Ageratina jucunda*	
Incised agrimony; Harvest-lice	*Agrimonia incisa*	
Silktree; Mimosa	*Albizia julibrissin* *	
Common ragweed	*Ambrosia artemisiifolia*	
Bastard false indigo	*Amorpha fruticosa*	
Peppervine	*Ampelopsis arborea*	
Virginia snakeroot	*Aristolochia serpentaria*	
Pinewoods milkweed	*Asclepias humistrata*	
Swamp milkweed	*Asclepias perennis*	
Butterflyweed	*Asclepias tuberosa*	
Southern butterflyweed	*Asclepias tuberosa rolfsii*	
Slimleaf pawpaw	*Asimina angustifolia*	
Woolly pawpaw	*Asimina incana*	
Bearded milkvetch	*Astragalus villosus*	
Groundsel tree; Sea-myrtle	*Baccharis halimifolia*	
Coastalplain honeycombhead	*Balduina angustifolia*	
White wild indigo	*Baptisia alba*	
Wax begonia	*Begonia cucullata* *	
Alabama supplejack	*Berchemia scandens*	
Soft greeneyes	*Berlandiera pumila*	
River birch	*Betula nigra*	
Crossvine	*Bignonia capreolata*	
False nettle; Bog hemp	*Boehmeria cylindrica*	
American beautyberry	*Callicarpa americana*	
Eastern sweetshrub	*Calycanthus floridus*	UMW
Trumpet creeper	*Campsis radicans*	
American hornbeam	*Carpinus caroliniana*	
Water hickory	*Carya aquatica*	
Pignut hickory	*Carya glabra*	
Mockernut hickory	*Carya tomentosa*	
Sugarberry; Hackberry	*Celtis laevigata*	
Spurred butterfly pea	*Centrosema virginianum*	
Common buttonbush	*Cephalanthus occidentalis*	
Eastern redbud	*Cercis canadensis*	
Partridge pea	*Chamaecrista fasciculata*	
White fringetree	*Chionanthus virginicus*	
Cottony goldenaster	*Chrysopsis gossypina*	
Swamp leather-flower	*Clematis crispa*	
Turk's turban; Skyrocket	*Clerodendrum indicum* *	
Atlantic pigeonwings	*Clitoria mariana*	
Tread-softly	*Cnidoscolus stimulosus*	
Carolina coralbead	*Cocculus carolinus*	
Canadian horseweed	*Conyza canadensis*	
Lanceleaf tickseed	*Coreopsis lanceolata*	
Flowering dogwood	*Cornus florida*	

*** Non-native species**

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Yellowleaf hawthorne	*Crataegus flava*	
Parsley hawthorn	*Crataegus marshallii*	
Rabbitbells	*Crotalaria rotundifolia*	
Silver croton	*Croton argyranthemus*	
Titi	*Cyrilla racemiflora*	
Summer farewell	*Dalea pinnata*	
Florida ticktrefoil	*Desmodium floridanum*	
Coastalplan balm	*Dicerandra linearifolia var. robustior*	
Carolina ponysfoot	*Dichondra carolinensis*	
Poor Joe	*Diodia teres*	
Virginia buttonweed	*Diodia virginiana*	
Common persimmon	*Diospyros virginiana*	
Swamp twinflower	*Dyschoriste humistrata*	
Oblongleaf twinflower	*Dyschoriste oblongifolia*	
Devil's grandmother	*Elephantopus tomentosus*	
Prairie fleabane	*Erigeron strigosus*	
Baldwin's eryngo	*Eryngium baldwinii*	
Button rattlesnakemaster	*Eryngium yuccifolium*	
Coralbean; Cherokee bean	*Erythrina herbacea*	
American strawberrybush	*Euonymus americanus*	
Dogfennel	*Eupatorium capillifolium*	
Yankeeweed	*Eupatorium compositifolium*	
Slender flattop goldenrod	*Euthamia caroliniana*	
Eastern swampprivet	*Forestiera acuminata*	
White ash	*Fraxinus americana*	
Carolina ash; pop ash	*Fraxinus caroliniana*	
Downy milkpea	*Galactia regularis*	
Eastern milkpea	*Galactia volubilis*	
Coastal bedstraw	*Galium hispidulum*	
Caribbean purple everlasting	*Gamochaeta antillana*	
Pennsylvania everlasting	*Gamochaeta pensylvanica*	
Spoonleaf purple everlasting	*Gamochaeta purpurea*	
Southern beeblossom	*Gaura angustifolia*	
Yellow jessamine	*Gelsemium sempervirens*	
Angle pod	*Gonolobus suberosus*	UHF
Carolina silverbell	*Halesia carolina*	
American witchhazel	*Hamamelis virginiana*	
Carolina frostweed	*Helianthemum carolinianum*	
Pinebarren frostweed	*Helianthemum corymbosum*	
Florida scrub frostweed	*Helianthemum nashii*	
Camphorweed	*Heterotheca subaxillaris*	
Innocence; Roundleaf bluet	*Houstonia procumbens*	
Carolina woollywhite	*Hymenopappus scabiosaeus*	
St. Andrew's-cross	*Hypericum hypericoides*	
Tropical bushmint	*Hyptis mutabilis* *	

