

**ST. MARKS RIVER PRESERVE  
STATE PARK**

**APPROVED  
UNIT MANAGEMENT PLAN**

**STATE OF FLORIDA  
Department Of Environmental Protection  
Division of Recreation and Parks**

**June 10, 2011**



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## INTRODUCTION

St. Marks River Preserve State Park is located in Leon and Jefferson Counties (see Vicinity Map); access to the park is from County Road 259, Tram Road (see Reference Map). In addition, significant land and water resources existing near the park have been identified on the Vicinity Map.

On January 24, 2006, the Board of Trustees of the Internal Improvement Trust Fund (Trustees) purchased the 2,589.67-acre parcel in Leon and Jefferson counties, Florida, which constitutes St. Marks River Preserve State Park. The acquisition was funded through the Florida Forever program. Since the initial acquisition, the Trustees have not acquired any additional property for St. Marks River Preserve State Park. To date, the park contains 2,590 acres.

On December 21, 2006, the Trustees transferred management authority of the park to the Florida Department of Environmental Protection (DEP), Division of Recreation and Parks (DRP) under lease agreement No. 4535. The period of the lease is for a period of fifty (50) years and will expire on December 20, 2056.

The Trustees lease stipulates that the property be used for conservation and protection of natural and historical resources. The DRP manages the park for the conservation and protection of natural and historical resources, and for public outdoor recreation that is compatible with the conservation and protection of the property.

At St. Marks River Preserve State Park, public outdoor recreation and conservation is the designated single use of the property. There are no legislative or executive directives that constrain the use of this property.

## PURPOSE AND SIGNIFICANCE OF THE PARK

The park is part of the Upper St. Marks River Corridor Florida Forever Project. The primary goal of the project is to buffer the upper St. Marks River from development and preserve its water quality, while protecting the natural communities in the river floodplain. The Upper St. Marks River Corridor Florida Forever Project would create a long-sought and permanent wildlife corridor along the St. Marks River and provide continuous linkage between local, state and federal conservation lands stretching from Tallahassee to the Gulf of Mexico.

The unique topography and geology of the park protects the water quality of the St. Marks River and to Apalachee Bay and the estuary at St. Marks National Wildlife Refuge. The river also contributes to the Floridan aquifer and the potable water supply of Tallahassee. The park is a magnet for wildlife, including the Florida black bear, a threatened species. The park encompasses old trade routes that were used in the first exploration and settlement of the region along the river, with historic dirt roads dating

back to the mid-1800s. The landscape connectivity and diversity provided by the river corridor offers excellent recreational trail opportunities.

St. Marks River Preserve State Park is classified as a state preserve in the DRP's unit classification system. In the management of a state preserve, preservation and enhancement of natural conditions is all important. Resource considerations are given priority over user considerations and development is restricted to the minimum necessary for ensuring its protection and maintenance, limited access, user safety and convenience, and appropriate interpretation. Permitted uses are primarily of a passive nature, related to the aesthetic, educational and recreational enjoyment of the preserve, although other compatible uses are permitted in limited amounts. Program emphasis is placed on interpretation of the natural and cultural attributes of the preserve.

### **PURPOSE AND SCOPE OF THE PLAN**

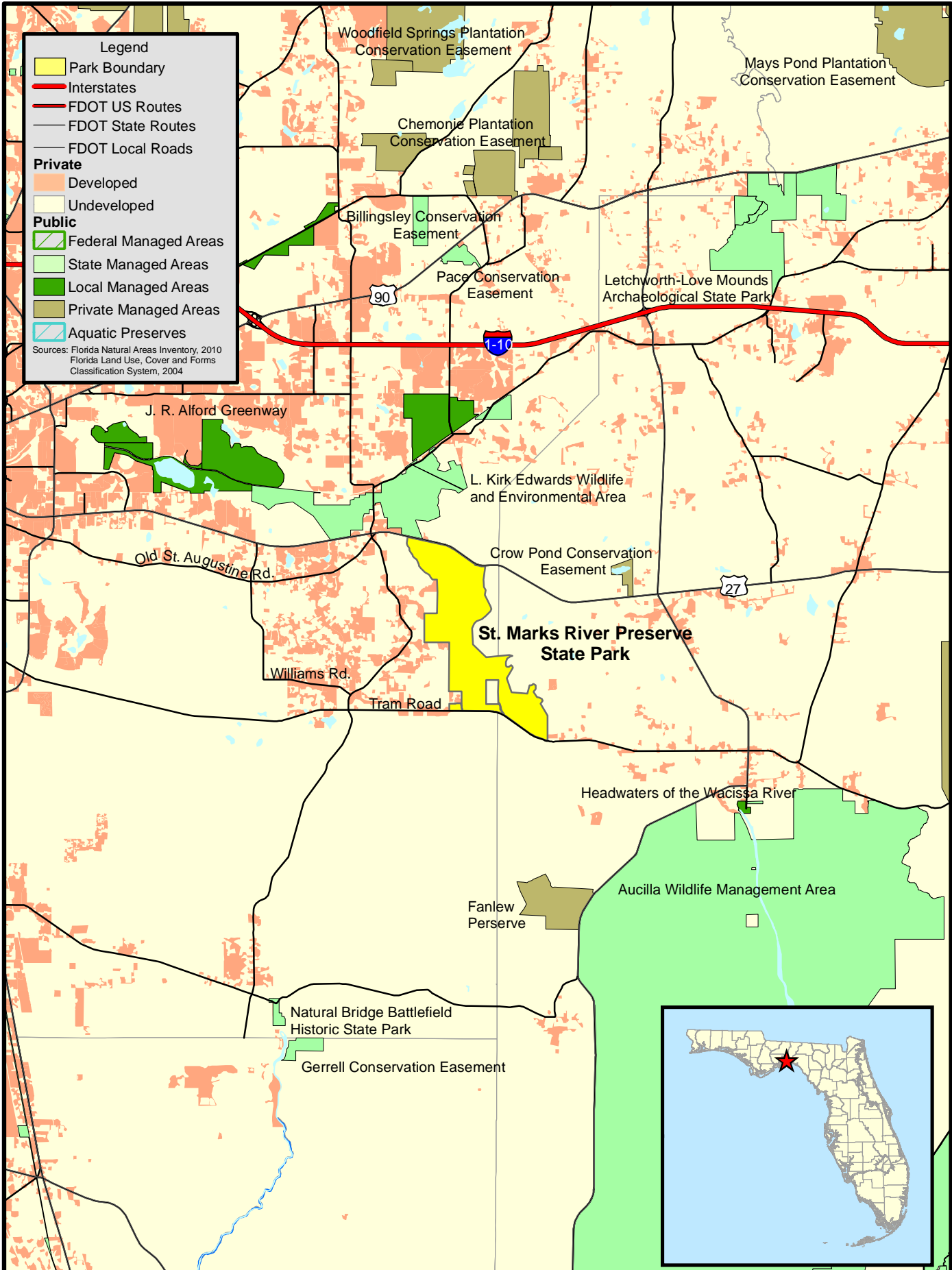
This plan serves as the basic statement of policy and direction for the management of St. Marks River Preserve State Park as a unit of Florida's state park system. It identifies the goals, objectives, actions and criteria or standards that guide each aspect of park administration, and sets forth the specific measures that will be implemented to meet management objectives. 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. Upon approval, this management plan will be the initial plan for the park.

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. In addition, this component identifies resource management problems and needs, and establishes measurable management objectives for each of the park's management goals according to resource type. The Resource Management Component also 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 allocates the park's recreational resources, determines the volume of public use and develops the park's physical plan. During development of the Land Use Component, intrinsic factors such as access, population, adjacent land uses, natural and cultural resources, current public uses, and existing park development are considered. Measurable objectives are established to expand recreational opportunities and to develop or improve use areas, facilities and programs.

The Implementation Component consolidates the measurable objectives and actions for each of the park's management goals. An implementation schedule and cost estimates are included for each objective and action. Included in the table (1) measures used to



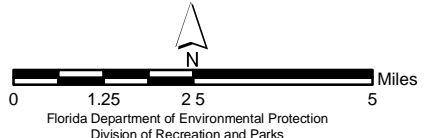


**Legend**

- Park Boundary
- Interstates
- FDOT US Routes
- FDOT State Routes
- FDOT Local Roads
- Private**
- Developed
- Undeveloped
- Public**
- Federal Managed Areas
- State Managed Areas
- Local Managed Areas
- Private Managed Areas
- Aquatic Preserves

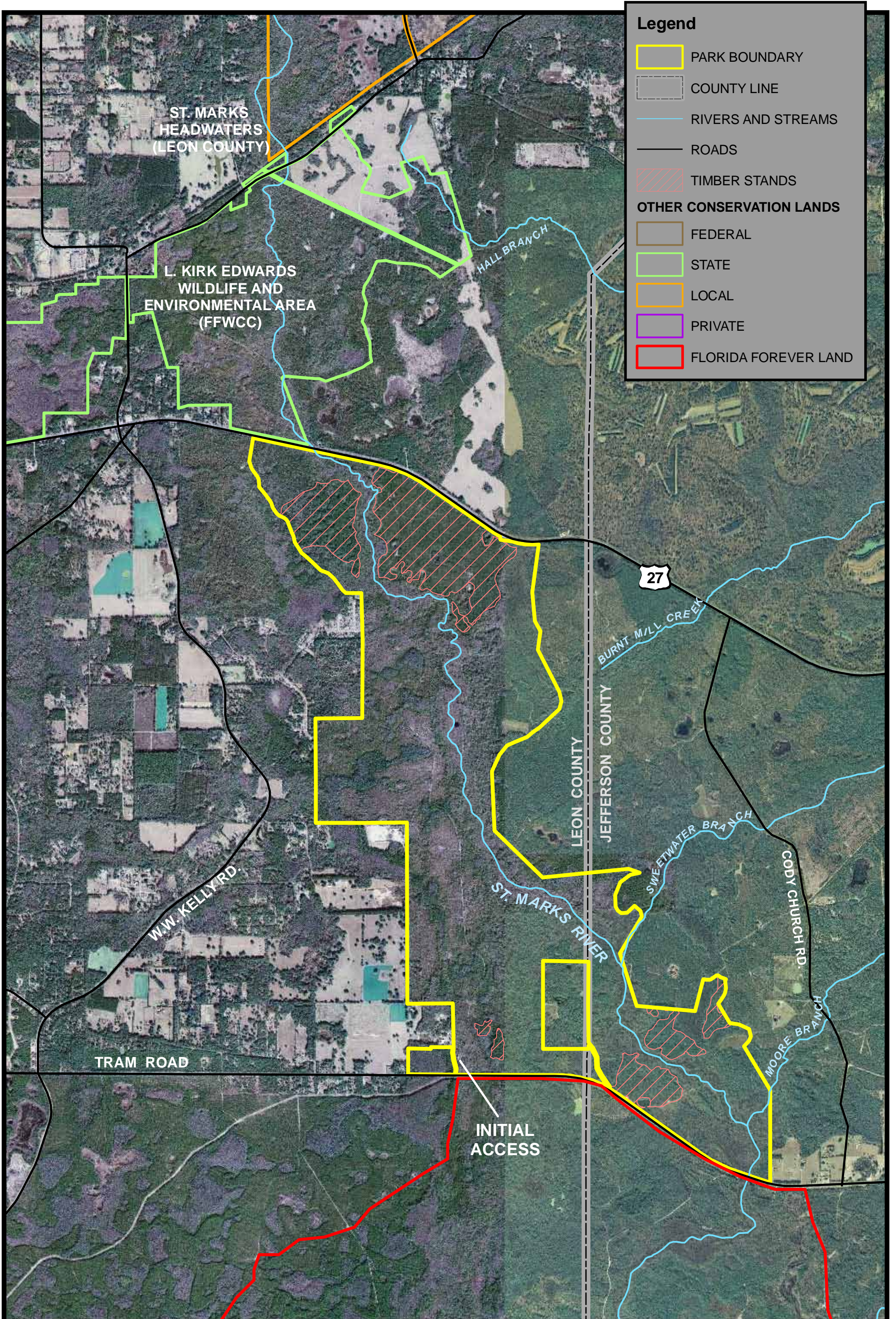
Sources: Florida Natural Areas Inventory, 2010  
Florida Land Use, Cover and Forms Classification System, 2004

**ST. MARKS RIVER PRESERVE STATE PARK**



**VICINITY MAP**





**Legend**

- PARK BOUNDARY
- COUNTY LINE
- RIVERS AND STREAMS
- ROADS
- TIMBER STANDS
- OTHER CONSERVATION LANDS**
- FEDERAL
- STATE
- LOCAL
- PRIVATE
- FLORIDA FOREVER LAND



evaluate the DRP's implementation progress, (2) timeframes for completing actions and objectives, and (3) a general estimate of costs to complete each action and objective.

All development and resource alterations 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 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 natural and cultural resources, management needs, aesthetic values, visitation and visitor experiences. For this park, it was determined that selective timber removal operations could be accommodated in a manner that would be compatible and not interfere with the primary purpose of resource-based outdoor recreation and conservation. This compatible secondary management purpose is addressed in the Resource Management Component of the plan. Uses such as, water resource development projects, water supply projects, stormwater management projects, linear facilities and sustainable agriculture and forestry (other than those forest management activities specifically identified in this plan) are not consistent with this plan or the management purposes of the park.

Visitor fees and charges are the principal source of revenue generated by the park. The DRP analyzed the feasibility of the park to generate revenue to enhance management; however, it was determined that multiple-use management activities would not be appropriate as a means of generating revenues for land management. On a case-by-case basis, the DRP evaluates strategies to supplement park funding and include, but are not limited to, fees, concessions and similar measures.

The DRP analyzed the use of private land managers to facilitate restoration and management of this park. Decisions regarding this type of management (such as outsourcing, contracting with the private sector, use of volunteers, etc.) are determined on a case-by-case basis as necessity dictates.

## **MANAGEMENT PROGRAM OVERVIEW**

### **Management Authority and Responsibility**

In accordance with Chapter 258, Florida Statutes and Chapter 62D-2, Florida Administrative Code, the 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.

Many operating procedures are standardized system-wide and are set by internal direction. These procedures are outlined in the DRP's Operations Manual (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.

1. .... Provide administrative support for all park functions.
2. .... Protect water quality and quantity in the park, restore hydrology to the extent feasible and maintain the restored condition.
3. .... Restore and maintain the natural communities/habitats of the park.
4. .... Maintain, improve or restore imperiled species populations and habitats in the park.
5. .... Remove exotic and invasive plants and animals from the park and conduct needed maintenance-control.
6. .... Protect, preserve and maintain the cultural resources of the park.
7. .... Provide public access and recreational opportunities in the park.
8. .... 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), Division of

Forestry (DOF), 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 (FFWCC), assists staff in the enforcement of state laws pertaining to wildlife, freshwater fish and other aquatic life existing within the park. In addition, the FFWCC aids the DRP with wildlife management programs, including imperiled species management and Watchable Wildlife programs. 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 on Tuesday, February 15, 2011, to present the draft management plan. In addition, an Advisory Group meeting was held on Wednesday, February 16, 2011. The purpose of this meeting is to provide the Advisory Group members an opportunity to discuss the draft management plan. Addendum 2 contains the list of Advisory Group members and the Advisory Group staff report.

### **Other Designations**

St. Marks River Preserve 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.

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 DEP. This park is not within or adjacent to an aquatic preserve as designated under the Florida Aquatic Preserve Act of 1975 (Section 258.35, Florida Statutes).



## 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. The management measures expressed in this plan are consistent with the DEP's overall mission in ecosystem management. Cited references are contained in Addendum 3.

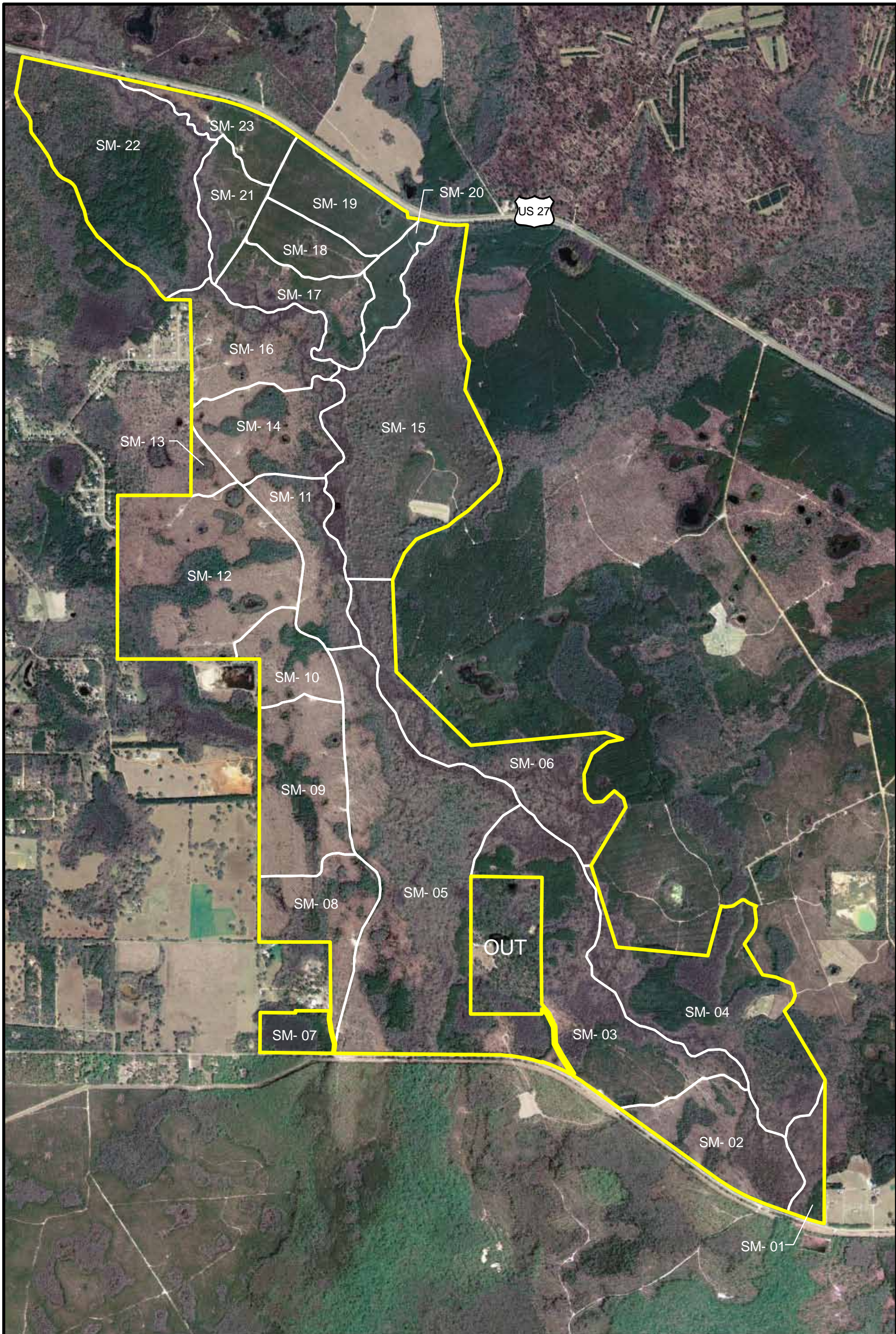
The DRP's philosophy of resource management is natural systems management. Primary emphasis is placed on restoring and maintaining, to the degree possible, the natural processes that shaped the structure, function and species composition of Florida's diverse natural communities as they occurred in the 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: St. Marks River State Park Management Zone Acreage**

<b>Management Zone</b>	<b>Acreage</b>	<b>Managed with Prescribed Fire</b>
USM 1	27.54	
USM 2	94.08	Y
USM 3	191.64	Y
USM 4	190.68	Y
USM 5	368.59	Y
USM 6	141.68	
USM 7	23.38	
USM 8	81.18	Y
USM 9	118.47	Y
USM 10	51.86	Y
USM 11	73.26	Y
USM 12	211.89	Y
USM 13	13.91	Y
USM 14	92.64	Y
USM 15	289.22	Y
USM 16	95.84	Y
USM 17	68.68	Y
USM 18	44.19	Y
USM 19	67.11	Y
USM 20	31.47	
USM 21	45.89	Y
USM 22	219.66	Y
USM 23	47.02	Y

**RESOURCE DESCRIPTION AND ASSESSMENT**

**Natural Resources**

**Topography**

The park is geographically situated in the subtle valley of the St. Marks River corridor located between U.S. Highway 27, to the north and Tram Road to the south. Elevations just east and west of the park rise to over 160 feet, characteristic of the Tallahassee Hills geographic region. The highest elevation in the park is approximately 70 feet (see Topographic Map). This elevation occurs within management zone USM-21, located in the far north, and within the southwest corner of management zone USM-9 located along the western boundary. Starting from these higher elevations and moving down-slope towards the river, one enters the extensive floodplain, an area with no significant topographic relief. The elevation within this broad, flat, low-lying river floodplain ranges from 30 to 40 feet.

## **Geology**

The dominant geologic feature near the park is the Cody Scarp. This escarpment is considered one of the most persistent topographic breaks in Florida. The escarpment marks an ancient shoreline left behind when sea levels were much higher than they are today. The Cody Scarp marks the boundary between two major physiographic divisions in Leon and Jefferson Counties. The Northern Highlands occur north of the escarpment and include the prominent physiographic feature known as the Tallahassee Hills. The coastal lowlands occur south of the escarpment, and include the vast Woodville Karst Plain and the River Valley Lowlands. The River Valley Lowlands are subtle riverine valleys in lower Jefferson County, including those of the St. Marks, Wacissa and Pinhook Rivers. Topographic maps reveal that Tram Road closely follows the Cody Scarp near the park. The escarpment is apparent, just west of the park, where elevations immediately north of the highway rise from 55 feet to 165 feet in a relatively short distance, representing a slope of nine percent, or a slope angle of five degrees. The escarpment line continues east along the park's south boundary, however it is less apparent due to the lower elevations associated with the St. Marks River valley.

## **Soils**

Twenty-one distinct soil units occur within the boundaries of the park (see Soils Map). Locations of the soil units are identified in the Soils Map. For a detailed description of these soils, see Addendum 4.

## **Minerals**

There are no known minerals of commercial value at the park.

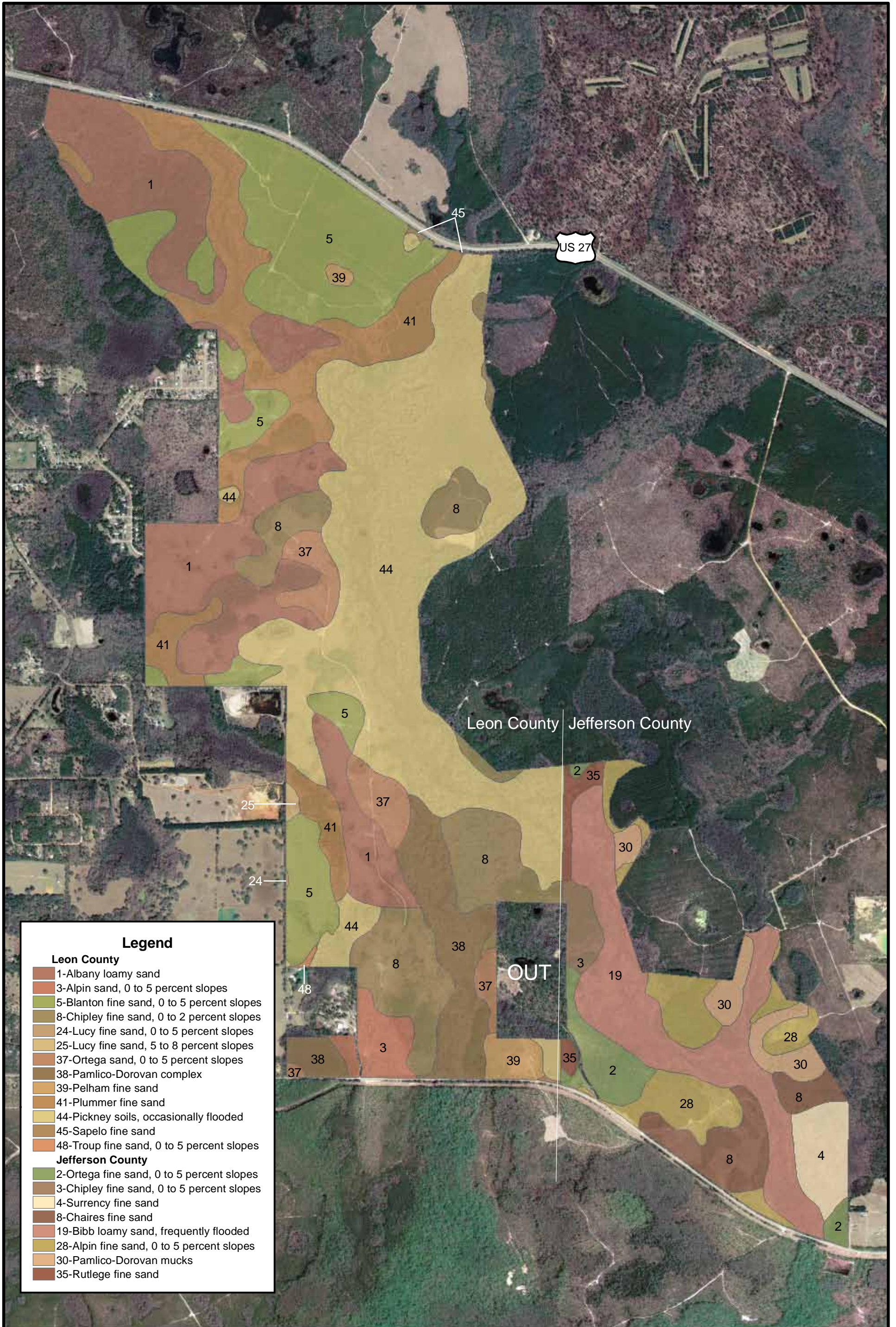
## **Hydrology**

In Jefferson, Leon, and Wakulla counties, the Floridan Aquifer consists of the Miocene St. Marks Formation, the Oligocene Suwannee Limestone and the Eocene Ocala Limestone (Scott 2001). The thickness of the aquifer increases from 1,000 to 2,697 feet, north to south, however only the first 328 feet are used due to high availability in the upper aquifer and increased mineralization and lower availability of the aquifer beginning in the Ocala Limestone (Pratt et al. 1996).

The aquifer is only covered by a thin veneer of permeable Pleistocene sands, called the Woodville Karst Plain by Hendy and Sproul (1966). Located in the area of south Leon County, southwest Jefferson County and east Wakulla County, the Woodville Karst Plain is characterized by high groundwater recharge rates of 38 to 50 centimeters per year, abundant sinkholes, and few surface drainage features in the upland areas. The numerous domes and basin swamps at St. Marks River State Park are the result of similar erosion and solution of the underlying limestone.

The main hydrological feature within the park is the St. Marks River. The water level of the upper stretch of the river fluctuates depending on rainfall. Whole portions of the





**Legend**

**Leon County**

- 1-Albany loamy sand
- 3-Alpin sand, 0 to 5 percent slopes
- 5-Blanton fine sand, 0 to 5 percent slopes
- 8-Chipley fine sand, 0 to 2 percent slopes
- 24-Lucy fine sand, 0 to 5 percent slopes
- 25-Lucy fine sand, 5 to 8 percent slopes
- 37-Ortega sand, 0 to 5 percent slopes
- 38-Pamlico-Dorovan complex
- 39-Pelham fine sand
- 41-Plummer fine sand
- 44-Pickney soils, occasionally flooded
- 45-Sapelo fine sand
- 48-Troup fine sand, 0 to 5 percent slopes

**Jefferson County**

- 2-Ortega fine sand, 0 to 5 percent slopes
- 3-Chipley fine sand, 0 to 5 percent slopes
- 4-Surrency fine sand
- 8-Chaires fine sand
- 19-Bibb loamy sand, frequently flooded
- 28-Alpin fine sand, 0 to 5 percent slopes
- 30-Pamlico-Dorovan mucks
- 35-Rutlege fine sand



river commonly dry up or are reduced to isolated shallow pools, particularly during drought periods. The St. Marks River originates in east Leon County, FL near the town of Capitola. At its headwater, the St. Marks River appears to be little more than a collection of connected wetlands. As the river continues south it picks up the drainage from swamps located in the surrounding area and flow increases to a recognizable dark-water creek by the time it crosses U.S. Highway 27 and through the park boundary. The character of the river remains the same until it collects the discharge from Horn Spring and Chicken Branch Spring approximately 6.25 miles downstream from Tram Road. The combined discharge from these two second-magnitude springs provides the majority of the base flow for the upper St. Marks River and allows the navigation of the river with a canoe or kayak. At Natural Bridge, the St. Marks River is taken by a swallet and resurges at the St. Marks Rise about 0.6 miles to the south where its flow is greatly augmented by groundwater discharge. Discharge measurements collected by Northwest Florida Water Management District (NFWMD) staff indicate that, on average, only 24 percent of the discharge at the river rise is contributed by inflow at the Natural Bridge swallet. The St. Marks River receives significant inflow from the Wakulla River at the confluence near the town of St. Marks.

