

Natural Bridge Battlefield Historic State Park

APPROVED Unit Management Plan

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Division of Recreation and Parks
February 2016





Florida Department of Environmental Protection

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

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Jonathan P. Steverson
Secretary

February 24, 2016

Ms. Sine Murray
Office of Park Planning
3900 Commonwealth Blvd., M.S. 525
Tallahassee, Florida 32399-3000

RE: Natural Bridge Battlefield Historic State Park- Lease No. 3635

Dear Ms. Murray:

The Division of State Lands, Office of Environmental Services, acting as agent for the Board of Trustees of the Internal Improvement Trust Fund, hereby approves the Natural Bridge Battlefield Historic State Park management plan. The next management plan update is due February 24, 2026.

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

Sincerely,

A handwritten signature in cursive script that reads "Paula L. Allen".

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

PA/cb

TABLE OF CONTENTS

INTRODUCTION	1
PURPOSE AND SIGNIFICANCE OF THE PARK	1
Park Significance	1
PURPOSE AND SCOPE OF THE PLAN	2
MANAGEMENT PROGRAM OVERVIEW	8
Management Authority and Responsibility	8
Park Management Goals	9
Management Coordination	9
Public Participation.....	9
Other Designations	9

RESOURCE MANAGEMENT COMPONENT

INTRODUCTION	11
RESOURCE DESCRIPTION AND ASSESSMENT	12
Natural Resources.....	12
Topography	12
Geology	15
Soils	15
Minerals.....	16
Hydrology	16
Natural Communities (FNAI).....	20
Imperiled Species	34
Exotic and Nuisance Species.....	37
Special Natural Features	39
Cultural Resources.....	39
Prehistoric and Historic Archaeological Sites	40
Historic Structures	43
Collections	43
RESOURCE MANAGEMENT PROGRAM	44
Management Goals, Objectives and Actions.....	44
Natural Resource Management	45
Hydrological Management	45
Natural Communities Management	46
Imperiled Species Management	48
Exotic Species Management	50
Cultural Resource Management	51
Cultural Resource Management.....	51
Special Management Considerations.....	52
Timber Management Analysis	52
Arthropod Control Plan.....	53
Resource Management Schedule.....	53
Land Management Review	53

LAND USE COMPONENT

INTRODUCTION	55
EXTERNAL CONDITIONS	55
Existing Use of Adjacent Lands	56
Planned Use of Adjacent Lands	57
PROPERTY ANALYSIS	57
Recreation Resource Elements.....	57
Land Area	57
Water Area.....	57
Shoreline	58
Natural Scenery	58
Significant Wildlife Habitat.....	58
Archaeological and Historic Features.....	58
Assessment of Use.....	59
Past Uses	59
Future Land Use and Zoning	59
Current Recreation Use and Visitor Programs.....	59
Protected Zones.....	60
Existing Facilities	60
Recreation Facilities.....	63
Support Facilities	63
CONCEPTUAL LAND USE PLAN	63
Potential Uses	64
Public Access and Recreational Opportunities.....	64
Proposed Facilities	67
Capital Facilities and Infrastructure	67
Facilities Development.....	70
Recreational Carrying Capacity	70
Optimum Boundary	71

IMPLEMENTATION COMPONENT

MANAGEMENT PROGRESS	75
Acquisition	75
Park Administration and Operations	75
Resource Management	76
Natural Resources	76
Cultural Resources	76
Recreation and Visitor Services.....	76
Park Facilities	76
MANAGEMENT PLAN IMPLEMENTATION	77

TABLES

TABLE 1 – Management Zones.....	12
TABLE 2 – Imperiled Species Inventory.....	36
TABLE 3 – Inventory of FLEPPC Category I and II Exotic Plant Species.....	38
TABLE 4 – Cultural Sites Listed in the Florida Master Site File	44
TABLE 5 – Prescribed Fire Management.....	46
TABLE 6 – Existing Use and Recreational Carrying Capacity	71
TABLE 7 – Implementation Schedule and Cost Estimates.....	79

MAPS

Vicinity Map	3
Reference Map	5
Management Zones Map.....	13
Soils Map	17
Natural Communities Map.....	21
Base Map	61
Conceptual Land Use Plan Map.....	65
Optimum Boundary Map.....	73

LIST OF ADDENDA

ADDENDUM 1	
Acquisition History.....	A 1 - 1
ADDENDUM 2	
Advisory Group Members and Report	A 2 - 1
ADDENDUM 3	
References Cited	A 3 - 1
ADDENDUM 4	
Soil Descriptions	A 4 - 1
ADDENDUM 5	
Plant and Animal List	A 5 - 1
ADDENDUM 6	
Imperiled Species Ranking Definitions	A 6 - 1
ADDENDUM 7	
Cultural Information	A 7 - 1

INTRODUCTION

Natural Bridge Battlefield Historic State Park is located in unincorporated Leon County, approximately 15 miles southeast of Tallahassee (see Vicinity Map). Access to the park is from Natural Bridge Road off State Road 363 near the community of Woodville (see Reference Map). In addition, significant land and water resources existing near the park have been identified on the Vicinity Map.

Natural Bridge Battlefield Historic State Park was acquired in 1950 as a donation from the United Daughters of the Confederacy (see Addendum 1). Currently the park contains 135.20 acres. At Natural Bridge Battlefield Historic 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 State of Florida acquired the original 6 acres of Natural Bridge Battlefield Historic State Park as a donation from the United Daughters of the Confederacy for the purpose of the erection of a monument and establishing a park on the battlefield of the Battle of Natural Bridge. Land acquisition by the State of Florida continues through the present day, where the park boundary now extends to over 135 acres. The purpose of the acquisition is to protect the unique geological features of the St. Marks River, preserve the site of the historic civil war battle, protect the sites of prehistoric inhabitation, and provide the people of Florida with the opportunity to learn about this unique part of the state.

Park Significance

- The park protects the site of the Battle of Natural Bridge, which was the second largest American Civil War battle fought in the state of Florida. A diverse group of Confederate troops defended the Natural Bridge, which protected Tallahassee as the only capital east of the Mississippi River that was not captured by Union forces.
- The St. Marks River disappears underground as it enters the park boundary, creating unique geological features such as karst windows and a series of underground caves. This natural bridge over the river is the origin of the park's name.
- The park occupies a central area of the largely undeveloped St. Marks River corridor, which is part of a Florida Forever effort to help protect the spring-fed river, numerous historic sites, and imperiled species.
- The natural bridge over the St. Marks River in the park has attracted human activity since prehistoric times; archaeological studies uncovering artifacts dating back to the Mid-Archaic Period (6500 BC).
- The park provides visitors with opportunities to explore and interpret the geological and historic features of the park through paddling, fishing, nature trails and picnic facilities.

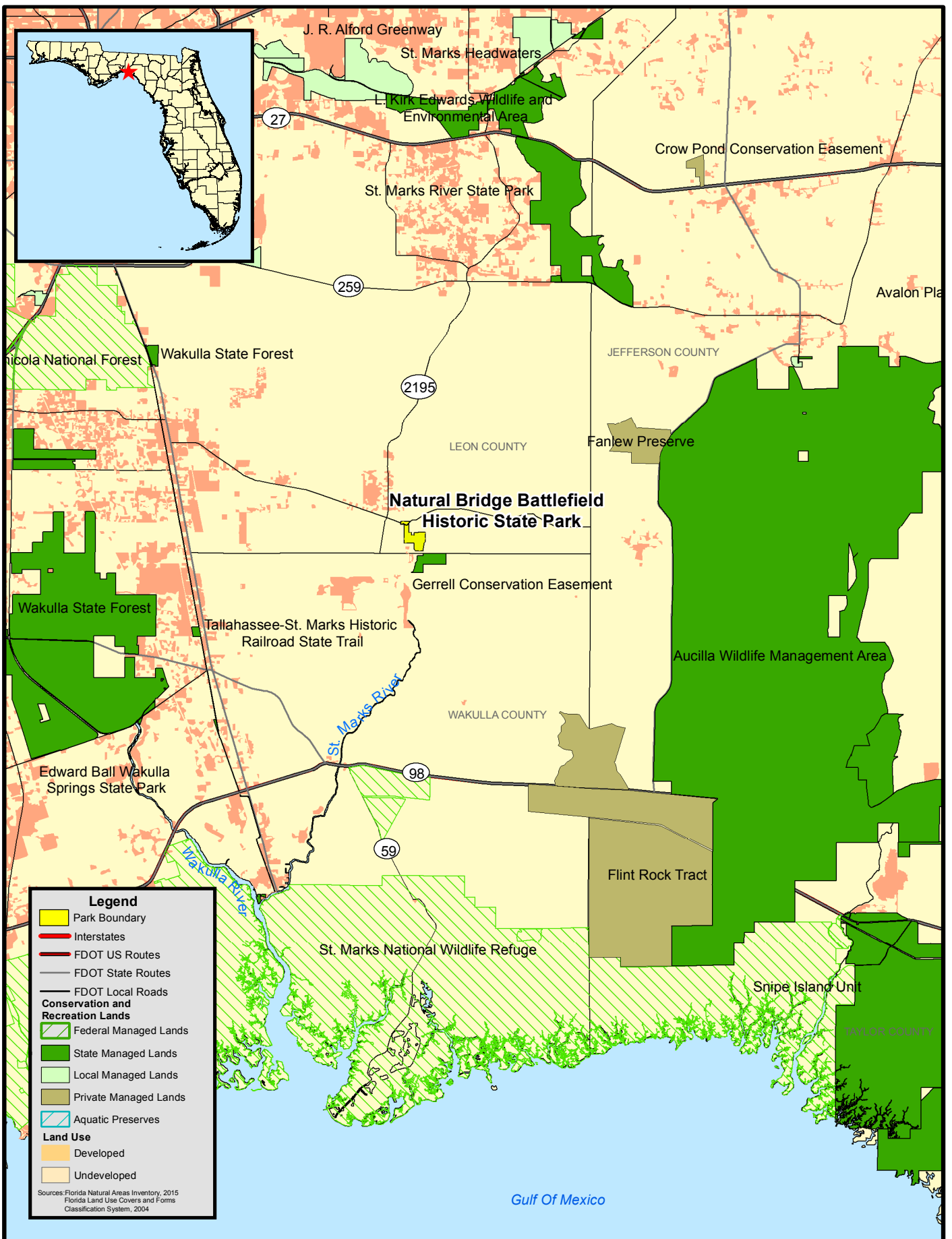
Natural Bridge Battlefield Historic State Park is classified as a special feature site in DRP's unit classification system. A "special feature" is a discrete and well-defined object or condition that attracts public interest and provides recreational enjoyment through visitation, observation and study. A state special feature site is an area which contains such a feature, and which is set aside for controlled public enjoyment. Special feature sites for the most part are either historical or archaeological by type, but they may also have a geological, botanical, zoological or other basis. State special feature sites must be of unusual or exceptional character, or have statewide or broad regional significance.

In the management of a special feature site, primary emphasis is placed on protection and maintenance of the special feature for long-term public enjoyment. Permitted uses are almost exclusively passive in nature and program emphasis is on interpretation of the special feature. Development at special feature sites is focused on protection and maintenance of the site, public access, safety and the convenience of the user.

Purpose and Scope of the Plan

This plan serves as the basic statement of policy and direction for the management of Natural Bridge Battlefield Historic State Park as a unit of Florida's state park system. It identifies the goals, objectives, actions and criteria or standards that guide each aspect of park administration, and sets forth the specific measures that will be implemented to meet management objectives and provide balanced public utilization. The plan is intended to meet the requirements of Sections 253.034 and 259.032, Florida Statutes, Chapter 18-2, Florida Administrative Code, and is intended to be consistent with the State Lands Management Plan. With approval, this management plan will replace the September 5, 2003 approved plan.

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

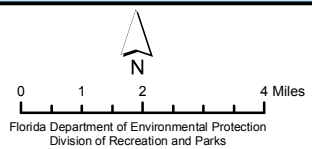


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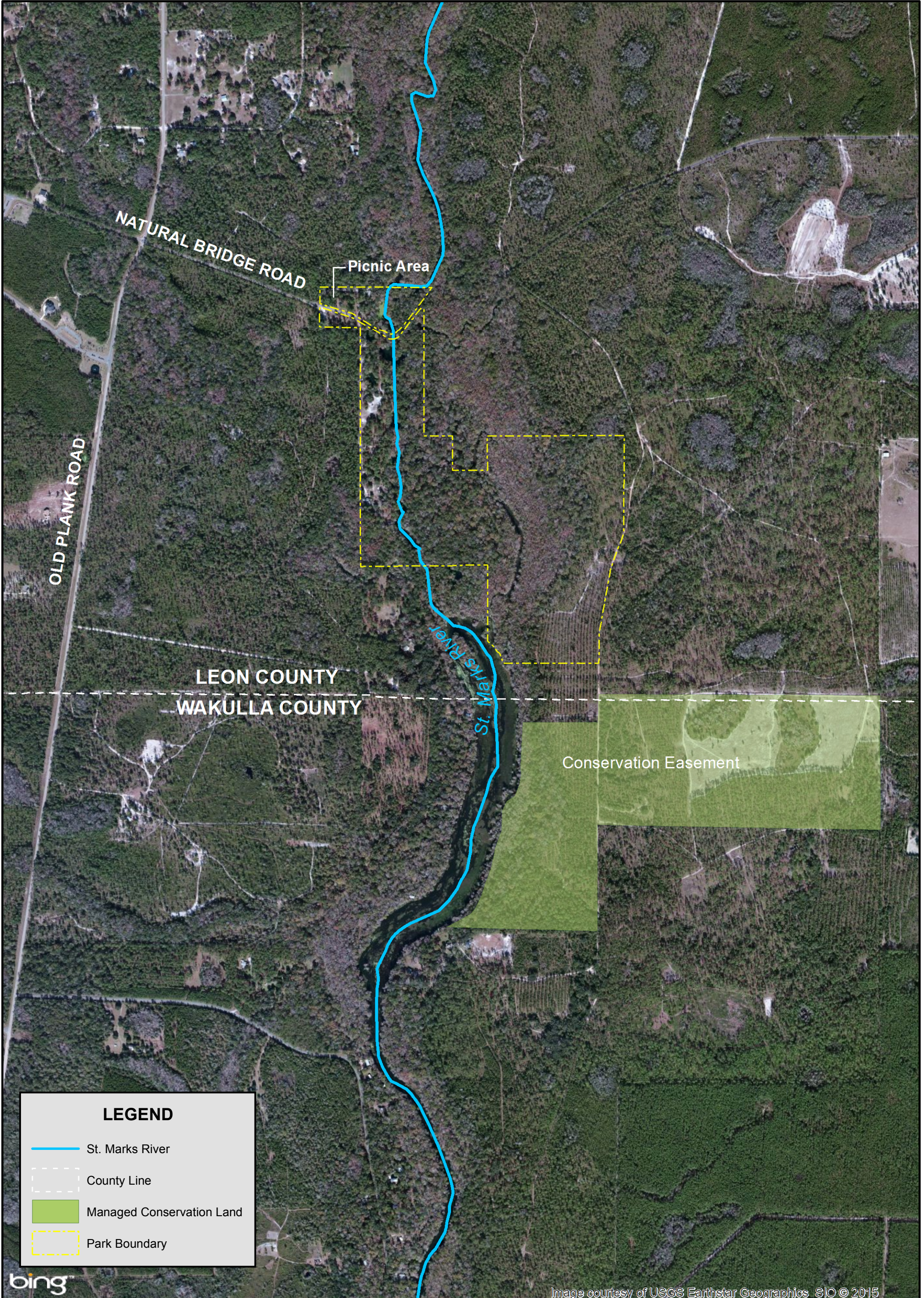
- Park Boundary
- Interstates
- FDOT US Routes
- FDOT State Routes
- FDOT Local Roads
- Conservation and Recreation Lands**
- Federal Managed Lands
- State Managed Lands
- Local Managed Lands
- Private Managed Lands
- Aquatic Preserves
- Land Use**
- Developed
- Undeveloped

Sources: Florida Natural Areas Inventory, 2015
Florida Land Use Covers and Forms Classification System, 2004

**NATURAL BRIDGE BATTLEFIELD
HISTORIC STATE PARK**



VICINITY MAP



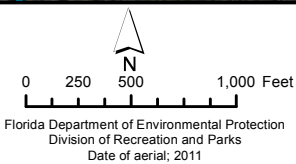
LEGEND

- St. Marks River
- County Line
- Managed Conservation Land
- Park Boundary

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**NATURAL BRIDGE BATTLEFIELD
HISTORIC STATE PARK**



REFERENCE MAP

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

The Implementation Component consolidates the measurable objectives and actions for each of the park's management goals. An implementation schedule and cost estimates are included for each objective and action. Included in this table are (1) measures that will be used to evaluate the DRP's implementation progress, (2) timeframes for completing actions and objectives and (3) estimated costs to complete each action and objective.