*** Non-native species**

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Carolina holly; Sand holly	*Ilex ambigua*	
American holly	*Ilex opaca*	
Yaupon	*Ilex vomitoria*	
Virginia willow	*Itea virginica*	
Virginia dwarfdandelion	*Krigia virginica*	
Grassleaf lettuce	*Lactuca graminifolia*	
Pineland pinweed	*Lechea sessiliflora*	
Lion's ear	*Leonotis nepetifolia* *	
Virginia pepperweed	*Lepidium virginicum*	
Hairy lespedeza	*Lespedeza hirta*	
Pinkscale gayfeather	*Liatris elegans*	
Fewflower gayfeather	*Liatris pauciflora*	
Shortleaf gayfeather	*Liatris tenuifolia*	
Canadian toadflax	*Linaria canadensis*	
Sweetgum	*Liquidambar styraciflua*	
Lupine	*Lupinus* sp.	
Skyblue lupine	*Lupinus diffusus*	
Lady lupine	*Lupinus villosus*	
Rose-rush	*Lygodesmia aphylla*	
Southern magnolia	*Magnolia grandiflora*	
Sensitive brier	*Mimosa quadrivalvis*	
Partridgeberry	*Mitchella repens*	
Red mulberry	*Morus rubra*	
Southern bayberry; Wax myrtle	*Myrica cerifera*	
Swamp tupelo	*Nyssa sylvatica* var. *biflora*	
Cutleaf eveningprimrose	*Oenothera laciniata*	
False gromwell	*Onosmodium virginianum*	
Pricklypear	*Opuntia humifusa*	
Wild olive	*Osmanthus americanus*	
Eastern hophornbeam	*Ostrya virginiana*	
Common yellow woodsorrel	*Oxalis corniculata*	
Virginia creeper	*Parthenocissus quinquefolia*	
Purple passionflower	*Passiflora incarnata*	
Yellow passionflower	*Passiflora lutea*	
Buckroot	*Pediomelum canescens*	
Eustis lake beardtongue	*Penstemon australis*	
Red bay	*Persea borbonia*	
Annual phlox	*Phlox drummondii* *	
Downy phlox	*Phlox pilosa*	
Turkey tangle fogfruit	*Phyla nodiflora*	
Cypresshead groundcherry	*Physalis arenicola*	
Obedient plant	*Physostegia virginiana* *	
Pitted stripeseed	*Piriqueta cistoides* subsp. *caroliniana*	
Narrowleaf silkgrass	*Pityopsis graminifolia*	
Wright's plantain	*Plantago wrightiana*	

*** Non-native species**

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
American sycamore	*Platanus occidentalis*	
Procession flower	*Polygala incarnata*	
Showy milkwort	*Polygala violacea*	
Bog smartweed	*Polygonum setaceum*	
Rustweed	*Polypremum procumbens*	
Carolina laurelcherry	*Prunus caroliniana*	
Black cherry	*Prunus serotina*	
Flatwoods plum; Hog plum	*Prunus umbellata*	
Sweet everlasting	*Pseudognaphalium obtusifolium*	
Common hoptree; Wafer ash	*Ptelea trifoliata*	
Blackroot	*Pterocaulon pycnostachyum*	
Florida mountainmint	*Pycnanthemum floridanum*	UMW, UP
Carolina desertchicory	*Pyrrhopappus carolinianus*	
White oak	*Quercus alba*	
Spanish oak; Southern red oak	*Quercus falcata*	
Bluejack oak	*Quercus incana*	
Turkey oak	*Quercus laevis*	
Laurel oak; Diamond oak	*Quercus laurifolia*	
Sand post oak	*Quercus margaretta*	
Basket oak;Swamp chestnut oak	*Quercus michauxii*	
Water oak	*Quercus nigra*	
Live oak	*Quercus virginiana*	
Sweet pinxter azalea	*Rhododendron canescens*	
Winged sumac	*Rhus copallinum*	
Brownhair snoutbean	*Rhynchosia cinerea*	
Dollarleaf	*Rhynchosia reniformis*	
Sand blackberry	*Rubus cuneifolius*	
Heartwing dock	*Rumex hastatulus*	
Smallflower mock buckthorn	*Sageretia minutiflora*	
Carolina willow	*Salix caroliniana*	
Azure blue sage	*Salvia azurea*	
Lyreleaf sage	*Salvia lyrata*	
Pineland pimpernel	*Samolus valerandi* subsp. *parviflorus*	
Canadian blacksnakeroot	*Sanicula canadensis*	
Sassafras	*Sassafras albidum*	
Small's skullcap	*Scutellaria multiglandulosa*	
Gulf sebastian-bush	*Sebastiania fruticosa*	
Privet wild sensitive plant	*Senna ligustrina*	
Whitetop aster; Dixie aster	*Sericocarpus tortifolius*	
Piedmont blacksenna	*Seymeria pectinata*	
Cuban jute	*Sida rhombifolia*	
Gum bully	*Sideroxylon lanuginosum*	
Florida bully	*Sideroxylon reclinatum*	
Sleepy catchfly	*Silene antirrhina*	
Anisescented goldenrod	*Solidago odora*	

*** Non-native species**

Common Name	*Scientific Name*	Primary Habitat Codes (for imperiled species)
Roughfruit scaleseed	*Spermolepis divaricata*	
Bristly scaleseed	*Spermolepis echinata*	
Queensdelight	*Stillingia sylvatica*	
Pineland scalypink	*Stipulicida setacea*	
Pink fuzzybean	*Strophostyles umbellata*	
Coastalplain dawnflower	*Stylisma patens*	
Hairy dawnflower	*Stylisma villosa*	
Carolina false vervain	*Stylodon carneum*	
Sidebeak pencilflower	*Stylosanthes biflora*	
Climbing aster	*Symphyotrichum carolinianum*	
Eastern silver aster	*Symphyotrichum concolor*	
Common sweetleaf	*Symplocos tinctoria*	
Scurf hoarypea	*Tephrosia chrysophylla*	
Florida hoarypea	*Tephrosia florida*	
Spiked hoarypea	*Tephrosia spicata*	
Goat's rue	*Tephrosia virginiana*	
Pineland nerveray	*Tetragonotheca helianthoides*	
Carolina basswood	*Tilia americana* var. *caroliniana*	
Atlantic poison oak	*Toxicodendron pubescens*	
Eastern poison ivy	*Toxicodendron radicans*	
Wavyleaf noseburn	*Tragia urens*	
Field clover; Hop clover	*Trifolium campestre*	
Winged elm	*Ulmus alata*	
American elm	*Ulmus americana*	
Cedar elm	*Ulmus crassifolia*	
Sparkleberry	*Vaccinium arboreum*	
Highbush blueberry	*Vaccinium corymbosum*	
Deerberry	*Vaccinium stamineum*	
Tall ironweed	*Vernonia angustifolia*	
Giant ironweed	*Vernonia gigantea*	
Walter's viburnum	*Viburnum obovatum*	
Rusty blackhaw	*Viburnum rufidulum*	
Early blue violet	*Viola palmata*	
Common blue violet	*Viola sororia*	
Summer grape	*Vitis aestivalis*	
Muscadine	*Vitis rotundifolia*	
Hercules-club	*Zanthoxylum clava-herculis*	
Viperina	*Zornia bracteata*	