North of the Cody Escarpment, the Floridan Aquifer transitions from unconfined to semi-confined with the addition of the Miocene, Torreya and Pliocene Miccosukee Formations, clastic units of variable thickness and low permeability. Where present, these clastic units may contain minor surficial and intermediate aquifers; however, they primarily function to restrict local recharge to the Floridan Aquifer. Where the Torreya and Miccosukee Formations are thick, transmissivity of the underlying Floridan Aquifer decreases precipitously due to slower dissolution of the limestone matrix (Miller 1986). There are a few notable locations in the St. Marks Basin where the clastic units are breached by sinkholes, directly connecting the Floridan Aquifer to the surface. These sinks are concentrated near Lake Miccosukee and collectively take in the surface drainage for most of the tributaries to the St. Marks River. The tributaries including Lloyd Creek, Burnt Mill Creek, Still Creek and Hall Branch, were originally complete surface features whose channels were lowered and captured by erosions and solution of the underlying limestone. The broad shallow lakes of the region, including Lakes Jackson, Iamonia, Lafayette and Miccosukee, are likely former surface streams enlarged laterally by sinkhole formation (Yon, 1966).

Three drainages feed into the St. Marks River within the boundaries of the state park. All three originate in low broad basin swamps with poorly defined stream channels, and flow into the St. Marks River from the northeast. Beginning in the north, the first is Burnt Mill Creek. While a surface connection with the St. Marks River occurs through floodplain swamp and forest, the majority of flow disappears into a large sinkhole about 0.5 miles upstream of the surface channel confluence. Stream flow within Burnt Mill Creek becomes organized into a more defined streambed for the last several hundred feet, before cascading several feet into the dark sinkhole. This “disappearance”

of Burnt Mill Creek only occurs following light to moderate rainfall. Very heavy rains result in a broad flow of surface water across the flooded sinkhole and through the floodplain connection with the St. Marks River.

Sweetwater Branch and Moore Branch are two ephemeral streams that connect with the St. Marks River inside the park. Both have very poorly defined stream channels that follow a string of black gum dominated wetlands along their courses.

### **Natural Communities**

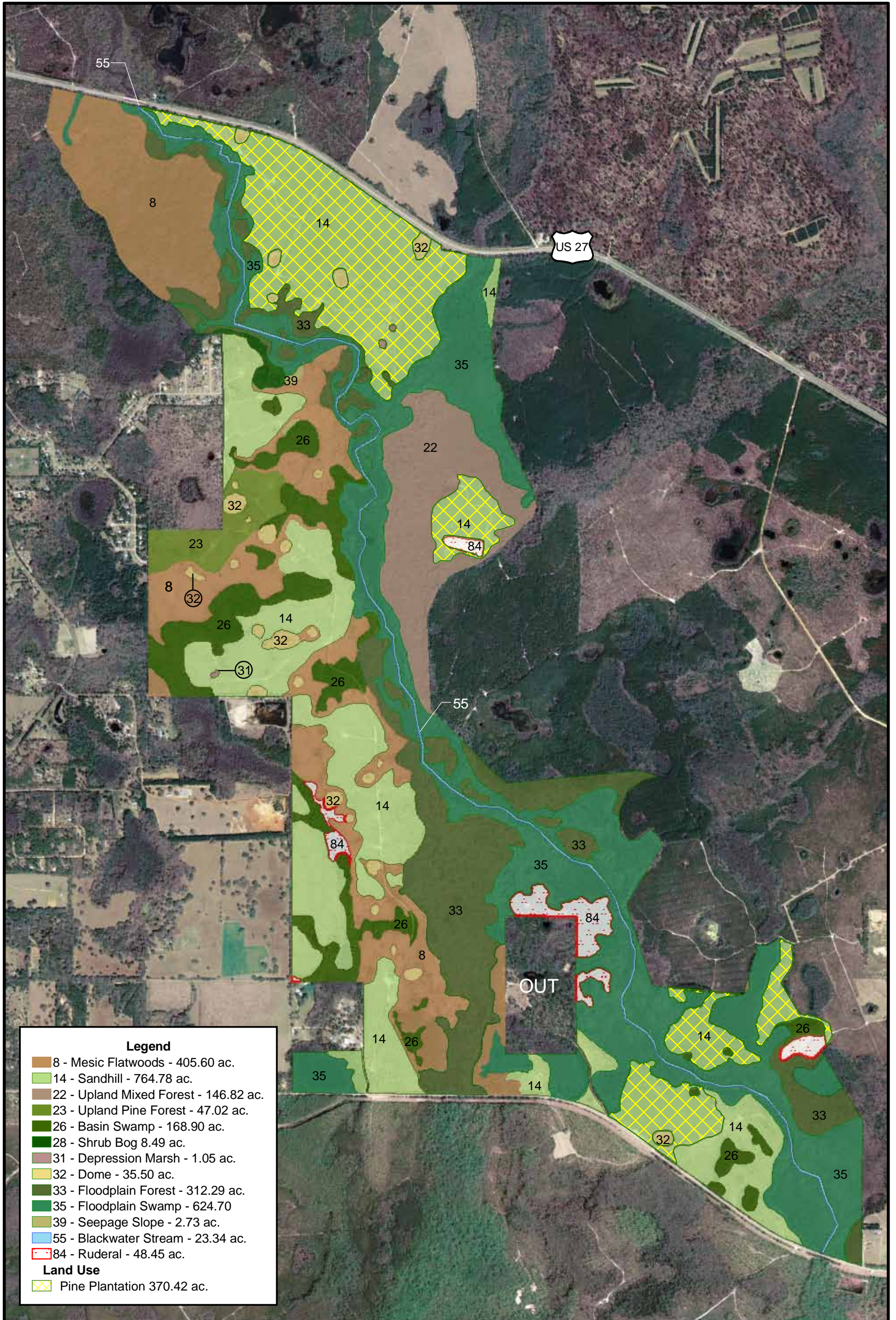
This section of the management plan describes and assesses each of the natural communities found in the state park. It also describes the desired future condition of each natural community and identifies the actions that will be required to bring the community to its desired future condition (DFC). Specific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

The park contains twelve distinct natural communities as well as ruderal and developed areas (see Natural Communities Map). A list of known plants and animals occurring in the park is contained in Addendum 5.







## MESIC FLATWOODS

**Desired future condition:** The overstory should consist of widely scattered longleaf pine (*Pinus palustris*) with various size and age components. Some scattered slash pine (*Pinus elliottii*) may also be present as well, with longleaf pine being the dominant species. Native herbaceous groundcover including wiregrass (*Aristida stricta*) and Andropogon (*Andropogon spp.*) grasses should occur over at least 50 percent of the area and should be less than three feet in height. Saw palmetto (*Serenoa repens*) and gallberry (*Ilex glabra*) should make up no more than 50 percent of total shrub species cover, and be less than three feet in height. Shrub species include saw palmetto, gallberry, Glossy fetterbush (*Lyonia lucida*), runner oak (*Quercus pumila*), dwarf live oak (*Quercus minima*) and shiny blueberry (*Vaccinium myrsinites*). Shrubs are generally knee-high or less, and there are few if any large trunks of saw palmetto along the ground. The Optimal fire return interval for this community is two to five years.

**Description and assessment:** The broad, flat pinelands adjacent to the river floodplain are best described as mesic flatwoods. These pinelands are located along slightly lower elevations, thus occupying broad areas between the high, dry pinelands and the extensive floodplain communities. All of the mesic flatwoods have been managed as high-yield commercial timberland for the past six decades. A few scattered, volunteer longleaf pines occur in a few sites. Longleaf pine once comprised the major portion of the overstory. Today the overstory in most of the mesic flatwoods areas consists of widely scattered planted slash pines; the remnants of timber thinning operations before State acquisition.

Evergreen woody shrubs such as gallberry, glossy fetterbush and titi (*Cyrilla racemiflora*) are the dominant vegetation in most areas. Other typical mesic flatwoods plants found within these areas include yellow-eyed grass (*Xyris spp.*), hatpins (*Eriocaulon decangulare*), tall meadow beauty (*Rhexia alifanus*), saw palmetto, blazing star (*Liatris spp.*), deer tongue (*Carphephorus spp.*), and thoroughwort (*Eupatorium spp.*).

The best example of mesic flatwoods occurs in the western central portion of the park (Management Zone USM-12). This area represents the palmetto-gallberry-slash pine variety of flatwoods often found along Florida's Big Bend. Native grasses such as Andropogon and some scattered wiregrass also occur here.

A large area of mesic flatwoods in the far northwest portion of the park (Management Zone USM-22) appears to have been planted. Semi-wetland areas at slightly lower elevations are scattered across this area of mesic flatwoods. Most of these wetlands support a heavy undergrowth of evergreen woody shrubs such as titi, large gallberry (*Ilex coriacea*) and glossy fetterbush. It appears that silviculture was largely excluded from these lower lying areas of flatwoods. The shady, mesic conditions in the area, have contributed to a very heavy accumulation of leaf litter and duff. Together with the

heavy undergrowth of woody shrubs, the area has a high fuel load, and could potentially experience a high-intensity wildfire, particularly under drought conditions.

**General management measures:** General management measures for mesic flatwoods will begin with site-specific identification of hydrological disruptions and natural community restoration needs. Management measures will include prescribed burning, selective hardwood removal and exotic species control.

## SANDHILL

**Desired future condition:** The dominant pine should be longleaf. Herbaceous groundcover should occur over 80 percent or more of the area, and should be less than three feet in height. There should be scattered individual trees, clumps or ridges of onsite oak species, such as turkey oak (*Quercus laevis*), bluejack oak (*Quercus incana*) and dwarf live oak specific to St. Marks River State Park. In old growth conditions, some on-site oaks are commonly 50-100 years old. The optimal fire return Interval for this community is two to four years.

**Description and assessment:** Sandhills occur on nearly all of the high, well-drained upland areas of the park. A few of these areas have very well drained, deep sandy soils. Grasses and forbs are more abundant than in other upland areas, despite having been impacted by past silviculture. Species such as wiregrass and broomsedge (*Andropogon spp.*) are present in a relatively even distribution throughout the areas identified as sandhill. Other typical sandhill plant species such as blazing star, fleabane (*Erigeron spp.*), sparkleberry (*Vaccinium arboreum*), winged sumac (*Rhus copallinum*), turkey oak, blue-jack oak and silver croton (*Croton argyranthemus*) are currently found here.

Active gopher tortoise (*Gopherus polyphemus*) burrows have been identified in the park's sandhill. Other documented animals include, pocket gopher (*Geomys pinetis*), eastern diamond-back rattlesnake (*Crotalus adamanteus*), cotton mouse (*Peromyscus gossypinus*), red-bellied sapsucker (*Melanerpes carolinus*), redheaded woodpecker (*Melanerpes erythrocephalus*), downy woodpecker (*Picoides pubescens*), pileated woodpecker (*Dryocopus pileatus*), white-tailed deer (*Odocoileus virginianus*), and wild turkey (*Meleagris gallopavo*).

Before the land was acquired by the state, all of the sandhill areas were managed as high-yield commercial timberland. In a few areas, volunteer longleaf pines occur. Before silviculture, it appears that longleaf pine was the dominant pine species in these areas. Today the overstory consists of widely scattered planted slash pines that remain from the last commercial timber harvests. The areas of pine plantation (approximately 370 acres) have been identified on the Natural Communities Map as a land use overlay in the mapped sandhill community.

The large sandhill area just south of U.S. Highway 27 and another just north of Tram



Road have not been thinned. The initial restoration measure for the 127-acre site (Management Zones USM-17 through USM-21 & USM 23) should be timber thinning to establish a more natural overstory density, and improve understory habitat for low herbaceous plants. The southern site (within Management Zone USM-3), consists of approximately 44 acres of planted longleaf pines. The initial management measure for this site will be to thin the stand to approximately 150 stems per acre, to establish a more natural overstory density and improve growing conditions for the remaining pines.

**General management measures:** General management measures for sandhill will begin with site-specific identification of hydrological disruptions and natural community restoration needs. Management measures will include prescribed burning, vegetation management measures, such as selective hardwood removal, and exotic species control.

### UPLAND MIXED FOREST

**Desired future condition:** The dominant tree species should include swamp chestnut oak (*Quercus michauxii*), live oak (*Quercus virginiana*), white oak (*Quercus alba*), pignut hickory (*Carya glabra*), American beech (*Fagus grandifolia*) and southern magnolia (*Magnolia grandiflora*) along with spruce pine (*Pinus glabra*) and loblolly pine (*Pinus taeda*). Hardwood tree species should be dominant or co-dominant with pines. Herbaceous groundcover should occur over approximately 50 percent of the area. Woody understory shrubs should be largely absent. The Optimal Fire Return Interval for this community should be three to ten years.

**Description and assessment:** A large, highly disturbed, upland area along the eastern side of the park is classified as an early successional upland mixed forest. This area has experienced varying degrees of timber removal. Some larger hardwood trees remain across the area. Species such as live oak, water oak (*Quercus nigra*), laurel oak (*Quercus laurifolia*), southern magnolia, swamp chestnut oak and spruce pines remain widely scattered. Dominant species are currently laurel oak and water oak.

**General management measures:** General management measures for the area described as upland mixed forest should begin with additional investigation to identify pre-existing natural site conditions. Based on additional investigations, general management measures may include site-specific vegetation management, species reintroduction, and closure or rerouting of existing roads and trails.

### UPLAND PINE FOREST

**Desired future condition:** Dominant tree species should be longleaf pine with multi-age classes, as well as scattered blackjack oak (*Quercus marilandica*) and turkey oaks. Herbaceous cover is less than three feet in height and should occur over at least 80 percent of the area. In addition to groundcover and pine characteristics noted

previously, mature hardwood trees should be scattered throughout, such as blackjack oak, pignut hickory, flowering dogwood (*Cornus florida*) and sassafras (*Sassafras albidum*). In old growth conditions, oak trees and hickories may reach 100-200 years old. The Optimal Fire Return Interval for this community is two to five years.

**Description and assessment:** Relatively large areas have been labeled as upland pine forest. These areas are very similar to the park's sandhill communities, and generally occur nearby. They have subtle differences in soil composition and soil moisture retention, as well as key vegetation differences. The most apparent difference between the sandhill and upland pine forest is the relative presence of either turkey oak or blackjack oak. Blackjack oak is the dominant hardwood within areas mapped as upland pine forest, while turkey oak occupies this niche in the areas mapped as sandhill. Overall, understory conditions appear slightly more mesic.

Gopher tortoise burrows have been observed in the upland pine forest area, in addition to other associated species such as the eastern diamond-back rattlesnake.

**General management measures:** General management measures for upland pine forest will begin with site-specific identification of hydrological disruptions and natural community restoration needs. Management measures will include prescribed burning, vegetation management measures, such as selective hardwood removal, and exotic species control.

## **BASIN SWAMP**

**Desired future condition:** The natural hydrological regime for these forested basin wetlands should allow for an extended hydroperiod that typically lasts 200-300 days. Dominant trees should be cypress (*Taxodium spp.*), loblolly bay (*Gordonia lasianthus*) and sweet bay magnolia (*Magnolia virginiana*). Other canopy species should include slash pine, red maple (*Acer rubrum*), dahoon holly (*Ilex cassine*) and sweetgum (*Liquidambar styraciflua*). Understory shrubs should be concentrated around the perimeter or ecotone. Shrub species should consist of a wide range including titi, gallberry, glossy fetterbush, Virginia willow (*Itea virginica*) and wax myrtle (*Myrica cerifera*). The herbaceous component, if present, may include species such as ferns, arrowheads *Sagittaria spp.*, lizard's tail (*Saururus cernuus*), false nettle (*Boehmeria cylindrica*) and sphagnum moss (*Sphagnum spp.*).

**Description and assessment:** A variety of irregularly shaped wetland basins occur at the park, and are best described as basin swamp natural communities. In most cases, the wetlands are not connected with the larger floodplain forests and swamps of the St. Marks River corridor. These wetlands are usually at least several acres in size, and are typically occupied by a closed canopy forest of water tolerant hardwood trees. Dominant canopy forming trees include loblolly bay, cypress and sweet bay magnolia. The larger basin swamps appear to have extended hydro-periods, with surface water

being present for a majority of the year.

The park's basin swamps provide very good habitat for a variety of animal species. Documented species from these wetlands include leopard frog (*Rana sphenocephala*), bronze frog (*Rana clamitans clamitans*), green tree frog (*Hyla cinerea*), cricket frog (*Acris gryllus*), spring peeper (*Pseudacris crucifer*), southern chorus frog (*Pseudacris nigrita*), southern water snake (*Nerodia fasciata*), American alligator (*Alligator mississippiensis*), green anole (*Anolis carolinensis*), as well as a variety of small neo-tropical migratory birds that utilize these densely forested islands for temporary refuge.

A dense growth of titi, large gallberry and glossy fetterbush occupy the narrow ecotone between these closed canopy wetland forests and the surrounding pinelands.

**General management measures:** Initial investigations reveal that natural hydrology is largely unaltered within and around most basin swamp natural communities. General management measures should include more in depth investigation of the integrity of hydrological processes. Prescribed burning, associated with fire intervals of adjacent natural communities, will be conducted as well as exotic species monitoring.

#### **SHRUB BOG**

**Desired future condition:** The area delineated as shrub bog should be dominated by woody wetland shrubs such as titi, large sweet gallberry, wax myrtle and glossy fetterbush. Soil in this area is either saturated or flooded following heavy rains, or during normal to wetter than normal years. A few scattered wetland trees such as sweet bay and loblolly bay may be present; however, the dominant vegetation is comprised of the evergreen shrubs that form a nearly contiguous, low canopy.

**Description and assessment:** The current condition of the shrub bog area is identical to the above description.

**General management measures:** Initial investigations reveal that natural hydrology is largely unaltered within this wetland area. General management measures will include aggressive prescribed burning, along ecotones, associated with fire intervals of adjacent natural communities and exotic species monitoring.

#### **DEPRESSION MARSH**

**Desired future condition:** Emergent herbaceous and low shrub species should be dominant over most of the area, with an open vista. If hydrophytic trees and shrubs occur, they should be sparse and concentrated within the center/deeper area. There should be little accumulation of dead grassy fuels due to frequent burning. The Optimal Fire Return Interval for this community should be approximately two to four years depending on annual drought conditions.

**Description and assessment:** A few small wetlands are best described as depression marsh. These wetlands are very shallow, circular depressions, indicative of partial collapse of underlying limestone. Unlike other wetlands described at this park, water tolerant herbs, grasses and low shrubs are more typical. These shallow wetlands can be completely dry during drought periods.

**General management measures:** Initial investigations reveal that natural hydrology is largely unaltered within and around depression marsh natural communities. Prescribed burning, associated with fire intervals of adjacent natural communities, will be conducted as well as exotic species monitoring.

### **DOMES SWAMP**

**Desired future condition:** These areas should be isolated, forested, depression wetlands occurring within the surrounding fire maintained mesic flatwoods or sandhill. Larger trees growing in the interior should include mature cypress, black gum (*Nyssa sylvatica*) and loblolly bay. Smaller wetland hardwoods and shrubs such as swamp cyrilla, Virginia willow, large sweet gallberry and glossy fetterbush should occur within more shallow water and along the outer edge, forming an ecotone with the surrounding fire dependent pinelands. Other sub-canopy species can include red maple, dahoon holly, swamp bay (*Persea palustris*) and sweetbay. If an herbaceous component is present, it should include ferns and other water tolerant sedges and grasses. Surface hydrology connectivity between Dome Swamps and their surrounding natural communities should be unaltered and fully in tact. Dome Swamps should be exposed to fire on the same frequency as the adjacent fire type community, allowing fires to naturally burn across ecotones. Fires should be appropriately planned to avoid high severity fuel consumption within the dome swamp.

**Description and assessment:** Many smaller wetlands at the park are described as dome swamp. These wetlands are situated within circular depressions that usually contain some level of standing water throughout the year. Bald cypress along with black gum and loblolly bay are the dominant trees in most of the dome wetlands. Other domes lack these overstory trees. A large number of these wetlands, particularly those located in the north; occur within obvious "bowl-shaped" depressions, indicative of the karst region. The dome wetlands generally have a central area of "ponded" surface water, with or without the surrounding canopy of pond cypress (*Taxodium ascendens*) and black gum. Some of the surface water areas are fully overgrown by hydrophytic shrubs such as button bush (*Cephalanthus occidentalis*), and/or ringed by dahoon holly, myrtle-leaf holly (*Ilex myrtifolia*) and swamp cyrilla. Animal species noted during initial field visits were box turtle (*Terrapene carolina*), cricket frog, bronze frog, spring peeper and mosquito fish (*Gambusia affinis*).

A number of the park's domes are surrounded by an ecotonal area dominated by swamp cyrilla, large gallberry and glossy fetterbush.

**General management measures:** Initial investigations reveal that natural hydrology is largely unaltered within and around dome natural communities. Prescribed burning of ecotones, associated with fire intervals of adjacent natural communities, will be conducted as well as exotic species monitoring and removal.

## FLOODPLAIN FOREST

**Desired future condition:** The Park's floodplain forests should be seasonally flooded associated with water levels of the St. Marks River. These areas should consist of closed canopy, hardwood forests that occur on very slight elevations within the floodplain of the river corridor. Typical overstory trees should include swamp chestnut oak, loblolly pine, spruce pine, sweetgum, live oak, water oak, water hickory, American elm (*Ulmus americana*), laurel oak and red maple. Understory species may include swamp dogwood (*Cornus foemina*) and American hornbeam (*Carpinus caroliniana*). Some higher elevated ecotonal areas between the floodplain forest and adjacent pinelands should support hardwood species such as American beech (*Fagus grandifolia*), American holly (*Ilex opaca*), white oak and southern magnolia. Presence of groundcover should be highly variable depending on site-specific hydroperiods. Some large areas of floodplain forest should support a dense understory of woods grass.

**Description and assessment:** Vast areas within the floodplain of the St. Marks River are examples of river floodplain forest. These closed canopy forests occur on slightly higher elevations within the river floodplain corridor. These are hardwood-dominated forests with very open, inviting understories. The dense canopy consists primarily of laurel oak, live oak, water oak, swamp chestnut oak, loblolly pine, spruce pine and sweetgum. Other trees include American hornbeam, American beech, American holly, white oak and southern magnolia. The understory conditions throughout the majority of this map unit are open and almost manicured in appearance. A uniform growth of woods grass provides a lush green base to the forest floor in many areas. Widely scattered bluestem palmetto is the only notable understory shrub. These closed canopy forests abruptly transition to mesic flatwoods or sandhill as one moves upslope from the river floodplain.

Animal species noted during initial site visits by various DEP staff include eastern grey squirrel (*Sciurus carolinensis*), nine banded armadillo (*Dasypus novemcinctus*), opossum (*Didelphis marsupialis*), raccoon (*Procyon lotor*), marsh rabbit (*Sylvilagus palustris*), barred owl (*Strix varia*), eastern screech owl (*Otus asio*), Carolina wren (*Thryothorus ludovicianus*), hermit thrush (*Catharus guttatus*), hooded warbler (*Wilsonia citrina*), northern cardinal (*Cardinalis cardinalis*), eastern pipistrelle bat (*Pipistrellus subflavus*) and white-tailed deer. Florida black bear (*Ursus americanus floridanus*) and bobcat (*Felis rufus*) are also known to routinely range through the Park.

**General management measures:** The Park's floodplain forests are in very good condition, having experienced few impacts or alterations from past land usage. General

management measures should focus on minimizing disturbance and alterations within the floodplain forests, and preserving adjacent natural communities.

### FLOODPLAIN SWAMP

**Desired future condition:** The Park's floodplain swamps should be frequently flooded communities located within low-lying areas adjacent to the St. Marks River. The closed or nearly closed canopy should primarily be comprised of black gum and bald cypress. Other species should include water hickory (*Carya aquatica*), red maple and water oak. Understory vegetation should be sparse or absent, due to frequent flooding.

**Description and assessment:** Low-lying areas along the St. Marks River and ephemeral tributaries are best described as floodplain swamp. These areas typically have a seasonal hydro-period, regardless of water levels within the river. The swamps experience varying levels of inundation related to local and upstream rainfall, and subsequent flooding of the St. Marks River.

The fully closed to nearly closed canopy is dominated in most areas by black gum. Bald cypress and scattered red maple also contribute to the dense canopy. The understory within the floodplain swamp is open and easy to walk through, when dry. With very few exceptions, there are no understory herbaceous plants, due to the frequency of standing water throughout much of the year. When dry, the ground is generally covered with decaying leaf litter. The park's vast floodplain swamps generally transition into floodplain forest or mesic flatwoods.

**General management measures:** The natural hydrology of the park's floodplain swamps remains largely unaltered and in tact. Management measures should focus on continued protection of these areas, and the adjacent natural communities.

### SEEPAGE SLOPE

**Desired future condition:** Areas delineated as seepage slope should have relatively wet/saturated soils, and should be dominated by low herbaceous plants. Woody shrubs, if present, should be very sparse and low in height due to frequent fires. The Optimal Fire Return Interval for this community is two to three years.

**Description and assessment:** Two areas situated between well-drained pinelands and "down-drainage" wetlands are classified as seepage slope. Water draining through the permeable upper soil horizons of the pinelands, becomes perched very near or at the surface before ultimately draining into the wetlands located farther "down drainage." Soils are typically damp to the touch, if not wet, and support a high diversity of wetland plants including yellow-eyed grass, pipe wort (*Eriocaulon spp.*), tall meadow beauty, St. John's wort *Hypericum spp.*, deer tongue, coinwort (*Centella asiatica*), club moss (*Lycopodium spp.*), milkwort (*Polygala spp.*) and hooded pitcherplant (*Sarracenia minor*). Other species include gallberry, wiregrass, broomsedge, bluestem palmetto

(*Sabal minor*), wax myrtle and swamp cyrilla.

**General management measures:** Management measures for areas delineated as seepage slope should include frequent prescribed burning in accordance with surrounding pyric natural communities, preservation of natural surface hydrology and protection from soil erosion. Localized surface hydrology should remain unaltered, in order to preserve natural process and high soil moisture conditions.

### **BLACKWATER STREAM**

**Desired future condition:** This upper portion of the St. Marks River should naturally be an intermittent watercourse, having originated in lowlands where extensive wetlands with organic soils collect rainfall and runoff, discharging it slowly into the stream. The water should be stained and laden with tannins, particulates and dissolved organic matter derived from drainage through adjacent swamps. The riverbed should have a sandy bottom overlain by varying depths of organic matter. Emergent and floating vegetation is very limited or largely absent due to dramatic seasonal fluctuations in water levels.

**Description and assessment:** The stretch of the St. Marks River flowing through the park is best classified as a blackwater stream. All water input is via poorly defined, ephemeral streams originating in broad shallow swamps. The “upper” stretch of the St. Marks River does have a well-defined channel over the majority of its stream course. Because the river’s water level is highly dependent on drainage input from adjacent wetlands, the upper portion of the river is often reduced to little more than a series of stagnant pools during periods of below normal rainfall. The entire stretch of the river flows through a blackgum and bald cypress dominated floodplain swamp.

**General management measures:** The hydrology of the upper St. Marks River corridor located within the State Park is largely unaltered and in tact. There are no major constrictions or impacts to the natural hydrology of the river and its surface tributaries within the span stretching from U.S. Highway 27 to Tram Road. The only man-made constrictions are the bridge crossings at both highways, and a former bridge crossing of the St. Marks River at the southwest corner of management zone SM-17. Stabilization of a low water crossing point approximately 0.4 mile downstream, within management zone SM-16 will be considered in order to conduct resource management activities at the park. General management measures should focus on minimizing disturbance and alterations within the river corridor, and preserving adjacent natural communities.