All development and resource alteration proposed in this plan is subject to the granting of appropriate permits, easements, licenses, and other required legal instruments. Approval of the management plan does not constitute an exemption from complying with the appropriate local, state or federal agencies. This plan is also intended to meet the requirements for beach and shore preservation, as defined in Chapter 161, Florida Statutes, and Chapters 62B-33, 62B-36 and 62R-49, Florida Administrative Code.

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 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 no secondary purposes could be accommodated in a manner that would not interfere with the primary purpose of resource-based outdoor recreation and conservation. Uses such as water resource development projects, water supply projects, stormwater management projects, linear facilities and sustainable agriculture and forestry (other than those forest management activities specifically identified in this plan) are not consistent with this plan or the management purposes of the park.

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

DRP may provide the services and facilities outlined in this plan either with its own funds and staff or through an outsourcing contract. Private contractors may provide assistance with natural resource management and restoration activities or a concessionaire may provide services to park visitors in order to enhance the visitor experience. For example, a concessionaire could be authorized to sell merchandise

and food and to rent recreational equipment for use in the park. A concessionaire may also be authorized to provide specialized services, such as interpretive tours, or overnight accommodations when the required capital investment exceeds that which DRP can elect to incur. Decisions regarding outsourcing, contracting with the private sector, the use of concessionaires, etc., are made on a case-by-case basis in accordance with the policies set forth in DRP's Operations Manual (OM).

Management Program Overview

Management Authority and Responsibility

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

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

The Board of Trustees of the Internal Improvement Trust Fund (Trustees) has granted management authority of certain sovereign submerged lands to the DRP under Management Agreement MA 68-086 (as amended January 19, 1988). The management area includes a 400-foot zone from the edge of mean high water where a park boundary borders sovereign submerged lands fronting beaches, bays, estuarine areas, rivers or streams. Where emergent wetland vegetation exists, the zone extends waterward 400 feet beyond the vegetation. The agreement is intended to provide additional protection to resources of the park and nearshore areas and to provide authority to manage activities that could adversely affect public recreational uses.

Many operating procedures are standardized system-wide and are set by internal direction. These procedures are outlined in the 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:

- Provide administrative support for all park functions.
- Protect water quality and quantity in the park, restore hydrology to the extent feasible and maintain the restored condition.
- Restore and maintain the natural communities/habitats of the park.
- Maintain, improve or restore imperiled species populations and habitats in the park.
- Remove exotic and invasive plants and animals from the park and conduct needed maintenance-control.
- Protect, preserve and maintain the cultural resources of the park.
- Provide public access and recreational opportunities in the park.
- Develop and maintain the capital facilities and infrastructure necessary to meet the goals and objectives of this management plan.

Management Coordination

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

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

Public Participation

DRP provided an opportunity for public input by conducting a public workshop and an Advisory Group meeting to present the draft management plan to the public. These meetings were held on December 9 and 10, 2015, respectively. Meeting notices were published in the Florida Administrative Register, November 30, 2015, Volume 41, Number 230, included on the Department Internet Calendar, posted in clear view at the park, and promoted locally. The purpose of the Advisory Group meeting is to provide the Advisory Group members an opportunity to discuss the draft management plan (see Addendum 2).

Other Designations

Natural Bridge Battlefield Historic 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 Department. This park is not located 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

In accordance with Chapter 258, Florida Statutes, the Division of Recreation and Parks (DRP) 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 Department'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 which 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 types, burn zones, 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. Natural Bridge Battlefield Historic State Park Management Zones		
Management Zone	Acreage	Managed with Prescribed Fire
NB-1	1.37	N
NB-2	16.33	N
NB-3	5.46	N
NB-4	44.02	N
NB-5	8.04	N
NB-6	60.00	Y

RESOURCE DESCRIPTION AND ASSESSMENT

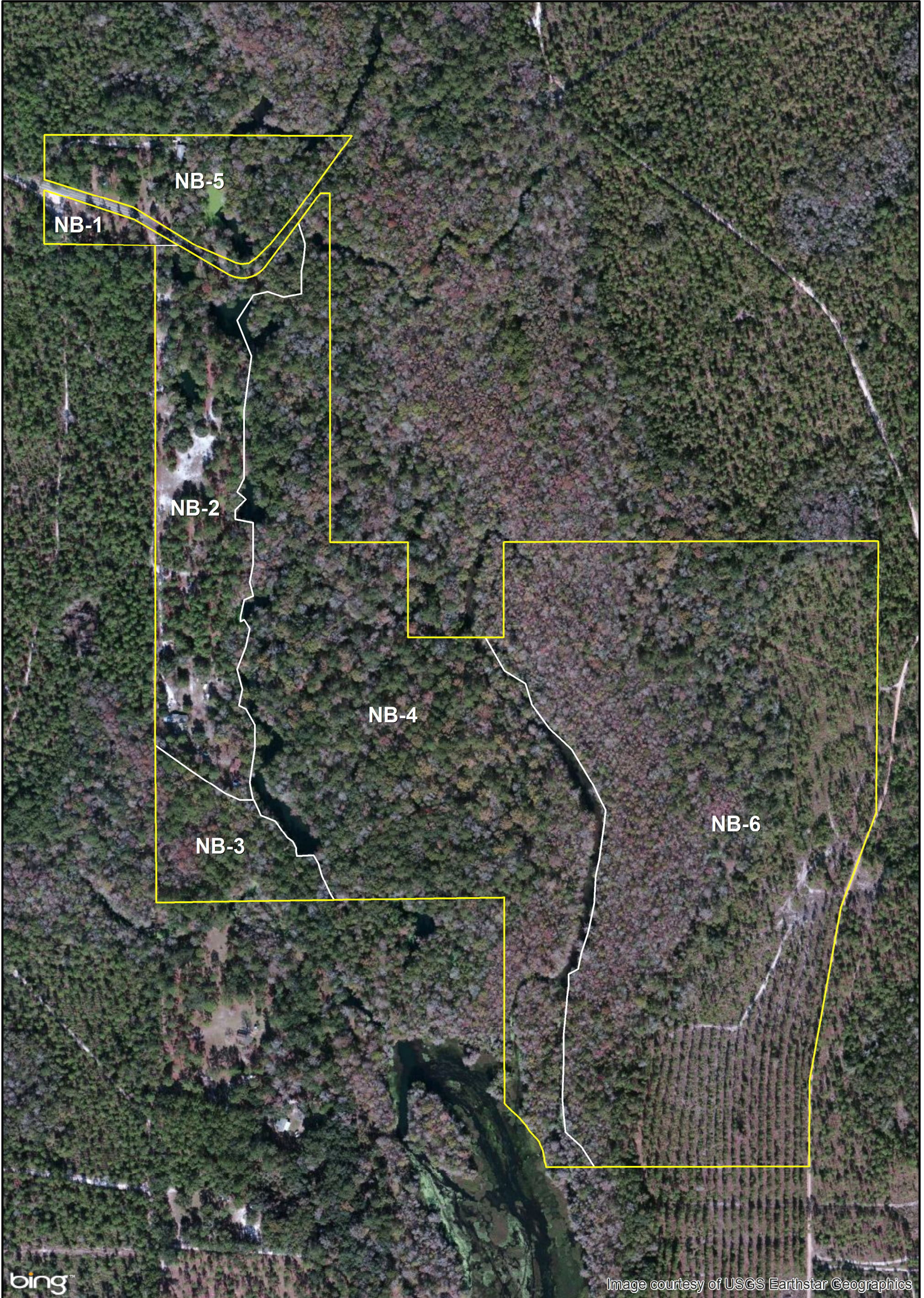
Natural Resources

Topography

The park is situated in the major physiographic division known as the Gulf Coastal Lowlands, which is subdivided into the Apalachicola Coastal Lowlands and the Woodville Karst Plain. The Woodville Karst Plain, on which the park is located, is a gently sloping landscape with elevation generally not exceeding 60 feet. It is characterized by loose quartz sands thinly veneering a limestone substratum that has resulted in sinkhole-sand dune topography.

The Woodville Karst Plain is further divided into two areas based on elevation, the Lake Munson Hills and the Wakulla Sand Hills. The park is situated in the Wakulla Sand Hills at the plain's southern edge, immediately adjacent to the St. Marks River. This area consists of a series of relict sand dunes associated with an ancient shoreline existing when sea levels were higher. Another significant topographical feature at the park is a narrow strip along the river and its flood plain valley called the St. Marks River Valley Lowlands. Soils are sandy and wet in this strip; the river itself flows upon or is slightly incised into the bedrock.

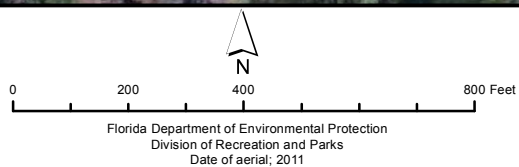
Overall, the park's landscape slopes gently toward the edge of the St. Marks River. The park is particularly distinctive for its variety of karst features. The St. Marks River submerges below the landscape for about 0.6 miles before returning to the surface at the St. Marks River Rise south of the park boundary; it is this landform, the natural bridge that lends the park its name. Along the route of the river's subterranean cave system, multiple sinkhole of varying depths may be observed; these conical depressions form when the overlying soil and rock collapse into voids in the limestone bedrock. The shallowest sinkholes, located on the original park parcel, are approximately 20-30 feet deep and are typically only filled with water following rain events. The deeper



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NATURAL BRIDGE BATTLEFIELD
HISTORIC STATE PARK



MANAGEMENT ZONES MAP

sinkhole lakes, referred to as karst windows, are located south of Natural Bridge Road and the Rakestraw Tract boundary fence. These karst windows are essentially cave chambers open to the surface that have active inflows and outflows; ripples and currents are often visible on the water surface as water vents through these features. Elevation in the park ranges from about 10 feet near the river to several areas exceeding 20 feet.

Geology

Leon County is located along the north central border of the Floridan Plateau, which includes the current peninsula and surrounding continental shelf down to the 300 foot bathymetric contour. The Floridan Plateau, which was exposed during the last glacial maximum about 18,000 years ago, is composed of strata ranging in age from early Paleozoic to Recent and varies in thickness from about 5,000 feet to more than 15,000 feet. The oldest rocks are of sedimentary origin dating back to the Silurian and Ordovician periods at depths of about 7,000 feet. Mesozoic clastics and carbonates, sands, and clays extend to about 4,500 feet deep. The youngest strata are Quaternary beds dominated by sands and sandy clays and are less than 100 feet thick.

The upper layer of underlying limestone in the park is the St. Marks Formation, which was deposited about 15 million years ago during the early Miocene period. The Miccosukee and Hawthorn formations had originally overlain the St. Marks Formation, but erosion had removed these layers in subsequent years. Sediments of the St. Marks Formation are fine to medium grained, silty to sandy limestones which are normally composed of at least 90% calcium carbonate. The St. Marks Formation is exposed along the St. Marks River and in numerous sinks in this area.

Suwannee Limestone underlies the St. Marks Formation. The Suwannee Limestone is the only deposit of the Oligocene Age (30 million years old) found in Leon County. It overlies the Crystal River Formation of the Jackson Stage from the Eocene Age. The Suwannee Limestone in Leon County holds the principal aquifer and most of the water wells penetrate into the formation.

Soils

A soil survey of Leon County shows that three soil types occur in the park (see Soils Map). The St. Marks River forms the boundary between the two largest units with the Chaires fine sand series occurring on either side of the Pamlico-Dorovan complex. The surface and subsurface layers of the Chaires fine sand series drain rapidly and permeability generally decreases with depth. The depth to the water table ranges between 10 inches during rainy periods and 20 to 40 inches during drier months. The Talquin fine sand series lies on the northeastern corner of the Gerrell Tract and possesses some general surface layer characteristics (e.g., permeability, water capacity, fertility) in common with the Chaires fine sand series, though deeper layers are more permeable in the Talquin fine sand. The Pamlico-Dorovan complex is very high in organic content as mucky peats generally overlay dark sandy soils in the deeper strata. Permeability is moderate in the surface layers and rapid in the substratum. The water table is usually above the surface for about half the year and 10 inches deep in the drier months. This soil complex is

dominated by alluvial forest, bottomland forest, and riparian habitats. Detailed soil descriptions can be found in Addendum 3.

Loss of soil along the shorelines of the various water bodies is the most significant erosion issue at the park. Some of the areas along these banks had been denuded of vegetation and are currently rather ruderal in character. Substrate loss may be observed in several locations, including along a couple sinkhole lake shorelines, portions of the zone 5 river bank, and an unpaved boat ramp near Natural Bridge Road's one lane bridge. These areas should be monitored in order to determine whether this loss is progressive and in need of corrective action. The boat ramp parcel is owned by St. Joe Company and has experienced significant soil loss; remedial work or upgrades to this feature would require the cooperation of that organization. Native vegetation should be planted in those bare areas prone to erosion, particularly along several sinkhole lake shorelines; a restoration plan would be drafted prior to initiating such as project. Erecting fencing or cordons around some sections of the sinkhole lakes' shorelines would prevent visitor trampling as well as prevent safety concerns associated with swimming or falling into the water bodies (e.g., strong currents into aquatic caves, occasional alligators).