*** Non-native species**

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

INVERTEBRATES

Mollusks

Suwannee Moccasinshell	*Medionidus walkeri*	AST, BST

Crayfish

Pallid Cave Crayfish	*Procambarus pallidus*	ACV

Beetles

Simple Cebrionid Beetle	*Selenodon simplex*	SH, UP

Butterflies

Hoary Edge	*Achalarus lyciades*	UMW, UP, SH
Gulf Fritillary	*Agraulis vanillae*	MTC
Dusky Roadside-Skipper	*Amblyscirtes alternate*	SH, UP
Goatweed Leafwing	*Anaea andria*	SH, UP
Hackberry Butterfly	*Asterocampa celtis*	MH, BF,UHF
Tawny Emperor	*Asterocampa clyton*	MH, BF,UHF
Sachem Skipper	*Atalopedes campestris*	MTC
Great Purple Hairstreak	*Atlides halesus*	MH, BF, UHF
Red Spotted Purple	*Basilarchia astyanax*	MH, BF,UHF
Pipe-vine Swallowtail	*Battus philenor*	SH, UP UMW
Juniper Hairstreak	*Callophrys gryneus*	MH
Red-banded Hairstreak	*Calycopis cecrops*	MTC
Spring Azure	*Celastrina ladon*	UP, UMW
Queen	*Danaus gilippus*	MTC
Silver Spotted Skipper	*Epargyreus clarus*	MTC
Horace's Duskywing	*Erynnis horatius*	MTC
Juvenal's Duskywing	*Erynnis juvenalis*	MTC
Zarucco Duskywing	*Erynnis zarucco*	MTC
Barred Yellow	*Eurema daira*	MTC
Little Yellow Sulfur	*Eurema lisa*	MTC
Sleepy Orange	*Eurema nicippe*	MTC
Zebra Swallowtail	*Eurytides marcellus*	SH, UP
Southern Hairstreak	*Fixsenia favonius*	MTC
Ceranus Blue	*Hemiargus ceranus*	MTC
Carolina Satyr	*Hermeuptychia sosybius*	MH, BF,UHF
Meske's Skipper	*Hesperia meskei*	SH, UP
Fiery Skipper	*Hylephila phyleus*	MTC
Buckeye	*Junonia coenia*	MTC
Clouded Skipper	*Lerema accuis*	MTC
American Snout	*Libytheana carinenta*	UHF, BF
Yucca Giant Skipper	*Megathymus yuccae*	SH, UP
Twin-spot Skipper	*Oligoria maculata*	MTC
Ocola Skipper	*Panoquina ocola*	MTC
Eastern Tiger Swallowtail	*Papilio glaucus*	MTC

*** Non-native species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Palamedes Swallowtail	*Papilio palamedes*	MTC
White M Hairstreak	*Parhasius m-album*	MTC
Cloudless Sulfur	*Phoebis sennae*	MTC
Phaon Crescent	*Phyciodes phaon*	MTC
Pearl Crescent	*Phyciodes tharos*	MTC
Cabbage White Sulfur	*Pieris rapae*	MTC
Zabulon Skipper	*Poanes zabulon*	UHF, MH
Whirlabout	*Polites vibex*	MTC
Question Mark	*Polygonia interrogationis*	MH, BF,UHF
Phaon Crescent	*Phyciodes phaon*	MTC
Seminole Texas Crescent	*Phyciodes texana*	MH, BF,UHF
Pearl Crescent	*Phyciodes tharos*	MTC
Banded Hairstreak	*Satyrium calanus*	MH, BF, UHF
Striped Hairstreak	*Satyrium liparops*	MH, BF, UHF
Gray Hairstreak	*Strymon melinus*	MTC
Southern Cloudywing	*Thorybes bathyllus*	MTC
Northern Cloudywing	*Thorybes pylades*	MTC
Long-tailed Skipper	*Urbanus proteus*	MTC
Red Admiral	*Vanessa atlanta*	MTC
American Painted Lady	*Vanessa virginiensis*	MTC
Southern Dog Face	*Zerene cesonia*	SH, UP

FISH

Gulf Sturgeon	*Acipenser oxyrhynchus desotoi*	AST, BST
Alabama Shad	*Alosa alabamae*	AST, BST
White Catfish	*Ameiurus catus*	AST, BST
Spotted Bullhead	*Ameiurus serracanthus*	AST, BST
American Eel	*Anquilla rostrata*	AST, BST
Pirate Perch	*Aphredoderus sayanus*	AST, BST, SRST
Flier	*Centrarchus macropterus*	AST, BST
Bannerfin Shiner	*Cyprinella leedsi*	AST, BST, SRST
Blacktail Shiner	*Cyprinella venusta*	AST, BST, SRST
Everglades Pygmy Sunfish	*Elassoma evergladei*	AST, BST, SRST
Okefenokee Pygmy Sunfish	*Elassoma okefenokee*	AST, BST, SRST
Bluespotted Sunfish	*Enneacanthus gloriosus*	AST, BST
Banded Sunfish	*Enneacanthus obesus*	AST, BST
Lake Chubsucker	*Erimyzon sucetta*	AST, BST
Brown Darter	*Etheostoma edwini*	AST, BST
Swamp Darter	*Etheostoma fusiforme*	AST, BST
Mosquitofish	*Gambusia affinis*	AST, BST, SRST
Channel Catfish	*Ictalurus punctatus*	AST, BST
Brook Silverside	*Labidesthes sicculus*	AST, BST, SRST
Longnose Gar	*Lepisosteus ossens*	AST, BST
Redbreast Sunfish	*Lepomis auritus*	AST, BST, SRST
Warmouth	*Lepomis gulosus*	AST, BST, SRST