### **RUDERAL**

**Desired future condition:** The ruderal areas within the park will be managed to remove Florida Exotic Pest Plant Council (FLEPPC) Category I and II priority invasive exotic plant species. Other management measures include limited restoration efforts designed to minimize the effect of the ruderal areas on adjacent natural areas. Cost-

effectiveness, return on investment and consideration of other higher priority restoration projects within the park will determine the extent of restoration measures in ruderal areas.

**Description and assessment:** Three of the timber stands described in the timber management section, as well as a few small cleared, areas are currently described as ruderal. Natural, on-site understory plant species occur in reasonably good proportions and abundance in the timber stands. It is anticipated, that these areas will be reclassified with a “pineland” natural community label, following initial timber removal efforts.

**General management measures:** Control of EPPC Category I and II invasive plant species in ruderal areas will be on going. Prescribed fire may be applied for vegetative fuel management.

### **DEVELOPED (UNMAPPED)**

**Desired future condition:** The developed areas within the park will be managed to minimize the effect of the developed areas on adjacent natural areas. Priority invasive exotic plant species (FLEPPC Category I and II species) will be removed from developed areas. Other management measures include proper stormwater management and development guidelines that are compatible with prescribed fire management in adjacent natural areas.

**Description and assessment:** A small equestrian trailhead parking area is located at the south end of the property, off Tram Road. This area is delineated on the Reference Map as “initial access.”

**General management measures:** Staff will continue to control invasive exotic plant species in developed areas of the park. Defensible space will be maintained around all structures in areas managed with prescribed fire or at risk of wildfires.

### **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 species that are known to occur within or frequent the park include the Florida black bear, gopher tortoise, little blue heron (*Egretta caerulea*), snowy egret (*Egretta thula*) and white ibis (*Eudocimus albus*), swallow-tailed kite (*Elanoides forficatus*), wood stork (*Mycteria Americana*), Southeastern American kestrel (*Falco sparverius paulus*) and merlin (*Falco columbarius*). One plant species, the Alabama azalea (*Rhododendron alabamense*), was recently identified. Additional professional surveys of the park’s flora and fauna are a priority, and will be actively pursued over the period of this



management plan.

The Florida black bear is a threatened species that occurs along the entire St. Marks River Corridor. Black bears need large contiguous tracts of land in order to ensure a viable breeding population of more than 200 individuals (Cox et. al 1994). Park and District staff should work in coordination with FFWCC to investigate patterns and frequency of black bear use on park lands. For this reason, the completion of Upper St. Marks River Florida Forever Project should remain a priority in the Florida Forever program. Based on FFWCC information and local observations within the region, the overall population within the Big Bend appears to be experiencing a steady recovery since the early 1990s.

Gopher tortoises occur within the high dry pinelands of the Park. The majority of burrows identified thus far are located within the northern management zones, just south of U.S. Highway 27. A recent burrow survey within USM-21 and USM-23 identified many active burrows, including one very small sized burrow indicative of a very young individual. More complete gopher tortoise burrow surveys shall be conducted over the course of this management plan, in coordination with prescribed burning.

A wide variety of wading birds including little blue herons, snowy egrets and white ibis have been observed within the park's basin swamps and the extensive river floodplain swamp. All three species commonly occur along the lower reaches of the St. Marks River as well as the nearby Aucilla, Wacissa and Wakulla Rivers. Local populations are estimated to be stable.

Woodstorks have been observed at the park. These occurrences are as fly-overs.

Swallow-tailed kites are occasionally seen as fly-overs or roosting. Due to their relative infrequency, an estimate of the overall regional population will not be attempted here.

Merlin and other falcons are occasionally observed as fly-overs, during the fall migration period. Due to their relative infrequency, an estimate of the overall regional population will not be attempted here.

The Alabama azalea occurs sparingly along the banks of a small drainage within the floodplain forest. Hooded pitcherplants occur in two small clumps within an area delineated as seepage slope.

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		
<b>PLANTS</b>						
Cardinal flower <i>Lobelia cardinalis</i>			LT		10	Tier 1
Southern crabapple <i>Malus angustifolia</i>			LT		10	Tier 1
Alabama azalea <i>Rhododendron alabamense</i>	LE			S2	10	Tier 2
Hooded pitcherplant <i>Sarracenia minor</i>			LT		1,6,7,10	Tier 2
<b>REPTILES</b>						
Gopher tortoise <i>Gopherus polyphemus</i>	LT	N		S3	1,6,7,8,10,13	Tier1 Tier 2
<b>BIRDS</b>						
Little blue heron <i>Egretta caerulea</i>	LS	N		S4	4	Tier 1
Snowy egret <i>Egretta thula</i>	LS	N		S3	4	Tier 1
Swallow-tailed kite <i>Elanoides forficatus</i>	N	N		S2	1	Tier 1
White ibis <i>Eudocimus albus</i>	LS	N		S4	4	Tier 1
Merlin <i>Falco columbarius</i>	N	N		S2		Tier 1
Southeastern American Kestrel <i>Falco sparverius paulus</i>	LT	N		S3		Tier 1
Woodstork <i>Mycteria americana</i>	LE	LE		S2		Tier 1
<b>MAMMALS</b>						
Florida black bear <i>Ursus americanus floridanus</i>	LT	N		S2	1,4,10,13	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 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.

Initial site visits and routine patrolling by park staff have revealed very few exotic plant species to date. A few exotic species have been found and accordingly removed at the park’s southwestern corner within management zones SM-8 and SM-9. All removal efforts were conducted by trained park staff.

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, 2009). The table also identifies relative distribution for each species and the management zones in which they are known to occur. An explanation of the codes is provided following the table.

<b>Table 3: Inventory of FLEPPC Category I and II Exotic Plant Species</b>			
<b>Common and Scientific Name</b>	<b>FLEPPC Category</b>	<b>Distribution</b>	<b>Management Zone</b>
<b>PLANTS</b>			
Mimosa <i>Albizia julibrissin</i>	I	0	USM- 8
Japanese climbing fern <i>Lygodium japonicum</i>	I	2	USM-8, USM-9
Chinaberry <i>Melia azedarach</i>	II	0	USM-8

**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 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.

Exotic or non-indigenous and nuisance animals are removed as necessary to protect the integrity of natural communities and native wildlife populations. Feral hog (*Sus scrofa*) and isolated signs of feral hog damage were noted shortly after land acquisition. Trained park staff has conducted sustained removal efforts. Following the initial feral hog removal efforts, signs of damage have been reduced. Park staff has communicated and coordinated removal efforts with the adjacent FFWCC and private hunt lease managed properties to the north and northeast. Sustained feral hog removal efforts are on going at these adjacent properties. Trained park staff will continue routine monitoring of the park's wetland natural communities with priority given to areas with histories of hog occurrence.

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**

There are no special natural features located on the park.

### **Cultural Resources**

This section addresses the cultural resources present in St. Marks River State 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 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 historic structures and landscapes 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 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. Every cultural resource's significance derives from historical, architectural or archaeological contexts. Evaluation 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.

For collections, 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. In addition, this inventory contains the evaluation of significance.

## **Pre-Historic 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.

Park staff has recorded five historic period archaeological sites on park property: 8JE1646, 8LE5412, 8LE5413, 8LE5686 and 8LE5689. These sites appear to be former bridge sites or historic period artifacts associated with former crossing points of the St.

## Marks River.

A review of the FMSF indicates that archaeological sites are plentiful on the park borders and in the surrounding areas. In addition, this also indicates that unrecorded resources may be present especially on the upland portions of the park. Nine recorded archaeological sites {8JE67, 8JE68, (8JE880/8LE1549/8LE2909), 8LE151, 8LE1433, 8LE1711, 8LE1712, 8LE2106, 8LE2122} appear to be on the park's immediate borders and due to their proximity may be partially within the park. Most of these sites (with the exceptions of 8JE67 , 8JE880/8LE1549/8LE2909 and 8LE151) generally appear as small artifact scatters probably representing short term campsites and cannot be associated with a specific prehistoric cultural period due to the lack of diagnostic pottery or stone tools.

8JE67 and 8JE880/8LE1549/8LE2909 were first identified as indeterminate artifact scatters not eligible for the National Register. However, further Phase II investigations of both sites by R. Christopher Goodwin and Associates in 2009 determined that 8JE67 contained intact paleosurfaces likely dating to the Early Archaic or Paleo-Indian period and that 8JE880/ 8LE1549/8LE2909 contained a paleosurface similar to Early Archaic sites in the area.

8LE151, the Castro site, was recorded by archaeologist Calvin Jones in 1968 as a historic period Native American site (Leon-Jefferson period). Jones suggested it might have been the site of the Spanish Mission Assumption del Puerto, although no diagnostic Spanish Mission period artifacts were identified during his site inspection.

One site, 8LE2105, located just 250 meters from the park, is considered eligible for listing on the National Register of Historic Places. This site is potentially significant with components ranging from the Paleoindian period including every major culture period through to the 20<sup>th</sup> century American period. This site, if still in good condition, is indicative of the potential for what may be located on St. Marks River State Park.

Sub-surface investigation at St. Marks River State Park has only been conducted at one location: the site for a planned startup kit at the southern end of the park off Tram Road. This site was formerly a logging ramp and had been heavily disturbed during logging operations. Two shovel tests were excavated to one meter below surface at the startup kit location: one at the site for a composting toilet and one at the site of a planned information kiosk. No artifacts were identified in either test although during a surface walkover at the southern end of the logging ramp a small scatter of artifacts was recovered that included whiteware, one fragment of prehistoric pottery, and two chert flakes. The pottery was grit tempered and appeared to be stamped but may have been incised and smoothed; the design was unclear. A fragment of a Herty cup was identified on a dirt road near the startup kit, hinting at possible naval stores activity.

A regional overview of historical resources indicates that the area where the current park is located has been utilized more or less continuously for thousands of years, with perhaps a brief lull following the final destruction of the Apalachee missions in 1704 and before migration of the Creeks from Georgia beginning a few years later (McEwan 1993, Milanich 1994, Milanich and Fairbanks 1980, Milanich and Hudson 1993). Highly significant sites dating from the Paleoindian period, the earliest phase of human occupation in Florida, have been identified just a few miles away near major springs and spring fed rivers in north Florida, including the nearby Aucilla and Wacissa River systems and at Wakulla Springs.

There are major sites, within the Tallahassee region, from the historic period including the De Soto Winter Encampment site, Mission San Luis de Talimali, Seminole villages, and sites from the American Territorial period, early statehood period and American Civil War. Although not as well known as earlier events, this area was active in the naval stores industry that began in the post-Civil War period and continued until the 1940s as well as the timber industry.

On a more localized level, a historic highway that once linked Pensacola and St. Augustine appears to have skirted the northern boundary of the park. The section of the road between Tallahassee and St. Augustine was constructed under contract by John Bellamy and so that section was often referred to as "Bellamy Road." Built in the 1820s the road was planned as a major overland route passing through Tallahassee to link east and west Florida. An 1825 plat map shows the road following the approximate route of modern Old St. Augustine Road (US Highway 27), which is the northern boundary of the park. The land that is now the state park was owned by the St. Joe Paper Company, a major business conglomerate that once held vast tracts of land in the Florida panhandle.

Many roads on the park are historic. The main north-south road was well established by 1954, and was probably based on an existing, informal road network that developed well before then. The earliest aerial photos from 1937 and 1941 indicate a road or network of roads followed the high ground between Gum Creek and the St. Marks River. A bridge crossing on the St. Marks River by the main north-south road is indicated on the USGS 1:24,000 topography map on the northern section of the park and may be historic.

Historic aerials also indicate the property, at least since the 1930s, has been primarily utilized for agriculture, timber production or turpentine. At least two areas on 1937 aerial photographs appear to show activity areas that need to be investigated for the presence of historic resources. No detailed historical research has yet been conducted to determine land use or ownership prior to this time.

**Condition Assessment:** All five archaeological sites located within the park and the



nine archaeological sites located immediately adjacent to the park are considered to be in good condition. The equestrian trailhead site consisting of whiteware, chert flakes and an isolated piece of pre-historic pottery is also considered to be in good condition. No immediate management actions are deemed necessary other than periodic monitoring and protection.

**Level of Significance:** The five recorded archaeological sites located within the park (8JE1646, 8LE5412, 8LE5413, 8LE5686, and 8LE5689) have not been evaluated for significance. Of the nine recorded sites located immediately adjacent to the park, two (8JE67 and 8JE880/8LE1549/8LE2909) have been determined eligible for the National Register due to their research potential (National Register Criterion D). Of the remaining sites, five have been determined ineligible (8JE68, 8LE1711, 8LE1712, 8LE2106, and 8LE2122), and two have not been evaluated for significance (8LE151 and 8LE1433).

**General management measures:** The primary treatment for the park's five recorded archaeological sites will be preservation. Preservation includes protection from damage from resource management, natural causes, construction or human damage including looting.

### **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:** No historic structures have been identified or recorded on park property.

### **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 park does not maintain any formal or informal collections of historic, natural history or archaeological objects. If artifacts are recovered on park property during archaeological monitoring or other activities, they are transmitted to the Division of Historical Resources (DHR), Bureau of Archaeological Research (BAR) for treatment and preservation.

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
8JE1646 St. Marks River State Park Bridge Site #5	Historic/Unspecified	Archaeological Site	NE	G	P
8LE5412 Otter Spring Bridges	Historic/Unspecified	Archaeological Site	NE	G	P
8LE5413 The Crossing	Historic/Unspecified	Archaeological Site	NE	G	P
8LE5686 St. Marks River State Park Bridge Site #1	Historic/Unspecified	Archaeological Site	NE	G	P
8LE5689 St. Marks River State Park Bridge Site #4	Historic/Unspecified	Archaeological Site	NE	G	P

**Significance:**

NRL= .....National Register listed  
 NR = .....National Register eligible  
 LS = .....locally significant  
 NE = .....not evaluated  
 NS = .....not significant

**Condition**

G= .....Good  
 F= .....Fair  
 P= .....Poor

**Recommended Treatment:**

RS = .....Restoration  
 RH = .....Rehabilitation  
 ST = .....Stabilization  
 P = .....Preservation  
 R = .....Removal

## RESOURCE MANAGEMENT PROGRAM

### Management Goals, Objectives and Actions

Measurable objectives and actions have been identified for each of the DRP's management goals for St. Marks 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 Chapters 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 plans 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 before 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.*

Management measures for hydrology at this unit should begin with an evaluation of the current designated stream crossings. Currently there are two jeep trail crossings, one on the St. Marks and one within the drainage associated with Burnt Mill Creek. These sections of resource management trail cross through areas of floodplain forest associated with the respective streams. These crossings function well in their current condition during relatively dry periods. Park and district environmental staff should evaluate the need for more permanent/hardened crossing points necessary to traverse these road sections during periods of higher water. If reinforcement of the sub-grade is deemed necessary, then the application process for the construction of extended low water crossings will be coordinated through the DEP Northwest District, Tallahassee Branch Office. Assistance with this permitting process should be requested from district environmental staff.

Other hydrological management measures should include an evaluation of the park’s current network of resource management roads. Any road sections that are experiencing erosion problems or that intersect wetland natural communities should be specifically addressed. Management measures for any identified problem sections should include or consider sub-grade stabilization with geotextile fabric and rock and/or the installation of appropriate sized culverts or water bars. If significant problem areas are discovered, specific evaluations should be made to determine if problematic sections of road should be relocated to avoid significant disruptions to surface hydrology.

Placement of any new fire lines and resource management roads should be carefully evaluated in order to avoid or at least minimize disruption of surface sheet flow. Any new roads or fire lines should avoid crossing streams or wetlands wherever possible. Any roads or fire lines near streams or wetlands should be constructed to avoid acceleration or channeling of surface water runoff that could lead to soil erosion or siltation of adjacent wetlands.

*Objective: Improve natural hydrological conditions and functions to approximately 18 acres of floodplain forest natural community and 32 acres of floodplain swamp.*

The park perimeter service road near the southern apex of management zone SM-22 intersects approximately 500 feet of floodplain forest with down-drainage feeding into the St. Mark River. Currently this stretch of un-improved road intercepts and redirects a portion of the natural surface water flow. A low water crossing (road bed stabilization) along this approximate 500-foot stretch of perimeter service road would serve to largely restore natural intended sheet flow, and reduce siltation of surface waters feeding into an adjacent 50 acres of floodplain. If the intent of roadbed stabilization is to restore natural surface sheet flow, then it is important that the final elevation of the stabilized road match the elevation of the ground running directly adjacent to the road. If the final roadbed is notably below the elevation of the adjacent natural surface (ground), then the road will function to intercept and shunt surface water flow along its path. If the final roadbed is notably above the elevation of the adjacent natural surface (ground), then the road will function as a berm, thus blocking surface water flow along the “up drainage” side of the road.

In order to accomplish the even-grade roadbed requirement, removal of soil and de-mucking will likely be required before installation of recommended geo-synthetic fabric and gabian stone. Additionally, if an area of periodic high flow is discovered, geowebbing may be required in order to hold the fill material in place, particularly if smaller size rock (A or B base) is used as top dressing. All fill rock mentioned previously is considered grey limerock. Grey limerock or a “harder” fill rock material is recommended rather than white limerock, which is typically used on secondary roads and parking lot improvements.

***Objective: Improve natural hydrological conditions and functions to approximately 12 acres of blackwater stream natural community.***

An unimproved low water crossing of a narrow portion of the St. Marks River currently exists within management zone SM-16. Installation of a stabilized low water crossing at this point would serve to reduce infrequent siltation affecting approximately 10 acres of the St. Marks River directly downstream of the crossing point. Construction methods and concerns for this proposed low water crossing are identical to those stated above. Much greater emphasis should be placed on design and construction methods that will allow the crossing to withstand periods of high flow, associated with “flash flooding.”

***Objective: Improve natural hydrological condition and functions to approximately 37 acres of basin swamp natural community and 2 acres of dome swamp natural community.***

Based on historic aerials and anecdotal evidence, the main north – south running road through the park has been in existence since at least the 1930s. This road provides important resource management access to Park staff. The road largely avoids major wetlands, following a mostly upland corridor through the park. It is recommended that this road should be included in park-wide evaluation of existing roads and trails to help identify any significant hydrological impacts.

There are two obvious segments of the north – south road that should be addressed. The first occurs at the northern apex of management zone SM-12 where the road runs through approximately 280 feet of basin swamp natural community. This basin swamp natural community forms a contiguous wetland connection with the St. Marks River floodplain. This stretch of road should be evaluated to determine whether an extended low water crossing or series of culverts could be installed to re-establish wetland continuity through the corridor.

The second area of concern occurs along the northeastern edge of management zone SM-10 where the road runs through approximately 700 feet of basin swamp natural community. This area is also contiguous with the St. Marks River floodplain. This stretch of road should be evaluated in order to determine the necessity of a low water crossing or series of culverts to re-establish wetland continuity. Included in the evaluation of this road segment, Park staff should evaluate and consider the option of relocating this stretch of road to the west, along an upland corridor.

*Objective: Analyze impacts of park roads on surface drainage and identify/address any significant erosion problems.*

As stated previously, an evaluation of the park's current network of resource management roads should be conducted to identify any areas with erosion problems. Corrective measures along any erosion prone segments of roadways may include the installation of water bars in order to redirect and dispel "high energy" sheet flow moving across the road that would otherwise form rivulets and lead to gully erosion. The most basic water bars are berms of soil or bedded logs that slow down and channel water off roads to avoid the creation of gullies. Water bars can divert water to more gently sloping, vegetated areas, located down drainage.

### **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 has 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 ten years, have 1,000 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**

<b>Natural Community</b>	<b>Acres</b>	<b>Optimal Fire Return Interval (Years)</b>
Sandhill	718	2-4
Mesic Flatwoods	463	2-5
Upland Pine Forest	47	2-5
Seepage Slope	3	2-3
Depression Marsh	1	2-4
<b>Annual Target Acreage</b>	280 - 600	

The park is partitioned into management zones, and burn prescriptions are implemented on the prescribed burn cycle for each zone (see Management Zones Map). 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

Fire-dependent natural communities at the park include mesic flatwoods, sandhill, upland pine forest, depression marsh and seepage slope. Fire-influenced natural communities include upland mixed forest, basin swamp and dome swamp.

Local wildlife populations that depend on or benefit from well-maintained fire adapted natural communities include gopher tortoise, southeastern pocket gopher, northern bobwhite quail, white-tailed deer and wild turkey. Prescribed burning is the primary management tool for mimicking natural process and improving and maintaining quality habitats for these and many other wildlife species. Burn zone descriptions, management objectives, GIS generated maps, and current burn prescriptions are reviewed annually and updated as necessary as part of the District 1 annual prescribed fire planning process . Specific management zone information such as burn histories, natural communities’ configurations and backlog status is maintained in the DRP’s statewide burn database.

Park staff will coordinate with the district burn coordinator to identify yearly burn

objectives. Once zones have been selected, burn prescriptions will be completed and reviewed by the end of the calendar year. All primary and secondary (contingency) fire lines for the planned burn zones will be completed by the end of the calendar year. At a minimum, fire lines will be cleared of all significant vegetation and fine dead fuels up to twice the width of the adjacent live understory fuels. In most cases, resource management roads are used as primary firebreaks, and provide for a mineral soil fire line component without the need for disking. Segments of well-established fire lines may require light disking before burning. It is recommended that only the outer edge of the fire line be treated in order to preserve vehicular access along the remaining majority of the fire line. Prior planning for any new fire lines must be coordinated through the DRP, Bureau of Natural and Cultural Resources (BNCR) and the DHR, BAR. Additionally, any new fire lines need the approval of the District Bureau Chief in consultation with the District Biologist.

Park staff will communicate with the district burn coordinator, and regional fire managers, in order to gather additional burn crew and equipment needed to conduct burns. Park staff will be responsible for tracking weather conditions throughout the burn season, and identifying potential burn windows based on weather forecasts.

All fire suppression equipment will be routinely inspected and operational tested. Any necessary maintenance or repairs will be accomplished or facilitated by park staff, or coordinated with the District if necessary.

Accurate and complete rainfall data is best maintained on-site, to track the local drought index and plan prescribed fire activities. However, the DOF's Keetch-Byram Drought Index website can substitute if there is not a daily staff presence at the unit.

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 and 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 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, small-scale vegetation management and so forth.

Following are the natural community/habitat restoration and maintenance actions recommended to create the desired future conditions in the mesic flatwoods, sandhill, upland pine forest and seepage slope natural communities at St. Marks River State Park.

***Objective: Conduct habitat/natural community restoration activities on 304 acres of sandhill natural community.***

Approximately 304 acres of sandhill community are currently in pine plantation. The total acreage is comprised of three areas of planted pines. As described in the timber management section, it is recommended that all stands be initially thinned by approximately 50 percent, followed some years later by at least one more harvest. This will allow significant improvement for remaining understory herbaceous components while providing fine fuel, in the form of needle cast, in order to help sustain prescribed fires. Post harvest management measures will eventually include reintroduction of containerized longleaf pine seedlings. Longleaf seedling should be hand planted in relatively open gaps. If feasible, the longleaf reintroduction should occur over several planting cycles spanning many years (5-10 year planting interval), in order to begin re-establishing a population that is diverse in age and size.

Park and District staff should establish and maintain sandhill restoration photo points within the designated restoration area, in order to visually track and gage basic qualitative changes in plant species proportions and relative abundance over time.

Periodic monitoring of the sandhill restoration sites will be necessary in order to determine whether prescribed burning alone is adequately maintaining desired understory woody vs. herbaceous plant species proportions. If off-site hardwoods are not being adequately suppressed by fire alone, selective mechanical hardwood removal measures will be necessary.

Additionally, native on-site groundcover seed may be collected within other sandhill areas of the park, or from acceptable regional sites, if necessary to help re-establish the

desired density of native herbaceous plants within the sandhill restoration areas.

***Objective: Conduct habitat/natural community restoration activities on 138 acres of mesic flatwoods natural community.***

Approximately 138 acres of mesic flatwoods community are currently in pine plantation. The total acreage is comprised of three areas of planted pines. As described in the timber management section, it is recommended that all stands be initially thinned by approximately 50 percent, followed some years later by at least one more harvest. This will allow significant improvement for remaining understory herbaceous components while providing enough fine fuel, in the form of needle cast, in order to sustain prescribed fires. Post harvest management measures will eventually include reintroduction of containerized longleaf pine seedlings. Longleaf seedling should be hand planted in relatively open gaps. If feasible, the longleaf reintroduction should occur over several planting cycles spanning many years (5-10 year planting interval), in order to begin re-establishing a population that is diverse in age and size.

Periodic monitoring of the mesic flatwoods restoration sites will be necessary in order to determine whether prescribed burning alone is adequately maintaining desired understory woody vs. herbaceous plant species proportions. If native understory shrubs are disproportionately high despite sustained prescribed burning efforts, then vegetation management measures such as roller chopping or bush-hog mowing should be considered by site managers.

Park and District staff should establish and maintain mesic flatwood restoration photo points within the designated restoration area, in order to visually track and gage basic qualitative changes in plant species proportions and relative abundance over time.

Additionally, native on-site groundcover seed may be collected within other natural areas of the park, or from acceptable regional sites, if necessary to help re-establish the desired density of native herbaceous plants within these restoration areas.

**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 at the park.

***Objective: Conduct natural community/habitat improvement activities on two acres of seepage slope natural community.***

Approximately two acres of seepage slope natural community is currently overgrown with woody shrubs such as titi, wax myrtle and gallberry. Understory species proportions have shifted heavily towards woody shrubs over the past several decades of fire exclusion. Mechanical understory woody fuel reduction is needed in order to augment and maximize the effectiveness of prescribed burning. Park staff should

consider gyro-trac mowing or shredding of the two acres of degraded seepage slope community within management zone SM-16. A “rough” gyro-trac mowing followed by prescribed burning, should significantly improve and accelerate efforts to re-establish appropriate understory species proportions, weighted towards herbaceous growth.

### **Imperiled Species Management**

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

The DRP strives to maintain healthy 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 FFWCC, USFWS, 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.***

A significant effort has already been made to improve the park’s inventory of plants via contractual work with the U.S. Geological Survey. Similar surveys to improve the park’s

inventory of fauna should be pursued as well. Additionally, the park should encourage assistance from regional university professionals and student staff in order to accomplish necessary inventory work.

*Objective: Monitor and document 1 selected imperiled animal species in the park.*

Gopher tortoise occurrence and distribution will be monitored and tracked via burrow surveys. Park staff will follow an established burrow location survey protocol closely coordinated with prescribed burning of portions of management zones with gopher tortoise habitat. Park and district staff will conduct transect surveys of all management zones, with suitable tortoise habitat closely following scheduled prescribed burns. Staff will coordinate with the District listed species coordinator to ensure that FFWCC survey guidelines are followed. Staff will either walk or ride (ATV) along a rough grid to adequately canvas the suitable habitat portion of the given management zone. All tortoise burrows will be recorded via GPS. The GPS data shall be converted to GIS shape files and maintained as spatial data at the District 1 office.

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

Hooded pitcher plant and Alabama azalea occurrences in the park will be recorded via GPS. The GPS data shall be converted to GIS shape files and maintained as spatial data at the District 1 office.

### **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 implement control measures on up to 1 acre of exotic plants.*

Routinely inspect the park for exotic plant species, with focus on areas of past occurrence. Implement control measures promptly.

There are currently no exotic plant occurrences on the park beyond level 2 distribution. Japanese climbing fern occurs at level 2 distribution within management zone SM-8. Control measures have been implemented, and continued annual monitoring and control activities will be conducted by trained park staff.

It is estimated that the average number of acres of invasive exotic plants to be treated annually during the period of this plan will be less than one acre.

A park specific exotic species control plan has been prepared for this unit by park staff in coordination with district biological staff. This plan will be accessible to all park staff,

and serve to direct exotic removal efforts in a manner that provides for consistency and continuity over the long-term. For the purpose of this plan, basic management measures regarding exotic species will include periodic surveys of the park's natural communities in order to identify current or new exotic species occurrences, tracking via GPS/GIS, prompt removal or control efforts and documentation via District 1 exotic species removal tracking forms. Assistance with species identification, acquisition and proper use of appropriate herbicides and seasonal timing, should be coordinated with the district exotic plant removal coordinator.

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

Active monitoring and control measures will be conducted for feral hogs and coyotes by trained park staff. If either species is detected, park staff will determine use patterns and implement appropriate removal measures in accordance with DRP procedure.