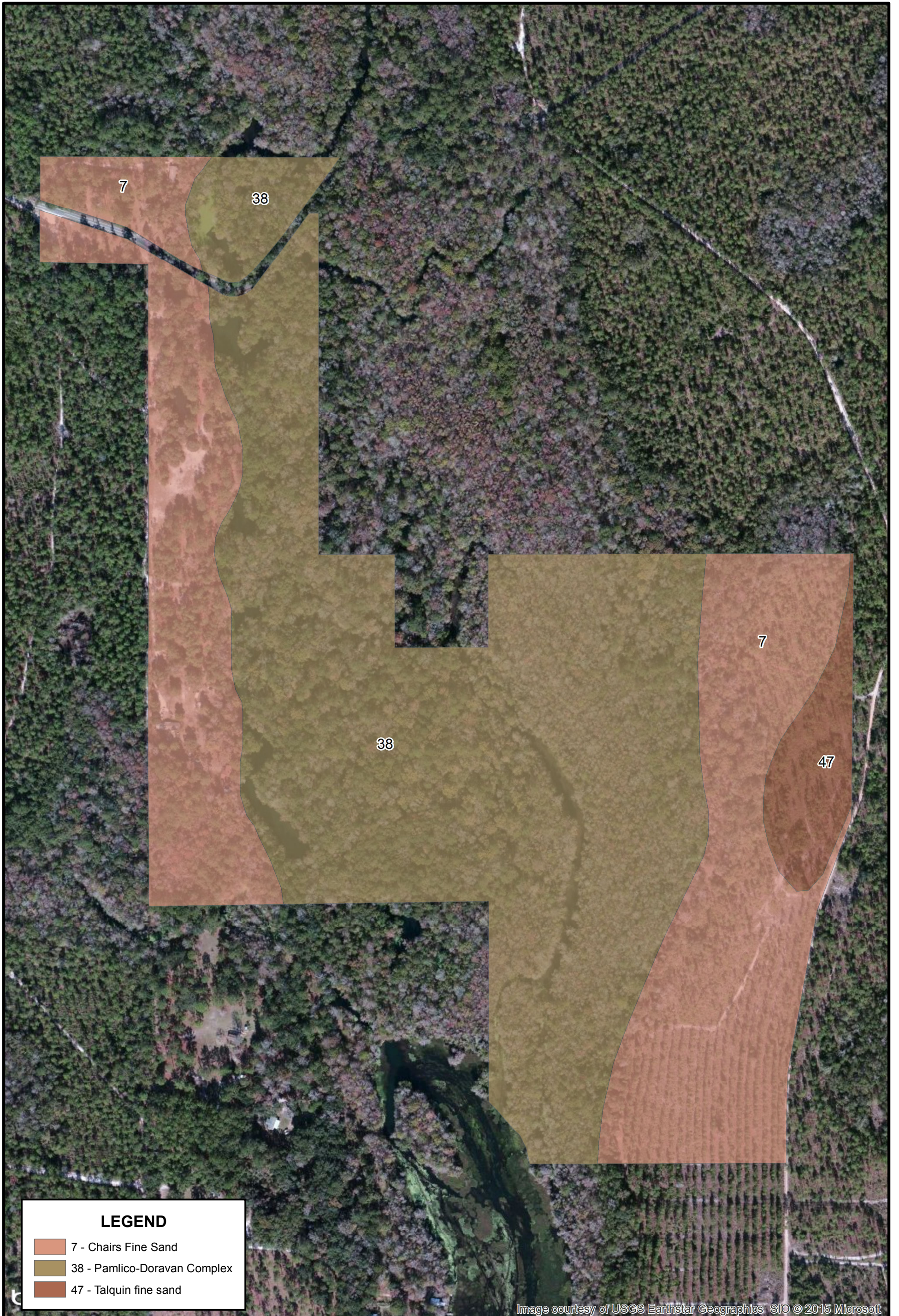
Minerals

There is no active mining of minerals in the park or adjacent to it.

Quartz sand is present and is relatively clay free, clean, and unconsolidated. Limestone occurs beneath the sand. Most of the limestone bedrock is slightly sandy, argillaceous, and partially dolomitized. The hardness of the limestone varies considerably. This limestone has been used for road base and has the potential for use as agricultural limestone or quick and hydrated lime. However, mining of limestone in this area is not considered economically viable in modern times.

Hydrology

Hydrological processes, both natural and altered, are some of the main forces shaping the ecology and cultural history of this park. The St. Marks River flows through the park at about the middle portion of its total length, though largely underground. The river's course is marked by many karst features weathered into the limestone bedrock including the famous Natural Bridge and its associated aquatic cave system and sinkhole lakes. Starting its journey in the Tallahassee Hills area of eastern Leon County, this river widens below Horn Spring and flows about 2.5 miles to the Natural Bridge, where it disappears underground until reemerging at the St. Marks River Rise about 0.6 miles downstream and just south of the current park boundary. At this point, the river

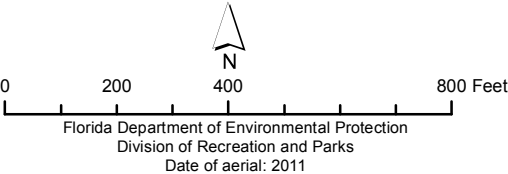


LEGEND

- 7 - Chairs Fine Sand
- 38 - Pamlico-Doravan Complex
- 47 - Talquin fine sand

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NATURAL BRIDGE BATTLEFIELD
HISTORIC STATE PARK



SOILS MAP

flows at an average rate of 700 cubic feet per second within its well-defined channel incised into the limestone. The river continues for about 11 miles to the south until its confluence with the Wakulla River, shortly thereafter emptying into the Gulf of Mexico. The St. Marks River traverses a total of approximately 35 miles and drains 1,150 square miles in Leon, Jefferson, and Wakulla counties.

While the river is classified as a blackwater stream, which is characterized by acidic dark colored water with a high content of particulate and dissolved organic matter derived from source wetlands, it gradually acquires more of the character of a spring-run as it absorbs more spring-fed water and assumes a more neutral pH. A distinctive set of cultural features found on the Rakestraw Tract is the system of canals linking the sinkhole lakes excavated in the 19th century possibly to facilitate timber transport across the Natural Bridge and down the river to the Rise.

The water quality of the upper St. Marks River is generally good at the present. However, since Lake Lafayette receives stormwater runoff from Tallahassee, which in turn drains into the St. Marks River, the potential exists for water degradation resulting from increased nitrogen loading and decreased oxygen concentrations in the future as the regional population increases. The St. Marks River is classified as an Outstanding Florida Water (a Special Water) bordered by the Florida National Scenic Trail. The extreme lower portion of the river south of the park, between Rattlesnake Branch and its confluence with the Wakulla River, was polluted by petroleum residues from a former refinery and does not share the higher quality of the upper portion. A recent report was published by Hazlett-Kincaid, Inc. prior to acquisition of the Rakestraw property that describes some of the hydrological attributes of this portion of the St. Marks River and its associated karst features (Kincaid and Werner 2006); this valuable resource was used as a source for many of the facts mentioned above. The Woodville Karst Plain Project (WKPP), an organization of cave divers that explores and maps many of the aquatic caves in the north Florida region including those found at Wakulla Springs State Park, has been active at this park and periodically supplies information to the park staff about these features.

With the acquisition of the Gerrell Tract in 2011, the park boundary now encompasses a magnitude 2 spring and several smaller vents in its proximity. This spring was recently named Gerrell Spring in honor of the local family that donated the land, though it also had been referred to as Elly Spring. This spring occurs just south of the park boundary and is the source of a tributary creek, which flows off park property past the privately owned Lawhon parcel before once again entering the park. The 0.5-miles spring-run flows south into the wider channel of the St. Marks River associated with the Rise referred to above. This tributary supports an alluvial forest along both banks.

On site, the most significant potential threat to the water resource would be the loss of native groundcover vegetation along the edge of the river and sinkholes. This disturbance could lead to erosion and subsequent siltation of the water bodies, potentially impacting the productivity of the aquatic ecosystem in the park. In order to prevent this problem, shorelines in the park should be monitored for erosion

resulting from visitor usage. While portions of the shorelines of the river along the original tract and several sinkhole lakes on the Rakestraw Tract are currently ruderal in character, these water resources and shorelines appear to be in stable condition in the short term.

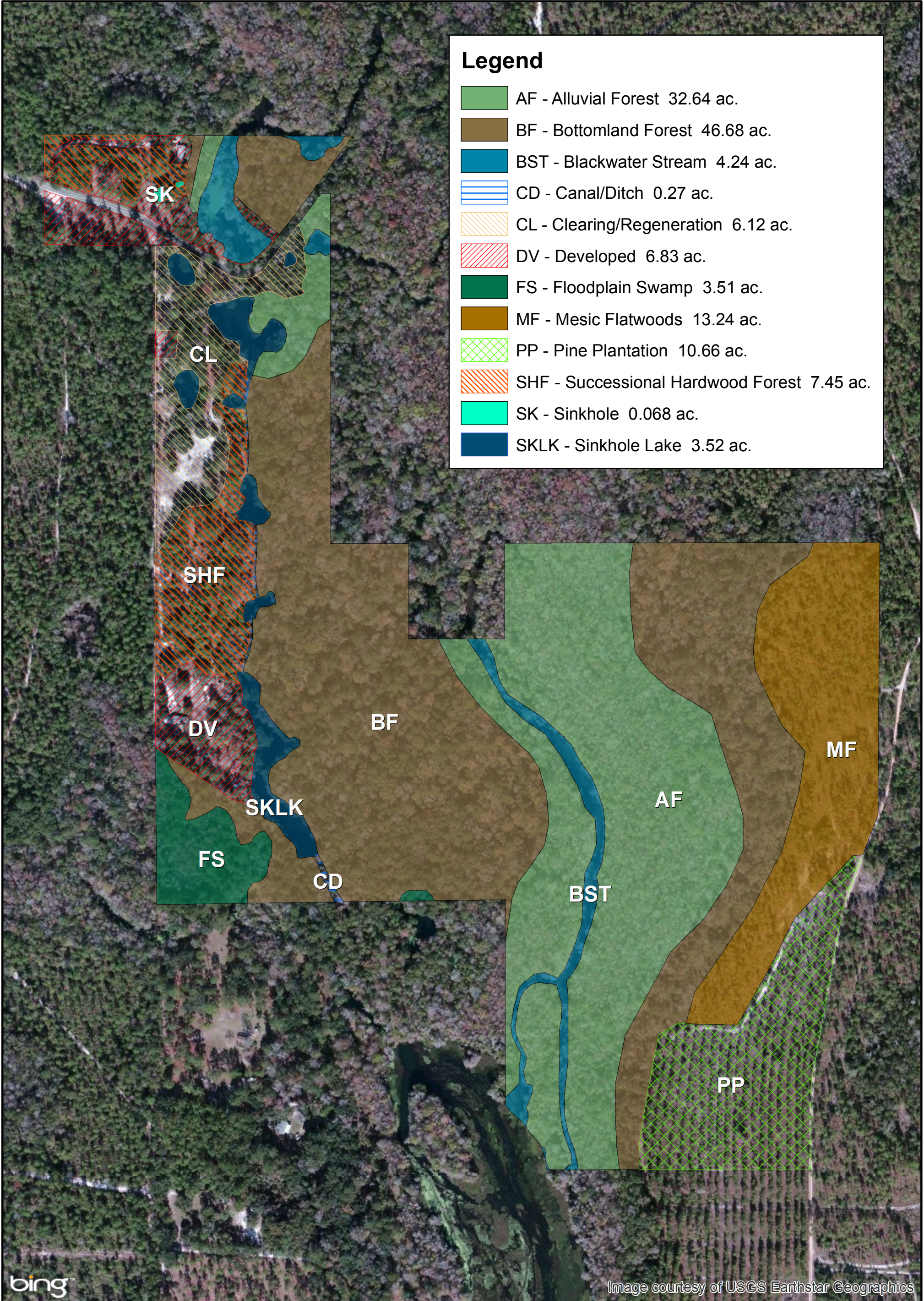
In 2004, the well and water treatment system that supplies water to the park was upgraded so that it is now potable. Bathroom facilities were also constructed since the 2003 Unit Management Plan. Daily rainfall is monitored with an on-site rain gauge and recorded. Annual rainfall for the park averages approximately 57 inches.

Natural Communities

This section of the management plan describes and assesses each of the natural communities found in the state park. It also describes of the desired future condition 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 are discussed in the Resource Management Program section of this component.

The system of classifying natural communities employed in this plan was developed by the Florida Natural Areas Inventory (FNAI). The premise of this system is that physical factors such as climate, geology, soil, hydrology, and fire frequency generally determine the species composition of an area, and that areas which 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.

At the point in time when the park's natural communities have reached their desired future condition, they are considered to be in a maintenance status and share certain basic characteristics and management requirements. These include the maintenance of the optimal fire return intervals for fire dependent communities, the maintenance control of non-native plant and animal species, the maintenance of natural hydrological functions (including historic water flows and water quality), the maintenance of proper vegetative structure that represents the natural diversity of the community, the maintenance of healthy populations of plant and wildlife species (including those that are imperiled or endemic), and the maintenance of intact ecotones between natural communities across the landscape.



Legend

- AF - Alluvial Forest 32.64 ac.
- BF - Bottomland Forest 46.68 ac.
- BST - Blackwater Stream 4.24 ac.
- CD - Canal/Ditch 0.27 ac.
- CL - Clearing/Regeneration 6.12 ac.
- DV - Developed 6.83 ac.
- FS - Floodplain Swamp 3.51 ac.
- MF - Mesic Flatwoods 13.24 ac.
- PP - Pine Plantation 10.66 ac.
- SHF - Successional Hardwood Forest 7.45 ac.
- SK - Sinkhole 0.068 ac.
- SKLK - Sinkhole Lake 3.52 ac.

The park contains eight 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.

BLACKWATER STREAM

Description and assessment: The St. Marks River and its associated drainages are classified as blackwater stream features. These elements are present in the northern section of the park before the river submerges below the natural bridge in addition to the tributary flowing through the Gerrell Tract. Shorelines of the tributary are fringed with alluvial forest along its length; the river banks in zone 5 may either be bordered with alluvial forest or relatively steep shorelines. As mentioned above, water quality at this point of the river is generally good, though impacts from upstream urban runoff originating in Tallahassee may increase with expanding population. A variety of wildlife (e.g., alligators, wading birds, turtles) may be viewed on the water surface or along the shorelines. Several aquatic emergent plant species, which seasonally develop impressive flowers, can be observed along the shorelines [e.g., grassy arrowhead (*Sagittaria graminea*), spider-lily (*Hymenocallis rotata*), pickerelweed (*Pontederia cordata*), green arrow arum (*Peltandra virginica*)]. Duckweed and marsh pennywort occasionally cover large expanses of the water surface where flow is limited, and scatterings of American white waterlily (*Nymphaea odorata*) may be present. Hydrilla (*Hydrilla verticillata*) and water lettuce (*Pistia stratioides*) are problematic in the river near zone 5, the sinkhole lakes, and some of the canal segments. Water hyacinth (*Eichhornia crassipes*) occurs on the tributary shores or in its open water; hydrilla is found in this tributary as well.

Desired future condition: Characterized as perennial or intermittent watercourses originating in lowlands where extensive wetlands with organic soils collect rainfall and runoff, discharging it slowly to the stream. The stained waters are laden with tannins, particulates, and dissolved organic matter derived from drainage through adjacent swamps resulting in sandy bottoms overlain by organic matter. Emergent and floating vegetation may occur but is often limited by steep banks and dramatic seasonal fluctuations in water levels. Desired conditions include minimizing disturbance and alterations and preserving adjacent natural communities.

General management measures: Control of aquatic exotic plants is the most pressing issue affecting the ecological health of the river and its tributaries. Arrangements have been made with the FWC Invasive Plant Management Section for them to assist the park staff with herbicidal applications given the difficulty of treating extensive infestations in the water column. Staff should also monitor shorelines against the establishment of other exotic plants, such as wild taro (*Colocasia esculenta*) or purple sesban (*Sesbania punicea*). These shorelines should also be monitored for erosion and a management plan drafted for corrective action if necessary.