*** Non-native species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Bluegill	*Lepomis macrochirus*	AST, BST, SRST
Dollar Sunfish	*Lepomis marginatus*	AST, BST, SRST
Readear Sunfish	*Lepomis microlophus*	AST, BST, SRST
Spotted Sunfish	*Lepomis punctatus*	AST, BST, SRST
Suwannee Bass	*Micropterus notius*	AST, BST
Largemouth Bass	*Micropterus salmoides*	AST, BST
Spotted Sucker	*Minytrema melanops*	AST, BST, SRST
Striped Mullet	*Mugil cephalus*	AST, BST
Golden Shiner	*Notemigonus crysoleucas*	AST, BST, SRST
Sailfin Shiner	*Notropis hypselopterus*	AST, BST, SRST
Coastal Shiner	*Notropis petersoni*	AST, BST, SRST
Weed Shiner	*Notropis texanus*	AST, BST
Tadpole Madtom	*Noturus gyrinus*	AST, BST
Speckled Madtom	*Noturus leptacanthus*	AST, BST
Pugnose Minnow	*Opsopoeodus emiliae emiliae*	AST, BST, SRST
Blackbanded Darter	*Percina nigrofasciata*	AST, BST, SRST
Black Crappie	*Pomoxis nigromaculatus*	AST, BST
Atlantic Needlefish	*Strongylura marina*	AST, BST
Hogchoker	*Trinectes maculatus*	AST, BST, SRST

AMPHIBIANS

Frogs and Toads

Southern Toad	*Anaxyrus terrestris*	MTC
Green Treefrog	*Hyla cinerea*	MTC
Squirrel Treefrog	*Hyla squirella*	MTC

Salamanders

Marbled Salamander	*Ambystoma opacum*	BF, AF, FS
Slimy Salamander	*Plethodon grobmanii*	BF, MH, UHF

REPTILES

Crocodilians

American Alligator	*Alligator mississippiensis*	AST, BST

Turtles

Gopher Tortoise	*Gopherus polyphemus*	SH, UP
Alligator Snapping Turtle	*Macrochelys temminckii*	AST, BST
Suwannee Cooter	*Pseudemys suwanniensis*	AST, BST
Florida Box Turtle	*Terrapene carolina bauri*	MH, MF, UHF
Yellow-bellied Slider	*Trachemys scripta scripta*	AST, BST, SRST

Lizards

*** Non-native species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Green Anole	*Anolis carolinensis*	MTC
Brown Anole	*Anolis sagrei**	MTC
Six-lined Racerunner	*Aspidoscelis sexlineata*	SH, UP
Broad-headed Skink	*Plestiodon laticeps*	MH, UHF, BF
Florida Wormlizard	*Rineura floridana*	SH, UP
Eastern Fence Lizard	*Sceloporus undulatus*	SH, UP, UMW
Ground Skink	*Scincella lateralis*	UMW, UHF
Snakes		
Southern Black Racer	*Coluber constrictor priapus*	UHF, UP, UMW
East. Diamond-backed Rattlesnake	*Crotalus adamanteus*	SH, UP
Eastern Indigo Snake	*Drymarchon couperi*	SH, UP
Red-bellied Water Snake	*Nerodia erythrogaster erythrogaster*	BST, AST
Rough Green Snake	*Opheodrys aestivus*	UHF, UP
Florida Red-bellied Snake	*Storeria occipitomaculata obscura*	UP, UHF, UMW
BIRDS		
Waterfowl		
Wood Duck	*Aix sponsa*	AST, BST
New World Quails		
Northern Bobwhite	*Colinus virginianus*	SH, UC
Cormorants		
Double-crested Cormorant	*Phalocrocorax auritus*	AST, BST
Herons and Egrets		
Great Blue Heron	*Ardea herodias*	AST, BST
Great Egret	*Ardea alba*	AST, BST
Little Blue Heron	*Egretta caerulea*	AST, BST
Cattle Egret	*Bubulcus ibis*	AST, BST
Green Heron	*Butorides virescens*	AST, BST
Black-crowned Night-Heron	*Nycticorax nycticoraxi*	AST, BST
Ibises		
White Ibis	*Eudocimus albus*	AST, BST
New World Vultures		
Black Vulture	*Coragyps atratus*	MTC, OF
Turkey Vulture	*Cathartes aura*	MTC, OF
Hawks, Eagles, and Kites		
Mississippi Kite	*Ictinia mississippiensis*	AF, UMW, OF
Northern Harrier	*Circus cyaneus*	SH, OF

*** Non-native species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Sharp-shinned Hawk	*Accipiter striatus*	UHF, MEH, UMW
Cooper's Hawk	*Accipiter cooperi*	UHF, MEH, UMW
Red-shouldered Hawk	*Buteo lineatus*	MTC, OF
Broad-winged Hawk	*Buteo platypterus*	UHF, MEH, OF
Falcons		
American Kestrel	*Falco sparverius*	SH, UC
Doves		
Mourning Dove	*Zenaida macroura*	MTC
Common Ground-Dove	*Columbina passerina*	SH
Cuckoos		
Yellow-billed Cuckoo	*Coccyzus americanus*	UHF, UMW
Owls		
Eastern Screech-Owl	*Otus asio*	UHF, UMW
Great Horned Owl	*Bubo virginianus*	SH, UMW
Barred Owl	*Strix varia*	FS, AF, BF
Nightjars		
Common Nighthawk	*Chordeiles minor*	SH, OF
Chuck-will's-widow	*Caprimulgus carolinensis*	UHF, UMW
Swifts		
Chimney Swift	*Chaetura pelagica*	OF
Hummingbirds		
Ruby-throated Hummingbird	*Archilochus colubris*	MTC
Kingfishers		
Belted Kingfisher	*Ceryle alcyon*	AST, BST
Woodpeckers		
Redheaded Woodpecker	*Melanerpes erythrocephalus*	SH
Red-bellied Woodpecker	*Melanerpes carolinus*	MTC
Yellow-bellied Sapsucker	*Sphyrapicus varius*	UHF, AF, BF
Downy Woodpecker	*Picoides pubescens*	MTC
Hairy Woodpecker	*Picoides villosus*	UHF, UMW, BF
Northern Flicker	*Colaptes auratus*	SH
Pileated Woodpecker	*Dryocopus pileatus*	UHF, UMW, BF
Tyrant Flycatchers		
Eastern Wood Pewee	*Contopus virens*	SH, UMW
Acadian Flycatcher	*Empidonax virescens*	AF, FS, BF
Eastern Phoebe	*Sayornis phoebe*	SH, UC, CL