### **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.

St. Marks River State Park has five areas of planted pines where timber harvesting would aid in the restoration of these disturbed sites (see Addendum 8). All sites require the removal of planted off-site slash pine followed by reintroduction of longleaf pine seedlings to begin restoration. Addendum 8 contains a detailed description of each pine stand with management recommendations.

### **Cultural Resource Management**

#### **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 St. Marks 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 and collections care must be submitted to the DHR for review and comment before 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 five of five recorded cultural resources in the park.*

Assessments should include an examination of each site with a discussion of any threats to the site's condition such as natural erosion; vehicular damage; horse, bicycle or pedestrian damage; looting; construction including damage from firebreak construction; animal damage; plant or root damage or other factors that might cause deterioration of the site. This evaluation should attempt to compare the current condition with previous evaluations using photo points or high resolution scanning or similar techniques.

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

There is a need to complete a predictive model for high, medium and low probability of locating archaeological sites within the park. This work should be coordinated with professional archaeological staff in BNCR, BAR and DHR. A Level 1 archaeological survey for priority areas identified by the predictive model should be conducted.

Detailed historical research needs to be conducted to determine land use and ownership of park property before 1937. Oral history interviews and collection/documentation of other anecdotal historical information should be gathered as well.

In cooperation with the Florida Bureau of Archaeological Research, develop and adopt a procedure for accepting artifacts and other probable cultural materials recovered and turned over by visitors and for forwarding them to the Bureau.

Coordinate with the Bureau of Natural and Cultural Resources to review the Florida

Master Site File in order to identify additional recorded sites on any future acquired lands.

Review all potential ground disturbance activities according to the DHR matrix of disturbance. Coordinate major ground disturbance events through the DHR.

### **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 managing agency shall consider the findings and recommendations of the land management review team in finalizing the required update of its management plan. St. Marks River State Park was the subject of a land management review on April 13, 2010.



## **LAND USE COMPONENT**

### **INTRODUCTION**

Land use planning and park development decisions for the state park system are based on the dual responsibilities of the Division of Recreation and Parks (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 to guide the location and extent of future park development. Input to the plan is provided by experts in environmental sciences, cultural resources, park operation and management, and through public workshops, and user groups. With this approach, the DRP objective is to provide quality development for resource-based recreation with a high level of sensitivity to the natural and cultural resources at each park throughout the state.

This component of the unit plan includes a brief inventory of the external conditions and the recreational potential of the unit. Existing uses, facilities, special conditions on use, and specific areas within the park that will be given special protection, are identified. The land use component then summarizes the current conceptual land use plan for the park, identifying the existing or proposed activities suited to the resource base of the park. Any new facilities needed to support the proposed activities are described and located in general terms.

### **EXTERNAL CONDITIONS**

An assessment of the conditions that exist beyond the boundaries of the unit can identify any special development problems or opportunities that exist because of the unit's unique setting or environment. This also provides an opportunity to deal systematically with various planning issues such as location, regional demographics, adjacent land uses and park interaction with other facilities.

St. Marks River Preserve State Park is located in Leon and Jefferson Counties, about ten miles east of Tallahassee in the panhandle of the state. The park is situated along the Upper St. Marks River corridor between U.S. Highway 27 and Tram Road. Initial public access has been established off Tram Road.

The park constitutes an important linkage within a potential conservation corridor extending from Tallahassee to the Gulf of Mexico. The network of connected conservation lands are managed by various local, state and federal entities. The City of Tallahassee manages Tom Brown Park, an active recreation park with user-based recreation fields, and Lafayette Heritage Trail Park that provides multi-use trails

and opportunities for picnicking, fishing and paddling. Leon County manages J.R. Alford Greenway offering 17.5 miles of multi-use trail for non-motorized use. The Florida Fish and Wildlife Conservation Commission (FFWCC) manage the L. Kirk Edwards Wildlife Environmental Area and Aucilla Wildlife Management Area (WMA), which both allow hunting, fishing, wildlife viewing and paddling. The Aucilla WMA also supports hiking, biking and seasonal camping. In 2007, the Nature Conservancy purchased the Wood Sink and Fanlew Tract properties that are slated to be managed by FFWCC. The United States Fish and Wildlife Service manage the St. Marks National Wildlife Refuge. This 100,000-acre refuge provides recreational opportunities such as hiking, biking, horseback riding, picnicking, paddling, boating, wildlife viewing, fishing and hunting as well as a historic lighthouse to visit. Also nearby is Natural Bridge Battlefield Historic State Park where a Civil War battle took place and an annual reenactment is held. This state park is also where the St. Marks River disappears into a sink and flows underground for about 0.6 mile before reemerging at St. Marks Spring.

### **Existing Use of Adjacent Lands**

The north boundary of the park fronts U.S. Highway 27, also known as Apalachee Parkway, which is a busy four-lane highway. North of U.S. Highway 27 along the Upper St. Marks River corridor is additional conservation land protecting this important water resource. Agricultural lands border the remainder of the north, east and south sides of the park. Most of this land is owned by St. Joe Land and Development Company. The south boundary of the park fronts Leon County Road 259, Tram Road, which is a two-lane road with direct linkage to southeast Tallahassee. In addition, the area west of the park boundary contains many single-family homes, many of which have been built in recent years. There is also one 80-acre outparcel within the south-central portion of the park.

### **Planned Use of Adjacent Lands**

Over 320,000 people reside within the Tallahassee Metropolitan Statistical Area, which includes Leon, Jefferson, Gadsden and Wakulla counties (U.S. Bureau of the Census, 2000). The projected population of the area is expected to grow by 30 percent to over 420,000 by 2020 (Florida Statistical Abstract, 2008). Projected growth in the Tallahassee area, it is expected to have an impact on the park.

Potential impacts to the park from future development may include disruption of natural hydrology, decrease in water quality and quantity, management constraints with prescribed burning, increase in exotic plants and domestic pets, noise and light pollution, and increase in local traffic.

According to the Future Land Use Map for Leon County (2008), neighboring lands to the north, south, east and immediately adjacent to the western park boundary are designated Rural, which allows up to one dwelling unit per ten acres. However,



properties near the park that are west of W.W. Kelly Road have been designated Urban Fringe, Residential Preservation and Urban Residential 2 which allow much denser residential development. It is likely that the areas under these designations will continue to experience residential growth within the life of this management plan.

On the eastern side of the park within Jefferson County, the future land use designation for all neighboring properties is Agriculture 20 that allows up to one dwelling unit per twenty acres (1999). However, much of the land to the east of the park boundary within both Jefferson and Leon Counties is owned by St. Joe Land and Development Company, which may attempt to develop their property in the future. Park staff should coordinate with the Counties to keep informed of any development plans in order to protect park resources and visitor experience.

## **PROPERTY ANALYSIS**

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

### **Recreation Resource Elements**

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

#### **Land Area**

This 2,590-acre park is composed of upland hardwoods and pine communities, and forested wetlands along the upper reaches of the St. Marks River. The park aids in buffering the St. Marks River from development and preserves its water quality while also protecting the natural communities in the floodplain. Prior to state acquisition, most of the uplands had been managed as high-yield commercial timberland. Due to the extensive floodplain and numerous basin swamps and cypress domes within the park, recreational opportunities should be limited to passive pursuits such as hiking, biking, horseback riding, picnicking and primitive camping.

#### **Water Area**

The St. Marks River is the dominant hydrological feature within the park. This upper stretch of the river is largely ephemeral in regards to water levels. Large

sections of the river commonly dry up or are reduced to isolated shallow pools, particularly in drought periods. Therefore, during the majority of the year, the section of river that runs through the park is not able to accommodate most water-based recreation such as paddling, boating, swimming or fishing. In contrast, following heavy rain events such as Tropical Storm Fay in 2007, the river and surrounding floodplain can accommodate large volumes of fast moving water. During these events, conditions are usually too dangerous to allow recreational use of the river. The DRP will continue to monitor water levels throughout the year in hopes of establishing a canoe/kayak trail during high-water seasons when conditions are determined to be safe.

### **Natural Scenery**

The fertile river land provides a scenic assortment of plant communities including a floodplain forest, xeric hammock, flatwoods, sandhill and bay heads. Future trails will highlight the unique plant and animal life by way of hiking, biking and horseback riding.

### **Significant Wildlife Habitat**

The park is home to a variety of native wildlife for visitors to experience, including the threatened Florida black bear (*Ursus americanus floridanus*), gopher tortoises (*Gopherus polyphemus*), bobcats (*Felis rufus*), gray fox (*Urocyon cinereoargenteus*) and white-tailed deer (*Odocoileus virginianus*). Birding enthusiasts can spot a variety of birds within the park.

### **Natural Features**

A large sinkhole located near the northeast corner of the park is a significant natural feature that could become a trail destination in the future. The majority of the flow from Burnt Mill Creek disappears into the dark sinkhole about 0.5 miles upstream from the surface channel confluence with the St. Marks River. This scenic location is also home to an old-growth cypress dome.

### **Archaeological and Historical Features**

Five cultural sites have been identified within the park boundary. These sites appear to be former bridge sites or historic period artifacts associated with former crossing points of the St. Marks River. One of the bridge sites includes squared timbers that appear to have been deliberately placed at the site in the riverbed. The Florida Master Site File includes records for many archaeological sites that have been identified in close proximity to the park, which indicates that unknown sites are likely present within the park. In addition, several possible historic sites have been identified including a bridge site and many roads. Further research is needed to determine their significance.

### **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**

Prior to acquisition, the property has been primarily utilized for agriculture, timber production or turpentine since the 1930s. The property has also supported private hunting leases in the past.

### **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 opportunities

The portion of the park within Leon County is designated "Rural/Agriculture" on the Future Land Use Map which allows passive recreational land uses. This area is also included in the "Rural Zoning District" which allows passive and active recreation among other uses. Park property within Jefferson County has the future land use designation of "Agriculture 20" which includes outdoor recreation as an allowable use.

### **Current Recreational Use and Visitor Programs**

Since this is a new addition to the state park system, access is currently limited to a simple trailhead off Tram Road. From here, hikers, bikers and equestrians are welcome to access the service roads that cross the property. The trailhead also provides picnicking at a few scattered tables. In addition, the park provides opportunities for nature study and wildlife observation.

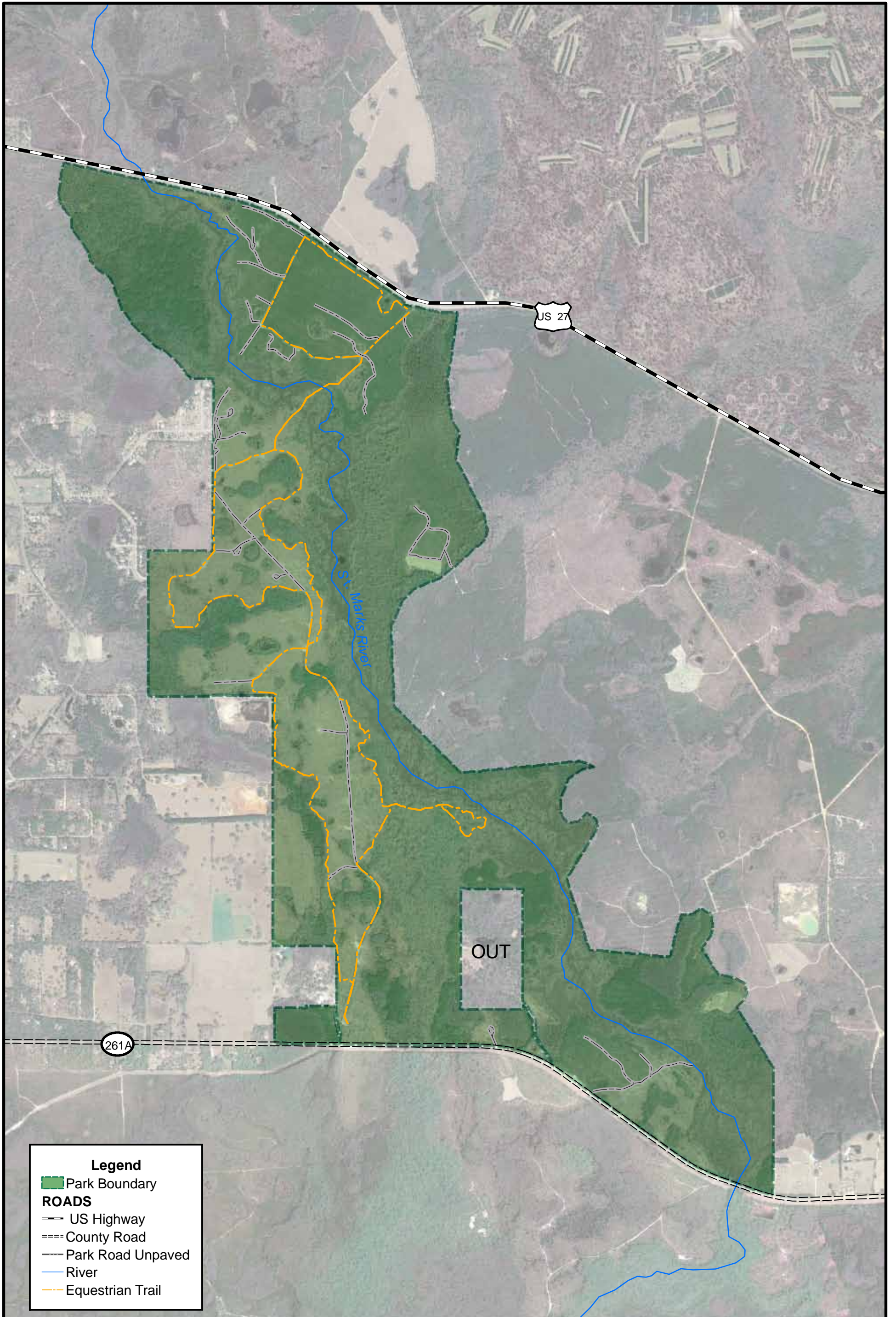
As this is a new state park with limited recreational facilities, park staff currently does not provide regular interpretive and educational programs.

### **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 St. Marks River Preserve State Park, the sandhill and wetland communities (basin swamp, baygall, depression marsh, dome swamp, floodplain forest, floodplain swamp and seepage slope) have been designated as protected zones and

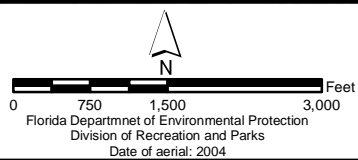




**Legend**

- Park Boundary
- ROADS**
- US Highway
- County Road
- Park Road Unpaved
- River
- Equestrian Trail

ST MARKS RIVER PRESERVE STATE PARK



BASE MAP



are delineated on the Conceptual Land Use Plan.

### **Existing Facilities**

#### **Recreation Facilities**

An initial trailhead area has been established near the southwest corner of the park off Tram Road. Currently, the facility consists of a stabilized parking area for approximately 10-15 cars and four horse trailers, as well as a few scattered picnic tables and an interpretive sign. The service roads are available for hiking, biking and horseback riding.

#### **Support Facilities**

No support facilities are currently located on site. This park is managed by staff based out of Lake Jackson Mounds Archaeological State Park.

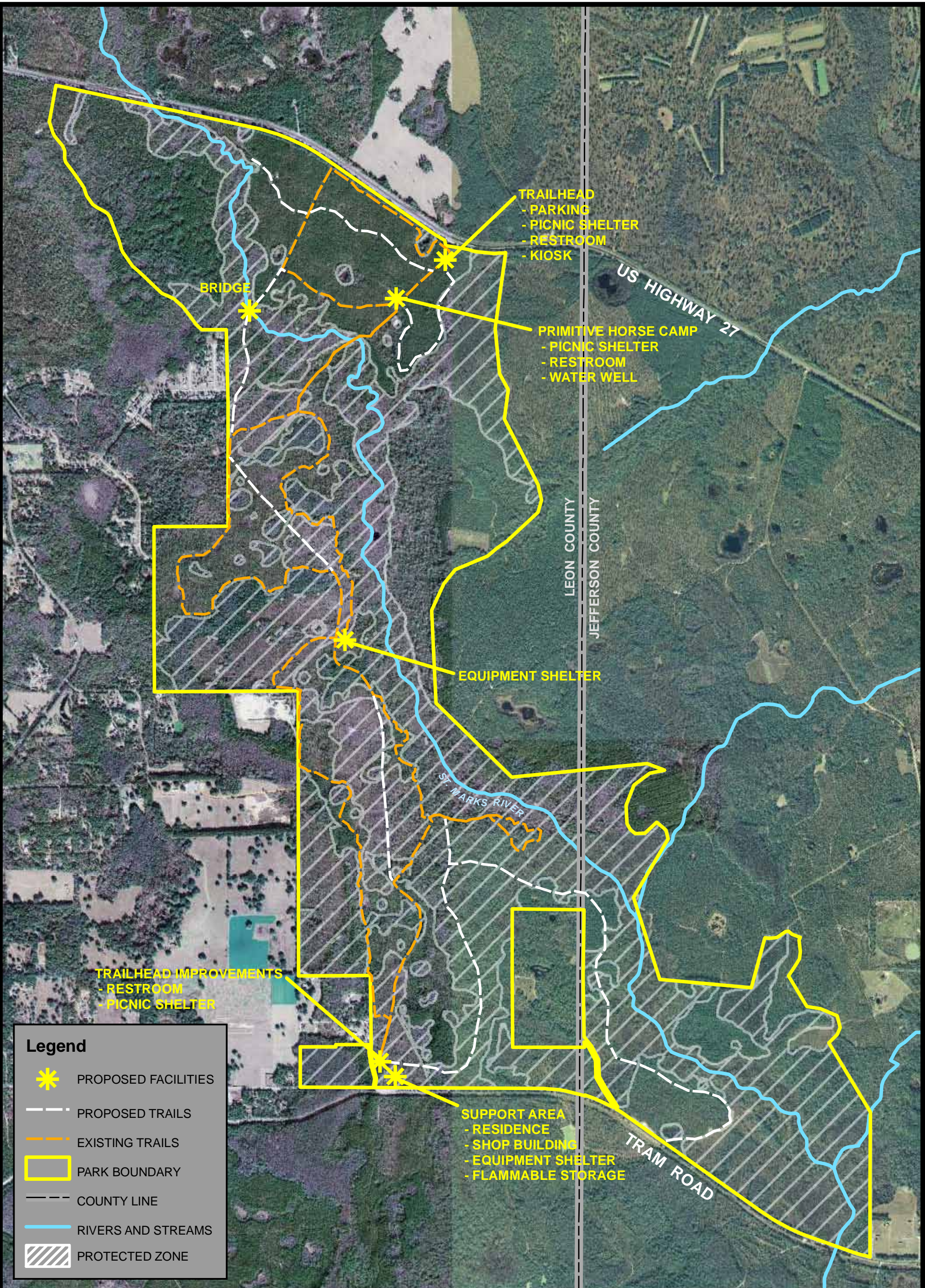
### **CONCEPTUAL LAND USE PLAN**

The following narrative represents the current conceptual land use proposal for this park. As new information is provided regarding the environment of the park, cultural resources, recreational use, and as new land is acquired, the conceptual land use plan may be amended to address the new conditions (see Conceptual Land Use Plan). A detailed development plan for the park and a site plan for specific facilities will be developed based on this conceptual land use plan, as funding becomes available.

The conceptual land use plan described here 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. The development plan will be reassessed during the next update of the park management plan, and modified to address new conditions, as needed.

During the development of the management plan, the DRP assessed potential impacts of proposed uses or development on the park resources and applied that analysis to decisions on the future physical plan of the park as well as the scale and character of proposed development. Potential impacts are more thoroughly 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 more thoroughly investigated. Municipal sewer connections, advanced wastewater treatment or best available technology systems are applied for on-site sewage disposal. Stormwater management systems are designed to minimize impervious surfaces to the greatest extent feasible, and all facilities are designed and constructed using best management practices to avoid impacts and to mitigate those that cannot be avoided. Federal, state and local permit and regulatory







requirements are met by the final design of the projects. This includes the design of all new park facilities consistent with the universal access requirements of the Americans with Disabilities Act (ADA). After new facilities are constructed, the park staff monitors conditions to ensure that impacts remain within acceptable levels.

## Potential Uses

### 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 activities and programs are also recommended and discussed below.

*Objective: Maintain the park's current recreational carrying capacity of 56 users per day.*

The park will continue to provide opportunities for hiking, biking, horseback riding, picnicking, nature study and wildlife observation.

*Objective: Expand the park's recreational carrying capacity by 148 users per day.*

Trail use and picnicking opportunities within the park will be expanded as new facilities are developed at the park. In addition, opportunities for primitive horse camping are proposed as discussed below.

*Objective: Develop new interpretive/educational programs.*

The park is a new addition to the Park System, and should have an interpretive plan developed. The plan should include an interpretive sign program along the trail system to educate users about the park's natural features and communities as well as responsible use.

## 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 management focus at St. Marks River Preserve State Park is to preserve and restore the upland ecosystems in order to maintain water quality and provide healthy habitat for native plants and animals. Due to the wide river floodplain and numerous basin swamps and cypress domes throughout the park, recreational opportunities should be limited to passive pursuits such as hiking, horseback riding, biking, picnicking and primitive camping. The DRP will continue to monitor water levels throughout the year in hopes of establishing paddling access during high-water seasons when conditions are determined to be safe.

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 that visitors enjoy while in the park, to improve the protection of park resources, and to streamline the efficiency of park operations. The following is a summary of new facilities needed to implement the conceptual land use plan for St. Marks River Preserve 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: Construct 17 new facilities and ten miles of trail.*

**Trail Network and Trailheads.** A shared-use trail system for hiking and horseback riding is proposed for the park that should utilize a combination of existing service roads, jeep trails and new trails. To the extent practical, the trail system should be designed as a series of loops to provide a variety of routes and lengths. The trails should expose trail users to a wide range of natural communities and interesting features in an effort to enhance the visitor experience and provide for educational opportunities. Directional and interpretive signage should be placed in appropriate locations along the trail network. The total length of potential trail is estimated to be between 8 and 12 miles.

Footbridges, boardwalks and/or low water crossings are proposed wherever necessary to protect park resources and provide safe wetland crossings by park visitors. Certain sections of the trail system that traverse wet or otherwise sensitive areas of the park may be deemed hiking only. In addition, due to the flood-prone nature of the property, portions of the trail system may be closed occasionally.

Access to the trail network should be provided at each end of the park. The existing trailhead off Tram Road should remain and serve as the southern access point. Improvements to the existing trailhead include a small picnic shelter housing four picnic tables and a small restroom. Another trailhead should be established off U.S. Highway 27 at the north end of the park. This new trailhead should be located just a short distance inside the gate and provide parking for up to twenty vehicles, small picnic shelter housing four tables, small restroom and an informational kiosk to orient visitors. Due to the park being a new addition to the Florida Park System, Park staff will continue to monitor the use of the park and take into account the environmental factors that may be impacted. Trail and parking capacity may be increased in the future based on those evaluations.

**Primitive Horse Camp.** An equestrian group camp is proposed for a previously disturbed area at the north end of the park with access from U.S. Highway 27.

Recommended facilities include a medium picnic shelter housing six tables, small restroom, water well and fencing. This group camp should be able to accommodate ten horse trailers and available to any organized equestrian group that registers with park staff.

**Support Area.** The park currently has no permanent/on-site land management equipment, infrastructure or full time staff presence. An equipment storage facility is proposed at a central location where existing equipment is already stored on site, this area will be used as an interim equipment storage facility until a full support area is established on site. At that time, the storage area will be re-used as a picnic pavilion or shelter for visitors during inclement weather. A park support area, which includes a residence, shop facility, equipment storage and flammable storage, is sited near the existing trailhead off Tram Road, for proximity to utilities and ease of park operations.

**Bridge.** Wetland crossings that are suitable for service vehicles and fire suppression vehicles/equipment will be needed to ensure that land management activities such as prescribed burning and routine monitoring and patrolling can occur. A service bridge is proposed for one essential river crossing at the north end of the park at a location that previously served as a crossing as evidenced by remnants of a blown-out culvert. This bridge would also be incorporated into the proposed trail network to serve trail users.

### **Facilities Development**

Preliminary cost estimates for these recommended facilities and improvements are provided in the Ten-Year Implementation Schedule and Cost Estimates located in the Implementation Component of this plan. These cost estimates are based on the most cost-effective construction standards available at this time. 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 include:

#### **Recreation Facilities**

##### **Trail Network**

Shared-use trail (8-12 miles)

Footbridges/boardwalk/low water crossings (as needed)

Interpretive signage

##### **North Trailhead**

Trailhead parking (Up to 20 vehicles)

Small picnic shelter

Small restroom

Kiosk

### **Existing (South) Trailhead**

Small picnic shelter  
Small restroom

### **Primitive Horse Camp**

Medium picnic shelter  
Small restroom  
Water well  
Fencing

### **Support Facilities**

Staff residence  
Shop building  
Equipment shelter (2)  
Flammable storage building  
Service bridge

### **Existing Use and 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).

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**

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

Identification of 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



**Table 6--Existing Use and Recreational Carrying Capacity**

<b>Activity/Facility</b>	<b>Existing Capacity</b>		<b>Proposed Additional Capacity</b>		<b>Estimated Recreational Capacity</b>	
	<b>One Time</b>	<b>Daily</b>	<b>One Time</b>	<b>Daily</b>	<b>One Time</b>	<b>Daily</b>
<b>Trails</b>						
Shared Use	20	40	20	40	40	80
<b>Horse Camp</b>			20	20	20	20
<b>Picnicking</b>	8	16	32	32	40	48
<b>TOTAL</b>	<b>28</b>	<b>56</b>	<b>72</b>	<b>92</b>	<b>100</b>	<b>148</b>

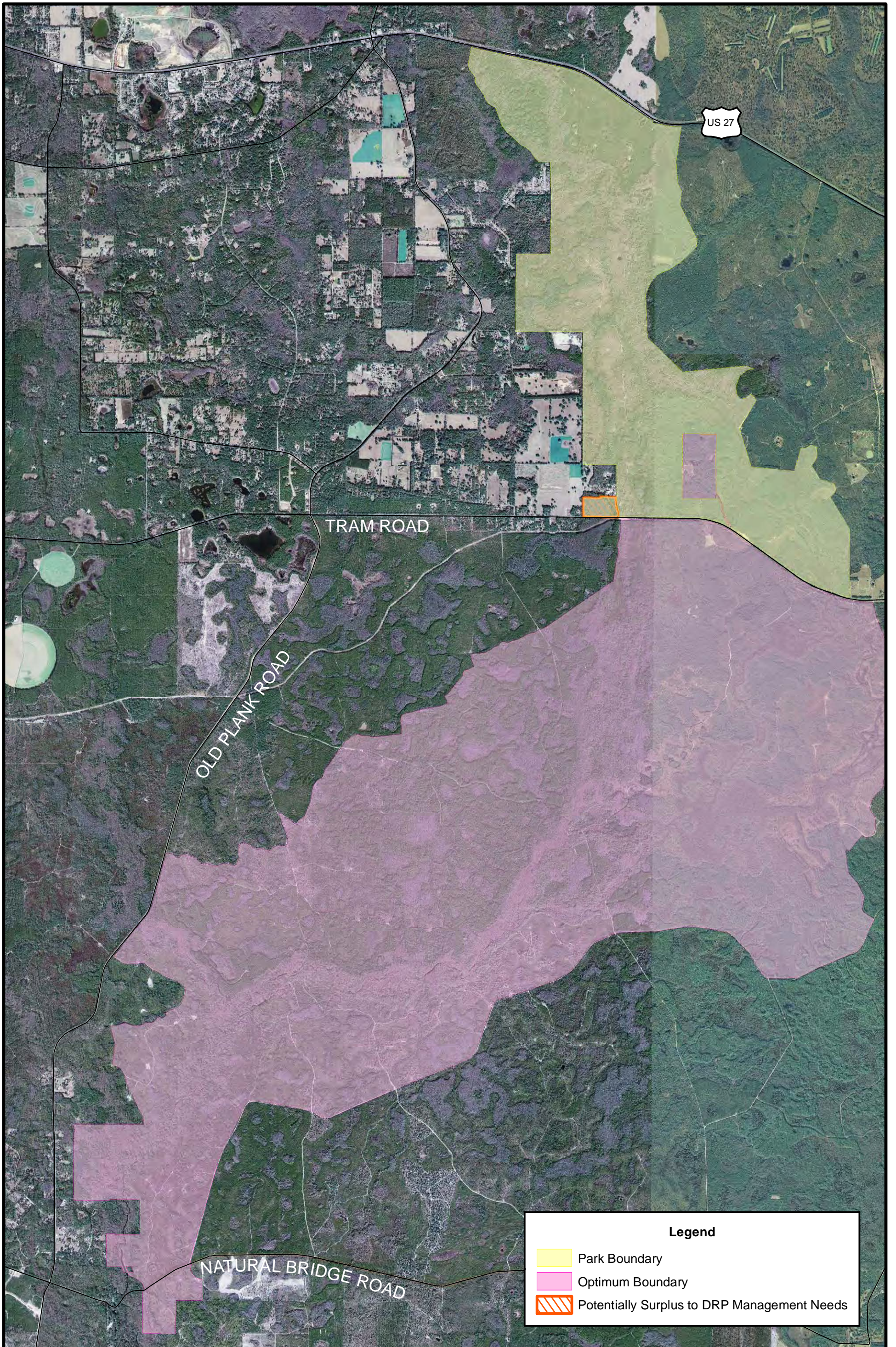
optimum boundary map to reduce or restrict the lawful rights of private landowners. Identification on the map does not empower or suggest that any government entity should impose additional or more restrictive environmental land use or zoning regulations. Identification should not be used as the basis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

Phase II of the Upper St. Marks River Corridor Florida Forever Project is identified within the optimum boundary. This extends south from Tram Road to Natural Bridge Battlefield Historic State Park along the floodplain of the St. Marks River. A single owner controls the majority of this property. Acquisition of this land would buffer the upper St. Marks River from development, preserve water quality, and protect the natural communities within the river’s floodplain. Phase II also has great potential for providing a diverse resource-based recreational experience with regional context.