SINKHOLE LAKE

Description and assessment: A number of sinkhole lakes occur on the Rakestraw Tract. These sinkhole lakes may also be referred to as karst windows since they are essentially water caves in the limestone with flow inputs and outputs while lacking a ceiling. The historic canals were excavated in order to link existing sinkhole lakes together to create a waterway across the natural bridge. There is wide variation in terms of the sinkhole lake attributes. The smallest is just east of the Green House and is about the size of a vehicle; the largest is a horseshoe-shaped lake just a short distance further to the northeast (~ 0.8 acres). Shorelines may be very gradual so as to possess negligible slope or consist of vertical walls climbing about eight feet above the water. These features can be fringed with dense thickets of woody plants or bordered with sparsely vegetated clearings; a sinkhole lake near the Green House has a wooden viewing platform constructed on the steep bank before the DRP acquired the property. The sinkhole lakes also differ in their depths, in possessing calm versus strong currents [and thus their tendency to support duck weed (*Lemna* sp.) in the open water], and water clarity (clear blue versus blackwater depending on the proportion of aquifer water present). They generally drop off too abruptly to support many shallow water plants, but commonly harbor duck weed and marsh pennywort (*Hydrocotyl* sp.) on their surfaces. Their shoreline vegetation is typically reflective of the surrounding terrestrial communities. A steep walled sinkhole lake just south of the horseshoe-shaped lake has two pink azalea (*Rhododendron canescens*) individuals growing along its northern shore. Unfortunately, this same lake also currently supports an extensive monoculture of water lettuce (*Pistia stratioides*); park staff have been cooperating with FWC Invasive Plant Management Section personnel to treat this infestation, which presents significant logistical difficulties in terms of access on account of its limited size and steep walls. Hydrilla also occurs in multiple sinkhole lakes. Erosion is another issue affecting the shorelines. Most of the sinkhole lakes appear to have experienced a negligible loss of soil from their edges. However, the sinkhole lake nearest to the northwestern corner of the Rakestraw Tract, in the vicinity of the property's entrance gate, has experienced soil loss from its rather steep shoreline; the lack of vegetative groundcover around this feature is a significant contributor. On the other hand, the sinkhole lake with the pink azalea / water lettuce is eroding on a small portion its very steep northern bank, adjacent to a canal segment. Anecdotal observations suggest that very high water events following heavy rains may cause strong currents to flow through the canal system with the turbulence of impacting the slower, deeper water in the lake reducing that shoreline. However, this phenomenon likely results from the altered hydrology resulting from the past canal excavation, and any corrective action that may be undertaken must preserve this cultural resource.

Desired future condition: Relatively permanent and typically deep lake that may be characterized by clear water with a high mineral content formed in depressions within a limestone base. Vegetative cover may range from being completely absent, consisting of a fringe of emergent species, or being completely covered with floating plants. Desired conditions include minimized disturbances that cause unnatural erosion and reduced pollution to the connected aquifer system.

General management measures: Park staff will continue to work with FWC IPMS in order to control the aquatic exotic plants occurring in the sinkhole lakes. Since the first treatment (2011) of the water lettuce monoculture mentioned above was only able to treat about half of this coverage due to logistical constraints, park staff plan to experiment with the feasibility of manual removal and disposal at a location that would not reintroduce this pest to other areas. FWC IPMS will also return to attempt different strategies for this particular infestation. Hydrilla and water hyacinth will also be more intensively targeted in the future. In order to prevent further erosion on the sinkhole lake shoreline nearest the metal gate, native vegetation should be planted to restore the groundcover and resist soil loss. Other bare shorelines should also be revegetated according to a restoration plan drafted for that purpose. Another measure would be to fence or otherwise cordon off some of the steeper and denuded banks from pedestrian access in order to arrest further deterioration. Barriers from entry would also serve to prevent visitors from swimming in these lakes, which present significant safety hazards from alligators or strong currents flowing into aquatic caves. As a further measure to conserve natural and cultural resources, the park staff intends to promote activities such as hiking or bird watching and prevent fishing from the sinkhole lakes on the Rakestraw Tract. Staff will monitor the erosion on the steep walled sinkhole lake mentioned above with photo points; this would enable for it to be demonstrated whether the erosion is progressive and if the canal's integrity would be compromised by further soil loss. If corrective action is deemed necessary, the complexity involved in this effort would require the hiring of contracted experts to initiate a restoration project.

SINKHOLE

Description and assessment: Two sinkholes are located between the monument and the river. Unlike the predominant karst features on the Rakestraw Tract, these depressions are too shallow to hold perennial water reserves and are frequently dry, only holding rainwater for a period following storms. As the features are lined with sand, they do not provide the degree of moisture typical of sinkholes with seepage from limestone walls, which can support a suite of more mesic herbaceous species. Dense shade from the tree and shrub canopy also prevents the development of significant groundcover; much of the bottom surface is covered with decaying leaves. For the most part, species found in these sinkholes are reflective of those abundant in the locality. The major exception to this pattern is the presence of several pink azalea (*Rhododendron canescens*) individuals, which are listed by FDACS as Commercially Exploited, around the upper rim. Other plant species occurring here include laurel oak (*Quercus hemisphaerica*), horse sugar (*Symplocos tinctorum*), deer berry (*Vaccinium stamineum*), American holly (*Ilex opaca*), slash pine (*Pinus elliotii*), sparkleberry (*Vaccinium arboreum*), live oak (*Quercus virginiana*), sweet gum (*Liquidambar styraciflua*), fetterbush (*Lyonia lucida*), saw palmetto (*Serenoa repens*), water oak (*Quercus nigra*), giant cane (*Arundinaria gigantea*), and greenbrier (*Smilax pumila*).

Desired future condition: Sinkholes are characterized by cylindrical or conical depressions with limestone or sand walls. Sinkholes do not contain standing water for long periods of time as do Sinkhole Lakes. Depending upon the age of the

sinkhole, the vegetation of sandy sinkholes may represent a well-developed forest species including southern magnolia, sweetgum, wax myrtle, grape vines, Virginia creeper, water oak, and pignut hickory. Sinkholes with vertical limestone walls may be covered by a variety of mosses, liverworts, ferns and small herbs. Sinkholes will generally have a very moist microclimate due to seepage and being buffered by the lower elevation and a tree canopy. Desired future conditions include limited unnatural erosion and protection of the microclimate from disturbance.

General management measures: Monitoring for exotic species and erosion will continue. Fortunately, the dense woody vegetation in and around the sinkhole will prevent the loss of soil.

FLOODPLAIN SWAMP

Description and assessment: The floodplain swamps occurring in the park consist of portions of larger expanses of this community type extending into other properties. The stand occurring at the southwest corner of the park occupies the majority of swamp acreage with the very tip of another swamp present along the southern boundary of zone 4. There is wide variation in degree of flooding in the southwest corner swamp. The deepest portions of the depression would hold water throughout most seasonal conditions and would only dry out when precipitation is very scarce. The periphery would experience alternating wetting and drying as the water pool expands and contracts throughout the year. The canopy is dominated by mature and medium-sized trees, including bald cypress (*Taxodium distichum*), sweet gum (*Liquidambar styraciflua*), and black gum (*Nyssa sylvatica*); younger trees are lacking, indicating low levels of new recruitment in at least the relatively recent past. Midstory trees and shrubs are insignificant components of this community and the relatively sparse groundcover toward the periphery is dominated by giant cane (*Arundinaria gigantea*). A powerline corridor follows the western park boundary in zone 3 and all trees have been cleared along this strip measuring about 15 feet in width.

Desired future condition: Frequently or permanently flooded community in low lying areas along streams and rivers. Soils consist of a mixture of sand, organics, and alluvial materials. Closed canopy typically dominated by bald cypress, but commonly includes tupelo species as well as water hickory, red maple, and overcup oak. Trees bases are often buttressed. Understory and groundcover are typically sparse.

General management measures: Preventing the establishment of exotic plants and removal of exotic animals when encountered are priority management goals for this community. Periodic surveys of this area should be undertaken to locate and treat invasive plants if they are encountered. Given the hydrological connectivity of the swamps across boundary lines, park staff should remain aware of changes in land use on adjacent properties that could affect water quality and degrade the park's swamp habitats. Cooperation with adjacent landowners would assist with monitoring issues that may impact water quality.

BOTTOMLAND FOREST

Description and assessment: The bottomland forest is in very good condition and contains multiple trees of exceptional girth and height. It primarily occurs adjacent to the alluvial forest stands at a slightly higher elevation so as to make flooding a relatively infrequent event. It also borders sections of the sinkhole lake / canal system running along the north-south axis of the Rakestraw Tract where the shoreline is more abrupt. This is a fairly diverse community possessing a plentiful variety of woody plants and substrate conditions. Undulations in the ground surface serve to provide varied moisture regimes to the vegetation, greatly contributing to intra-community habitat heterogeneity. The stand on the Rakestraw Tract (zone 4) contains several slight depressions that temporarily hold standing water following heavy rains, but effective evaporation prevents sustained hydric conditions for at least part of the year. Given the uneven surface and localized lack of a consistent grade toward the river, these depressions are the end points for surface drainage in portions of the stand. On the other hand, the stand on the Gerrell Tract (zone 6) forms a transition zone band between alluvial forest and the drier flatwoods. This stand occupies a perceptible drop in elevation that is consistent and fairly narrow along its central and southern portions while the northern portion has more of the undulating character as the stand west of the tributary, though with more direct drainage into the alluvial forest. Canopy cover is fairly consistent throughout the stand, though the age distribution and spacing of individual trees is variable. Unlike the alluvial forest with its rather dense stands of mostly young trees, open spaces below the canopy are locally plentiful. Mature trees of multiple species, both hardwood and conifer, are well represented. Shrub coverage varies with denser clumping along the sinkhole lake / canal complex and in some transitional areas with the mesic flatwoods on the Gerrell Tract, which supports saw palmetto thickets on these higher topographies; dwarf palmetto may be observed growing more sparsely in the lower, wetter areas. Herbaceous groundcover plants are somewhat scattered with some localized clumping. Plant species observed in this community include swamp chestnut oak (*Quercus michauxii*), white oak (*Quercus alba*), American beech (*Fagus grandifolia*), blue beech (*Carpinus caroliniana*), sweet gum (*Liquidambar styraciflua*), spruce pine (*Pinus glabra*), slash pine (*Pinus elliotii*), water oak (*Quercus nigra*), black gum (*Nyssa sylvatica*), American holly (*Ilex opaca*), red bay (*Persea borbonia*), sugarberry (*Celtis laevigata*), sweet bay (*Magnolia virginiana*), pignut hickory (*Carya glabra*), southern magnolia (*Magnolia grandiflora*), loblolly bay (*Gordonia lasianthus*), southern arrowwood (*Viburnum dentatum*), saw palmetto (*Serenoa repens*), dwarf palmetto (*Sabal minor*), northern bayberry (*Myrica caroliniensis*), woodvamp (*Decumaria barbara*), bully (*Sideroxylon* sp.), slender woodoats (*Chasmanthium laxum*), leathery rush (*Juncus coriaceus*), soft rush (*Juncus effusus*), cinnamon fern (*Osmunda cinnamomea*), maidencane (*Panicum hemitomom*), and basketgrass (*Oplismenus hirtellus*).

While this community is in very good condition, some anthropogenic influences and disturbances are evident in limited locations. A dirt access road and separate powerline corridor traverse the park property to the private inholding (the Lawhon property). Abandoned deer stands of various constructions and levels of disrepair occur sporadically on both sides of the tributary. Several large diameter tree

stumps are found in the zone 6 bottomland forest stand, indicating past selective logging activity in the relatively recent past. In the vicinity of the stumps, there is a fallow two track access route leading from the flatwoods into the bottomland forest before it abruptly terminates just prior to the alluvial forest ecotone; at this terminus, the ruts get progressively deeper and hold significant quantities of water.

Desired future condition: A fairly low lying, mesic community prone to periodic flooding. Vegetation consists of a mature closed canopy of deciduous and evergreen trees. Overstory species consists of species such as sweetgum, sweetbay, water oak, live oak, swamp chestnut oak, loblolly pine, and spruce pine. Under story may be open or dense. Understory species typically include wax myrtle, saw palmetto, and buttonbush. Presence of groundcover is variable and may consist of woodoats and various sedges.

General management measures: Since the community is already in maintenance condition, the primary necessity to retain this quality consists of keeping it free of exotic plants and animals. Periodic surveys of this area should be undertaken to locate and treat invasive plants as they are encountered. Exotic animals, especially armadillos, should be removed when observed. The rutted access road terminus mentioned above should be restored so that the soil at that location assumes the natural grade of the surface around it, preventing any significant hindrances to natural hydrology. A plan should be drawn up that seeks to fill the ruts with compatible fill material and reduce adjacent mounding in order to reestablish a level grade toward the alluvial forest. The problematic area consists of about a 30 meter length east from the terminus.

ALLUVIAL FOREST

Description and assessment: Alluvial forest occurs in several locations in proximity to the river with the largest expanse occurring along both shores of the tributary flowing through the Gerrell Tract and several smaller areas in the northwest section of the park. This community is in good condition. As with the bottomland forest, very slight differences in surface topography influence the frequency of flooding. A matter of inches in the alluvial forest can translate into soil that is waterlogged for much of the year. As would be expected, rivulets and pools of standing water become more common as one travels toward the tributary. Crawfish chimneys are abundant elements distributed throughout this community. Cypress knees are also very common ground features; in addition to bald cypress, other hardwood tree species contribute to a diverse canopy. Massive and medium-sized trees occur scattered throughout this assemblage, though the majority of individuals are young, slender trees. Most of the canopy is occupied by deciduous trees, resulting in a high degree of light penetration to the surface during the cooler months of the year. Nonetheless, groundcover plants and shrubs are relatively sparse over the leaf strewn forest floor and present few hindrances to walking where the ground is firm. Much of the riverbank is accessible since shrubs and small trees are not particularly dense at most locations. Significant signs of past anthropogenic disturbance are not particularly evident: fallen tree trunks are occasionally encountered, but cut stumps were not apparent; significant soil disturbance, aside from moderate hog damage, was not observed. Plant species observed here include

bald cypress (*Taxodium distichum*), blue beech (*Carpinus caroliniana*), sweet gum (*Liquidambar styraciflua*), black gum (*Nyssa sylvatica*), American holly (*Ilex opaca*), red maple (*Acer rubrum*), swamp bay (*Persea palustris*), black willow (*Salix nigra*), witchgrass sp. (*Dichanthelium* sp.), marsh ladiestresses (*Spiranthes odorata*), crossvine (*Bignonia capreolata*), violet (*Viola* sp.), green arrow arum (*Peltandra virginica*), netted chain fern (*Woodwardia areolata*), and sedges.

Desired future condition: Seasonally flooded, closed canopy, hardwood forest that occurs on ridges or slight elevations within the floodplain of alluvial rivers. Typical overstory trees may include water hickory, American elm, sweetgum, Carolina ash, and red maple. Understory species may include swamp dogwood, willow species, and black cherry. Presence of groundcover is variable. Species such as netted chain fern and other shade tolerant herbaceous species may be present.

General management measures: Since the community is already in maintenance condition, the primary necessity to retain this quality consists of keeping it free of exotic plants and animals. Periodic surveys of this area should be undertaken to locate and treat invasive plants as they are encountered. Scattered water hyacinth (*Eichhornia crassipes*) was observed along the river bank between zones 4 and 6; these individuals were treated in fall 2011 and should be retreated when they reestablish. Since water hyacinth clumps occur in the tributary's open water beyond the reach of someone standing on the shore, this species will continue to recruit to the shoreline until they are controlled in the river. Despite the presence of standing water pools and rivulets along a band bordering the river, no water hyacinth was observed away from the immediate shoreline. Exotic animals, especially armadillos and feral hogs, should be removed when observed.

MESIC FLATWOODS

Description and assessment: Mesic flatwoods occur along the northern portion of the Gerrell Tract's eastern boundary and are in fair to good condition. The sparse canopy is dominated by slash pine, but longleaf pines are also represented; pine seedling recruits were observed, indicating ongoing reproduction. While small, discrete patches of young hardwood trees occur in several areas, most of the community has saw palmetto and herbaceous groundcover characteristics consistent with well maintained mesic flatwoods, suggesting that some degree of prescribed fire had likely occurred sometime in the past. However, an infrastructure of firelines may need to be constructed before prescribed burning could be conducted by the park staff as determined in preparation of a burn plan. The community borders fire resistant communities to the west (bottomland forest) and north (bald cypress dominated dome swamp off the property). As a result, these boundaries possess a transition zone with higher young hardwood densities than are generally found in the three communities' interiors. The southern fringe bordering the pine plantation gradually assumes a more xeric character with proximity to the edge. While signs of disturbance are evident, they do not significantly degrade the community as a whole. The most obvious indication is a limited area adjacent to Jim French Road where some of the pines had been felled in the past. Deep ruts are also infrequently observed in the soil surface in some

locations not proximal to any current access roads. Plant species observed here include slash pine (*Pinus elliottii*), longleaf pine (*Pinus palustris*), American holly (*Ilex opaca*), saw palmetto (*Serenoa repens*), staggerbush (*Lyonia fruticosa*), fetterbush (*Lyonia lucida*), water oak (*Quercus nigra*), laurel oak (*Quercus hemisphaerica*), wiregrass (*Aristida stricta*), yellow jessamine (*Gelsemium sempervirens*), shiny blueberry (*Vaccinium myrsinites*), broomsedge (*Andropogon* sp.), pineywoods dropseed (*Sporobolus junceus*), St. John's wort (*Hypericum* sp.), dwarf live oak (*Quercus minima*), bracken fern (*Pteridium aquilinum*), wax myrtle (*Myrica cerifera*), deer berry (*Vaccinium stamineum*), dwarf huckleberry (*Gaylussacia dumosa*), yellow eyed grass (*Xyris* sp.), and elephant's foot (*Elephantopus* sp.).