*** Non-native species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Great Crested Flycatcher	*Myiarchus crinitus*	MTC
Eastern Kingbird	*Tyrannus tyrannus*	SH, UC
Shrikes		
Loggerhead Shrike	*Lanius ludovicianus*	SH, UC
Vireos		
White-eyed Vireo	*Vireo griseus*	MTC
Yellow-throated Vireo	*Vireo flavifrons*	SH, UMW
Blue-headed Vireo	*Vireo solitarius*	UHF, MEH, UMW
Red-eyed Vireo	*Vireo olivaceus*	UHF, MEH, BF
Crows and Jays		
Blue Jay	*Cyanocitta cristata*	MTC
American Crow	*Corvus brachyrhynchos*	MTC
Fish Crow	*Corvus ossifragus*	MTC
Swallows		
Purple Martin	*Progne subis*	OF
Barn Swallow	*Hirundo rustica*	CL, DV, OF
Tits and Allies		
Carolina Chickadee	*Poecile carolinensis*	MTC
Tufted Titmouse	*Baeolophus bicolor*	MTC
Nuthatches		
Brown-headed Nuthatch	*Sitta pusilla*	SH
Creepers		
Brown Creeper	*Certhia americana*	UHF, UMW
Wrens		
Carolina Wren	*Thryothorus ludovicianus*	MTC
House Wren	*Troglodytes aedon*	SH, UC
Winter Wren	*Troglodytes hiemalis*	AF
Kinglets		
Golden-crowned Kinglet	*Regulus satrapa*	SH, UMW
Ruby-crowned Kinglet	*Regulus calendula*	MTC
Old World Warblers		
Blue-gray Gnatcatcher	*Polioptila caerulea*	MTC
Thrushes		
Eastern Bluebird	*Sialia sialis*	SH
Veery	*Catharus fuscescens*	UHF, BF

*** Non-native species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Swainson's Thrush	*Catharus ustulatus*	UHF, BF
Hermit Thrush	*Catharus guttatus*	UHF, UMW, BF
Wood Thrush	*Hylocichla mustelina*	UHF, BF
American Robin	*Turdus migratorius*	MTC
Mockingbirds and Thrashers		
Gray Catbird	*Dumetella carolinensis*	UMW, UC, DV
Northern Mockingbird	*Mimus polyglottos*	SH, CL, DV
Brown Thrasher	*Toxostoma rufum*	SH, UC, DV
Waxwings		
Cedar Waxwing	*Bombycilla cedrorum*	MTC
New World Warblers		
Ovenbird	*Seiurus aurocapilla*	UHF, UMW, BF
Worm-eating Warbler	*Helmitheros vermivorum*	UHF, MEH, BF
Northern Waterthrush	*Parkesia noveboracensis*	FS, AF, BST, AST
Blue-winged Warbler	*Vermivora cyanoptera*	UHF, UMW, DV
Black-and-white Warbler	*Mniotilta varia*	MTC
Prothonotary Warbler	*Protonotaria citrea*	FS
Tennessee Warbler	*Oreothlypis peregrina*	UHF, UMW
Orange-crowned Warbler	*Oreothlypis celata*	UHF, UMW, BF, DV
Nashville Warbler	*Oreothlypis ruficapilla*	UHF, UMW, DV
Kentucky Warbler	*Geothlypis formosa*	UHF, BF, AF
Common Yellowthroat	*Geothlypis trichas*	FS
Hooded Warbler	*Setophaga citrina*	UHF, BF
American Redstart	*Setophaga ruticilla*	UHF, UMW, BF, DV
Northern Parula	*Setophaga americana*	MTC
Magnolia Warbler	*Setophaga magnolia*	UHF, UMW, BF, DV
Blackburnian Warbler	*Setophaga fusca*	SH, UMW, DV
Yellow Warbler	*Setophaga petechia*	FS, CL, UC, DV
Chestnut-sided Warbler	*Setophaga pensylvanica*	UHF, UMW, DV
Black-throated Blue Warbler	*Setophaga caerulescens*	UHF, UMW, BF
Palm Warbler	*Setophaga palmarum*	SH, UC, DV, CL
Pine Warbler	*Setophaga pinus*	SH, PP, DV
Yellow-rumped Warbler	*Setophaga coronata*	MTC
Yellow-throated Warbler	*Setophaga dominica*	SH, UMW, DV
Prairie Warbler	*Setophaga discolor*	SH, UC
Black-throated Green Warbler	*Setophaga virens*	UHF, UMW, DV
Tanagers		
Summer Tanager	*Piranga rubra*	SH, UMW, DV
Scarlet Tanager	*Piranga olivacea*	UHF, UMW, DV
Sparrows and Allies		
Eastern Towhee	*Pipilo erythrophthalmus*	SH

*** Non-native species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Bachman's Sparrow	*Peucaea aestivalis*	SH
Chipping Sparrow	*Spizella passerina*	SH, UC, CL, DV
Field Sparrow	*Spizella pusilla*	SH, UC, CL, DV
Vesper Sparrow	*Pooecetes gramineus*	SH, UC, CL, DV
Savannah Sparrow	*Passerculus sandwichensis*	SH, UC, CL, DV
Fox Sparrow	*Passerella iliaca*	UHF, UMW
Song Sparrow	*Melospiza melodia*	UMW, UC, DV
Swamp Sparrow	*Melospiza georgiana*	FS, DV
White-throated Sparrow	*Zonotrichia albicollis*	UMW, UC, DV
Cardinals, Grosbeaks and Buntings		
Northern Cardinal	*Cardinalis cardinalis*	MTC
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	UHF, DV
Blue Grosbeak	*Guiraca caerulea*	SH, UC
Indigo Bunting	*Passerina cyanea*	SH, UC
Blackbirds and Allies		
Red-winged Blackbird	*Agelaius phoeniceus*	MTC
Eastern Meadowlark	*Sturnella magna*	SH, UC, CL
Rusty Blackbird	*Euphagus carolinus*	FS
Common Grackle	*Quiscalus quiscula*	MTC
Brown-headed Cowbird	*Molothrus ater*	SH, DV
Orchard Oriole	*Icterus spurius*	SH, CL, DV
Finches and Allies		
Purple Finch	*Carpodacus purpureus*	SH, DV
American Goldfinch	*Carduelis tristis*	MTC
MAMMALS		
Didelphids		
Virginia Opossum	*Didelphis virginiana*	MTC
Insectivores		
Eastern Mole	*Scalopus aquaticus*	UP, MH
Bats		
Big Brown Bat	*Eptesicus fuscus*	MTC
Southeastern Bat	*Myotis austroriparius*	MTC
Brazilian Free-tailed Bat	*Tadarida brasiliensis*	MTC
Edentates		
Nine-banded Armadillo	*Dasypus novemcinctus* *	MTC
Lagomorphs		
Eastern Cottontail	*Sylvilagus floridanus*	UP, UHF