An 80-acre outparcel in the south-central portion of the park is also included within the optimum boundary. Acquisition of this parcel would improve the efficiency of land management activities.

The DRP identifies a parcel in the southwestern corner of the park as potentially surplus. Development to the north and wetlands in the east sever the parcel from the rest of the park. and complicate land management activities.

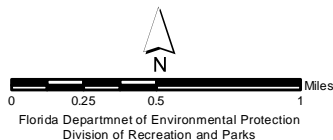




**Legend**

- Park Boundary
- Optimum Boundary
- Potentially Surplus to DRP Management Needs

ST. MARKS RIVER PRESERVE STATE PARK



OPTIMUM BOUNDARY



## 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 acquisition of St. Marks River State Park in 2007, 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.

#### Acquisition

- Acquisition of the park's original 2,590 acres.

#### Park Administration and Operations

- Purchased \$100,000 worth of new equipment and \$125,000 worth of equipment improvements for continued park maintenance.
- Established 3.5 miles of fence along park's western boundary.

#### Resource Management

##### **Natural Resources**

- Successfully completed 398 acres of prescribed fire.
- Removal of 46 nuisance and exotic animals.

##### **Cultural Resources**

- Identification of five historic sites within park boundary.

#### Recreation and Visitor Services

- Cleared and maintained service roads and trails within park boundary.
- Installed amenities within park day-use area.
- Working with equestrian users to map trails in park.
- Established a core group of park volunteers.

#### Park Facilities

- Established park entrance, stabilized parking area and informational kiosk.

## 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) summarize 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, periods 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  
St. Marks River Preserve State Park Ten-Year Implementation Schedule and Cost Estimates  
Sheet 1 of 5

**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.**

**ALTHOUGH THE PUBLIC HAS ACCESS TO RECREATION OPPORTUNITIES AT ST. MARKS RIVER PRESERVE STATE PARK, THE PARK IS A NEW ADDITION TO THE FLORIDA STATE PARK SYSTEM AND HAS NOT BEEN FULLY STAFFED NOR DEVELOPED AT THIS TIME. THEREFORE, MANY OF THE ACTIONS AND OBJECTIVES IDENTIFIED HERE ARE CONSIDERED TO BE UNFUNDED NEEDS AT THIS TIME.**

Goal I: Provide administrative support for all park functions.		Measure	Planning Period	Total Estimated Manpower and Expense Cost* (10-years)
Objective A	Continue day-to-day administrative support at current levels.	Administrative support ongoing	C	\$2,000
Objective B	Expand administrative support as new lands are acquired, new facilities are developed, or as other needs arise.	Administrative support expanded	UFN	\$10,000
Goal II: Protect water quality and quantity in the park, restore hydrology to the extent feasible, and maintain the restored condition.		Measure	Planning Period	Total Estimated Manpower and Expense Cost* (10-years)
Objective A	Analyze the impact of park roads on surface drainage and identify/address any significant erosion problems.	Assessment conducted	UFN	\$15,000
Objective B	Improve natural hydrological conditions and function to approximately 18 acres of floodplain forest, 32 acres of floodplain swamp, 12 acres of blackwater stream, 37 acres of basin swamp, and 2 acres of dome swamp natural community, down drainage of impacted resource management roads.	# Acres restored or with restoration underway	UFN	\$152,000

\* 2010 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  
St. Marks River Preserve State Park Ten-Year Implementation Schedule and Cost Estimates  
Sheet 2 of 5

<b>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.</b>				
<b>Goal III: Restore and maintain the natural communities/habitats of the park.</b>				
		<b>Measure</b>	<b>Planning Period</b>	<b>Total Estimated Manpower and Expense Cost* (10-years)</b>
<b>Objective A</b>	<b>Within 10 years have 1000 acres of the park maintained within optimal fire return interval.</b>	# Acres within fire return interval target	LT	<b>\$292,000</b>
Action 1	Develop/update annual burn plan.	Plan updated	C	\$16,000
Action 2	Manage fire dependent communities for ecosystem function, structure and processes by burning between 280-600 acres annually, as identified by the annual burn plan.	Average # acres burned annually	C	\$276,000
<b>Objective B</b>	<b>Conduct habitat/natural community restoration activities on 304 acres of sandhill, 138 acres of mesic flatwoods, and 2 acres of seepage slope natural community.</b>	# Acres restored or with restoration underway	UFN	<b>\$7,200</b>
Action 1	Develop a site specific restoration plan for each natural community.	Plan developed	UFN	\$1,600
Action 2	Implement restoration plan	# Acres with restoration underway	UFN	\$5,600
<b>Goal IV: Maintain, improve or restore imperiled species populations and habitats in the park.</b>				
		<b>Measure</b>	<b>Planning Period</b>	<b>Total Estimated Manpower and Expense Cost* (10-years)</b>
<b>Objective A</b>	<b>Continue surveys of imperiled species occurrence inventory lists for plants and animals, as needed.</b>	List updated	C	<b>\$10,000</b>
<b>Objective B</b>	<b>Monitor and document 2 selected imperiled animal species in the park.</b>	# Species monitored	UFN	<b>\$20,500</b>
Action 1	Implement monitoring protocols for imperiled gopher tortises in the park.	# Species monitored	UFN	\$13,500
Action 2	Coordinate with FFWCC on implementing monitoring protocols of threatened Florida black bear.	# Species monitored	UFN	\$7,000
<b>Objective C</b>	<b>Monitor and document 2 selected imperiled plant species in the park.</b>	# Species monitored	UFN	<b>\$5,300</b>
Action 1	Implement monitoring protocols for 2 selected imperiled plant species including hooded pitcher plant and alabama azalea.	# Species monitored	UFN	\$5,300

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UFN = currently unfunded need

Table 7  
St. Marks River Preserve State Park Ten-Year Implementation Schedule and Cost Estimates  
Sheet 3 of 5

**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.**

<b>Goal V: Remove exotic and invasive plants and animals from the park and conduct needed maintenance-control.</b>				
		<b>Measure</b>	<b>Planning Period</b>	<b>Total Estimated Manpower and Expense Cost* (10-years)</b>
<b>Objective A</b>	<b>Annually treat 1 acre of exotic plant species in the park.</b>	# Acres treated	C	<b>\$9,900</b>
Action 1	Update exotic plant management annual work plan.	Plan Updated	C	\$3,500
Action 2	Implement annual work plan.	Plan implemented	C	\$6,400
<b>Objective B</b>	<b>Implement control measures on 2 exotic and nuisance animal species in the park.</b>	# Species for which control measures implemented	UFN	<b>\$32,200</b>
Action 1	Conduct control measures for feral hogs and coyotes by trained park staff.		UFN	\$32,200
<b>Goal VI: Protect, preserve and maintain the cultural resources of the park.</b>				
		<b>Measure</b>	<b>Planning Period</b>	<b>Total Estimated Manpower and Expense Cost* (10-years)</b>
<b>Objective A</b>	<b>Assess and evaluate 5 of 5 recorded cultural resources in the park.</b>	Documentation complete	UFN	<b>\$398</b>
Action 1	Complete 5 assessments/evaluations of archaeological sites. Prioritize preservation and stabilization projects.	Assessments complete	UFN	\$398
<b>Objective B</b>	<b>Compile reliable documentation for all recorded historic and archaeological sites.</b>	Documentation complete	UFN	<b>\$20,016</b>
Action 1	Ensure all known sites are recorded or updated in the Florida Master Site File.	# Sites recorded or updated	UFN	\$4,300
Action 2	Complete a predictive model for high, medium and low probability of locating archaeological sites within the park.	Probability Map completed	UFN	\$13,129
Action 3	Develop and adopt a scope of collections statement.	Document completed	UFN	\$2,229
Action 4	Conduct oral history interviews.	Interviews complete	UFN	\$357

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Table 7  
St. Marks River Preserve State Park Ten-Year Implementation Schedule and Cost Estimates  
Sheet 4 of 5

**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	Total Estimated Manpower and Expense Cost* (10-years)
Objective A	Maintain the park's current recreational carrying capacity of 56 users per day.	# Recreation/visitor opportunities per day	C	\$177,000
Objective B	Expand the park's recreational carrying capacity by 148 users per day.	# Recreation/visitor opportunities per day	UFN	\$21,000
Action 1	Develop 3 new recreational opportunities including trail use, picnicking and primitive horse camping.	# Recreation/visitor opportunities per day	UFN	\$21,000
Objective C	Develop 1 new interpretive program.	# Interpretive/education programs	UFN	\$1,500
Action 1	Develop and implement Interpretive Plan.	Plan developed/implemented	UFN	\$1,500
Goal VIII: Develop and maintain the capital facilities and infrastructure necessary to meet the goals and objectives of this management plan.		Measure	Planning Period	Total Estimated Manpower and Expense Cost* (10-years)
Objective A	Maintain all public and support facilities in the park.	Facilities maintained	C	\$5,000
Objective B	Construct 17 new facilities and 10 new miles of trail as identified in the Land Use Component.	# Facilities/Miles of Trail/Miles of Road	UFN	\$2,643,779
Objective C	Provide maintenance for new facilities that are developed.	Facilities maintained	UFN	\$8,000

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UFN = currently unfunded need

Table 7  
 St. Marks River Preserve State Park Ten-Year Implementation Schedule and Cost Estimates  
 Sheet 5 of 5

**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.**

Summary of Estimated Costs			
Management Categories	Estimated Cost*		
Resource Management	\$564,514		
Administration and Support	\$25,000		
Capital Improvements	\$2,643,779		
Recreation Visitor Services	\$199,500		
Law Enforcement Activities <sup>1</sup>			
	<sup>1</sup> Law enforcement activities in Florida State Parks are conducted by the DEP Division of Law Enforcement and by local law enforcement agencies.		

\* 2010 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





## **Addendum 1 – Acquisition History**



## **St. Marks River Preserve State Park Acquisition History**

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### **Purpose of Acquisition**

The State of Florida Board of Trustees of the Internal Improvement Trust Fund (Trustees) acquired St. Marks River State Park to buffer the Upper St. Marks River from development and preserve its water quality, while also protecting the natural communities in its associated floodplain.

### **Sequence of Acquisition**

On January 24, 2006, the Trustees purchased the 2,589.67-acre parcel in Leon and Jefferson counties, Florida, which constitutes St. Marks River State Park. The parcel was acquired from St. Joe Timberland Company of Delaware, LLC for \$10,617,647.00 and was funded through the Florida Forever program. Since the initial acquisition, the Trustees have not acquired any additional property for St. Marks River State Park.

### **Title of Interest**

The Trustees hold fee simple title to St. Marks River State Park.

### **Lease Agreement Number 4535**

On December 21, 2006, the Trustees transferred management authority of St. Marks River State Park to the Florida Department of Environmental Protection (Department), Division of Recreation and Parks (Division) under lease agreement No. 4535. The period of the lease is for a period of fifty (50) years and will expire on December 20, 2056.

The Trustees lease agreement for St. Marks River State Park stipulates that the property be used for conservation and protection of natural and historical resources. The Division manages St. Marks River State Park for the conservation and protection of natural and historical resources, and for public outdoor recreation that is compatible with the conservation and protection of the property.

### **Special Conditions on Use**

St. Marks River State Park is designated single-use to provide resource-based public outdoor recreation and other park related uses. Uses such as water resource development projects, water supply projects, storm-water management projects, and linear facilities and sustainable agriculture and forestry (other than those forest management activities specifically identified in this plan) are not consistent with this management plan.

## St. Marks River Preserve State Park Acquisition History

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### Outstanding Reservations

Following is a listing of outstanding encumbrances that apply to this park.

**Type of Instrument:** .....Warranty Deed  
**Grantor:** .....St. Joe Timberland Company of  
Delaware, LLC.  
**Grantee:** .....Trustees  
**Beginning Date:**.....June 28, 2006  
**Ending Date:** .....No ending date given  
**Encumbrance:** .....This warranty deed is subject to  
easements, restrictions, limitations and  
conditions of record if any existed on  
the date of the execution the warranty  
deed.

**Addendum 2 – Advisory Group Members and Report**





## St. Marks River Preserve State Park Advisory Group Members

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Mr. Mike Humphrey  
Jefferson County Forester  
Florida Division of Forestry  
2334 S. Jefferson Street  
Monticello, Florida 32344

Represented by:  
Mr. Jason Love  
Other Public Lands Forester  
Florida Division of Forestry  
865 Geddie Road  
Tallahassee, Florida 32304

Dr. John Himes  
Northwest Region Non-Game Biologist  
Florida Fish and Wildlife Conservation  
Commission  
3911 Highway 2321  
Panama City, Florida 32409-1658

Mr. Barry Burch  
Florida Park Service  
Park Manager  
Tallahassee-St. Marks Administration  
1022 Desoto Park Drive  
Tallahassee, Florida 32301

Mr. Tyler Macmillan  
Bureau Chief  
Land Management Operations  
Northwest Water Management District  
81 Water Management Drive  
Havana, Florida 32333

Honorable Kristen Dozier  
Leon County Commissioner, District 5  
301 South Monroe Street, 5<sup>th</sup> Floor  
Tallahassee, Florida 32301

Honorable Danny Monroe III  
Jefferson County Commissioner, District  
5  
c/o Jefferson County Courthouse  
1 Courthouse Circle  
Monticello, Florida 32344

Mr. Wayne Bertsch  
Ochlockonee Soil and Water  
Conservation District  
101 South Monroe Street  
Tallahassee, Florida 32301

Ms. Melissa Forehand  
Apalachee Audubon Society  
3414 Prock Drive  
Tallahassee, Florida 32311

Mr. Hugh Boyter  
The Wildlife Society, Florida Chapter  
2023 Hill-N-Dale, North  
Tallahassee, Florida 32317

Mrs. Sue Noyes  
President  
Southern Trailriders Association  
5800 Veterans Memorial Drive  
Tallahassee, Florida 32309

Mr. Dale Allen  
Florida Trail Association  
Apalachee Chapter  
3186 Baringer Hill Drive  
Tallahassee, Florida 32311

Represented by:  
Mr. Terry O. Tenold  
Chapter Chair  
Florida Trail Association  
Apalachee Chapter  
1737 Brookside Blvd  
Tallahassee, Florida 32301

Mr. Bob and Shirley Rice  
2320 Cody Church Road  
Monticello, Florida 32344

Eddie Mitchell  
1330 Capital Circle NE  
Tallahassee, Florida 32308

**St. Marks River Preserve State Park Advisory Group Members**

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## St. Marks River Preserve State Park Advisory Group Staff Report

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The Advisory Group meeting to review the proposed land management plan for St. Marks River Preserve State Park was held at the Marjorie Stoneman Douglas Building on February 16, 2011 at 9:00 AM.

Chairman John Dailey of the Leon County Board of County Commissioners was represented by District 5 Commissioner Kristin Dozier. Chairman Stephen Fulford of the Jefferson County Board of County Commissioners was represented by District 5 Commissioner Danny Monroe III. Jefferson County Forester Mr. Mike Humphrey for the Division of Forestry was represented by Region 1 Public Lands Forester Mr. Jason Love. Mr. Dale Allen of the Apalachee Chapter of the Florida Trail Association was represented by Mr. Terry Tenold. Other attending representatives included Dr. John Himes (Florida Fish and Wildlife Conservation Commission), Mr. Tyler Macmillan (Northwest Water Management District), Mr. Wayne Bertsch (Ochlockonee Soil and Water Conservation District), Ms. Melissa Forehand (Apalachee Audubon Society), Mr. Hugh Boyter (The Wildlife Society, Florida Chapter), Ms. Sue Noyes (Southern Trailriders Association) and Mr. Bob Rice (Adjacent landowner). Mr. Marc Mitchell (Adjacent landowner) was not in attendance. All other appointed Advisory Group members were present as well as Mr. John Kalin (TallahasseeTrails.com). Attending staff were Mr. Danny Jones, Mr. John McKenzie, Mr. Barry Burch, Ms. Amber Raynsford and Mr. Joe Blazina.

Mr. Blazina 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 plans.

### Summary of Advisory Group Comments

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**Mr. Boyter (The Wildlife Society, Florida Chapter)** provided corrections for the formatting of the vicinity map in the plan. He commented that the plan was very good and comprehensive. Mr. Boyter suggested an additional resource management objective to coordinate Florida black bear monitoring in the park with Florida Fish and Wildlife Conservation Commission (FFWCC) to evaluate the current use by the Florida black bears and the potential effects of the park's future recreation uses on the species.

**Mr. Tenold (Florida Trail Association, Apalachee Chapter)** commented on the future development of trails at the park. He stated that the Florida Trail Association supports multi-use trails, but in the future would like to see a 'hiking only' 2.5 - 3 mile trail that starts at the trailhead. He had a question regarding the current carrying capacity, and proposed expansion in the land use component, Mr. Tenold asked if the current and proposed parking areas could accommodate the amount of users in the plan. Mr. Tenold also asked about the proposed installation of composting restrooms at the park, and their functionality with the high humidity in Florida.

## St. Marks River Preserve State Park Advisory Group Staff Report

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**Commissioner Monroe (Jefferson County Commission)** commented that the management plan is extremely useful to have for the park. He said that it is great to protect the natural resources at this park, because our natural resources are very important, and the recreation opportunities are great to provide to our residents.

**Ms. Noyes (Southern Trailriders Association)** commented that she was very pleased with the proposed recreation facilities at the park. Ms. Noyes stated that there are over "10,000 horses in this region" and there are not any equestrian camping facilities currently available. She commented that there are over 100 members in the Southern Trailriders Association, and they can usually fill the existing trailer parking area at the park, and typically overflow into the regular parking area on scheduled trail riding days. Ms. Noyes agreed with Mr. Tenold that expansion of the existing and proposed parking areas would be beneficial. She also commented on how well the current staff at the park has restored the natural areas and maintained the trails, and that they thoroughly enjoy it.

**Mr. Rice (Adjacent Landowner)** commented that he appreciated the work that is being conducted out at the park currently, and as an adjacent landowner, his biggest concern is the control of exotic species and preservation of the natural resources at the park. Mr. Rice commented that he has discovered some archaeological artifacts on his adjacent property, and mentioned the likelihood of them being found on the park property as well. He also commented that he has seen feral hogs on his property, and has noticed an increase in nuisance animals on his property as well as Cody Church Road.

**Dr. Himes (Florida Fish and Wildlife Conservation Commission)** commented that the plan is very good, comprehensive and laid out well. Dr. Himes suggested trying to provide a protective buffer around the water bodies at the park to help reduce sedimentation and erosion issues. He commented that the park is likely to be home to a handful of species of cave crayfish in the sinkholes and other water bodies at the park. He suggested including some discussion regarding the cave crayfish and their sensitivity to sedimentation in the water bodies in the imperiled species discussion of the plan.

**Ms. Forehand (Audubon Society, Apalachee Chapter)** commented that she is happy with the content of the plan, and had a specific question regarding the occurrence of Limpkins at the park because of their common occurrence at the nearby Wacissa River. Mr. McKenzie responded that due to the ephemeral nature of the St. Marks River within the park boundary, they are more likely to be found in other areas that are wet all year.

**Commissioner Dozier (Leon County Commission)** commented that the plan was well done and comprehensive. She asked about the St. Marks River corridor, and discussed concerns she had received from residents in the Capitola/Chaires area regarding



## St. Marks River Preserve State Park Advisory Group Staff Report

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flooding. Both Mr. McKenzie and Mr. Burch commented that the river corridor within the park is not restricted, and a majority of the park is floodplain that is largely dictated by increased flow from upstream of the river. Adjacent Landowner Mr. Rice commented that the increased development in the area combined with the bridge over the river at U.S. Highway 27 is more likely to be the cause of flooding upstream.

**Mr. Bertsch (Ochlockonee Soil and Water Conservation District)** commented that the Soil and Water Conservation District was happy with the content of the plan, and did not have any comments to submit.

**Mr. Macmillan (Northwest Florida Water Management District)** commented that he was very happy when he heard the park property was purchased and announced to be managed by the Division of Recreation and Parks (DRP). He commented that the management plan for the park was well done. To follow up on flooding conversations earlier in the meeting, Mr. Macmillan asked about the presence of beavers on the property, and suggested to add language in the management plan to monitor for beaver activity. He added that once beavers have established themselves, they can be a headache and have the ability to significantly alter the natural hydrological systems. Mr. Macmillan also commented on the proposed bridge site in the Conceptual Land Use Plan, and said that it would be extremely useful for staff access and management of the property. He also added that any locations that currently have blown-out culverts in the road system prove that constructing a bridge should be investigated for a more long-term solution. He asked other questions regarding current resource management efforts at the park, and received answers from Mr. Burch and Mr. McKenzie.

**Mr. Love (Division of Forestry)** provided corrections for typographic errors and suggestions for map format changes. He commented on some of the exotic species control objectives, and asked why the plan recommends treating only one acre per year. Mr. McKenzie responded that it is because the park does not currently have an exotic species problem. Mr. Love also had a comment regarding the Optimum Boundary of the park, and the addition of lands to the east that would help with resource management and river access. He had comments regarding revisions to the Timber Analysis Addendum, adding that it can be used to create a larger scope of work and accomplish more work at the park, which would assist in future development of recreation facilities. Mr. Love concluded his comments with a mentioning that it has been a pleasure to work with Mr. Burch and his staff, who accomplish a lot on the property with the limited resources they have.

### Staff Recommendations

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Division staff recommends approval of the proposed management plan for St. Marks River Preserve State Park with minor typographical and grammatical changes and corrections resulting from the public workshop and Advisory Group review. The

## St. Marks River Preserve State Park Advisory Group Staff Report

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following substantive changes to the text of the plan are recommended:

- **Resource Management Component**

Regarding the monitoring of the imperiled Florida black bear on the park property, the following language has been added to the explanatory text for the imperiled species objective:

*The Florida black bear is an imperiled species that occurs along the entire St. Marks River Corridor. Park and District staff should work in coordination with FFWCC to investigate patterns and frequency of black bear use on park lands and factors that affect that use. Florida Park Service staff will be reliant on FFWCC guidance and expertise in determining the appropriate level of monitoring, and developing and implementing suitable monitoring objectives that consider the park's staffing limitations.*

Regarding the monitoring of beaver activity, the following language has been added to the nuisance animal discussion:

*District and Park Staff will also monitor for detrimental hydrological impacts to the St. Marks River floodplain caused by beaver (*Castor canadensis*) activity at the park.*

Regarding hydrological restoration projects and damaged culverts along service roads, text will be added to the hydrology section of the plan to indicate that consideration will be given to construction of bridges in place of improperly sized culverts and low-water crossings.

- **Land Use Component**

Regarding concerns suggested to increase parking capacity at the existing trailhead and the proposed northern trailhead, staff established a moderately low capacity for trails use and picnicking for the initial plan for the park. The proposed parking capacity is based on that level of use. Park staff will monitor the use of the park and environmental factors, such as how visitor use affects the use patterns of the Florida black bear. Trail and parking capacity may be increased in the future based on those evaluations. Text to this effect has been added under the Conceptual Land Use Plan heading of the management 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.”

State park management plans are reviewed by advisory groups that are composed in compliance with these requirements. 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. Additional members may be appointed if special issues or conditions exist that require a broader representation for adequate review of the management plan. 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 DRP staff.

## St. Marks River Preserve State Park Advisory Group Staff Report

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### **Addendum 3 – References Cited**





## St. Marks River Preserve State Park References Cited

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## St. Marks River Preserve State Park References Cited

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## **Addendum 4 – Soil Descriptions**





## Leon County Soils

**1-Albany loamy sand, 0 to 2 percent slopes.** This nearly level, somewhat poorly drained soil is on lower elevations of uplands.

Typically the surface layer is very dark grayish brown loamy sand about 4 inches thick. The subsurface layer is loamy sand about 46 inches thick- the upper 17 inches is pale brown, the next 15 inches is very pale brown, and the lower 14 inches is mottled very pale brown, yellow and brownish yellow. The subsoil extends to a depth of 78 inches- the upper 13 inches is mottled light gray and yellowish brown sandy loam and the lower 15 inches is light yellowish brown sandy clay loam. Below 78 inches is light gray very fine sandy loam that has yellow and reddish yellow mottles.

Included with this soil in mapping are small areas of Troup and Plummer soils. These inclusions make up about 20 percent of the map unit.

This Albany soil has a seasonal high water table 12 to 30 inches below the surface for 1 to 2 months in most years. Available water capacity is very low in the surface and subsurface layers and medium in the subsoil. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. Natural fertility is low.

The native trees include longleaf and slash pines and mixed hardwoods- white oak, live oak, laurel oak, sweetgum, hickory, dogwood, and persimmon trees. The understory consists of native grasses and shrubs including huckleberry, briers, and pineland threeawn.

This soil has several limitations for cultivated crops because of periodic wetness and droughtiness in the root zone. With adequate water control, such crops as corn, soybeans, and peanuts are moderately suited. Management includes close-growing, soil-improving crops in rotation with row crops. The close-growing crops should be used two-thirds of the time. To help improve the soil tilth, cover crops and crop residues should be used to protect the soil from erosion. Fertilizer and lime are needed.

The soil is moderately suited for pastures and hay crops. Coastal bermudagrass, bahiagrasses and clovers are well suited to this soil. These plants respond well to fertilizers and lime. Drainage removes excess internal water in wet seasons. Controlled grazing maintains vigorous plants.

The potential is moderately high for pine trees on this soil. Moderate equipment use limitations, seedling mortality, and plant competition are management concerns. Slash and loblolly pine are the best suited trees to plant for commercial woodland production.

This Albany soil is in capability subclass IIIw.

## St. Marks River Preserve State Park Soils Descriptions

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**3 - Alpin sand, 0 to 5 percent slopes.** This excessively drained, nearly level to gently sloping soil is on ridges, knolls, and broad upland areas. Slopes are smooth to broken.

Typically, the surface layer is dark gray sand about 4 inches thick. The subsurface layer, extending to a depth of about 55 inches, is very pale brown sand. White mottles and splotches are in the lower part. The underlying material extending to 90 inches or more is white sand that has thin brownish yellow bands or lenses.

Included with this soil in mapping are small areas of Kershaw, Ortega, Blanton, and Troup soils that are on the same slope position as this Alpin soil. A few areas of these soils are also on slopes ranging to about 12 percent. Small areas are on foot slopes or side slopes where limestone is within 80 inches of the surface and occasionally outcrops at the surface. These inclusions make up less than 15 percent of the map unit.

The water table of this Alpin soil is below a depth of 80 inches. Available water capacity is low to very low, and permeability is very rapid. Natural fertility is low.

Native trees include longleaf pine, turkey oak, bluejack oak, and blackjack oak; the understory includes honeysuckle, pineland threeawn, and running oak.

This soil has very severe limitations for cultivated crops. Droughtiness and rapid leaching of plant nutrients reduce the potential yields of suited crops. Row crops should be planted on the contour. Crop rotations should include close-growing plants at least three-fourths of the time. Soil-improving crops and crop residue should be used to protect the soil from erosion. Irrigation of suitable crops is usually feasible where water is readily available.