Desired future condition: Dominant pines in northern Florida are longleaf pine. With the region's history of logging, longleaf pines have mostly been replaced with slash pines. Native herbaceous groundcover is over at least 50 percent of the area and is less than 3 feet in height. Saw palmetto/ shrub component comprises no more than 50 percent of total shrub species cover, and are less than 3 feet in height. Shrub species include saw palmetto, gallberry, fetterbush, runner oak, dwarf live oak, shiny blueberry and dwarf huckleberry. Shrubs are generally knee-high or less, and there are few if any large trunks of saw palmetto along the ground.

General management measures: Reintroducing prescribed fire into the mesic flatwoods is the highest priority toward enhancing then maintaining the ecological quality of this community. A burn plan will be drafted that would address the steps necessary to establish an effective infrastructure of firelines. Planting longleaf pines in the disturbed area off Jim French Road would restore the flatwoods canopy in that location. Monitoring for exotic species and erosion issues should be undertaken.

PINE PLANTATION

Description and assessment: A pine plantation (Altered Landcover Type) occurs just south of the mesic flatwoods along the Gerrell Tract's southeastern corner. The canopy is dominated by rows of well-spaced slash pines (~ 30-40 feet tall) running north to south. Despite this alteration, portions of the natural groundcover are remarkably well preserved; scattered remnant hardwood trees are present in the rows. The presence of several indicator species (turkey oak, sand live oak, sand post oak) as well as soil cores showing sandy soils down to several feet suggest that this area had once supported a sandhill community. Groundcover remnants of that community are most intact toward the northern and western portions and appear to be capable of effectively carrying fire. The southern boundary and the eastern portions near Jim French Road are more ruderal in character, dominated by dog fennel and turf grass. Plant species observed here include slash pine (*Pinus elliottii*), turkey oak (*Quercus laevis*), sand live oak (*Quercus geminata*), sand post oak (*Quercus margaretta*), laurel oak (*Quercus hemisphaerica*), water oak (*Quercus nigra*), sweet gum (*Liquidambar styraciflua*), yaupon (*Ilex vomitoria*), wax myrtle (*Myrica cerifera*), sparkleberry (*Vaccinium stamineum*), tall jointweed (*Polygonella gracilis*), croton (*Croton* sp.), yellow jessamine (*Gelsemium sempervirens*),

wiregrass (*Aristida stricta*), dropseed (*Sporobolus* sp.), broomsedge (*Andropogon* sp.), narrow leaf silkgrass (*Pityopsis graminifolia*), witchgrass (*Dichantherium* sp.), shiny blueberry (*Vaccinium myrsinites*), dwarf live oak (*Quercus minima*), running oak (*Quercus pumila*), southern dewberry (*Rubus trivialis*), and dog fennel (*Eupatorium capillifolium*).

Desired future condition: The pine plantation will be managed to minimize any adverse effects on adjacent natural areas. Priority invasive plant species (EPPC Category I and II species) will be removed from the pine plantation if encountered.

General management measures: This area will be monitoring for exotic species and erosion issues. A restoration plan will also be drafted that describes management actions necessary to return this altered landcover type to the natural community sandhill. Aspects of this plan would involve the introduction of prescribed fire and planting of longleaf pine as well as groundcover species. Longleaf pine planting would proceed episodically over the long term in order to restore the dominance of this species in the canopy while providing for the spacing of individuals and heterogeneity in age and size classes typical in a natural stand. Groundcover vegetation is in good condition in portions of the stand but may need to be augmented where dog fennel and turf grasses are predominant. The slash pine can be retained as is since they have already undergone thinning at some point in the past and their needle cast would be crucial for the even burning of the stand. Park staff should periodically monitor the slash pines for any evidence of a significant infestation by pine beetles or other pests that could damage this stand of timber or progress to a more serious problem with potential to spread to other trees in the area. In the event of a suspected infestation, park staff should notify district biologists and seek advice on possible remedies from the Florida Forest Service or other forestry contractors charged with this duty.

SUCCESSIONAL HARDWOOD FOREST

Description and assessment: Successional hardwood forest (Altered Landcover Type) is the best descriptor for this community type, which occurs between the clearing and the developed area occupied by the 1986 River House and the 1964 House. In its natural condition, this area appears to have been likely a flatwoods or sandhill community, but fire suppression and land use practices have allowed for many hardwood trees [e.g., water oak (*Quercus nigra*), laurel oak (*Quercus hemisphaerica*), sweet gum (*Liquidambar styraciflua*), southern magnolia (*Magnolia grandiflora*)] to grow amidst the remnant slash pines (*Pinus elliottii*). The presence of turkey oak (*Quercus laevis*) individuals near the clearing suggests a sandhill proclivity at one time for the northern fringe area. Other species observed in this community include saw palmetto (*Serenoa repens*), shiny blueberry (*Vaccinium myrsinites*), bracken fern (*Pteridium aquilinum*), dwarf live oak (*Quercus minima*), sparkleberry (*Vaccinium arboreum*), narrowleaf silkgrass (*Pityopsis graminifolia*), and broomsedge (*Andropogon* sp.). Groundcover is highly variable, alternating between sparse vegetation on sandy soil to dense saw palmetto thickets. There is a relatively deep depression (~ 4 to 5 feet) with thick vegetation south of the clearing that may have been excavated in the past.

Desired future condition: The successional hardwood forest will be managed to minimize any adverse effects on adjacent natural areas. Priority invasive plant species (EPPC Category I and II species) will be removed from the community if encountered.

General management measures: This area appears to be an amalgam of disparate associations and influences and is now somewhat ruderal in character. Especially with its location adjacent to a public use area (battle reenactments in the clearing) as well as the staff housing / shop area and with other higher priority restoration / prescribed fire actions to initiate on the Gerrell Tract, directed management toward a natural community type is not planned for this cycle. The scarcity of groundcover fuel materials in some areas may make an even burn challenging, though staff may elect to burn well vegetated sections in order to reduce brush, if necessary. Monitoring for exotic species and erosion will continue.

CLEARING

Description and assessment: A clearing (Altered Landcover Type) occurs north and south of the Green House in areas between the some of the sinkhole lakes. South of the house lies an open expanse dominated by bare sand with very sparse native vegetation. Several mature pine and hardwood trees dot the area with most other herbs and woody saplings being about a foot or less tall; lichens (e.g., *Cladonia* sp.) and soil crusts also occur intermixed with the scant vegetation. Plant species found here include sand live oak (*Quercus geminata*), slash pine (*Pinus elliotii*), American holly (*Ilex opaca*), shiny blueberry (*Vaccinium myrsinites*), saw palmetto (*Serenoa repens*), narrow leaf silkgrass (*Pityopsis graminifolia*), Adam's needle (*Yucca filamentosa*), prickly pear (*Opuntia humifusa*), and scattered wiregrass (*Aristida stricta*).

The clearing north of the Green House has a very different character. It is mostly lower elevation, wetter, covered with small ruderal grasses and herbs, and supports a mature canopy of pines and hardwoods. Clearing is not an optimal descriptor for this area, but it provides the best choice of those at hand. This area is essentially a degraded forest with an intact overstory, but underlain by groundcover that serves as a lawn. Since this clearing occurs on the nexus of the battlefield, there are no plans to restore this area to a natural community and instead retain its current condition as an interpretive area.

Desired future condition: The clearing will be managed to minimize any adverse effects on adjacent natural areas. Priority invasive plant species (EPPC Category I and II species) will be removed from the clearing if encountered.

General management measures: Monitoring for erosion of soil into the sinkhole lakes and removal of exotic plants and animals when encountered will continue.

CANAL

Description and assessment: One of the most significant cultural features of the park is the system of canal (Artificial Landcover Type) segments that originally served to provide shallow water linkages between the sinkhole lakes on the Rakestraw Tract over the 0.6 mile natural bridge. Lacking the width and water depth necessary for the passage of sizeable boats, this route was likely excavated in the 19th century for the passage of logs down the river (Gerrell 2000; Arbuthnot, et al. 2010); this canal and associated spoil piles on either side played a significant role in the Civil War battle (Graetz 1986). Attributes of the individual canal segments vary. Those toward the north or south end of the route tend to be wider and deeper with abundant water flow while central sections tend to be shallower with only trickles at their bottoms; the segment north of the culvert crossing toward the Lawhon property held no standing water and was filled with cypress knees at time of observation. Vegetation is not particularly plentiful in the canals, though marsh pennywort (*Hydrocotyl* sp.) and duck weed (*Lemna* sp.) are occasionally present and water lettuce (*Pistia stratioides*) occurs sparingly in the first three segments where it washes out from the sinkhole lakes upstream. Along with the culvert crossing, remnants of a couple spillways (~ 50 years old; Arbuthnot, et al. 2010) may be observed in the canals. One central section has its western fringe flush with the clearing soil surface and a narrower / shallower profile than the others; that spoil pile appears to have either collapsed or been pushed into the canal at some point in the past.

Desired future condition: The canals will be managed to minimize any adverse effects on adjacent natural areas. Priority invasive plant species (EPPC Category I and II species) will be removed from the canals if encountered. Erosion from these cultural features will be monitored and remedied if necessary.

General management measures: Exotic plants (e.g., water lettuce, hydrilla) should be treated when observed in the canals in conjunction with the treatment of the sinkhole lakes. Progressive erosion should be monitored for and corrected if necessary.

DEVELOPED

Description and assessment: The park acquired three residences when it assumed ownership of the Rakestraw Tract. The two southerly residences (1986 River House and 1964 House) are currently used to house staff members. The northerly residence (1986 Green House) is currently unoccupied and will likely be dedicated to a utilitarian purpose in the future (e.g., an office, park interpretive center). The original parcel (zones 1 and 5) contains a parking lot, bathroom facilities, the battlefield monument, and access corridors linking these together. A trailer also used as a staff residence is accessed by a driveway located north of Natural Bridge Road and the monument.

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 plant species (EPPC Category I and II species) will be removed from all developed areas. Other management measures include proper stormwater management and development guidelines that are compatible with prescribed fire management in adjacent natural areas.

General management measures: The developed areas should be monitored for exotic species and erosion issues.

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 (FWC) or the Florida Department of Agriculture and Consumer Services (FDACS) as endangered, threatened or of special concern.

Multiple imperiled animal species have been sighted at the park. Wood storks are occasionally observed flying over the park and roosting in the branches of tall trees surrounding the water bodies. Little blue herons may be observed wading along the shallower shores. Maintaining the emergent vegetation along shorelines and good water quality is important for the continued health of wading bird populations. While it is no longer federally listed as threatened, a bald eagle nest was located in the canopy of a tree along the tributary forming the boundary between zones 4 and 6. Park staff will monitor occupancy of the nest and strive to prevent conflicts if they are identified. Suwannee cooters and alligator snapping turtles are occasionally observed along segments of the river or the canals. Habitat quality for the cooters is enhanced when they have sufficient waterborne logs to rest upon, so these logs should be retained in place. American alligators have been seen floating on the water surface; one may observe a half dozen or more individuals of varying ages in the park's larger water bodies. Education and outreach to visitors about the dangers of feeding alligators is important to prevent the alteration of their normal behavior and conflicts with humans. Maintaining good water quality is very important to these water dwelling reptiles as well as the wading birds. Prevention of fishing within the Rakestraw tract would reduce contact between humans and animals and potentially promote the local abundance of their food resources.

Gopher tortoises are known to nest in some parcels adjacent to the park. Multiple burrows are present on the forested property west of the park, which is underlain by a gently sloping sand ridge; a burrow was also located just south of the park boundary on the Gerrell tract. In late winter 2010, park staff found an active burrow in the vicinity of the Green House; this tortoise was visually estimated to weigh about two pounds. Individuals from the off-site burrows are occasionally observed foraging in the park. According to the 2007 FWC gopher tortoise management plan, sufficient home range extent should include at least 40 contiguous acres of suitable habitat. While the Rakestraw tract habitat is too marginal or unsuitable to support a relocation effort, the drier stands in the Gerrell tract (along with adjacent undeveloped acreage on the Gerrell plantation) would likely provide favorable habitat for reintroduction as the ecological quality and

availability of forage items in the pine plantation increases with time as the restoration proceeds. If staff determines in the future that a relocation effort is warranted, a management plan for this course of action will be drafted.

There was one sighting of a black bear in front of the 1964 House during summer 2009. As the park is surrounded by large areas of undeveloped land, this bear must have been a transient from the wildlife corridor in the vicinity. Maintenance of habitat quality and function within the park would benefit the persistence of the regional population by providing for abundant resources at this point in the corridor. Trash cans at the park should be bear-proof to avoid habituating these animals to humans and their resources. If bears are frequently observed at the park, staff should consider the need to erect signage to warn visitors about proper precautions.

Pink azalea (*Rhododendron canescens*), listed by FDACS as commercially exploited (CE), was observed in two locations: along the northernmost dry sinkhole on the original parcel (zone 5) and adjacent to the steep walled sinkhole lake (also the site of the extensive water lettuce infestation) on the Rakestraw tract. One individual was located at the former site and two individuals were found adjacent to the northern shoreline of the latter location. The most important measure to preserve these individuals is to maintain a buffer from visitor impacts. The couple azaleas on the Rakestraw tract have a steep drop into the water on one side and a very dense saw palmetto clump on the other side, making access to them relatively difficult. On the other hand, there is a slight unofficial trail running alongside the large azalea fringing the dry sinkhole. This trail follows the river's course and appears to be seldom used; nonetheless, park staff should close this trail by piling woody debris at its entrance and discouraging visitor use to allow vegetative regrowth. Cinnamon fern (*Osmunda cinnamomea*) was observed in the bottomland forest in zone 4; no management measures are necessary for this species aside from ensuring that no individuals are removed by park visitors, which also applies to all other resources in the park.

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
	FWC	USFWS	FDACS	FNAI		
PLANTS						
Pink azalea <i>Rhododendron canescens</i>			CE		2,10	Tier 1
Cinnamon fern <i>Osmunda cinnamomea</i>			CE		2,10	Tier 1
REPTILES						
American alligator <i>Alligator mississippiensis</i>	LS	T (S/A)		G5/S4	2,10,13	Tier 1
Gopher tortoise <i>Gopherus polyphemus</i>	LS			G3/S3	2,10	Tier 1
Alligator snapping turtle <i>Macrolemys temminckii</i>	LS			G3G4/S3	2,10	Tier 1
Suwannee cooter <i>Pseudemys concinna suwaniensis</i>	LS			G5T3/S3	2,10	Tier 1
BIRDS						
Little blue heron <i>Egretta caerulea</i>	LS			G5/S4	2,10,14	Tier 1
Wood stork <i>Mycteria americana</i>	LE	LE		G4/S2	2,10,14	Tier 1
MAMMALS						
Black bear <i>Ursus americanus</i>	LT			G5T2,S2	2,10	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 & Education
14. Other

Monitoring Level:

- Tier 1. Non-Targeted Observation/Documentation: includes documentation of species presence through casual/passive observation during routine park activities (i.e. not conducting species specific searches). Documentation may be in the form of *Wildlife Observation Forms*, or other district specific methods used to communicate observations.
- Tier 2. Targeted Presence/Absence: includes monitoring methods/activities that are specifically intended to document presence/absence of a particular species or suite of species.
- Tier 3. Population Estimate/Index: an approximation of the true population size or population index based on a widely accepted method of sampling.
- Tier 4. Population Census: A complete count of an entire population with demographic analysis, including mortality, reproduction, emigration, and immigration.
- Tier 5. Other: may include habitat assessments for a particular species or suite of species or any other specific methods used as indicators to gather information about a particular species.