*** Non-native species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Rodents		
Beaver	*Castor canadensis*	AST, BST
Southeastern Pocket Gopher	*Geomys pinetis*	SH, UP
Southern Flying Squirrel	*Glaucomys volans*	UHF, UP, SH
Cotton Mouse	*Peromyscus gossypinus*	SH, UP, MH
Old Field Mouse	*Peromyscus polionotus*	SH, UP
Florida Mouse	*Podomys floridanus*	SH, UP
Eastern Gray Squirrel	*Sciurus carolinensis*	MTC
Sherman's Fox Squirrel	*Sciurus niger*	SH, UP
Hispid Cotton Rat	*Sigmodon hispidus*	MTC
Carnivores		
Coyote	*Canis latrans* *	MTC
River Otter	*Lutra canadensis*	AST, BST, SRST
Bobcat	*Lynx rufus*	MTC
Striped Skunk	*Mephitis mephitis*	MTC
Raccoon	*Procyon lotor*	MTC
Gray Fox	*Urocyon cinereoargenteus*	MTC
Black Bear	*Ursus americanus*	MTC
Red Fox	*Vulpes vulpes*	MTC
Artiodactyls		
White-tailed Deer	*Odocoileus virginianus*	MTC
Feral Hog	*Sus scrofa* *	MTC

*** Non-native species**

TERRESTRIAL

Beach Dune	BD
Coastal Berm	CB
Coastal Grassland	CG
Coastal Strand	CS
Dry Prairie	DP
Keys Cactus Barren	KCB
Limestone Outcrop	LO
Maritime Hammock	MAH
Mesic Flatwoods	MF
Mesic Hammock	MEH
Pine Rockland	PR
Rockland Hammock	RH
Sandhill	SH
Scrub	SC
Scrubby Flatwoods	SCF
Shell Mound	SHM
Sinkhole	SK
Slope Forest	SPF
Upland Glade	UG
Upland Hardwood Forest	UHF
Upland Mixed Woodland	UMW
Upland Pine	UP
Wet Flatwoods	WF
Xeric Hammock	XH

PALUSTRINE

Alluvial Forest	AF
Basin Marsh	BM
Basin Swamp	BS
Baygall	BG
Bottomland Forest	BF
Coastal Interdunal Swale	CIS
Depression Marsh	DM
Dome Swamp	DS
Floodplain Marsh	FM
Floodplain Swamp	FS
Glades Marsh	GM
Hydric Hammock	HH
Keys Tidal Rock Barren	KTRB
Mangrove Swamp	MS
Marl Prairie	MP
Salt Marsh	SAM
Seepage Slope	SSL
Shrub Bog	SHB
Slough	SLO
Slough Marsh	SLM

Strand Swamp ..... STS
Wet Prairie ..... WP

LACUSTRINE
Clastic Upland Lake ..... CULK
Coastal Dune Lake ..... CDLK
Coastal Rockland Lake ..... CRLK
Flatwoods/Prairie ..... FPLK
Marsh Lake ..... MLK
River Floodplain Lake ..... RFLK
Sandhill Upland Lake ..... SULK
Sinkhole Lake ..... SKLK
Swamp Lake ..... SWLK

RIVERINE
Alluvial Stream ..... AST
Blackwater Stream ..... BST
Seepage Stream ..... SST
Spring-run Stream ..... SRST

SUBTERRANEAN
Aquatic Cave ..... ACV
Terrestrial Cave ..... TCV

ESTUARINE
Algal Bed ..... EAB
Composite Substrate ..... ECPS
Consolidated Substrate ..... ECNS
Coral Reef ..... ECR
Mollusk Reef ..... EMR
Octocoral Bed ..... EOB
Seagrass Bed ..... ESGB
Sponge Bed ..... ESPB
Unconsolidated Substrate ..... EUS
Worm Reef ..... EWR

MARINE
Algal Bed ..... MAB
Composite Substrate ..... MCPS
Consolidated Substrate ..... MCNS
Coral Reef ..... MCR
Mollusk Reef ..... MMR
Octocoral Bed ..... MOB
Seagrass Bed ..... MSGB
Sponge Bed ..... MSPB
Unconsolidated Substrate ..... MUS
Worm Reef ..... MWR

ALTERED LANDCOVER TYPES

Abandoned field	ABF
Abandoned pasture	ABP
Agriculture	AG
Canal/ditch	CD
Clearcut pine plantation	CPP
Clearing	CL
Developed	DV
Impoundment/artificial pond	IAP
Invasive exotic monoculture	IEM
Pasture - improved	PI
Pasture - semi-improved	PSI
Pine plantation	PP
Road	RD
Spoil area	SA
Successional hardwood forest	SHF
Utility corridor	UC

MISCELLANEOUS

Many Types of Communities	MTC
Overflying	OF

Addendum 6—Imperiled Species Ranking Definitions

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 Fish and Wildlife Conservation 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 fabricated 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 or 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 or 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.
EXPE, XE..... Experimental essential population. A species listed as experimental and essential.
EXPN, XN .... Experimental non-essential population. A species listed as experimental and non-essential. Experimental, nonessential populations of endangered species are treated as threatened species on public land, for consultation purposes.