The soil is moderately suited to pastures and hay crops. Deep-rooting plants such as coastal bermudagrass and bahiagrasses are well suited, but yields are reduced by periodic droughts. Regular fertilizing and liming are needed. Grazing should be controlled to help plants maintain vigor.

Potential is moderately high for pine trees on this soil. Equipment use limitations and seedling mortality are management concerns. Slash and loblolly pine are the best suited trees to plant for commercial woodland production.

This Alpin soil is in capability subclass IVs.

**5 - Blanton fine sand, 0 to 5 percent slopes.** This nearly level to gently sloping, moderately well drained soil is on a small to large areas of the uplands.

Typically, the surface layer is dark grayish brown fine sand about 7 inches thick. The subsurface layer, extending to a depth of 52 inches, is brown, light yellowish brown,

## St. Marks River Preserve State Park Soils Descriptions

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and very pale brown fine sand. The subsoil is sandy clay loam to a depth of 80 inches or more – the upper 10 inches is brownish yellow that has reddish yellow mottles, and the lower 18 inches is light brownish gray that has red and strong brown mottles.

Included with his soil in mapping and small areas of Troup, Kershaw, Chipley, Albany, and Norfolk soils. Thee inclusions make up 15 to 20 percent of the map unit.

This Blanton soil has a water table that is perches above the subsoil for less than a month during wet seasons. In other season the water table is below 72 inches. The available water capacity is very low to low in the surface and subsurface layer and medium in the subsoil. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. Natural fertility is low.

This soil has severe limitations for most cultivated crops. Droughtiness and rapid leaching of plant nutrients limit the choice of plants and reduce potential yields of suited crops. Row crops should be planted on the contour. The crop rotation should include close-growing cover crops at least two-thirds of the time. Soil-improving cover crops and crop residue should be used to protect the soil from erosion. Irrigating high value crops is usually feasible where water is readily available.

The soil is moderately well suited to pasture and hay crops. Coastal bermudagrass and improved bahiagrass are well suited but yields are reduced by periodic droughts. Grasses respond to regular fertilizing and liming. Grazing should be controlled to maintain plant vigor and a good ground cover.

The potential is moderately high for pine trees. Equipment use limitations, seedling mortality, and plant competition are management concerns. Slash and longleaf pine are the best suited trees to plant for commercial wood production.

This Blanton soil is in capability subclass IIIs.

**8 - Chipley fine sand, 0 to 2 percent slopes.** This somewhat poorly drained, nearly level siol is on moderately low uplands. Slopes are smooth.

Typically, the surface layer is fine sand about 15 inches thick. The upper 5 inches is very dark gray and the lower 10 inches is dark grayish brown. The underlying layer is fine sand to a depth of 80 inches or more – the upper 8 inches is brown that has grey mottles; the next 14 inches is brownish yellow that has reddish yellow and gray mottles; and the lower 43 inches is brownish yellow, light brownish gray, and white.

Included with this soil in mapping are small areas of Rutlege, Ortega, and Albany soils. Ortega soils are on slightly higher positions and Rutlege soils in low positions. These inclusions make up less than 20 percent of the map unit.

## St. Marks River Preserve State Park Soils Descriptions

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This Chipley soil has a water table within a depth of 20 to 40 inches for 2 to 4 moths in most years. The available water capacity is low in the surface layer and very low in the other layers. Permeability is rapid. Natural fertility is low.

Native trees and understory consist mostly of slash and longleaf pine, scattered post, turkey oak, blackjack oak and pineland threawn.

This soil has severe limitations for cultivated crops. Droughtiness and rapid leaching of plant nutrients limit the choice of crops and reduce potential yields of suitable crops. The presence of a water table within 20 to 40 inches of the surface in wet seasons affects the availability of water in the root zone by providing water through capillary rise to supplement the low available water capacity. In very dry seasons the water table drops well below the root zone and little capillary water is available to plants. The crop rotation should include close-growing crops to cover the soil at least two-thirds of the time. Lime and fertilizer should be applied as needed. Soil-improving cover crops and all crop residue should be used to protect the soil from erosion. Irrigating high value crops is usually feasible where water is readily available. Tile or other drainage methods are needed for some crops that could be damaged by a high water table during the growing season.

The soil is moderately well suited for pastures and hay. Suitable plants include coastal bermudagrass and bahiagrasses. The soils require fertilizer and lime. Controlled grazing maintains vigorous plants.

The potential for trees on this soil is high. Equipment use limitations, seedling mortality, and plant competition are management concerns. Slash and loblolly pine are the best suited trees to plant for commercial woodland production.

This Chipley soil is in capability subclass IIIs.

**24- Lucy fine sand, 0 to 5 percent slopes.** This well drained, nearly level to gently sloping soil is on upland ridges. Slopes are smooth and uniform to irregular in shape.

Typically, the surface layer is dark grayish brown fine sand 5 inches thick. The subsurface layer is fine sand and extends to a depth of 26 inches- the upper 4 inches is dark yellowish brown, the next 7 inches is dark brown, and the lower 10 inches is strong brown. The subsoil is yellowish red sandy clay loam to a depth of 80 inches or more.

Included with this soil in mapping are small areas of Orangeburg and Troup soils on the same slope positions as this Lucy soil. Small areas of Wagram and Blanton soils are on some top slopes. Also included in mapping are small areas where the surface layer is sand or loamy sand. These inclusions make up 15 percent or less of the map unit.

## St. Marks River Preserve State Park Soils Descriptions

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The Lucy soil does not have a water table within a depth of 80 inches. The available water capacity is low in the surface and subsurface layers and medium in the subsoil. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. Natural fertility is low.

The native trees include slash and longleaf pine, live oak, post oak, red oak, and dogwood trees. The understory consists of native shrubs and grasses, including huckleberry, southern dewberry, smilax, Virginia creeper, American beautyberry, muscadine grape, yaupon, and sparse pineland threeawn.

This soil has moderate limitations for cultivated crops. Droughtiness and rapid leaching of plant nutrients from the thick sandy surface layer limit the choice of crops and the potential yields of suitable crops. Such crops as corn, soybeans, peanuts, and tobacco can be grown. Row crops should be planted on the contour. The crop rotation should include cover crops at least half the time. Cover crops and crop residues should be used to protect the soil from erosion. A good seedbed, fertilizer, and lime are necessary. Irrigating high value crops such as tobacco is usually feasible where irrigation water is readily available.

The soil is well suited to pastures. Deep-rooting plants such as coastal bermudagrass and bahiagrasses are well suited and respond well to fertilizer and lime. Controlled grazing is important to maintain vigorous plants and a good cover.

The potential is moderately high for pine trees on this soil. Equipment use limitation, seedling mortality, and plant competition are management concerns. Loblolly and slash pine are the best suited trees to plant for commercial woodland production.

This Lucy soil is in capability subclass IIs.

**25- Lucy fine sand, 5 to 8 percent slopes.** This sloping, well drained soil is on upland hillsides. Typically, the surface layer is dark brown fine sand about 5 inches thick. The next 8 inches is brown fine sand; extending to a depth of 30 inches is reddish yellow and strong brown fine sand. The subsoil extends to a depth of 80 inches or more- the upper 6 inches is yellowish red fine sandy loam, the next 39 inches is red sandy clay loam, and the lower 5 inches is yellowish red fine sandy loam.

Included with these soils are small areas of Orangeburg and Troup soils. These inclusions make up less than 20 percent of the map unit.

This Lucy soil has a water table below depths of 80 inches throughout the year. The available water capacity is low in the surface and subsurface layers and medium in the subsoil. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. Natural fertility is low.



## St. Marks River Preserve State Park Soils Descriptions

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Native trees include slash pine, longleaf pine, live oak, post oak, red oak, and dogwood trees. The understory consists of native shrubs and grasses, including huckleberry, southern dewberry, smilax, Virginia creeper, American beautyberry, muscadine grape, yaupon, and pineland threeawn.

This soil has severe limitations for cultivated crops. Droughtiness and rapid leaching of plant nutrients from the thick sandy surface layer severely limit the suitability of this soil for most row crops.

The steepness of slopes further limits the suitability by making cultivation more difficult and by increasing the hazard of erosion. Row crops should be planted on the contour. The crop rotation should keep the soil under close-growing crops at least two-thirds of the time. All crops respond to fertilizer and lime. Soil-improving cover crops and crop residue should be used to protect the soil from erosion.

This soil is moderately well suited to pasture. Deep-rooting plants such as coastal bermudagrass and bahiagrasses are well suited to this soil. Steepness of slope increases the erosion hazard and reduces the potential yields. Grasses respond to fertilizer and lime. Controlled grazing permits the plants to maintain their vigor and to provide good protective cover.

The potential is moderately high for pine trees. Equipment limitation, seedling mortality, and plant competition are management concerns. Slash and loblolly pine are the best suited trees to plant for commercial woodland production.

This Lucy soil is in capability subclass IIIs.

**37 - Ortega sand, 0 to 5 percent slopes.** This nearly level to gently sloping, moderately well drained soil is on small and medium areas on upland ridges.

Typically, the surface layer is sand about 10 inches thick. The upper 4 inches is gray, and the lower 6 inches is light brownish gray. The underlying layers are sand to a depth of about 44 inches and fine sand to 80 inches or more. From 10 to 18 inches is very pale brown, the next 16 inches is yellow, the next 28 inches is yellow that has brownish mottles, and the lower 8 inches is white that has yellowish mottles.

Included with this soil in mapping are small areas of Blanton and Kershaw soils. These inclusions make up about 25 percent of the map unit.

This Ortega soil has a water table that fluctuates between depths of about 60 to 72 inches in many years during rainy seasons and within depths of 40 to 60 inches occasionally during heavy rainfall periods. Available water capacity is low in the surface layer and very low in the underlying layers. Permeability is rapid. Natural

## St. Marks River Preserve State Park Soils Descriptions

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fertility is low.

Native trees are dominantly longleaf pines that have a ground cover of pineland threeawn.

This soil has severe limitations for most cultivated crops. Droughtiness and rapid leaching of plant nutrients limit the choice of plants and reduce potential yields of suitable crops. To reduce the erosion hazard, row crops should be planted on the contour. The crop rotation should include close-growing crops on the soil at least two-thirds of the time. Crops respond well to fertilizer and lime. Soil-improving cover crops and crop residue should be used to protect the soil from erosion. Irrigation of high-value crops is usually feasible where water is readily available.

These soils are moderately well suited to pasture and hay. Plants such as coastal bermudagrass and bahiagrass are well suited. Fertilizer and lime are needed. Controlled grazing is needed to maintain vigorous plants.

This soil has a moderately high potential for pine trees. Slash and longleaf pine are the best suited trees to plant for commercial woodland production.

This Ortega soil is in capability subclass IIIs.

**38- Pamlico- Dorovan complex.** This map unit consists of nearly level, very poorly drained Dorovan and Pamlico soils that are so intermixed that separating them was not practical at the scale selected for mapping. These soils are irregularly shaped areas of 20 to 200 acres in the flatwoods, along some flood plains, and along the edges of gently sloping soils on uplands. Individual areas of each soil in this unit range from about 1/8 to 3 acres in size.

Pamlico mucky peat makes up about 40 to 50 percent of each mapped area. Typically, the soil has a black mucky peat surface layer about 4 inches thick. The next layer to about 28 inches is very dark brown muck. The substratum is very dark gray and dark gray sand that extends to a depth of 80 inches or more.

The Pamlico soil has a water table above the surface for 5 to 8 months in most years and 10 inches below the surface most of the remaining time. Organic matter content is very high. Permeability is moderate in the organic layers and rapid in the sandy substratum. Available water capacity is very high in the organic and very low in the substratum.

The Dorovan mucky peat makes up about 30 to 40 percent of each mapped area. Typically, the surface layer is black mucky peat about 5 inches thick. The next layer to about 16 inches is black muck and then is very dark brown muck to a depth of 65 inches. The upper part of the substratum is very dark gray sandy loam about 4 inches

## St. Marks River Preserve State Park Soils Descriptions

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thick; then black sand extends to a depth of 80 inches or more.

The Dorovan soil has a water table above the surface 5 to 8 months in most years and 10 inches below the surface most of the remaining time. Permeability is moderate in the organic layers and rapid in the substratum. Available water capacity is very high. Organic matter content is very high.

Minor soils make up about 5 to 20 percent of the unit. Most of these soils have similar drainage but some are sandy and have a thin organic surface layer less than 16 inches thick.

Native trees include mostly water-tolerant hardwoods such as water oak, sweetbay, blackgum, sweetgum, red maple, black willow, common alder, and cypress. At the perimeter of areas, the trees are pond pine, shortleaf pine, and slash pine. Almost all areas are still in native trees. They provide a wildlife habitat.

The Pamlico and Dorovan soils have very severe limitations for cultivated crops. Generally, these soils are not suitable for cultivation, but with adequate water control, they are suitable for some row crops and most vegetable crops. A well designed and maintained water control system is needed. The water control system should remove excess water when row crops are on the soils and keep the soils saturated with water at all other times. Fertilizers that contain phosphates, potash, and minor elements are needed. Water-tolerant cover crops should be on the soils when row crops are not being grown. Crop residue and cover crops should be used to protect the soil from erosion.

Most adapted improved grasses and clovers grow well on these soils when water is properly controlled. Water control should maintain the water table near the surface to prevent excessive oxidation of the organic horizons. Fertilizers high in potash, phosphorus, and minor elements are needed. Controlled grazing helps maintain vigorous plants.

The potential of these soils is low for use as woodland. Seedling mortality and equipment limitations are management concerns. The best suited trees to plant for commercial woodland production are baldcypress on the Dorovan soils and slash and loblolly pine on the Pamlico soils.

The Pamlico and Dorovan soil are in capability subclass IVw.

**39 - Pelham fine sand.** This poorly drained, nearly level soil is on broad flatwoods, in depressional areas, and in some drainageways on uplands. Slopes range from 0 to 2 percent.

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

## St. Marks River Preserve State Park Soils Descriptions

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subsurface layer is dark gray, light brownish gray, and light gray fine sand about 21 inches thick. The subsoil is sand clay loam that extends a depth of 80 inches or more. The upper 6 inches of the subsoil is gray that has brown mottles, and the lower part is light gray that has yellow, brown, and red mottles.

Included with this soil in mapping and small areas of Plummer soils. These inclusions make up less than 15 percent of the map unit.

The water table of this Pelham soil is within 15 inches of the soil surface for 3 to 6 months in most years. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. The available water capacity is low in the surface and the subsurface layers and medium in the subsoil. Natural fertility is low.

Native trees include slash pine and loblolly pine, sweetgum, blackgum, and water oak. The understory includes greenbrier, waxmyrtle, and inkberry.

This soil has very severe limitations for cultivated crops. Because of wetness and thick sandy surface layers, a good water control system is needed before this soil is suitable for cultivation. The system should remove excess surface water and excess internal water from the surface layers in wet seasons. The crop rotation should include a close-growing, soil-improving crop on the soil at least three-fourths of the time. Seedbed preparation should include bedding the rows. Crops respond to fertilizer and lime. Crop residue and soil-improving crops should be used to protect the soil from erosion.

This soil is poorly to moderately suited to pasture and hay crops. Tall fescue, coastal bermudagrass, and bahiagrass are well suited to this soil. These grasses respond to fertilizer and lime. Grazing should be controlled to prevent overgrazing and reducing the vigor of the plants. Management should include water control to remove excess surface water.

This soil has high potential for pine trees, but surface drainage is needed for high productivity. Equipment use limitations, seedling mortality, and plant competition are management concerns. Slash and loblolly pine are the best suited trees to plant for commercial woodland production, but tree planting is feasible only with adequate surface drainage.

This Pelham soil is in capability subclass IVw.

**41 - Plummer fine sand.** This poorly drained, nearly level soil is in low areas and in poorly defined drainageways. Slopes range from 0 to 2 percent.

Typically, the surface layer is fine sand about 17 inches thick. The upper 6 inches is very dark grayish brown, and the lower 11 inches is dark grayish brown. The

## St. Marks River Preserve State Park Soils Descriptions

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subsurface layer is fine sand to a depth of about 61 inches – the upper 11 inches is gray, the next 8 inches is gray that has strong brown mottles, and the lower 25 inches is light gray. The subsoil extending to 80 inches or more is light gray fine sandy loam that has yellowish red mottles.

Included with this soil are small areas of Pelham soils. These inclusions make up less than 10 percent of the map unit.

A water table of this Plummer soil is within 15 inches of the soil surface for 3 to 6 months in most years. The available water capacity is low to very low in the surface and subsurface layers and medium in the subsoil. Permeability is moderately rapid in the surface and subsurface layers and moderate in the subsoil. Natural fertility is low.

The native trees include loblolly pine and slash pine, sweetgum, blackgum, and cypress. The understory includes inkberry, waxmyrtle, ferns and pineland threeawn.

This soil has very severe limitations for cultivated crops. Because of wetness and thick sandy surface layers, a good water control system is needed before these soils are suitable for cultivated crops. The system should remove excess surface and subsurface water during heavy rainfall. Seedbed preparation should include bedding of rows. Row crops should be rotate with close-growing crops at least three-fourths of the time. Crop residue and cover crops should be used to protect the soil from erosion. Crops respond to fertilizer and lime.

The soil is only fairly suited to pasture. Most improved grasses and legumes are poorly suited. Water control, controlled grazing, fertilizing, and liming help produce poor to moderate yields of pasture grasses.

With adequate surface drainage, this soil has high potential for pine trees. Equipment use limitations, seedling mortality, and plant competition are management concerns. Slash and loblolly pine are the best suited trees to plant for commercial woodland production, but tree planting is feasible only on areas with surface drainage.

This Plummer soil is in capability subclass IVw.

**44- Rutledge soils, occasionally flooded.** These nearly level, very poorly drained soils are in swamps, depressional areas, and along natural drainageways in the Apalachicola National Forest. The unit consists of Rutledge soils and similar soils that do not occur in a regular and repeating pattern. One or more of these soils make up about 75 percent of each map unit. Individual areas of each soil range up to 60 acres and are large enough to map separately, but because of present and predicted use, they were not separated in mapping. Areas of this association range from about 100 acres to several hundred acres.



## St. Marks River Preserve State Park Soils Descriptions

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Rutledge soils make up about 60 percent of the unit. Typically, Rutledge soils have a loamy fine sand surface layer about 15 inches thick. The upper 8 inches is black, and the lower 7 inches is very dark gray. The layer beneath the surface is fine sand to a depth of 80 inches or more. The upper 23 inches is light gray, and the lower 42 inches is very light gray. Yellowish mottles are in these layers.

The soils in this unit that are similar to Rutledge soils have a thicker surface layer. Typically, these soils have a black and very dark gray loamy fine sand surface layer about 30 inches thick. The underlying layer is gray and light gray fine sand that extends to a depth of 80 inches or more.

All these soils have a water table at or near the surface for long periods of each year. Most areas are flooded frequently for brief periods. Available water capacity is high in the surface layer and low below. Permeability is rapid throughout. Natural fertility is moderate.

Minor soils make up about 15 percent of the unit. The most extensive of these are Leon, Talquin, Sapelo, Plummer, Dorovan, and Pamlico soils. The mineral soils are usually around the perimeter of the association, and the organic soils are in the center.

Most areas of this unit are still in native trees of blackgum, slash pine, pond pine, cypress, and sweetbay and has an understory of titi, greenbrier, huckleberry, myrtle, inkberry, fetterbush, and water-tolerant grasses and sedges.

This unit has severe limitations for cultivated crops because of wetness. Without good water control measures, the number of suited crops is limited. With adequate water control, such crops as corn and soybeans can be grown. The water control system should remove excess water rapidly after heavy rainfall. Seedbed preparation should include bedding the rows. Management includes fertilizing, liming, and rotating crops to include close-growing, soil-improving crops on the soil at least two-thirds of the time. Crop residue from row crops and soil-improving should be used to protect the soil from erosion.

This soil is well suited to pasture and hay crops. Surface field ditches are needed to remove excess surface water during heavy rainfall. Tall fescue, bahiagrass, and white clovers are well suited. They respond to fertilizer and lime. Controlled grazing helps maintain the vigor of the plants.

With adequate surface drainage, the unit has high potential for pine trees. Equipment use limitations, seedling mortality, and plant competition are management concerns. Slash and loblolly pine are the best suited trees to plant for commercial woodland production, but tree planting is feasible only on areas with surface drainage.

## St. Marks River Preserve State Park Soils Descriptions

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This Rutledge soil is in capability subclass IVw.

**45- Sapelo fine sand.** This poorly drained, nearly level soil is on the flatwoods. Slopes are smooth to concave, ranging from 0 to 2 percent.

Typically, the surface layer is very dark gray fine sand about 6 inches thick. The subsurface layer is light gray fine sand to about 14 inches. The upper part of the subsoil, to about 26 inches, is fine sand. The first 2 inches is dark reddish brown, the next 6 inches is dark brown, and the lower 3 inches is brown. The dark color is organic matter that coats the sand grains. The next layer is very pale brown and light gray fine sand to a depth of 43 inches. The lower part of the subsoil is gray fine sandy loam that extends to 80 inches or more.

Included with the soil in mapping are small areas of Rutledge and Plummer soils. Also included are small areas that are not loamy in the lower part of the subsoil. These inclusions make up less than 20 percent of the map unit.

This Sapelo soil has a water table at 15 to 30 inches below the surface for about 2 to 4 months in most years. Permeability is moderate in both the upper and lower parts of the subsoil and rapid in the other layers. Available water capacity is medium in the upper and lower parts of the subsoil and low in the other layers. Natural fertility is low.

This soil has very severe limitations for cultivated crops because of wetness and sandy texture. With good water control measures and soil-improving measures, this soil is suitable for crops such as corn, peanuts, soybeans, and watermelons. A complete water control system should remove excess water quickly after heavy rainfall and serve to supply subsurface irrigation in dry seasons. Row crops should be rotated with soil-improving crops. The soil-improving crops should be on the land at least three-fourths of the time. Crop residue and the soil-improving crops should be used to protect the soil from erosion. Seedbed preparation should include bedding of the rows. Crops respond to fertilizer and lime, which should be added according to soil tests.

The soil is well suited to pasture and hay crops. Coastal bermudagrass, improved bahiagrass, and several legumes are adapted. Water control measures are needed to remove excess water during heavy rainfall. Fertilizer and lime are needed. Grazing should be controlled to maintain vigorous plants.

The potential is moderately high for pine trees on this soil. Equipment use limitations, seedling mortality, and plant competition are management concerns. Slash and loblolly pine are the best suited trees to plant for commercial woodland production.

This Sapelo soil is in capability subclass IVw.

## St. Marks River Preserve State Park Soils Descriptions

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**48- Troup fine sand, 0 to 5 percent slopes.** This nearly level to gently sloping well drained soil is on medium to large uplands.

Typically, the surface layer is dark grayish brown fine sand about 8 inches thick. The upper 11 inches of the subsurface layer is yellowish brown fine sand as well as the next 7 inches that has light gray uncoated sand grain pockets. The lower 18 inches of the subsurface layer is reddish yellow fine sand. The subsoil is fine sandy loam and sandy clay loam that extends to a depth of 80 inches or more. The upper 10 inches of the subsoil is strong brown, the next 19 inches is yellowish red, and the lower 7 inches is red.

Included with this soil are small areas of Blanton, Lucy, and Norfolk soils. These inclusions make up about 20 percent of the map unit.

The water table of this Troup soil is below a depth of 80 inches throughout the year. The available water capacity is low in the surface and subsurface layers and medium in the subsoil. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. Natural fertility is low.

This soil has severe limitations for cultivated crops. Droughtiness and rapid leaching of plant nutrients limit the choice of plants and reduce potential yields of suited crops. Soil management should include row crops planted on the contour. Crop rotations should include close-growing soil-improving crops on the soil at least two-thirds of the time. The soil-improving crops and the residue of all other crops should be used to protect the soil from erosion. All crops respond to lime and fertilizer. Irrigation of high value crops such as watermelons and tobacco is usually feasible where water is readily available.

This soil is moderately suited to improved pasture. Deep-rooting plants such as Coastal bermudagrass and improved bahiagrasses are well suited. These grasses produce good ground cover when lime and fertilizer are applied. Grazing should be controlled to prevent overgrazing and to maintain vigorous plants. Yields are occasionally reduced by severe drought.

The potential is moderately high for pine trees on this soil. Equipment limitations and seedling mortality are management concerns. Slash and loblolly pine are the best suited trees to plant for commercial woodland production.

This Troup soil is in capability subclass IIIs.

## Jefferson County Soils

**2- Ortega fine sand, 0 to 5 percent slopes.** This soil is moderately well drained and nearly level to gently sloping. It is on convex knolls on uplands and flatwoods. Individual areas of this soil are irregular in shape and range from 5 to 100 acres.

Typically, the surface layer is very dark gray fine sand about 5 inches thick. The underlying material is fine sand to a depth of at least 80 inches. It is yellowish brown and light yellowish brown to a depth of 41 inches, pale yellow with strong brown and brownish yellow mottles to a depth of 58 inches, and white with brownish yellow and reddish yellow mottles to a depth of 70 inches. Below that, it is white.

Included in mapping are small areas of Blanton, Chipley, and Sapelo soils. Also included are small areas of soils that have a thicker surface layer than that of the Ortega soil. The included soils make up less than 15 percent of the map unit.

This Ortega soil has a seasonal high water table that fluctuates between depths of 60 and 72 inches for more than 6 months in most years and is within a depth of 40 to 60 inches for 1 to 2 months during heavy rainfall periods. The available water capacity is low in the surface layer and very low in the underlying material. Permeability is rapid. Natural fertility is low.

The natural vegetation is dominantly longleaf pines turkey oak with a ground cover of pineland threawn.

The Ortega soil has severe limitations for most cultivated crops. Droughtiness and rapid leaching of plant nutrients limit the choice of plants and reduces potential yields of adapted crops. The high water table between depths of 40 to 60 inches affects the availability of water by providing water through capillary rise to supplement the low available water capacity. In very dry seasons, the high water table drops to well below the root zone, and little capillary water is available to plants. Row crops need to be planted in strips on the contour with alternate strips of close-growing crops. Crop rotations also need to include close-growing crops on the land at least two-thirds of the time. This soil needs fertilizer and lime for all crops. Soil-improving cover crops and all crop residue need to be left on the ground. Irrigation of high-value crops is generally feasible where irrigation water is readily available. Intensive management of soil fertility and water is needed for optimum crop production.

This soil has moderate limitations for use as pasture and for hay. Droughtiness and rapid leaching of nutrients from the soil are the major limiting factors. Plants, such as coastal bermudagrass and bahiagrass, are well adapted, but they require fertilizer and lime. Controlled grazing is needed to maintain vigorous plants for maximum yields. Intensive management of soil fertility and water is needed for optimum productivity of

## St. Marks River Preserve State Park Soils Descriptions

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the soil for pasture and hay.

This soil has moderately high potential productivity for longleaf and slash pines, and these pines are the best trees to plant. Droughtiness is the major limitation.

This soil has severe limitations for sanitary landfills, shallow excavations, and lawns and landscaping. It has moderate limitations for septic tank absorption fields and dwellings without basements. Wetness and seepage affect these uses.

This soil has severe limitations for camp areas, picnic areas, playgrounds, paths and trails, and golf fairways mainly because of the sandy surface.

This Ortega soil is in capability subclass IIIs and in woodland suitability group 10S.

**3- Chipley fine sand, 0 to 5 percent slopes.** This soil is somewhat poorly drained or moderately well drained and nearly level to gently sloping. It is on slightly convex knolls on uplands and flatwoods. Individual areas of this soil are irregular in shape and range from 5 to 150 acres.

Typically, the surface layer is very dark gray and dark grayish brown fine sand about 12 inches thick. The underlying material is fine sand to a depth of at least 80 inches. To a depth of 39 inches, it is yellowish brown and light yellowish brown with mottles in shades of brown and yellow in the lower part. To a depth of 72 inches, the underlying material is very pale brown with brown and reddish yellow mottles, and below that, it is light gray.

Included in mapping are small areas of Albany, Ortega, and Sapelo soils. The included soils make up less than 15 percent of the map unit.

This Chipley soil has a seasonal high water table within a depth of 20 to 40 inches for 2 to 4 months and within a depth of 40 to 72 inches for the rest of the year. The available water capacity is low in the surface layer and very low in the underlying material. Permeability is rapid. Natural fertility is low.