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

Exotic and Nuisance Species

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

There are no known persistent infestations in the developed areas or terrestrial natural communities. Mimosa saplings are occasionally located by park staff in the vicinity of Natural Bridge Road and the public use area, which are then treated. The Green House had plantings of lantana (*Lantana camara*) and border grass (*Liriope spicata*) at time of acquisition, but these plants have been removed. There are other non-native ornamental species (e.g., *Rhododendron formosa*, *Caladium bicolor*) planted around this house and lining the access road to the Lawhon property that should be considered for removal; although these species are not invasive, the DRP is working to replace exotic landscaping with native varieties as is more appropriate for cultural and natural resource conservation and interpretation.

Aquatic exotic plants pose a more significant issue for the park, having entered via the St. Marks River corridor, and would likely overwhelm those aquatic habitats over time if not controlled. Hydrilla (*Hydrilla verticillata*) may be located in variable amounts in the main river bordering the original parcel, in the tributary flowing through the Gerrell tract, and in many of the sinkhole lakes. Water lettuce (*Pistia stratioides*) is occasionally found in abundance in the sinkhole lakes or the canal system. Water hyacinth (*Eichhornia crassipes*) occurs in scattered clumps along the shoreline and in the open water of the tributary, but has not yet been observed in other parts of the park. Given the logistical difficulty of treating exotic plants in the

water bodies and equipment needed, DRP staff have sought assistance from the FWC Invasive Plant Management Section with herbicidal application. IPMS had treated a dense water lettuce infestation in fall 2011 and can return in the future if necessary.

Table 3 contains a list of the Florida Exotic Pest Plant Council (FLEPPC) Category I and II invasive, exotic plant species found within the park (FLEPPC 2011). FLEPPC compiles invasive species lists that are revised every two years. Professional botanists and others perform exhaustive studies to determine invasive exotic plants that should be placed on the lists. Invasive exotic plants are termed Category I when they are altering native plant communities by displacing native species, changing community structures or ecological functions, or hybridizing with natives. This definition does not rely on the economic severity or geographic range of the problem, but on the documented ecological damage caused. Category II invasive exotics have increased in abundance or frequency but have not yet altered Florida plant communities to the extent shown by Category I species. 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. For an inventory of all exotic species found within the park, see Addendum 5.

Table 3. Inventory of FLEPPC Category I and II Exotic Plant Species			
Common and Scientific Name	FLEPPC Category	Distribution	Management Zone
PLANTS			
Mimosa <i>Albizia julibrissin</i>	I	0	
Water hyacinth <i>Eichhornia crassipes</i>	I	3	6
Hydrilla <i>Hydrilla verticillata</i>	I	3	2, 4, 5, 6
Water lettuce <i>Pistia stratiotes</i>	I	0	

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 most 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, gray squirrels, venomous snakes and alligators. Nuisance animals are dealt with on a case-by-case basis.

Park staffers have been removing armadillos from the park, particularly since the addition of the Rakestraw Tract. In sufficient numbers, non-native armadillos can create significant ground disturbance as they root in the soil for prey items and they should be removed as they are encountered. In the course of surveying the Gerrell Tract for this plan, several small areas were observed that indicated moderate soil disturbance by another non-native species, feral hogs. Hogs are capable of doing more significant ecological damage to the soil and native vegetation given their large size and behavior of traveling in packs. A difficulty with controlling hogs is that they range over a large area, far larger than the Gerrell Tract, and their removal is more involved and expensive. Effective control would depend on the cooperation of the adjacent private landowners so that hog trapping could occur over a wider area. If observations suggest that the hogs are doing substantial damage to the resources, then the staff should work with their neighbors to initiate a control project executed by USDA or contractors. Anecdotal observations also suggest that coyotes may occasionally be present on the Gerrell Tract. Alligators present in the park's water bodies have the potential to become nuisance native species, especially if they are fed by and habituated to visitors. As the Rakestraw Tract is not yet open to the public, this has not yet presented a problem. As the public begins to access this area, they should be informed about the danger of feeding or approaching these animals with signage and literature.

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

Aside from the karst features mentioned above, the park has no other significant special natural features.

Cultural Resources

This section addresses the cultural resources present in Natural Bridge Battlefield Historic State Park which may include archaeological sites, historic buildings and structures, cultural landscapes and collections. The Florida Department of State 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 which 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). The following is a summary of the FMSF inventory and the related evaluation of significance.

Prehistoric and Historic Archaeological Sites

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

Description and assessment: There are four sites on the park that are currently listed in the Florida Master Site File (Arbuthnot et al. 2010). The Natural Bridge Battlefield Monument (8LE5730) was erected in 1922 through the sponsorship of the Anna Jackson Chapter of the United Daughters of the Confederacy on the original park parcel using funds appropriated by the state legislature in 1921 (zone 5). It is a 15 foot tall granite column on a stair-stepped pedestal topped with a copper eagle draping a Confederate flag (carved into the stone) over one corner. Each side is imprinted with commemorative text. This monument is surrounded with several rows of paving stones flush with the ground surface, which is itself fringed by several inscribed marble stones. Two of these stones are imprinted with text taken from preexisting brick-constructed monument columns, built in 1919, that once stood on both sides of Natural Bridge Road; an extensive survey report written by Environmental Services, Inc. (ESI; reference is in the first sentence) indicated that no traces of the brick monuments remain and were likely removed in the 1970s in the course of a road project. During this search, two concrete slabs were located east of the present monument; their existence was not previously known, though they likely were associated with a roadside sign long since removed instead of the brick monument. When the copper eagle was taken down for refurbishment in 2011, it was observed that this sculpture was in poor condition as a result of many years of exposure and actually contained bullet holes. Using digital laser technology, the original dimensions were recorded by Division of Historic Resources cultural experts and used as a basis to produce a replica, which has been placed atop the monument. The restoration of the original is in process and is planned to be exhibited in a future protected display of cultural artifacts on site. Preservation work was performed on the deteriorated grout joints in 2012.

Natural Bridge Road (8LE5731) is listed in the FMSF due to its instrumental role in the course of the Civil War battle. This designation primarily refers to that portion lying to the east of the natural bridge geological feature and it follows the original course of the 19th century artery predating the battle and was traversed by the attacking Union army. That portion of the road to the west of the natural bridge, which passed through the defending Confederate lines, has shifted course since the battle and the original roadway is no longer evident as a result of subsequent land use changes. In recent years, a one lane bridge spanning a short section of swamp

habitat to the east of the monument and parking area has been replaced by a two lane bridge.

The canal at Natural Bridge (8LE5732) was constructed sometime in the 19th century to facilitate transport down the St. Marks River over the land masses between the sinkhole lakes where the river flow naturally submerges underground through subterranean caves. Its exact construction date is unknown, though Arbuthnot et al. (2010) argues that it was likely first excavated in the 1830s to facilitate the transport of timber down the river. They arrive at this conclusion as a result of research into the General Land Office files and its inadequate width in sections for watercraft. Gerrell (2000) argues that the canal sections represented an unsuccessful attempt to excavate a route for watercraft transport that became irrelevant after the construction of the Tallahassee-St. Marks Railroad in 1836; he writes that the shallow canal as it exists today was later modified in the 1890s by cypress timber harvesting crews. Spoil piles on either side of the canal likely played an important role in the battle as they would have provided cover to soldiers from incoming gunfire. Arbuthnot et al. (2010) also found indications in two locations along the canal of spillways or dams constructed more than 50 years ago, though within the 20th century judging from the now fragmented construction materials.

FMSF item 8LE188 describes the entire Natural Bridge site in its totality, which extends beyond the present park boundary. Cultural artifacts found therein range across a wide variety of time periods: prehistoric (archaic and unknown), 19th century (especially Civil War), and 20th century. Arbuthnot et al. (2010) report that their phase I archaeological survey yielded many artifacts from this range of historical periods. Their methodology consisted of a pedestrian inspection of the ground surface, subterranean shovel tests on a regularly spaced grid system (small pits excavated at 25 meter intervals in upland areas and sifted through screens) and in “zones of special interest” determined to have a higher likelihood of containing artifacts, and metal detector surveys conducted at varying degrees of intensity based on surface features. Items found included aboriginal lithics (of or relating to stone tools) and pottery shards, civil war munitions, and various modern items (e.g., glass pieces, dinnerware fragments, nails/screws/bolts, coins, fishing items). An extensive literature review from multiple sources and interviews with local residents provided a wealth of information about the context of this site. ESI also recommended deleting two sites previously listed in the FMSF since they describe elements that are fully contained within this item: the natural bridge itself (8LE9) and the Rakestraw Field (8LE5698).

Level of Significance: Arbuthnot et al. (2010) provides a good treatment of the relationship of FMSF elements and their relevance to criteria for possible listing in the National Register of Historic Places. These criteria include “(1) properties that are associated with events that have made a significant contribution to broad patterns of our history; (2) properties that are associated with lives of people significant in our past; (3) properties that embody the distinctive characteristics of a 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 (4) properties that

have yielded, or may be likely to yield, important information in prehistory or history." They have argued that site 8LE5730 may be eligible under criterion 3, site 8LE5731 under criteria 1 and 3, 8LE5732 under criteria 1 and 3, and site 8LE188 is currently listed in the NRHP.

Condition Assessment: Of the cultural items listed in the FMSF, the Natural Bridge Battlefield Monument (8LE5730) requires the most attention in terms of maintenance. Portions of the lettering in the text on the marble slabs are a bit less visually apparent and some of the colors on the surrounding stones (e.g., Confederate and American flags) have faded. However, the overall condition of the monument can be said to be currently good, especially following restoration work in recent years. The condition of the Natural Bridge Road (8LE5731) is good, having been paved in the vicinity of the park in 2007 (Arbuthnot et al. 2010). Likewise, the general condition of the canal (8LE5732) is good, given its advanced age. Finally, given its preservation behind a fence on the Rakestraw Tract and the original tract's management history, that portion of the overall Natural Bridge Site (8LE188) protected by the park is in good condition.

General Management Measures: The DRP plans to locate an expert or organization that specializes in the maintenance of marble monuments of this type, possibly in the vicinity of the Middle Atlantic States where Civil War battlefields are most plentiful. Upgrades to the lettering and surface colors, as mentioned above, would be addressed with assistance and/or consultation with experts. Additionally, the monument and associated sidewalk area would be pressure washed (or other method deemed appropriate by the experts) as needed to clean the marble surfaces. Erecting posts and a chain around the immediate perimeter of the monument may discourage visitors from climbing.

As mentioned, the current Natural Bridge Road surface is new and needs no maintenance at this time; however, this artery is managed by the Leon County Roads Department and outside the purview of the park staff. The historic canal is regularly monitored by park staff for erosion or other problems, which would be addressed if or when the need arose.

It is important to preserve the battlefield and associated natural communities enclosed by the fence surrounding the Rakestraw Tract. The existing fence should be retained to allow controlled public access to this parcel when visitation can be monitored or guided by staff or volunteers. Visitors may explore this area during future guided tours, special events, or upon request. Passive outdoor recreation activities (e.g., bird watching, hiking) would be encouraged but fishing or swimming within the Rakestraw Tract would be discouraged for safety reasons and in order to preserve the steep banks of the various sinkhole lakes and the canal. At this time, the public can arrange for pre-scheduled guided tours of the Rakestraw Tract conducted by park staff or volunteers. Given the park's archaeological sensitivity, staff should attend the Archaeological Resource Management (ARM) training through the Division of Historic Resources to ensure best management practices in treatment of archaeological resources.

Historic Structures

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

Description: There are currently no historic structures in the park.

Collections

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

Description: The collection pertaining to the park is currently in a state of flux as a result of the aforementioned archaeological survey. As mentioned above, an abundance of objects spanning different periods were found as a result of the pedestrian survey and excavations. ESI submitted the objects to the Division of Historic Resources. These items will be itemized and catalogued for the records, at which time a scope of collections statement will be drafted and subsequently approved. Other collections items include paper records (e.g., various historical documents, newspaper clippings, photographs, reports) that may be found within one and a half file cabinet drawers (~ 3.5 cubic feet; climate controlled) at the administrative park office within Lake Jackson Mounds State Park. Artifacts would be on loan from DHR. Paper records are either on loan or have been donated to the park.

Condition Assessment: Any artifacts collected in the course of archaeological investigations should be in a similar state as they were found in, or a better condition if they were subject to restoration efforts. Paper records preserved at the park administrative office are maintained in a good condition and prevented from deterioration by sustaining a stable environment.

General Management Measures: Archaeological and historic artifacts are maintained by DHR within their facility. Aside from preserving the paper documents, there are no specific measures necessary to restore these items.

Detailed management goals, objectives and actions for the management of cultural resources in this park are discussed in the Resource Management Program section of this component. Table 3 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
Natural Bridge Battlefield Monument 8LE5730	20 th Century	Historic site	NR	Good	P
Natural Bridge Road 8LE5731	19 th / 20 th Century	Historic site	NR	Good	P
Canal at Natural Bridge 8LE5732	19 th Century	Historic site	NR	Good	P
Natural Bridge Site 8LE188	Prehistoric, Civil War, 19 th / 20 th Century	Historic site	NR	Good	P

Significance:

NR = National Register eligible

LS = Locally significant

NE = Not evaluated

NS = Not significant

Recommended Treatment:

RS = Restoration

RH = Rehabilitation

ST = Stabilization

P = Preservation

RESOURCE MANAGEMENT PROGRAM

Management Goals, Objectives and Actions

Measurable objectives and actions have been identified for each of the DRP's management goals for Natural Bridge Battlefield 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 Division of Recreation and Parks utilizes the 10-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. Since the plan is based on conditions that exist at the time the plan is developed, the annual work plans will provide the flexibility needed to adapt to future conditions as they change during the 10-year management planning cycle. As the park's annual work plans are implemented through the 10-year cycle, it may become necessary to adjust the management plan's priority schedules and cost estimates to reflect these changing conditions.

Natural Resource Management

Hydrological Management

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

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

Objective: Restore natural hydrological conditions and functions to approximately 0.02 acres of bottomland forest natural community.

This objective refers to the restoration of the deep ruts occurring near the terminus of the dirt access road in the zone 6 bottomland forest referred to above. This area is limited in size, only about 30 meters long, so the project would be relatively small scale. The ruts would be filled in with fill material compatible with the local soils and any adjacent mounding from the displacement of soil by the tires would be smoothed out. This would prevent the artificial pooling of water and potential disruption of surface flow patterns. A plan would be drafted that seeks to address these objectives.

Natural Communities Management

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

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

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

All prescribed burns in the Florida state park system are conducted with authorization from the FDACS, Florida Forest Service (FFS). Wildfire suppression activities in the park are coordinated with the FFS.

Objective: Within 10 years, have 23.8 acres of the park maintained within the optimum fire return interval.

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

Table 5. Prescribed Fire Management		
Natural Community	Acres	Optimal Fire Return Interval (Years)
Mesic flatwoods	13.23	2-5
Pine plantation (<i>restore to sandhill</i>)	10.65	3-6
Annual Target Acreage*	4 - 10	
*Annual Target Acreage Range is based on the fire return interval assigned to each burn zone. Each burn zone may include multiple natural communities.		