STATE

ANIMALS .. (Listed by the Florida Fish and Wildlife Conservation Commission - FWC)

FE ..... Federally-designated Endangered

FT ..... Federally-designated Threatened

FXN..... Federally-designated Threatened Nonessential Experimental Population

FT(S/A) ..... Federally-designated Threatened species due to similarity of appearance

ST..... Listed as Threatened Species by the FWC. 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 therefore is destined or very likely to become an endangered species within the near future.
SSC..... Listed as Species of Special Concern by the FWC. 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 that, in the near 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.

Addendum 7—Cultural Information

These procedures apply to state agencies, local governments, and non-profits that manage state-owned properties.

A. General Discussion

Historic resources are both archaeological sites and historic structures. Per Chapter 267, Florida Statutes, '*Historic property' or 'historic resource' means any prehistoric district, site, building, object, or other real or personal property of historical, architectural, or archaeological value, and folklife resources. These properties or resources may include, but are not limited to, monuments, memorials, Indian habitations, ceremonial sites, abandoned settlements, sunken or abandoned ships, engineering works, treasure trove, artifacts, or other objects with intrinsic historical or archaeological value, or any part thereof, relating to the history, government, and culture of the state."*

B. Agency Responsibilities

Per State Policy relative to historic properties, state agencies of the executive branch must allow the Division of Historical Resources (Division) the opportunity to comment on any undertakings, whether these undertakings directly involve the state agency, i.e., land management responsibilities, or the state agency has indirect jurisdiction, i.e. permitting authority, grants, etc. No state funds should be expended on the undertaking until the Division has the opportunity to review and comment on the project, permit, grant, etc.

State agencies shall preserve the historic resources which are owned or controlled by the agency.

Regarding proposed demolition or substantial alterations of historic properties, consultation with the Division must occur, and alternatives to demolition must be considered.

State agencies must consult with Division to establish a program to location, inventory and evaluate all historic properties under ownership or controlled by the agency.

C. Statutory Authority

Statutory Authority and more in depth information can be found at:
http://www.flheritage.com/preservation/compliance/guidelines.cfm

D. Management Implementation

Even though the Division sits on the Acquisition and Restoration Council and approves land management plans, these plans are conceptual. Specific information regarding individual projects must be submitted to the Division for review and recommendations.

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, 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 make preparations for locating and evaluating historic resources, both archaeological sites and historic structures.

E. Minimum Review Documentation Requirements

In order to have a proposed project reviewed by the Division, certain information must be submitted for comments and recommendations. The minimum review documentation requirements can be found at: http://www.flheritage.com/preservation/compliance/docs/minimum_review_documentation_requirements.pdf .

* * *

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

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

Phone: (850) 245-6425

Toll Free: (800) 847-7278
Fax: (850) 245-6435

The criteria to be used for evaluating eligibility for listing in the National Register of Historic Places are as follows:

1) Districts, sites, buildings, structures, and objects may be considered to have significance in American history, architecture, archaeology, engineering, and/or culture if they possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- **a)** are associated with events that have made a significant contribution to the broad patterns of our history; and/or
- **b)** are associated with the lives of persons significant in our past; and/or
- **c)** embody the distinctive characteristics of type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; and/or
- **d)** have yielded, or may be likely to yield, information important in prehistory or history.

2) Ordinarily cemeteries, birthplaces, or graves of historical figures; properties owned by religious institutions or used for religious purposes; structures that have been moved from their original locations; reconstructed historic buildings; properties primarily commemorative in nature; and properties that have achieved significance within the past 50 years shall not be considered eligible for the *National Register*. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories:

- **a)** a religious property deriving its primary significance from architectural or artistic distinction or historical importance; or
- **b)** a building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or
- **c)** a birthplace or grave of an historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life; or
- **d)** a cemetery which derives its primary significance from graves of persons of transcendent importance, from age, distinctive design features, or association with historic events; or

e) a reconstructed building, when it is accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and no other building or structure with the same association has survived; or a property primarily commemorative in intent, if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or

f) a property achieving significance within the past 50 years, if it is of exceptional importance.

Restoration is defined as the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project.

Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations and additions while preserving those portions or features that convey its historical, cultural or architectural values.

Stabilization is defined as the act or process of applying measures designed to reestablish a weather resistant enclosure and the structural stability of an unsafe or deteriorated property while maintaining the essential form as it exists at present.

Preservation is defined as the act or process of applying measures necessary to sustain the existing form, integrity and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. New exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project.

Addendum 8—Timber Management Analysis

At the request of Anne Barkdoll, Biologist, Division of Recreation and Parks, a forest resource assessment was prepared for two management zones of the Suwannee River State Park. A field visit was made on February 1, 2012.

Zone SR-5 –Natural Longleaf, Loblolly, Hardwood 8.5 acres

This is an identified sandhill site in need of restoration work. The natural groundcover is in fair condition, but would improve with some removal of shrub and hardwood component. This area is not large enough to justify any type harvesting operation of the hardwood or less desirable pines. This area is suitable for hand application of approved herbicides and possibly mowing of some type with a heavy duty brush cutter. These practices in combination with repeated prescribe burns will greatly improve natural habitat conditions on this site. At some point in the future, when hardwoods and shrubs are under control, plant longleaf tublings/seedlings to improve the longleaf component.

Zone SR-7 Stand 2 – Loblolly Pine, 12 acres

This is an 18-year-old site prepared loblolly pine plantation. There are approximately 175 trees per acre with an average diameter of 8.8 inches. The average basal area is 75 square feet per acre. At first glance, this stand does not appear to have been planted, however upon close inspection you will find windrows and evidence of bedding. I suspect this area flooded in the year it was site prepared, eroding the beds to nearly level ground. In addition, loblolly pine has "volunteered" in this stand from adjoining areas. Thin this stand down to 20 to 40 square feet of basal area per acre, leaving only the healthy, better formed trees. Portions of adjacent and neighboring management zones have stocking levels similar to stand 2, above. In those areas where longleaf pine is the preferred pine species it is recommended to heavily thin the loblolly pine and interplant with longleaf pine. Presently, the forested area of the park along the Suwannee River has only limited vehicular access thru the RV campground. Before any logging activities can take place, this access point will need improvement or a completely new access point established outside the campground area.