The natural vegetation is dominantly slash pine, longleaf pine, mixed hardwoods, and a ground cover of pineland threeawn.

This soil has severe limitations for cultivated crops. Droughtiness and rapid leaching of plant nutrients from the soil limit the choice of plants and reduce potential yields of adapted crops. The high water table within 20 to 40 inches of the surface in wet seasons affects the availability of water in the root zone by providing water through capillary rise to supplement the low available water capacity. In very dry seasons, the water table drops well below the root zone and little capillary water is available to plants. Row

## St. Marks River Preserve State Park Soils Descriptions

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crops need to be planted in strips on the contour with alternate strips of close-growing crops. Crop rotations also need to include close-growing crops on the land at least two-thirds of the time. This soil needs lime and fertilizer for all crops. Soil-improving cover crops and crop residue need to be left on the land. Irrigation of high-value crops is generally feasible where irrigation water is readily available. Tile or other drainage is needed for some crops that are damaged by the high water table during the growing seasons. Intensive management of soil fertility and water is needed for optimum crop production.

The Chipley soil has moderate limitations for use as pasture and for hay. Droughtiness and rapid leaching of nutrients from the soil are the major limiting factors. Intensive management of soil fertility and water is required for optimum productivity of this soil. Plants, such as coastal bermudagrass and bahiagrass, are well adapted, but they require fertilizer and lime. Controlled grazing is needed to maintain vigorous plants for maximum yields.

This soil has high potential productivity for pine trees. Slash pine and longleaf pine are the best trees to plant. Droughtiness of this sandy soil is the major limitation.

This soil has severe limitations for septic tank absorption fields, sanitary landfills, shallow excavations, dwellings with basements, and lawns and landscaping. It has moderate limitations for dwellings without basements, small commercial buildings, and local roads and streets. Wetness and seepage are some of the limiting factors affecting these uses.

This soil has severe limitations for camp areas, picnic areas, playgrounds, paths and trails, and golf fairways mainly because of the sandy surface.

This Chipley soil is in capability subclass IIIs and in woodland suitability group 11S.

**4- Surrency fine sand.** This soil is very poorly drained and nearly level. It is in drainageways and depressions on uplands and flatwoods. Individual areas of this soil are circular or irregular in shape and range from 3 to 800 acres. Slopes are less than 1 percent.

Typically, the surface layer is dark gray and very dark gray fine sand about 15 inches thick. The subsurface layer is light gray fine sand to a depth of about 26 inches. The subsoil extends to a depth of at least 80 inches. It is light gray fine sandy loam in the upper part and light gray sandy clay loam in the lower part. It has dark yellowish brown mottles throughout.

Included in mapping are small areas of Pamlico, Pelham, and Plummer soils. Also included are small areas of soils that have a mucky surface layer less than 15 inches



## St. Marks River Preserve State Park Soils Descriptions

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thick. The included soils make up less than 15 percent of the map unit.

This Surrency soils is ponded for 6 to 9 months of the year, and the high water table is at or near the surface for the remainder of the year. The available water capacity is low in the surface and subsurface layers and moderate in the subsoil. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. Natural fertility is low.

The natural vegetation is blackgum, cypress, sweetbay, slash pine, and pond pine in the overstory, and swamp cyrilla, little leaf cyrilla, azalea, gallberry, smilax, and brambles in the understory.

This Surrency soil has severe limitations for cultivated crops, hay, and pasture because of wetness.

This soil is generally not suited to the production of pine trees because of ponding or wetness. It may be suited to cypress and hardwood production through natural regeneration. Equipment limitations, seedling mortality, and plant competition are the main concerns in management.

This soil has severe limitations for septic tank absorption fields, sanitary landfills, shallow excavations, dwellings, small commercial buildings, local roads and streets, and lawns and landscaping. Flooding and ponding are the main limiting factors.

This soil has severe limitations for camp areas, picnic areas, playgrounds, paths and trails, and golf fairways because of ponding.

This Surrency soil is in capability subclass VIw and in woodland suitability group 2W.

**8- Chaires fine sand.** This soil is poorly drained and nearly level. It is in broad, level areas on the flatwoods. Individual areas of this soil are irregular in shape and range from 10 to 1,500 acres. Slopes range from 0 to 2 percent.

Typically, the surface layer is very dark gray fine sand about 8 inches thick. The subsurface layer is white fine sand to a depth of 29 inches. The subsoil extends to a depth of at least 80 inches. It is very dark brown and very dark grayish brown fine sand and loamy fine sand to a depth of 52 inches and light olive gray and light greenish gray fine sandy loam below that.

Included in mapping are small areas of Albany, Chipley, Leon, and Surrency soils. Also included are small areas that are shallower to the subsoil than the Chaires soils, some soils that have a thicker surface layer, and some soils that have limestone at depths between 60 and 80 inches. The included soils make up less than 15 percent of the map unit.

## St. Marks River Preserve State Park Soils Descriptions

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This Chaires soil has a seasonal high water table within a depth of 10 inches for 1 to 3 months and at a depth of 10 to 40 inches for 6 months or more in most years. The available water capacity is very low in the surface and subsurface layers, low in the upper part of the subsoil, and moderate in the lower part. Permeability is rapid in the surface and subsurface layers, moderate in the upper part of the subsoil, and moderately slow to slow in the lower part. Natural fertility is low.

The natural vegetation is scattered bluejack, blackjack, laurel oak, water oak, longleaf pine, and sweetgum in the overstory. The understory is sawpalmetto, dwarf blueberry, greenbrier, fetterbush, gallberry, bromegrass, and pineland threeawn.

This soil has severe limitations for cultivated crops because of wetness.

The Chaires soil has severe limitations for use as pasture and for hay. A seasonal high water table and rapid leaching of plant nutrients from the soil limit the choice of plants and reduce potential yields of adapted crops. Intensive management of soil fertility and water is needed for optimum production of pasture and hay.

This soil has moderately high potential productivity for pine trees. Slash pine are the best trees to plant. Equipment limitations, seedling mortality, and plant competition are the main concerns in management. Planting trees on beds lowers the effective depth of the high water table.

This soil has severe limitations for septic tank absorption fields, sanitary landfills, shallow excavations, dwellings, small commercial buildings, local roads and streets, and lawns and landscaping because of wetness.

This soil has severe limitations for camp areas, picnic areas, playgrounds, paths and trails, and golf fairways mainly because of wetness and the sandy surface.

This Chaires soil is in the capability subclass IVw and in woodland suitability group 10W.

**19-Bibb loamy sand, frequently flooded.** This soil is poorly drained and nearly level. It is in drainageways and on flood plains that are subject to frequent flooding. Individual areas of this soil are elongated or irregular in shape and range from 20 to 500 acres. Slopes range from 0 to 2 percent.

Typically, the surface layer is dark gray loamy sand about 3 inches thick and dark grayish brown loamy sand to a depth of about 10 inches. The underlying material to a depth of 60 inches is dark grayish brown and grayish brown sandy loam that has yellowish brown mottles. To a depth of at least 80 inches, it is stratified light brownish gray loamy sand and sand that has yellowish brown mottles.

## St. Marks River Preserve State Park Soils Descriptions

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Included in mapping are small areas of Albany, Leefield, Pelham, and Plummer soils. The included soils make up less than 15 percent of the map unit.

This Bibb soil has a seasonal high water table within 12 inches of the surface for 6 months or more in most years. Flooding is common after heavy rainfalls. The available water capacity is low in the surface layer, moderate in the upper part of the underlying material, and low in the lower part. Permeability is rapid in the surface layer and moderate in the underlying material. Natural fertility is low.

The natural vegetation is water-tolerant species of bay, gum, beech, cypress, and oak. The understory is waxmyrtle, titi, and water-tolerant shrubs. Most areas of this soil are in native vegetation. In some of the more accessible areas, marketable trees have been cut.

This Bibb soil has severe limitations for cultivated crops, hay, and pasture because of flooding.

This soil has high potential productivity for loblolly pine, and they are the best trees to plant. Equipment limitations and seedling mortality are the main concerns in management.

This soil has severe limitations for septic tank absorption fields, sanitary landfills, shallow excavations, dwellings, small commercial buildings, local roads and streets, and lawns and landscaping. Flooding and wetness are the main limiting factors.

This soil has severe limitations for camp areas, picnic areas, playgrounds, paths and trails, and golf fairways because of wetness.

This Bibb soil is in capability subclass Vw and in woodland suitability group 9W.

**28-Alpin fine sand, 0 to 5 percent slopes.** This soil is excessively drained and nearly level to gently undulating. It is on summits, shoulders, and back slopes of uplands. Individual areas of this soil are irregular in shape and range from 5 to 200 acres.

Typically, the surface layer is dark grayish brown fine sand about 4 inches thick. The subsurface layer, to a depth of about 47 inches, is fine sand. It is yellowish brown to a depth of 20 inches, brownish yellow to a depth of 40 inches, and yellow below that. The underlying layer to a depth of at least 80 inches is very pale brown fine sand that has thin, strong brown loamy fine sand lamellae 1 to 2 centimeters thick.

Included in mapping are small areas of Blanton, Lakeland, and Ortega soils. A few areas of Alpin soil that has slopes ranging to about 12 percent are also included. The included soils make up less than 15 percent of the map unit.

## St. Marks River Preserve State Park Soils Descriptions

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This Alpin soil does not have a high water table within a depth of 80 inches. The available water capacity is low to very low throughout. Permeability is moderately rapid in the surface layer, rapid in the subsurface layer, and moderately rapid in the underlying layer. Natural fertility is low.

The natural vegetation includes longleaf pine, turkey oak, bluejack oak, post oak, and blackjack oak. The understory is honeysuckle, pineland threeawn, and running oak.

This Alpin soil has severe limitations for cultivated crops, and intensive soil management practices are needed if the soil is cultivated. Droughtiness and rapid leaching of plant nutrients reduce the variety and potential yields of adapted crops. Row crops need to be planted in strips on the contour alternating with strips of close-growing crops. Crop rotations also need to include close-growing plants that remain on the land at least three-fourths of the time. Only a few crops produce good yields without irrigation, but irrigation of crops is generally feasible where irrigation water is readily available.

This soil has moderate limitations for use as pasture and for hay. Deep-rooting plants, such as coastal bermudagrass and bahiagrass, are well adapted, but yields are reduced by periodic droughts. Regular applications of fertilizer and lime are needed. Grazing needs to be controlled to permit plants to maintain vigor for best yields.

This soil has moderately high potential productivity for longleaf, slash, and loblolly pines. Equipment limitations and seedling mortality are the main concerns in management. Slash pines or sand pines are the best trees to plant.

This soil has severe limitations for sanitary landfills, shallow excavations, and lawns and landscaping because of seepage and the sandy surface.

This soil has severe limitations for camp areas, picnic areas, playgrounds, paths and trails, and golf fairways because of the sandy surface and droughtiness.

This Alpin soil is in capability subclass IVs and in woodland suitability group 8S.

**30-Pamlico-Dorovan mucks.** The Pamlico and Dorovan soils are very poorly drained and nearly level. These soils are on the flatwoods, along some flood plains, and along the edges of gently sloping to sloping uplands. Individual areas are irregular in shape and range from 20 to 200 acres. Slopes range from 0 to 1 percent.

Pamlico muck makes up about 40 to 60 percent of the map unit. Typically, this soil is very dark brown muck to a depth of about 4 inches and black muck to a depth of 27 inches. The underlying material is dark grayish brown sand to a depth of at least 80 inches.

## St. Marks River Preserve State Park Soils Descriptions

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Pamlico soils have a high water table within a depth of 15 inches throughout most years and at or above the surface for 5 to 8 months in some years. The available water capacity is very high in the organic layers and low in the underlying material. Permeability is moderate in the organic layers and rapid in the underlying material.

Dorovan muck makes up about 20 to 50 percent of the map unit. Typically, this soil is very dark brown muck to a depth of about 65 inches. The underlying material is dark grayish brown sand to a depth of at least 80 inches.

Dorovan soils have a high water table within a depth of 10 inches throughout most years and at or above the surface for 5 to 8 months in some years. Permeability is moderate, and the available water capacity is very high. Natural fertility is low.

Included in mapping are small areas of Pelham, Plummer, Surrency, Plummer flooded, and Chaires depressional soils. The included soils make up less than 25 percent of the map unit.

The natural vegetation is mainly cypress and an understory of ferns, various shrubs, and vines.

The Pamlico and Dorovan soils have severe limitations for cultivated crops, hay, and for use as pasture because of wetness.

These soils, under natural conditions, are not suitable for pine tree production.

The Pamlico and Dorovan soils have severe limitations for septic tank absorption fields, sanitary landfills, shallow excavations, dwellings, small commercial buildings, local roads and streets, and lawns and landscaping because of ponding.

These soils have severe limitations for camp areas, picnic areas, playgrounds, paths and trails, and golf fairways mainly because of ponding and excess humus.

The Pamlico and Dorovan soils are in capability subclass IVw and in woodland suitability group 7W.

**35- Rutledge fine sand.** This soil is very poorly drained and nearly level. It is in shallow depressions and natural drainageways on uplands and flatwoods. Individual areas of this soil are irregular in shape and range from 10 to 150 acres. Slopes are less than 1 percent.

Typically, the surface layer is fine sand 12 inches thick. It is black to a depth of about 7 inches and very dark gray below that. The underlying material is fine sand to a depth of at least 80 inches. It is dark grayish brown and grayish brown to a depth of about 39

## St. Marks River Preserve State Park Soils Descriptions

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inches, light grayish brown to a depth of about 43 inches, and light gray below that. It has mottles in shades of brown and gray throughout.

Included in mapping are small areas of Plummer, Pelham, and Surrency soils. The included soils make up less than 15 percent of the map unit.

This Rutledge soil has a high water table above or near the surface for about 4 to 6 months of the year. It is subject to ponding after heavy rainfall. The available water capacity is low, and permeability is rapid. Natural fertility is low.

The natural vegetation in many areas of this soil is sweetbay, blackgum, and pond cypress. Some areas do not have trees, and the natural vegetation is pitcherplants, sedges, and beak rushes.

This soil has severe limitations for cultivated crops, hay, and for use as pasture because of wetness.

This Rutledge soil is generally not suited to the production of pine trees because of ponding or extended wetness. It can be suited to cypress and hardwood production through natural regeneration. Equipment limitations, seedling mortality, and plant competition are concerns in management.

This soil has severe limitations for septic tank absorption fields, sanitary landfills, shallow excavations, dwellings, small commercial buildings, local roads and streets, and lawns and landscaping because of wetness and ponding.

This soil has severe limitations for camp areas, picnic areas, playgrounds, paths and trails, and golf fairways because of the sandy surface and ponding.

The Rutledge soil is in capability subclass VIw and in woodland suitability group 2W.



**Addendum 5 – Plant And Animal List**



## St. Marks River Preserve State Park Plants

Common Name	<i>Scientific Name</i>	Primary Habitat (For Designated Species)
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### PTERIDOPHYTES

Foxtail club moss	<i>Lycopodiella alopecuroides</i>	
Japanese climbing fern	<i>Lygodium japonicum</i> *	
Mariana maiden fern	<i>Macrothelypteris torresiana</i> *	
Cinnamon fern	<i>Osmunda cinnamomea</i>	
Royal fern	<i>Osmunda regalis</i>	
Resurrection fern	<i>Pleopeltis polypodioides</i>	
Tailed bracken	<i>Pteridium aquilinum</i> var. <i>pseudocaudatum</i>	
Water spangles	<i>Salvinia minima</i>	
Downy maiden fern	<i>Thelypteris dentata</i> *	
Southern shield fern	<i>Thelypteris kunthii</i>	
Ovate marsh fern	<i>Thelypteris ovata</i>	
Netted chain fern	<i>Woodwardia areolata</i>	
Virginia chain fern	<i>Woodwardia virginica</i>	

### GYMNOSPERMS

Sand pine	<i>Pinus clausa</i>	
Slash pine	<i>Pinus elliottii</i>	
Spruce pine	<i>Pinus glabra</i>	
Longleaf pine	<i>Pinus palustris</i>	
Pond pine	<i>Pinus serotina</i>	
Loblolly pine	<i>Pinus taeda</i>	
Pond cypress	<i>Taxodium ascendens</i>	
Bald cypress	<i>Toxodium distichum</i>	

### ANGIOSPERMS

#### MONOCOTS

Bushy bluestem	<i>Andropogon glomeratus</i> var. <i>pumilus</i>	
Wiregrass	<i>Aristida purpurascens</i>	
Big carpetgrass	<i>Axonopus furcatus</i>	
Broad-wing sedge	<i>Carex alata</i>	
Sedge	<i>Carex amphibola</i>	
Elliott's sedge	<i>Carex elliottii</i>	
Giant sedge	<i>Carex gigantean</i>	
Clustered sedge	<i>Carex glaucescens</i>	
Godfrey's sedge	<i>Carex godfreyi</i>	
Bristly-stalked sedge	<i>Carex leptalea</i>	
Hop sedge	<i>Carex lupulina</i>	

\* Non-native Species

## St. Marks River Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat (For Designated Species)
Slender woodoats	<i>Chasmanthium laxum</i>	
Dayflower	<i>Commelina virginica</i>	
Pinebarren flatsedge	<i>Cyperus retrorsus</i>	
Green flatsedge	<i>Cyperus virens</i>	
Needleleaf witchgrass	<i>Dicanthelium aciculare</i>	
Variable witchgrass	<i>Dichanthelium commutatum</i>	
Purple lovegrass	<i>Eragrostis spectabilis</i>	
Four-spike fingergrass	<i>Eustachys neglecta</i>	
Hairy fimbry	<i>Fimbristylis puberula</i>	
Yellow stargrass	<i>Hypoxis curtissii</i>	
Leathery rush	<i>Juncus coriaceus</i>	
Soft rush	<i>Juncus effuses</i>	
Shore rush	<i>Juncus marginatus</i>	
Big-head rush	<i>Juncus megacephalus</i>	
Needlepod rush	<i>Juncus scirpoides</i>	
Carolina redroot	<i>Lachnanthes carolina</i>	
White-head bogbutton	<i>Lachnocaulon anceps</i>	
Southern bogbutton	<i>Lachnocaulon beyrichianum</i>	
Small's bogbutton	<i>Lachnocaulon minus</i>	
Woodsgrass	<i>Oplismenus hirtellus</i>	
Woodsgrass	<i>Oplismenus setarius</i>	
Beaked panicum	<i>Panicum anceps</i>	
Warty panicgrass	<i>Panicum verrucosum</i>	
Bahiagrass	<i>Paspalum notatum</i> *	
Thin paspalum	<i>Paspalum setaceum</i>	
Savannah panicum	<i>Phanopyrum gymnocarpon</i>	
Anglestem beaksedge	<i>Rhynchospora caduca</i>	
Shortbristle horned beaksedge	<i>Rhynchospora corniculata</i>	
Fascicled beaksedge	<i>Rhynchospora fascicularis</i>	
Mingled beaksedge	<i>Rhynchospora mixta</i>	
Bluestem palm	<i>Sabal minor</i>	
Cabbage palm	<i>Sabal palmetto</i>	
Grassy arrowhead	<i>Sagittaria graminea</i>	
Woolgrass	<i>Scirpus cyperinus</i>	
Tall nutgrass	<i>Scleria triglomerata</i>	
Saw palmetto	<i>Serenoa repens</i>	
Bristlegrass	<i>Setaria geniculata</i>	
Yellow bristlegrass	<i>Setaria parviflora</i>	
Cat greenbrier	<i>Smilax glauca</i>	
Laurel greenbrier	<i>Smilax laurifolia</i>	
Sarsaparilla vine	<i>Smilax pumila</i>	

\* Non-native Species

## St. Marks River Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat (For Designated Species)
Yellow hatpins	<i>Syngonanthus flavidulus</i>	
Spanish moss	<i>Tillandsia usneoides</i>	
Yelloweyed grass	<i>Xyris sp.</i>	
Adam's needle	<i>Yucca filamentosa</i>	
<b>DICOTS</b>		
Red maple	<i>Acer rubrum</i>	
Sticky jointvetch	<i>Aeschynomene viscidula</i>	
False foxglove	<i>Agalinis linifolia</i>	
Peppervine	<i>Ampelopsis arborea</i>	
Butterflyweed	<i>Asclepias tuberosa</i>	
Pawpaw	<i>Asimina sp.</i>	
Aster	<i>Aster dumosus</i>	
Aster	<i>Aster tortifolius</i>	
Big carpetgrass	<i>Axonopus furcatus</i>	
Honeycomb head	<i>Balduina uniflora</i>	
Rattan vine	<i>Berchemia scandens</i>	
Smallfruit beggarticks	<i>Bidens mitis</i>	
Crossvine	<i>Bignonia capreolata</i>	
False nettle	<i>Boehmeria cylindrica</i>	
American beautyberry	<i>Callicarpa americana</i>	
Trumpet creeper	<i>Campsis radicans</i>	
Vanilla leaf	<i>Carphephorus odoratissimus</i>	
Hairy chaffhead	<i>Carphephorus paniculatus</i>	
Bristleleaf chaffhead	<i>Carphephorus pseudoliatris</i>	
American hornbeam	<i>Carpinus caroliniana</i>	
Pignut hickory	<i>Carya glabra</i>	
Spadeleaf	<i>Centella asiatica</i>	
Spurred butterfly pea	<i>Centrosema virginianum</i>	
Common buttonbush	<i>Cephalanthus occidentalis</i>	
Partridge pea	<i>Chamaecrista fasciculata</i>	
Sensitive pea	<i>Chamaecrista nictitans</i>	
Fringe tree	<i>Chionanthus virginicus</i>	
Chloris	<i>Chloris floridana</i>	
Chloris	<i>Chloris neglecta</i>	
Maryland goldenaster	<i>Chrysopsis mariana</i>	
Sweetpepper bush	<i>Clethra alnifolia</i>	
Blue mistflower	<i>Conoclinium coelestinum</i>	
Canadian horseweed	<i>Conyza canadensis</i>	
Flowering dogwood	<i>Cornus florida</i>	
Swamp dogwood	<i>Cornus foemina</i>	

## St. Marks River Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat (For Designated Species)
Slender scratchdaisy	<i>Croptilon divaricatum</i>	
Purch's rattlebox	<i>Crotalaria purshii</i>	
Rabbitbells	<i>Crotalaria rotundifolia</i>	
Showy rattlebox	<i>Crotalaria spectabilis*</i>	
Silver croton	<i>Croton argyranthemus</i>	
Scaldweed	<i>Cuscuta gronovii</i>	
Titi	<i>Cyrilla racemiflora</i>	
Summer farewell	<i>Dalea pinnata</i>	
Climbing hydrangea	<i>Decumaria barbara</i>	
Poor Joe	<i>Diodia teres</i>	
Virginia buttonweed	<i>Diodia virginiana</i>	
Common persimmon	<i>Diospyros virginiana</i>	
Swamp twinflower	<i>Dyschoriste humistrata</i>	
Devil's grandmother	<i>Elephantopus tomentosus</i>	
Carolina scalystem	<i>Elytraria caroliniensis</i>	
American burnweed	<i>Erechtites hieraciifolius</i>	
Early white-top fleabane	<i>Erigeron vernus</i>	
Ten angle pipwort	<i>Eriocaulon decangulare</i>	
Fragrant eryngo	<i>Eryngium aromaticum</i>	
Coralbean	<i>Erythrina herbacea</i>	
Dogfennel	<i>Eupatorium capillifolium</i>	
Yankeeweed	<i>Eupatorium compositifolium</i>	
Roundleaf thoroughwort	<i>Eupatorium rotundifolium</i>	
Smallflower thoroughwort	<i>Eupatorium semiserratum</i>	
Slender flat-top goldenrod	<i>Euthamia caroliniana</i>	
Flat-top goldenrod	<i>Euthamia minor</i>	
American beech	<i>Fagus grandifolia</i>	
Pop ash	<i>Fraxinus caroliniana</i>	
Green ash	<i>Fraxinus pennsylvanica</i>	
Downy milkpea	<i>Galactia volubilis</i>	
Yellow jessamine	<i>Gelsemium sempervirens</i>	
Rabbit tobacco	<i>Gnaphalium obtusifolium</i>	
Loblolly bay	<i>Gordonia lasianthus</i>	
Shaggy hedge hyssop	<i>Gratiola pilosa</i>	
American witchhazel	<i>Hamamelis virginiana</i>	
Scratch daisy	<i>Haplopappus divaricatus</i>	
Innocence	<i>Hedyotis uniflora</i>	
Bitterweed	<i>Helenium amarum</i>	
Narrowleaf sunflower	<i>Helianthus angustifolius</i>	
Comfort root	<i>Hibiscus aculeatus</i>	
Whorled marsh pennywort	<i>Hydrocotyle verticillata</i>	

\* Non-native Species



## St. Marks River Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat (For Designated Species)
Florida panhandle spider lily	<i>Hymenocallis choctawensis</i>	
Roundpod St. John's-wort	<i>Hypericum cistifolium</i>	
St. Peter's cross	<i>Hypericum crux-andreae</i>	
Bedstraw St. John's-wort	<i>Hypericum galioides</i>	
Pineweeds	<i>Hypericum gentianoides</i>	
St. Andrew's-cross	<i>Hypericum hypericoides</i>	
Flatwoods St. John's-wort	<i>Hypericum microsepalum</i>	
Dwarf St. John's-wort	<i>Hypericum mutilum</i>	
Clustered bushmint	<i>Hyptis alata</i>	
Tropical bushmint	<i>Hyptis mutabilis*</i>	
Dahoon holly	<i>Ilex cassine</i>	
Large galberry	<i>Ilex coriacea</i>	
Gallberry	<i>Ilex glabra</i>	
Myrtle-leaf holly	<i>Ilex myrtifolia</i>	
American holly	<i>Ilex opaca</i>	
Yaupon	<i>Ilex vomitoria</i>	
Carolina indigo	<i>Indigofera caroliniana</i>	
Tie vine	<i>Ipomoea cordatotriloba</i>	
Cypress vine	<i>Ipomoea quamoclit*</i>	
Virginia willow	<i>Itea virginica</i>	
Valdivia duckweed	<i>Lemna valdiviana</i>	
Swamp doghobble	<i>Leucothoe racemosa</i>	
Pinkscale gayfeather	<i>Liatris elegans</i>	
Slender gayfeather	<i>Liatris gracilis</i>	
Shortleaf gayfeather	<i>Liatris tenuifolia</i>	
Gopher apple	<i>Licania michauxii</i>	
Sweetgum	<i>Liquidambar styraciflua</i>	
Cardinal flower	<i>Lobelia cardinalis</i>	
Downy lobelia	<i>Lobelia puberula</i>	
Seaside primrosewillow	<i>Ludwigia maritime</i>	
Rusty staggerbush	<i>Lyonia ferruginea</i>	
Coastalplain staggerbush	<i>Lyonia fruticosa</i>	
Fetterbush	<i>Lyonia lucida</i>	
Piedmont staggerbush	<i>Lyonia mariana</i>	
Southern magnolia	<i>Magnolia grandiflora</i>	
Sweetbay	<i>Magnolia virginiana</i>	
Southern crabapple	<i>Malus angustifolia</i>	
Chinaberry	<i>Melia azedarach*</i>	
Creeping cucumber	<i>Lelothria pendula</i>	
Partridgeberry	<i>Mitchella repens</i>	
Lax hornpod	<i>Mitreola petiolata</i>	