Two landcover types are slated for prescribed burning in this park: the natural community mesic flatwoods and the altered landcover type pine plantation; both areas are located along the easternmost park boundary in the Gerrell Tract (zone 6). The mesic flatwoods had evidently undergone some degree of burning before

the state of Florida purchased the land since much of the stand possesses a physiognomy consistent with periodic fire. While most of the stand is occupied by patches of herbaceous groundcover, including abundant wiregrass and saw palmetto clumps, there are discrete patches of hardwood trees that are not fire-adapted (e.g., laurel oak, water oak). Reintroduction of fire at regular intervals would reduce the coverage of these hardwoods and control their opportunistic recruitment into localized areas periodically experiencing uneven burns. The northern and western boundaries of the mesic flatwoods abut with off-property stands of dome swamp and the bottomland forest, respectively, which are less likely to burn under prescribed conditions. Previous land managers had likely used these areas as fire breaks to prevent the spread of fire beyond the target area, and these transition zones are thick with hardwood trees and shrubs that had grown up sheltered from the flames.

Burning the groundcover in the pine plantation will assist with restoring this area back to sandhill, its most likely affinity based on indicator species (e.g., sand live oak, sand post oak, and turkey oak) and soil cores that extracted deep sands down to at least 3 to 4 feet. Portions of this groundcover are remarkably well preserved with abundant wiregrass and other pyric species and should effectively carry fire; areas along the southern boundary and close to Jim French Road are more ruderal in character with high coverages of dog fennel and turf grass. Needle cast from the slash pines will assist with carrying the fire through the undergrowth. Over the next decade, groundcover on all 23.8 acres should be within a maintenance condition in terms of burning on the fire return intervals indicated above. The slightly longer burn interval suggested for the pine plantation (3-6 years) is necessary in order to ensure that sufficient needle cast and groundcover biomass is available to provide for an even burn in a stand that currently has significant bare soil coverage. Following prescribed burns on either community type, park staff will survey for gopher tortoise burrows. In spring 2014, park staff in collaboration with neighbors on the privately-owned Gerrell property (south of zone 6) burned the mesic flatwoods and pine plantation stands up to the swamp and bottomland forest communities fringing this area.

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

Examples that would qualify as natural communities' restoration, requiring annual restoration plans, include large mitigation projects, large-scale hardwood removal and timbering activities, roller-chopping and other large-scale vegetative modifications. The key concept is that restoration projects will go beyond

management activities routinely done as standard operating procedures such as routine mowing, the reintroduction of fire as a natural process, spot treatments of exotic plants, 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 sandhill community.

Objective: Conduct habitat/natural community restoration activities on 10.6 acres of clearings.

The pine plantation in zone 6 will be restored back to a sandhill community. Along with the initiation of prescribed burning in this stand as described above, longleaf pine seedlings should be planted in this stand over time so that the canopy dominance shifts back to this species instead of slash pine. This planting should proceed episodically over the course of years in order to provide for the growth of a stand with variable age and size classes, which would correspond to the natural condition far more than if all seedlings were planted simultaneously. Groundcover species typical of sandhill habitat would be planted where necessary if recruitment proves to be insufficient. As burning proceeds, it will be possible to more accurately assess which sandhill species may have lied dormant under the ruderal vegetation in the absence of recent fire. Progressively over time with multiple burns, the flora should approach the desired future condition of a sandhill community in maintenance condition. A restoration plan would be drafted for this effort.

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 0.1 acres of clearings.

This objective refers to the need for planting native vegetation on some of the bare shorelines of sinkhole lakes exposed to potential erosive processes. The target area should equal at least 0.1 acres of substrate. Prior to initiation of this project, a plan will be drafted regarding the plant species to be used and the spatial arrangement of these plantings (e.g., approximate density, dimensions of revegetated bands).

Imperiled Species Management

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

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

In the preparation of this management plan, DRP staff consulted with staff of the FWC's Imperiled Species Management or that agency's Regional Biologist and other appropriate federal, state and local agencies for assistance in developing imperiled animal species management objectives and actions. Likewise, for imperiled plant species, DRP staff consulted with FDACS. Data collected by the USFWS, FWC, 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 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 for plants and animals, as needed.

With the increase in park acreage from the original 8 acres to over 130, park and district staff will continue to update the baseline imperiled species occurrence inventory for plants and animals as resource management activities are conducted.

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

Gopher tortoise occurrence and distribution will be monitored and tracked by park staff via an established burrow location survey protocol. These staff members will conduct periodic transect surveys according to an approximate grid pattern covering all upland natural communities with particular emphasis on suitable gopher tortoise habitat closely following scheduled prescribed burns in the mesic flatwoods and pine plantation. Park staff will coordinate with the district listed species coordinator to ensure that FWC survey guidelines are followed. All tortoise burrows will be recorded via GPS to be converted into GIS shape files, which would be maintained 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 treat 1 acre of exotic plant species in the park.

Outside of occasional incidentals recruited from populations outside the park, terrestrial exotic plants are not problematic at this park, but aquatic species are present (hydrilla and water hyacinth with occasional water lettuce). Given the challenge and equipment requirements of treating exotic plants in water bodies, staff are cooperating with the FWC Invasive Plant Management Section to enable herbicidal application. IPMS has a specialized airboat for aquatic treatment. Logistical constraints still remain since the sinkhole lakes are relatively small and may have steep, wooded shorelines at least along a portion of their length. The treatment schedule is subject to the availability of IPMS personnel. Treatment efforts will likely tend toward continuous maintenance rather than reductions over time as long as these pest plants remain common in the river as a whole. Even if all invasives are eradicated on the park property, the probability of reintroduction is high from other portions of the river. Nonetheless, the DRP has an obligation to control exotic plant abundance in order to provide for the health and productivity of the aquatic ecosystem.

Objective: Implement control measures on one exotic animal species in the park.

Armadillos should be removed from the park as encountered in order to prevent the soil disturbance that their rooting behavior promotes. The feral hog damage observed in preparation for this plan was limited and not sufficient to initiate a costly trapping project. If it is determined that the hogs are significantly damaging the resources in the park, then staff should seek the cooperation of the adjacent landowners that would be necessary for a larger scale effort.

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 Natural Bridge Battlefield State Park.

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

The management of cultural resources is often complicated because these resources are irreplaceable and extremely vulnerable to disturbances. The advice of historical and archaeological experts is required in this effort. All activities related to land clearing, ground disturbing activities, major repairs or additions to historic structures listed or eligible for listing in the National Register of Historic Places must be submitted to the FDOS, Division of Historical Resources (DHR) for review and comment prior to undertaking the proposed project. Recommendations may include, but are not limited to concurrence with the project as submitted, pre-testing of the project site by a certified archaeological monitor, cultural resource assessment survey by a qualified professional archaeologist, modifications to the proposed project to avoid or mitigate potential adverse effect. In addition, any demolition or substantial alteration to any historic structure or resource must be submitted to DHR for consultation and the DRP must demonstrate that there is no feasible alternative to removal and must provide a strategy for documentation or salvage of the resource. Florida law further requires that the DRP consider the reuse of historic buildings in the park in lieu of new construction and must undertake a cost comparison of new development versus rehabilitation of a building before electing to construct a new or replacement building. This comparison must be accomplished with the assistance of DHR.

Objective: Assess and evaluate 3 of 4 recorded cultural resources in the park.

Park staff will assess and evaluate three of the cultural sites recorded in the FMSF: the monument (8LE5730), the canal system (8LE5732), and other historic elements present in the battlefield (8LE188). They would determine whether significant damage had occurred to the sites, such as soil erosion or other disturbance, excavation for artifacts, plant root damage, or vandalism. If multiple instances are discovered, they will prioritize projects accordingly. The fourth site, Natural Bridge Road (8LE5731), is in good condition and managed by Leon County outside the park's jurisdiction.

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

With such a significant cultural site as this park, there remains the necessity to collect any information available and conduct interviews with knowledgeable people research projects involving the battlefield or other historic elements of the site. All state parks were subject to an archaeological resource sensitivity modeling analysis by personnel at the University of South Florida in order to determine locations with

a higher probability of containing historic artifacts, which will guide further cultural surveys (Collins et al. 2012). If significant target areas are discovered that had not been previously surveyed by Arbuthnot et al. (2010), arrangements should be made for further archeological excavation. At this time, personnel from the University of West Florida are engaged in a metal detecting survey of the battlefield area in order to located cultural artifacts. The park staffers should develop and implement a Scope of Collections statement in anticipation of developing a protected display on site.

Objective: Bring 1 of 4 recorded cultural resources into good condition.

While much progress has been made in recent years, the Natural Bridge Battlefield Memorial Monument (8LE5730) still has several measures that should be undertaken in order to preserve it in good condition. The DRP plans to locate an expert or organization that specializes in the maintenance of marble monuments of this type, possibly in the vicinity of the Middle Atlantic States where Civil War battlefields are most plentiful. Upgrades to the lettering and surface colors, as mentioned above, would be addressed with assistance and/or consultation with experts. Additionally, the monument and associated sidewalk area would be pressure washed (or other method deemed appropriate by the experts) as needed to clean the marble surfaces. The park staff are also interested in erecting posts and a chain around the immediate perimeter of the monument to prevent visitors from climbing on it. Other cultural elements were assessed in the recent report (Arbuthnot et al. 2010) and found to be in good condition. These cultural items should be monitored and preserved in perpetuity.

Special Management Considerations

Timber Management Analysis

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

A timber management analysis was not conducted for this park since its total acreage is below the 1,000-acre threshold established by statute. Timber management will be re-evaluated during the next revision of this management plan.

Arthropod Control Plan

All DRP lands are designated as “environmentally sensitive and biologically highly productive” in accordance with Ch. 388 and Ch. 388.4111 Florida Statutes. If a local mosquito control district proposes a treatment plan, DRP responds within the allotted time and reaches consensus with the mosquito control district. By policy of DEP since 1987, aerial adulticiding is not allowed, but larviciding and ground adulticiding (truck spraying in public use areas) is typically allowed. DRP does not authorize new physical alterations of marshes through ditching, or water control structures. Mosquito control plans temporarily may be set aside under declared threats to public or animal health, or during a Governor’s Emergency Proclamation.

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.

This park has not been the subject of a Land Management Review.

LAND USE COMPONENT

Introduction

Land use planning and park development decisions for the state park system are based on the dual responsibilities of the Division of Recreation and Parks. These responsibilities are to preserve representative examples of original natural Florida and its cultural resources, and to provide outdoor recreation opportunities for Florida's citizens and visitors.

The general planning and design process begins with an analysis of the natural and cultural resources of the unit, and then proceeds through the creation of a conceptual land use plan 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.

Natural Bridge Battlefield Historic State Park is located within Leon County, about 10 miles southeast of Tallahassee in the panhandle of the state. The park is about six miles from the Tallahassee-St. Marks Historic Railroad State Trail that is a popular place for bicycling, roller-skating, walking and jogging. Fishing and boating are popular pursuits on the St. Marks River, which flows underground at the park's namesake Natural Bridge. St. Marks River Preserve State Park is located directly north of Natural Bridge Battlefield Historic State Park. The park is also within a short drive of Edward Ball Wakulla Springs State Park, San Marcos de Apalache Historic State Park, Lake Jackson Mounds Archaeological State Park, Alfred B. Maclay Gardens State Park, Letchworth-

Love Mounds Archaeological State Park, Apalachicola National Forest and Wakulla State Forest.

The park is located 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 which provides multi-use trails and opportunities for picnicking, fishing, hiking, 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 (FWC) manage 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, bicycling and seasonal camping. In 2007, the Nature Conservancy purchased the Wood Sink and Fanlew Tract properties which are also slated to be managed by FWC. The United States Fish and Wildlife Service manages 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 the newly acquired St. Marks River Preserve State Park, which provides miles of hiking, bicycling and equestrian trails.

Existing Use of Adjacent Lands

Natural Bridge Battlefield Historic State Park is located in southeast Leon County, about one mile north of Wakulla County. The park is approximately six miles east of the town of Woodville, on Natural Bridge Road.

Natural Bridge Road runs east-west through the park. Public access is available to the park via a parking area just south of Natural Bridge Road. The road has been paved east to the Jefferson County line and receives sparse local traffic. A lumber company owns most of the land surrounding the park to the north, west and east. Much of the land due north of the park is associated with the St. Marks River floodplain and is unsuitable for development. Less than one half mile northwest of the park is a single-family residential development.

The entire park boundary is located within unincorporated Leon County (Leon County 2014). It has a current "Rural" zoning, as are the lands adjacent to the park boundary. With this zoning, very low residential density and minimal commercial development is allowed, as well as passive recreational land uses. The single-family residential development northwest of the park is designated as "Residential Preservation" (Leon County 2014). Future development of this area is limited to only adding residential units within the confines of the existing residential area. Additional residential development is anticipated on undeveloped private lands around the park as the city of Woodville and nearby Wakulla County continues to grow. Potential impacts from additional development could include a decrease in the quality and supply of ground and surface water.

Planned Use of Adjacent Lands

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

Natural Bridge Battlefield Historic State Park contains 135.2 acres. The St. Marks River enters the park boundary from the north east and disappears underground to form the namesake the park is named after. It can be seen approximately 150 feet downstream in a series of sinkholes and eventually resurfaces 0.6 miles south at the St. Marks River Rise and continues to its confluence with the Wakulla River.

The site contains a combination of both natural and cultural features that provide opportunities for interpretation. Archaeological studies within the park boundary have uncovered artifacts ranging from prehistoric lithic scatter to historic artifacts directly linked with the Battle of Natural Bridge.

Acquisitions of the Rakestraw and Gerrell Tracts have significantly increased the park's acreage and opportunities for hiking trails and interpretive walks and reconfiguration of the annual battle reenactment.

Bottomland forest, alluvial forest, floodplain swamp, blackwater stream, sinkhole natural communities can all be found within the park boundary. Portions of the park, including the use areas and historic battlefield are developed or altered landcover types. Overlooks near the sinkholes will be important to interpret these unique geologic features without endangering users or the sensitive slopes.

Water Area

Starting its journey in the Tallahassee Hills area of eastern Leon County, the St. Marks River widens and flows about 2.5 miles to the Natural Bridge, where it disappears underground until reemerging at the St. Marks River Rise, 0.6 miles

downstream. At the park, the river flows at an average rate of 700 cubic feet per second. With the relatively low average flow rate, there are potential opportunities for paddlers to paddle either direction of the river from the park, paddling upstream above Natural Bridge toward Horn Spring, or, in the future, from the Gerrell Tract of the park, paddling downstream toward the confluence with the Wakulla River.

Shoreline

The banks of the St. Marks River provide opportunity for shoreline fishing. Numerous karst windows and sinkholes also provide scenic views of landlocked shorelines. Fishing platforms and boardwalks will provide optimal access to fishing and interpretive opportunities while limiting shoreline erosion impacts and ensuring visitor safety.

Natural Scenery

The scenic views within the park are correlated to the St. Marks River and the various karst features along Natural Bridge as the river makes its way underground to the rise downstream. Recent expansion of the park boundary provides more opportunities for visitors to interpret these unique geologic sites.

Significant Wildlife Habitat

The St. Marks River and corresponding sinkholes that carry it through the series of caves downstream to its confluence with the Wakulla River is classified as an Outstanding Florida Water. Alligators (*Alligator mississippiensis*), alligator snapping turtles (*Macroclemys temminckii*) and Suwannee cooters (*Pseudemys concinna suwaniensis*) are all imperiled species that have been observed at the park within the river and sinkholes. With the diversity of wildlife attributed to the St. Marks River, other wildlife are naturally attracted to it, including the Florida black bear (*Ursus americanus floridanus*), bald eagles (*Haliaeetus leucocephalus*), little blue herons (*Egretta caerulea*) and wood storks (*Mycteria americana*).