Prepared by: Doug Longshore, Senior Forester, Division of Forestry
February, 2012

Addendum 9 — Land Management Review

Memorandum

Florida Department of
Environmental Protection

February 13, 2012

TO: Marianne Gengenbach, Program Administrator
Division of State Lands

FROM: Parks Small, Chief, Bureau of Natural and Cultural Resources
Division of Recreation and Parks

Albert Gregory, Chief, Office of Park Planning
Division of Recreation and Parks

SUBJECT: Response to Draft Land Management Review (LMR)
Suwannee River State Park

The Land Management Review draft report provided to DRP determined that management of Suwannee River State Park by the Division of Recreation and Parks met the two tests prescribed by law. Namely, the review team concluded that the land is being managed for the purposes for which it was acquired and in accordance with the land management plan.

Below are Additional Recommendations and Checklist Findings (items the LMR determined should be further addressed in the management plan update) of the draft LMR report, with our manager's response to each. The responses were prepared via a coordinated effort of the park, district office, and our offices.

The team recommends that DRP continue efforts to achieve the desired fire regime in the upland mixed woodland community. (VOTE: 5+, 0-)
Managing Agency Response: Agree. This fire-type upland community is in need of more frequent fire and potentially expanded restoration efforts. The Division recognizes this need and will take steps to increase the level of burn frequency within this natural community.

The team recommends that DRP explore opportunities, such as using local Florida Native Plant Society volunteers, or other resources, to increase the level of plant survey work at this park. (VOTE: 5+, 0-)
Managing Agency Response: Agree. The Division recognizes this need and will take steps to increase the level of plant survey work at the park.

The team recommends that DRP continue efforts to indentify and prioritize improvements to cultural interpretative facilities at the park, as well as seek funding sources. (VOTE: 5+, 0-)
Managing Agency Response: Agree. Professional and successful interpretation of the natural and cultural resources of parks is a high priority for the Division. DRP will seek out funding sources and work to increase the quality of interpretive facilities at the park as funding and staff limitations permit.

The team recommends that DRP identify an appropriate set of restoration strategies for the area of altered sandhill that has succeeded to successional hardwood forest. (VOTE: 5+, 0-)
Managing Agency Response: Agree. The Division recognizes the need to develop an appropriate set of restoration strategies for altered sandhills in the park, specifically those that have changed to the extent that they are now classified as successional hardwood forest. The upcoming management plan update will contain a detailed description and map of each altered landcover

type in the park, including sandhill that has transformed to successional hardwood forest, as well as a description and map of the desired future condition for each altered area.

PLAN REVIEW

Management of natural communities, specifically upland mixed woodland and successional hardwood forest, with documentation in the management plan.

Managing Agency Response: Agree. The upcoming management plan update will contain a detailed description and map of each altered landcover type in the park, including upland mixed woodland that has transformed to successional hardwood forest, as well as a description and map of the desired future condition for each altered area.

Management of listed species, specifically pallid cave crayfish, with documentation in the management plan.

Managing Agency Response: Agree. Additional information on troglobite management, with specific reference to the pallid cave crayfish, will be included in the upcoming management plan update.

The need for resource management, prescribed fire, specifically frequency and quality, with documentation in the management plan.

Managing Agency Response: Agree. The upcoming management plan update will contain additional information on annual burning goals, including acres to be burned and fire return intervals for all fire-type natural communities.

Restoration of ruderal areas, specifically successional hardwood forest, with documentation in the management plan.

Managing Agency Response: Agree. Historical land use practices have heavily impacted natural communities in the park to the extent that some have transformed into altered landcover types such as successional hardwood forest. These areas will require substantial restoration efforts.

Non-Native, invasive & problem species, specifically prevention of animals, with documentation in the management plan.

Managing Agency Response: Agree. Removal of non-native, invasive & problem animal species is a high priority for the Division. Additional information about non-native species management will be included in the upcoming management plan update.

FIELD REVIEW

Management of natural communities, specifically upland pine, with documentation in the management plan.

Managing Agency Response: Agree. The upcoming management plan update will contain a detailed description and map of the existing condition of every natural community in the park, including upland pine, as well as a description and map of the desired future condition for each community. The Division will pursue restoration of the upland pine community as funding and staff limitations permit.

Increased protection of listed species, specifically plant inventory, with documentation in the management plan.

Managing Agency Response: Agree. Additional information on plant inventory and management of listed species will be included in the upcoming management plan update.

Restoration of ruderal areas, specifically successional hardwood forest and sandhill dumpsite, with documentation in the management plan.
Managing Agency Response: Agree. Historical land use practices have heavily impacted natural communities in the park to the extent that some have transformed into altered landcover types such as successional hardwood forest, and some have physical scars such as pits. These areas will require substantial restoration efforts. The Division will develop strategies for restoring the altered areas and will pursue actual restoration as funding and staff limitations permit.

The need for forest management, specifically timber inventory, with documentation in the management plan.
Managing Agency Response: *This Park has limited areas of planted pine, but several successional hardwood forest areas with offsite pines. The Division will consult with forestry experts to develop an updated Timber Assessment to guide removal of offsite pine species and guide natural community restoration efforts. An updated Timber Assessment will be included in the upcoming management plan revision.*

The need for increased resource protection, specifically gates & fencing, with documentation in the management plan.
Managing Agency Response: Agree. The Division will address adjacent property concerns in the update of the management plan. The need for gates and fencing in certain areas will be specified. The Division will pursue fencing and gate projects as funding and staff limitations permit.

The need for management resources, specifically staff and funding, with documentation in the management plan.
Managing Agency Response: Agree. If it is determined that additional staff are needed at the time of the next unit management plan revision, it will be included in the plan. However, no new staff can be assigned to this or any other park unit unless they are appropriated by the Legislature or reassigned from other units. Division funding is determined annually by the Florida Legislature and funds are allocated to the 160 state parks according to priority needs.

Thank you for your attention.

GK

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