\* Non-native Species

## St. Marks River Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat (For Designated Species)
Spotted beebalm	<i>Monarda punctata</i>	
Wax myrtle	<i>Myrica cerifera</i>	
Fragrant water lily	<i>Nymphaea odorata</i>	
Water tupelo	<i>Nyssa aquatica</i>	
Blackgum	<i>Nyssa biflora</i>	
Blackgum	<i>Nyssa sylvatica</i>	
Cutleaf evening primrose	<i>Oenothera laciniata</i>	
Clustered mille graines	<i>Oldenlandia uniflora</i>	
Pricklypear	<i>Opuntia humifusa</i>	
Wild olive	<i>Osmanthus americanus</i>	
Creeping woodsorrel	<i>Oxalis corniculata</i>	
Coastalplain palafox	<i>Palafoxia integrifolia</i>	
Virginia creeper	<i>Parthenocissus quinquefolia</i>	
Purple passionflower	<i>Passiflora incarnata</i>	
Manyflower beardtongue	<i>Penstemon multiflorus</i>	
Swamp bay	<i>Persea palustris</i>	
Florida phlox	<i>Phlox floridana</i>	
Capeweed	<i>Phyla nodiflora</i>	
Pokeweed	<i>Phytolacca americana</i>	
Piriqueta	<i>Piriqueta caroliniana</i>	
Narrowleaf goldenaster	<i>Pityopsis graminifolia</i>	
Camphorweed	<i>Pluchea sp.</i>	
Orange milkwort	<i>Polygaola lutea</i>	
Tall jointweed	<i>Polygonella gracilis</i>	
Swamp smartweed	<i>Polygonum hydropiperoides</i>	
Dotted smartweed	<i>Polygonum punctatum</i>	
Bog smartweed	<i>Polygonum setaceum</i>	
Polypodium	<i>Polypodium polypodioides</i>	
Rustweed	<i>Polypreum procumbens</i>	
Combleaf mermaidweed	<i>Proserpinaca pectinata</i>	
Carolina laurelcherry	<i>Prunus caroliniana</i>	
Mock bishopweed	<i>Ptilimnium capillaceum</i>	
Appalachian mountain mint	<i>Pycnanthemum flexuosum</i>	
White oak	<i>Quercus alba</i>	
laurel oak	<i>Quercus hemisphaerica</i>	
Bluejack oak	<i>Quercus incana</i>	
Turkey oak	<i>Quercus laevis</i>	
Swamp laurel oak	<i>Quercus laurifolia</i>	
Blackjack oak	<i>Quercus marilandica</i>	
Swamp chestnut oak	<i>Quercus michauxii</i>	
Dwarf live oak	<i>Quercus minima</i>	

\* Non-native Species

## St. Marks River Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat (For Designated Species)
Water oak	<i>Quercus nigra</i>	
Live oak	<i>Quercus virginiana</i>	
Tall meadowbeauty	<i>Rhexia alifanus</i>	
Pale meadowbeauty	<i>Rhexia mariana</i>	
Alabama azalea	<i>Rhododendron alabamense</i>	
Swamp azalea	<i>Rhododendron viscosum</i>	
Winged sumac	<i>Rhus copallinum</i>	
Swamp rose	<i>Rosa palustris</i>	
Sawtooth blackberry	<i>Rubus argutus</i>	
Sand blackberry	<i>Rubus cuneifolius</i>	
Southern dewberry	<i>Rubus trivialis</i>	
Carolina wild petunia	<i>Ruellia caroliniensis</i>	
Elderberry	<i>Sambucus Canadensis</i>	
Pineland pimpernel	<i>Samolus parviflorus</i>	
Hooded pitcherplant	<i>Sarracenia minor</i>	
Sassafras	<i>Sassafras albidum</i>	
Lizard's tail	<i>Saururus cernuus</i>	
Butterweed	<i>Senecio glabellus</i>	
White-top aster	<i>Sericocarpus tortifolius</i>	
Danglepod	<i>Sesbania herbacea</i>	
Sesbania	<i>Sesbania macrocarpa</i>	
Piedmont seymeria	<i>Seymeria pectinata</i>	
Hemlock water parsnip	<i>Sium suave</i>	
Sweet goldenrod	<i>Solidago odora</i>	
Queensdelight	<i>Stillingia sylvatica</i>	
Coastalplain dawnflower	<i>Stylisma patens</i>	
Rice button aster	<i>Symphotrichum dumosum</i>	
Horse sugar or Sweetleaf	<i>Symplocos tinctoria</i>	
Scurf hoarypea	<i>Tephrosia chrysophylla</i>	
Spiked hoarypea	<i>Tephrosia spicata</i>	
Eastern poison ivy	<i>Toxicodendron radicans</i>	
Wavyleaf noseburn	<i>Tragia urens</i>	
Greater marsh St. John's-wort	<i>Triadenum walteri</i>	
Forked bluecurls	<i>Trichostema dichotomum</i>	
Narrow-leaf bluecurls	<i>Trichostema setaceum</i>	
American elm	<i>Ulmus americana</i>	
Sparkleberry	<i>Vaccinium arboreum</i>	
Highbush blueberry	<i>Vaccinium corymbosum</i>	
Darrow's blueberry	<i>Vaccinium darrowii</i>	
Little-leaf blueberry	<i>Vaccinium elliotii</i>	
Shiny Blueberry	<i>Vaccinium myrsinites</i>	

\* Non-native Species

## St. Marks River Preserve State Park Plants

<b>Common Name</b>	<b>Scientific Name</b>	<b>Primary Habitat (For Designated Species)</b>
Deerberry	<i>Vaccinium stamineum</i>	
Tall ironweed	<i>Vernonia angustifolia</i>	
Walter's viburnum	<i>Viburnum obovatum</i>	
Common blue violet	<i>Viola sororia</i>	
Summer grape	<i>Vitis aestivalis</i>	
Muscadine	<i>Vitis rotundifolia</i>	
American wisteria	<i>Wisteria frutescens</i>	
Adam's needle	<i>Yucca filamentosa</i>	

St. Marks River Preserve State Park Animals

Common Name	Scientific Name	Primary Habitat (For All Species)
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**FISH**

Mosquitofish .....	<i>Gambusia affinis</i> .....	26,55
Redbreast sunfish .....	<i>Lepomis auritus</i> .....	55
Warmouth .....	<i>Lepomis gulosus</i> .....	55
Bluegill .....	<i>Lepomis macrochirus</i> .....	55
Red ear sunfish .....	<i>Lepomis microlophus</i> .....	55
Florida largemouth bass .....	<i>Micropterus salmoides floridanus</i> .....	55

**AMPHIBIANS**

**Salamanders**

Southern dusky salamander .....	<i>Desmognathus auriculatus</i> .....	33
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**Frogs and Toads**

Florida cricket frog .....	<i>Acris gryllus dorsalis</i> .....	26,32
Southern toad .....	<i>Bufo terrestris</i> .....	mtc
Green treefrog .....	<i>Hyla cinerea</i> .....	mtc
Southern chorus frog .....	<i>Pseudacris nigrita</i> .....	26,32
Little grass frog .....	<i>Pseudocris ocularis</i> .....	26,32
Bullfrog .....	<i>Rana catesbeiana</i> .....	55
Southern leopard frog .....	<i>Rana sphenoccephala</i> .....	26,32
Eastern spadefoot toad .....	<i>Scaphiopus holbrooki holbrooki</i> .....	mtc
Eastern narrow-mouthed toad ....	<i>Gastrophryne carolinensis</i> .....	8,26
Spring peeper .....	<i>Hyla cinerea</i> .....	26,31
Bronze frog .....	<i>Rana clamitans clamitans</i> .....	26,32
Pig frog .....	<i>Rana grylio</i> .....	55
Squirrel treefrog .....	<i>Hyla squirella</i> .....	mtc

**REPTILES**

**Crocodilians**

American alligator .....	<i>Alligator mississippiensis</i> .....	26,32,35,55
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**Turtles**

Florida softshell turtle .....	<i>Apalone ferox</i> .....	55
Gopher tortoise .....	<i>Gopherus polyphemus</i> .....	14,23
Suwannee cooter .....	<i>Pseudemys concinna suwanniensis</i> .....	55
Florida box turtle .....	<i>Terrapene carolina</i> .....	mtc

\* Non-native Species

## St. Marks River Preserve State Park Animals

Common Name	Scientific Name	Primary Habitat (For All Species)
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### Lizards

Green anole .....	Anolis carolinensis .....	mtc
Six-lined racerunner.....	Cnemidophorus sexlineatus sexlineatus.....	14
Mole skink.....	Eumeces egregius .....	8
Southeastern five-lined skink .....	Eumeces inexpectatus.....	8
Five-lined skink .....	Eumeces fasciatus.....	8,26
Broadhead skink.....	Eumeces laticeps.....	8,26
Eastern glass lizard .....	Ophisaurus ventralis.....	8
Southern fence lizard .....	Sceloporus undulatus undulates .....	14,23

### Snakes

Florida cottonmouth.....	Agkistrodon piscivorus conanti .....	26,55
Southern black racer.....	Coluber constrictor priapus .....	mtc
Eastern diamondback rattlesnake.....	Crotalus adamanteus.....	14,23
Southern water snake.....	Nerodia fasciata.....	26,55
Brown water snake.....	Nerodia taxispilota .....	55
Rough green snake .....	Opheodrys aestivus .....	8,26
Dusky pigmy rattlesnake.....	Sistrurus miliarius barbouri.....	8,14,23
Eastern garter snake.....	Thamnophis sirtalis sirtalis .....	mtc
Gray rat snake.....	Elaphe obsoleta spiloides .....	mtc
Corn snake .....	Elaphe guttata.....	8,14,23

## BIRDS

Cooper's hawk .....	Accipiter cooperii .....	fly over
Sharp-shinned hawk .....	Accipiter striatus .....	fly over
Red-winged blackbird .....	Agelaius phoeniceus .....	26,31
Wood duck.....	Aix sponsa .....	26,55
Green-winged teal.....	Anas crecca .....	55
Blue-winged teal.....	Anas discors.....	55, fly over
Mallard .....	Anas platyrhynchos .....	55, fly over
Anhinga.....	Anhinga anhinga .....	55, fly over
Ruby-throated hummingbird.....	Archilochus colubris.....	8, 14,23
Great egret.....	Ardea alba .....	55
Great blue heron.....	Ardea herodias.....	55
Redhead.....	Aythya americana .....	55, fly over
Greater scaup .....	Aythya marila.....	55, fly over
Cedar waxwing .....	Bombycilla cedrorum.....	8
American bittern.....	Botaurus lentiginosus .....	55, fly over
Cattle egret*.....	Bubulcus ibis .....	mtc
Red-tailed hawk .....	Buteo jamaicensis.....	8,14,23

\* Non-native Species



## St. Marks River Preserve State Park Animals

Common Name	Scientific Name	Primary Habitat (For All Species)
Red-shouldered hawk.....	<i>Buteo lineatus</i> .....	8,14,23
Broad-winged hawk.....	<i>Buteo platypterus</i> .....	8, 14,23
Green-backed heron.....	<i>Butorides striatus</i> .....	55, fly over
Chuck-will's widow .....	<i>Caprimulgus carolinensis</i> .....	8
Northern cardinal.....	<i>Cardinalis cardinalis</i> .....	mtc
Pine siskin .....	<i>Carduelis pinus</i> .....	8,14,23
American goldfinch.....	<i>Carduelis tristis</i> .....	8,14,23
House finch.....	<i>Carpodacus mexicanus</i> .....	8,14,23
Purple finch.....	<i>Carpodacus purpureus</i> .....	8,14,23
Great egret.....	<i>Casmerodius albus</i> .....	55, fly over
Turkey vulture.....	<i>Cathartes aura</i> .....	mtc
Hermit thrush .....	<i>Catharus guttatus</i> .....	8
Gray-cheeked thrush.....	<i>Catahrus minimus</i> .....	8
Belted kingfisher .....	<i>Ceryle alcyon</i> .....	55, fly over
Common nighthawk .....	<i>Chordeiles minor</i> .....	8, 14,23
Northern flicker .....	<i>Colaptes auratus</i> .....	8, 14,23
Northern bobwhite.....	<i>Colinus virginianus</i> .....	8,14,23
Common ground dove.....	<i>Coloumbina passerina</i> .....	8,14,23,84
Eastern wood pewee .....	<i>Contopus virens</i> .....	8
Black vulture .....	<i>Coragyps atratus</i> .....	mtc
Blue jay .....	<i>Cyanocitta cristata</i> .....	8, 84
Yellow-rumped warbler .....	<i>Dendroica coronata</i> .....	8, 14,23,84
Yellow-throated warbler.....	<i>Dendroica dominica</i> .....	8
Yellow warbler .....	<i>Dendroica petechia</i> .....	8
Pine warbler.....	<i>Dendroica pinus</i> .....	8
Bobolink .....	<i>Dolichonyx orizyvorus</i> .....	8
Pileated woodpecker.....	<i>Dryocopus pileatus</i> .....	8,33
Gray catbird .....	<i>Dumetella carolinensis</i> .....	mtc
Little blue heron .....	<i>Egretta caerulea</i> .....	26,55, fly over
Snowy egret .....	<i>Egretta thula</i> .....	26,55 fly over
White ibis .....	<i>Eudocimus albus</i> .....	26,55 fly over
Merlin .....	<i>Falco columbarius</i> .....	fly over
Southeastern American kestrel ....	<i>Falco sparverius paulus</i> .....	8, fly over
Common yellowthroat.....	<i>Geothlypis trichas</i> .....	8
Bald eagle.....	<i>Haliaeetus leucocephalus</i> .....	fly over
Wood thrush .....	<i>Hylocichla mustelina</i> .....	8
Loggerhead shrike .....	<i>Lanius ludovicianus</i> .....	8
Red-bellied woodpecker.....	<i>Melanerpes carolinus</i> .....	8,14,23,84
Red-headed woodpecker.....	<i>Melanerpes erythrocephalus</i> .....	8,14,23,84
Wild turkey .....	<i>Meleagris gallopavo</i> .....	8,14,23,84
Northern mockingbird.....	<i>Mimus polyglottos</i> .....	mtc

\* Non-native Species

St. Marks River Preserve State Park Animals

Common Name	Scientific Name	Primary Habitat (For All Species)
Black and white warbler.....	<i>Mniotilta varia</i> .....	8, 14,23,33
Brown-headed cowbird.....	<i>Molothrus ater</i> .....	mtc
Wood stork.....	<i>Mycteria americana</i> .....	fly over
Yellow-crowned night heron.....	<i>Nycticorax violaceus</i> .....	35,55, fly over
Eastern screech owl.....	<i>Otus asio</i> .....	8
Osprey.....	<i>Pandion haliaetus</i> .....	fly over
Tufted titmouse.....	<i>Parus bicolor</i> .....	8
Carolina chickadee.....	<i>Parus carolinensis</i> .....	8
House sparrow*.....	<i>Passer domesticus</i> .....	8, 84
Indigo bunting.....	<i>Passerina cyanea</i> .....	8,33
Rose-breasted grosbeak.....	<i>Pheucticus ludovicianus</i> .....	8,14,23,33
Downy woodpecker.....	<i>Picoides pubescens</i> .....	8
Rufous-sided towhee.....	<i>Pipilo erythrophthalmus</i> .....	8
Summer tanager.....	<i>Piranga rubra</i> .....	8, 14
Blue-gray gnatcatcher.....	<i>Poliophtila caerulea</i> .....	8,33
Prothonotary warbler.....	<i>Protonotaria citrea</i> .....	8,33
Common grackle.....	<i>Quiscalus quisqualis</i> .....	mtc
Ruby-crowned kinglet.....	<i>Regulus calendula</i> .....	8
Eastern phoebe.....	<i>Sayornis phoebe</i> .....	8
Eastern bluebird.....	<i>Sialia sialis</i> .....	8
Brown-headed nuthatch.....	<i>Sitta pusilla</i> .....	8,33
Barred owl.....	<i>Strix varia</i> .....	8, 33,35
Carolina wren.....	<i>Thryothorus ludovicianus</i> .....	8, 33, 84
Brown thrasher.....	<i>Toxostoma rufum</i> .....	8,14,23,33
American robin.....	<i>Turdus migratorius</i> .....	8,14,23
Eastern kingbird.....	<i>Tyrannus tyrannus</i> .....	8,84
Hooded warbler.....	<i>Wilsonia citrina</i> .....	8
Mourning dove.....	<i>Zenaida macroura</i> .....	8,14,23,84

MAMMALS

Coyote*.....	<i>Canis latrans</i> .....	mtc
Beaver.....	<i>Castor canadensis</i> .....	55
Nine-banded armadillo*.....	<i>Dasypus novemcinctus</i> .....	8, 33
Opposum.....	<i>Didelphis marsupialis</i> .....	8, 33
Bobcat.....	<i>Felis rufus</i> .....	mtc
Southeastern pocket gopher.....	<i>Goemys pinetis Rafinesque</i> .....	14,23
River otter.....	<i>Lutra canadensis</i> .....	55
Striped skunk.....	<i>Mephitis mephitis</i> .....	8
Eastern woodrat.....	<i>Neotoma floridana</i> .....	8
White-tailed deer.....	<i>Odocoileus virginianus</i> .....	8, 14,23,84

\* Non-native Species

## St. Marks River Preserve State Park Animals

Common Name	<i>Scientific Name</i>	Primary Habitat (For All Species)
Cotton mouse.....	<i>Peromyscus gossypinus</i> .....	8, 14,23
Eastern pipistrelle bat .....	<i>Pipistrellus subflavus</i> .....	33
Raccoon .....	<i>Procyon lotor</i> .....	mtc
Eastern mole .....	<i>Scalopus aquaticus</i> .....	8,14,23
Eastern gray squirrel.....	<i>Sciurus carolinensis</i> .....	mtc
Hispid cotton rat.....	<i>Sigmodon hispidus</i> .....	8,84
Eastern cottontail.....	<i>Sylvilagus floridanus</i> .....	mtc
Marsh rabbit.....	<i>Sylvilagus palustris</i> .....	26,33
Gray fox.....	<i>Urocyon cinereoargenteus</i> .....	mtc
Florida black bear.....	<i>Ursus americanus floridanus</i> .....	mtc
Red fox* .....	<i>Vulpes fulva</i> .....	any

\* Non-native Species

## St. Marks River Preserve State Park Animals

Common Name	<i>Scientific Name</i>	Primary Habitat (For All Species)
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## **Addendum 6 – Imperiled Species Ranking Definitions**





## Imperiled Species Ranking Definitions

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

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

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

### FNAI GLOBAL RANK DEFINITIONS

- G1.....Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or 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)

## Imperiled Species Ranking Definitions

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- 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.

## Imperiled Species Ranking Definitions

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### LEGAL STATUS

#### FEDERAL

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

- LE..... Listed as Endangered Species in the List of Endangered and Threatened Wildlife and Plants under the provisions of the Endangered Species Act. Defined as any species that is in danger of extinction throughout all or a significant portion of its range.
- PE..... Proposed for addition to the List of Endangered and Threatened Wildlife and Plants as Endangered Species. LT Listed as Threatened Species. Defined as any species that is likely to become an endangered species within the near future throughout all or a significant portion of its range.
- PT..... Proposed for listing as Threatened Species.
- C ..... Candidate Species for addition to the list of Endangered and Threatened Wildlife and Plants. Defined as those species for which the USFWS currently has on file sufficient information on biological vulnerability and threats to support proposing to list the species as endangered or threatened.
- E(S/A) .... Endangered due to similarity of appearance.
- T(S/A) .... Threatened due to similarity of appearance.

#### STATE

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

- LE..... Listed as Endangered Species by the FFWCC. Defined as a species, subspecies, or isolated population which is so rare or depleted in number or so restricted in range of habitat due to any man-made or natural factors that it is in immediate danger of extinction or extirpation from the state, or which may attain such a status within the immediate future.
- LT..... Listed as Threatened Species by the FFWCC. Defined as a species, subspecies, or isolated population, which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat, is decreasing in area at a rapid rate and therefore is destined or very likely to become an endangered species within the near future.
- LS..... Listed as Species of Special Concern by the FFWCC. Defined as a population which warrants special protection, recognition or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance or substantial human exploitation that, in the near future, may result in its becoming a threatened species?

## Imperiled Species Ranking Definitions

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### **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 – Timber Management**



### Timber Stand 1

Stand 1 is an upland area in the northern portion of the tract adjacent to U.S. Highway 27, and contains Management Zones SM-17, SM-18, SM-19, SM-20, SM-21, and SM-23. This stand totals about 227 acres. The trees to be harvested are planted slash pines that are about 15 years old. The pines in this stand have never been thinned. The stocking of the stand is estimated to be 600 - 700 trees per acre. The slash pines were planted in rows that are 9-10 feet wide with about a six-foot space between each tree in the rows. The diameter of the pines average 4-6 inches in dbh and the trees have an average height of 30 - 40 feet. The timber class size of the pine is all pulpwood or not yet large enough to be merchantable. Many of the trees are inflicted with fusiform rust disease that is common to slash pine in this area of the state. Understory growth is minimal with few hardwood trees due to shading from the dense growth of pine, but there are areas with remnant wiregrass growth present.

The soils are sand types and topography is mostly level. Several wetland areas are present within the stand and are not planted to pine but contain native wetland plant species. This area appears to have never been prescribed burned. Access to the stand can be made from U.S. Highway 27 to the north.

### Timber Stand 2

Stand 2 is located adjacent to Management Zone SM-05. The tract is about 8 acres in size and contains planted slash pines that appear to have never been thinned. The slash pines are 30 - 40 years old and average about 500 - 600 stems per acre. The average diameter of the pines is 8 - 12 inches in dbh. The average tree height is 60 - 70 feet. The trees are in several timber class sizes including pulpwood, chip-n-saw and sawtimber. Understory growth is moderate with gallberry being the dominant understory specie. Small oaks and sweetgum are present.

The topography is level to slightly sloping. Soils in this stand contain more moisture than those of Timber Stand 1. Wetlands around the stand make access difficult. Access to the area is from Tram Road to the south and then via a park patrol road to the west of the stand.

### Timber Stand 3

Stand 3 is within Management Zone SM-03 and is about 44 acres in size. The tract is planted longleaf pine estimated to 30 years in age. Stocking of the pines is 500 - 600 trees per acre. The trees have an average diameter of 4 - 6 inches in dbh. The average tree height is 30 - 40 feet. The timber class size of the longleaf pine is mostly pulpwood, with some chip-n-saw present in the larger trees. The dominant understory specie is sparkleberry and other upland trees such as southern red oak, hickory and laurel oak are present. Ground cover is sparse and but does include wiregrass, broomsedge and other herbaceous species.



The soil is quite sandy and topography is level. No wetland areas were observed within this stand. Historically, this stand was probably a sandhill type community. Access to the site is from Tram Road to the south and then via a park patrol road to the east of the stand.

### **Timber Stand 4**

Stand 4 is a 44-acre tract of mature planted loblolly pine located in Management Zone SM-04. The average density of pines is between 500 - 700 stems per acre and the average diameter is 8 - 10 inches dbh. The average tree height is 50 to 60 feet tall. The timber class sizes of the loblolly pines are mostly sawtimber with some chip-n-saw and pulpwood also present. Understory growth is moderate with sparkleberry, sweetgum and laurel oaks predominating.

The topography is mostly level to gently sloping. The soil is well drained but much less sandy than Timber Stand 3. Wetland areas are presented both in and adjacent to the stand. Access to the stand will be difficult due to wetland areas to the south and west of the stand, and private property to the north. Final access to the stand may have to be via an easement through private property to the north of the tract.

### **Timber Stand 5**

Stand 5 is an estimated 89-acre tract of planted slash pine located in the most northwest portion of the property in Management Zone SM-22. The tract is a flatwoods area that was planted to slash pine 25 - 30 years ago. The slash pine trees are 60 -70 feet tall with an average diameter of 6 - 8 inches dbh. The stocking of the stand is 500 - 600 stems per acre, although the northwest portion of the tract appears to be less dense and may have been thinned in the past or had poor survival. The timber class sizes of the slash pines are mostly chip-n-saw with some pulpwood and sawtimber present. The understory contains flatwood species that includes gallberry, sweetbay, sweetgum and some saw palmetto areas. The stand appears to have never been burned and fuel buildup is moderate to high.

The topography is level and the soils have higher moisture levels than the other timber stands. The St. Marks River is to the east of the stand and several wetland areas are within the stand. Access to the stand will be from U.S. Highway 27 to the north of the tract.

### **Timber Harvesting**

Any harvesting of Stand 1 will have to wait at least 5 years to allow the majority of slash pines to grow into merchantable size. When harvested, most trees will be pulpwood size. Harvesting will be a thin of the slash pines, removing every fifth row of trees and then selective removal of additional trees from the rows that are left. Trees

## St. Marks River Preserve State Park Timber Management Analysis

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selected for removal would be those that are diseased, poor formed, and suppressed. This first thin would remove approximately 50 percent of the volume of the pine stand. Understory conditions for wiregrass will be improved by the removal of the pines and the prescribed burning that will follow. Stand 1 may also be prescribed burned prior to any harvesting to improve access and stimulate the wiregrass.

After at least another 5-year waiting period, another thinning of the slash pine trees should take place. The site would be thinned so that enough trees are left on site to allow prescribed burning to continue. After thinning, longleaf pine seedlings will be planted in any open areas. Once the longleaf pines are established, can survive and carry prescribed fire, the remaining slash pines can be harvested. Planting of native grasses and other herbaceous plants will also be a part of the restoration of this stand. During the restoration process, some hardwood control measures may be required as well as seeding of other native plant species.

Harvesting of Stand 3 will remove a portion of the overstocked longleaf pines within the designated area. Harvesting will remove suppressed and poor formed trees leaving behind the larger and dominate longleaf pines. Density should be reduced to about half of the stands present state. Some native ground cover can be planted after harvesting, but most of the stand will be left to regenerate naturally. Prescribed burning of this stand will aid in the stimulation of additional native ground cover with the primary benefactor being the wiregrass that is present. Additional tree harvesting maybe required at future dates to reduce the final stocking of the mature longleaf pines to the desired density that will still carry frequent prescribed fires (80 – 150 trees per acre).

Harvesting of Stands 2, 4 and 5 would be similar and involves a partial thinning of the planted pines. The slash and loblolly pines in these stands would be thinned so that enough trees are left on site to allow prescribed burning to continue. The first harvest would remove approximately 50 percent of the timber volume and would involve a fifth row thinning and then a reduction of suppressed and diseased trees that are found within the rows of trees that are left. After thinning, prescribed burning of the stands should take place and continue on a determined rotational period. Future additional harvests of these stands would be likely to reduce the overstory pine stocking to the long-range desired goal. Planting of native grasses and other herbaceous plants may also be a part of the restoration if it is determine after thinning and burning that natural levels of these species are low. Additional hardwood tree controls may also be required to maintain the hardwood species at desired stocking levels.

All wetland areas within or adjacent to any of the timber stands should be protected from all timber operations and no harvesting of wetland species should occur. A protection zone or buffer area around the wetlands maybe desired to meet this goal.

Additional harvesting of all timber stands beyond what has been described should only be considered after an updated review of the need for restoration of these areas has been completed by park staff.



## **Addendum 8—Cultural Information**



## **Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties (revised February 2007)**

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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 in the following:

**Chapter 253, F.S.** – State Lands

**Chapter 267, F.S.** – Historical Resources

**Chapter 872, F.S.** – Offenses Concerning Dead Bodies and Graves

Other helpful citations and references:

Chapter 1A-32, F.A.C. – Archaeological Research

Other helpful citations and references:

Chapter 1A-44, F.A.C. – Procedures for Reporting and Determining Jurisdiction Over Unmarked Human Burials

Chapter 1A-46, F.A.C. – Archaeological and Historical Report Standards and Guidelines

The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings

**Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties (revised February 2007)**

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**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, pre-testing of the project site by a certified archaeological monitor, cultural resource assessment survey by a qualified professional archaeologist, modifications to the proposed project to avoid or mitigate potential adverse effects.

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

Adverse impacts to significant sites, either archaeological sites or historic buildings, must be avoided. Furthermore, managers of state property should 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, the following information, at a minimum, must be submitted for comments and recommendations.

**Project Description** – A detailed description of the proposed project including all related activities. For land clearing or ground disturbing activities, the depth and extent of the disturbance, use of heavy equipment, location of lay down yard, etc. For historic structures, specific details regarding rehabilitation, demolition, etc.

**Project Location** – The exact location of the project indicated on a USGS Quadrangle map, is preferable. A management base map may be acceptable. Aerial photos indicating the exact project area as supplemental information are helpful.

**Photographs** – Photographs of the project area are always useful. Photographs of structures are required.

**Description of Project Area** – Note the acreage of the project, describe the present condition of project area, and any past land uses or disturbances.

**Description of Structures** – Describe the condition and setting of each building within project area if approximately fifty years of age or older.

**Recorded Archaeological Sites or Historic Structures** – Provide Florida Master Site File numbers for all recorded historic resources within or adjacent to the project area. This information should be in the current management plan; however, it can be obtained by contacting the Florida Master Site File at (850) 245-6440 or Suncom 205-6440.

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**Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties (revised February 2007)**

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

Susan M. Harp  
Historic Preservation Planner  
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) 245-6333  
Suncom: 205-6333  
Fax: (850) 245-6438

**Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties (revised February 2007)**

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## **Eligibility Criteria for National Register of Historic Places**

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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.

## **Preservation Treatments as Defined by Secretary of Interior's Standards and Guidelines**

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**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 which 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.