Natural Features

Significant natural features in the park revolve around the unique the park's namesake, the natural bridge over the St. Marks River. This unique geologic formation has attracted human activity over the course of its history and provides great opportunity for interpretation.

Archaeological and Historic Features

During the final weeks of the American Civil War, the Battle of Natural Bridge preserved Tallahassee as the only Confederate Capitol east of the Mississippi River to never fall to the Union Army. The battle is known for the motley militia of old men and young boys who defeated seasoned Union Troops advancing north towards the Capitol.

The site includes a portion of the Confederate earthworks, a monument from the first quarter of the twentieth century dedicated to Confederate defenders, and the battlefield area. The area encompassing Natural Bridge Battlefield is

listed in the National Register of Historic Places. Confederate earthworks are located in the southern portion of the park. These historic features remain in the form of a low hillock that interrupts the land's gradual slope toward the St. Marks River. This continues east and south on adjacent private property.

The monument is located in the northwest area of the park, near the parking area. The granite structure is surrounded by a paved apron, which is bounded on the east by a raised earthen berm. A Florida Historic Marker is located between the eastern edge of the apron and the berm.

The park has been surveyed for cultural resources, including the Natural Bridge site in its totality, which extends beyond the present park boundary. It is listed in the Florida Master Site File (FMSF). Cultural artifacts found during a phase I archaeological survey range across a wide variety of time periods: prehistoric (archaic and unknown), 19th century (especially Civil War), and 20th century.

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 the acquisition by the state in 1950, the original park boundary was managed by the United Daughters of the Confederacy. The recent addition of the Rakestraw Tract to the park boundary was previously privately owned and contains three residences.

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 entire park boundary is located within unincorporated Leon County (Leon County 2014) and is zoned as Rural Space, which allows for low density development (one unit per ten acres). Other permitted uses in the current zoning designation that are applicable to the DRP include hiking and nature trails, picnicking, paddling trails, bicycle trails, equestrian trails and boat landings. Campgrounds and recreational vehicle parks are allowed on a restricted use basis.

Current Recreational Use and Visitor Programs

Natural Bridge Battlefield Historic State Park serves as a monument for the famous battle that occurred at the within the park boundary. Touring the historic battlefield and viewing the monument are activities that are available throughout the year.

The Battle of Natural Bridge is reenacted every year in March on a weekend approximating the anniversary of the actual battle. Visitors have the opportunity to view authentic Confederate and Union encampments, as well as other 19th Century period specific activities and historic items.

Recreational opportunities at the park include picnicking, which is a popular activity in the small picnic area near the southwest side of the original park boundary. Fishing and boat launching occurs along the banks of the St. Marks River before it disappears underground. The historic site also provides opportunities for wildlife viewing and nature study. The natural bridge and sinkhole features of the park provide visitors with opportunities to observe the region's karst geography.

By DRP estimates, the park's 6,251 visitors during Fiscal Year 2014-2015 contributed \$583,008 in direct economic impact and the equivalent of 9 jobs to the local economy (Florida Department of Environmental Protection 2015).

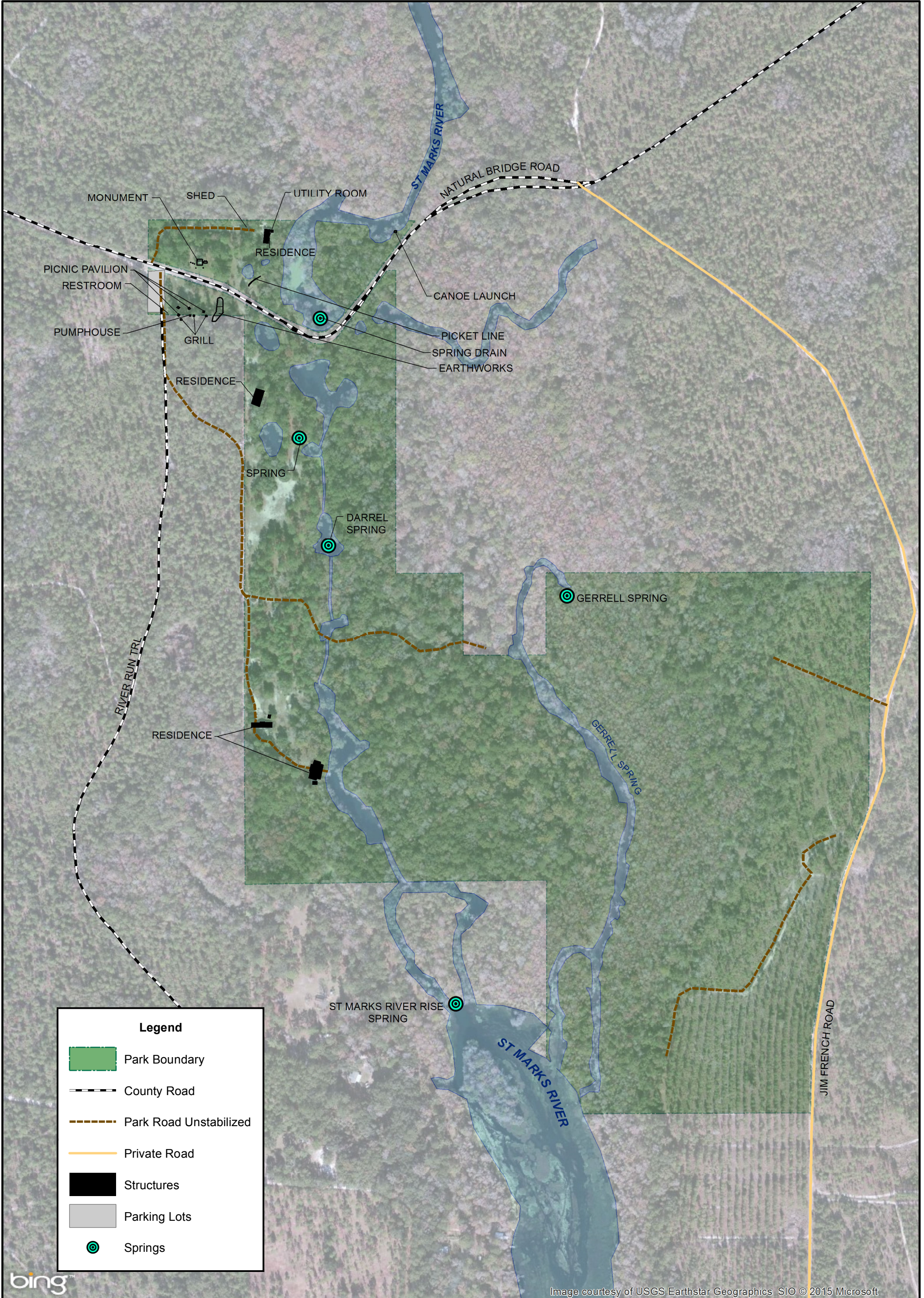
Protected Zones

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 Natural Bridge Battlefield Historic State Park, the Confederate earthworks, monument and battlefield area have been designated as protected zones due to their cultural significance. The St. Marks River, natural bridge, sink holes and alluvial forest area have also been designated as protected zones due to their ecological significance and sensitivity as delineated on the Conceptual Land Use Plan.

Existing Facilities

The main day-use area of the park is located on the south side of Natural Bridge Road; it contains a stabilized parking area for up to 25 vehicles, three small picnic shelters and a small restroom. On the north side of Natural Bridge Road, the Civil War Monument donated by the Anna Jackson Chapter of the United Daughters of the Confederacy, reconstructed picket lines, and interpretive panels explain the battlefield and its significance. Also on the north side of Natural Bridge Road, a shoreline paddling launch for canoes and kayaks provides paddling access upstream on the St. Marks River. This paddling launch



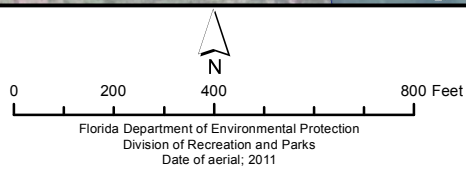
Legend

- Park Boundary
- County Road
- Park Road Unstabilized
- Private Road
- Structures
- Parking Lots
- ⊙ Springs



Image courtesy of USGS Earthstar Geographics SIO © 2015 Microsoft

**NATURAL BRIDGE BATTLEFIELD
HISTORIC STATE PARK**



BASE MAP

is located on a 3.31-acre parcel operated under a management agreement with Natural Bridge Timberlands, LLC.

On the north end of the park, within the original park property, a ranger residence, shop, and equipment storage provide staff presence and facilitate park operations.

With the acquisition of the Rakestraw Tract, three additional structures were added to the park. The northernmost building, known as the Rakestraw House, which is visible from Natural Bridge Road, currently serves as a meeting space for park operations and volunteer events. The two southern buildings, the Blockhouse and the River House, are utilized as staff residences to provide additional staff presence and assist with park operations.

Recreation Facilities

Small Picnic Shelter (3)
Grills (3)
Stabilized Parking Area (up to 25 vehicles)
Restroom
Monument
Interpretive Panels
Canoe/Kayak Launch

Support Facilities

Staff Residence (3)
Utility Room
Storage Shed
Pumphouse

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.

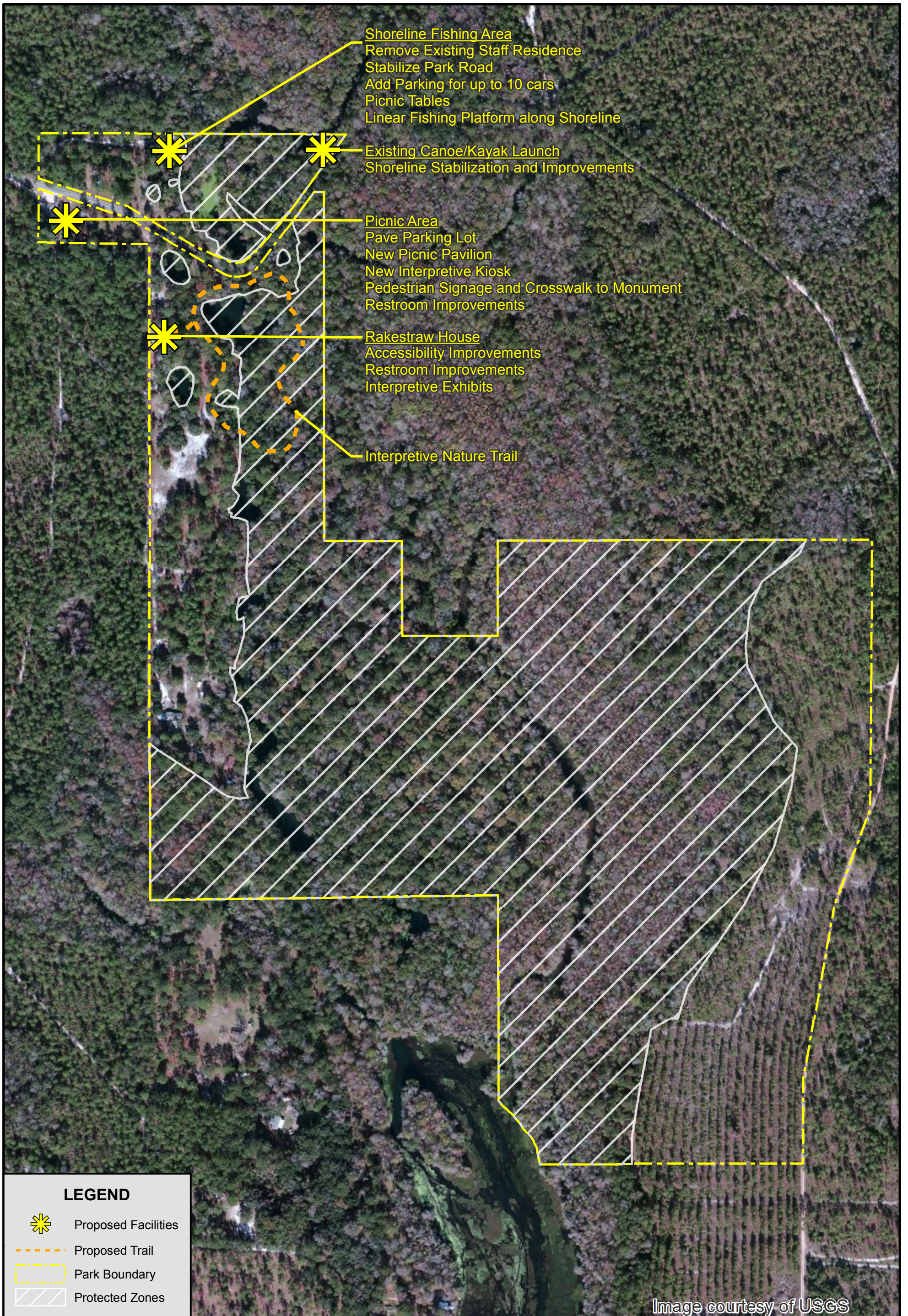
The existing recreational activities and programs of this state park are appropriate to the natural and cultural resources contained in the park and should be continued. New and improved activities and programs are also recommended and discussed below.

Objective: Maintain the park's current recreational carrying capacity of 228 users per day.

At Natural Bridge Battlefield Historic State Park, the primary emphasis is placed on protection and maintenance of the unique natural and cultural resources located at the park, while allowing the public an opportunity to experience these features. The park provides visitors with the opportunity to enjoy, reflect, and interpret the geological and historic features of the park through canoeing, kayaking, fishing, nature trails, and picnicking facilities. The current low-impact public use of the site is appropriate and should continue.

Objective: Expand the park's recreational carrying capacity by 280 users per day.

With the recent acquisitions at Natural Bridge Battlefield Historic State Park, which increased the park's acreage from approximately 9 acres to over 130, additional recreation opportunities are now available. New and improved recreation opportunities include enhanced paddling access to the Upper St. Marks River, organized fishing access, nature trail, and additional interpretive opportunities.



Objective: Continue to provide the current repertoire of 5 interpretive, educational and recreational programs on a regular basis.

In partnership with the park's Citizen Support Organization (CSO), the park currently offers four different interpretive and recreational programs which are available upon request. The programs include ranger lead walks, hands-on activities, and outreach programs that help explain the unique features located at the park, and their important role in the history of Tallahassee as well as Florida's big bend region.

The most public interpretive program at the park is the battle reenactment which takes place on the first weekend of March annually. The battle reenactment is a full weekend event, which includes participants in period civilian and military dress, engaging in a wide range of activities and demonstrations, including the reenactment of the Battle of Natural Bridge.

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

Through the development of an interpretive plan and partnership with the park's CSO, two new interpretive opportunities present themselves. The Rakestraw House is centrally located and presents an excellent opportunity for being a multi-use facility, including establishing an educational program for the park.

The park also plays a larger role in the cultural heritage of Tallahassee and a large number of other unique public lands in the region. There is an opportunity to capitalize on the close proximity of numerous pre-historic and historic sites nearby, through the creation of a Tallahassee Heritage Tour. Letchworth-Love Mounds Archaeological State Park, Lake Jackson Mounds Archaeological State Park, the DeSoto Winter Encampment Site, San Marcos de Apalachee Historic State Park, the Tallahassee-St. Marks Historic Railroad Trail, Natural Bridge Battlefield Historic State Park, Alfred B. Maclay Gardens State Park, and Edward Ball Wakulla Springs State Park as well as Mission San Luis de Apalachee collectively convey the long history of inhabitation of the Tallahassee area. Promoting these sites as stops along a Heritage Tour should increase visitation while providing a more thorough and accurate depiction of the history of the area.

Proposed Facilities

Capital Facilities and Infrastructure

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

The existing facilities of this state park are appropriate to the natural and cultural resources contained in the park and should be maintained. New construction, as discussed further below, is recommended to improve the quality and safety of the recreational opportunities 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 improved and new

facilities needed to implement the conceptual land use plan for Natural Bridge Battlefield Historic State Park:

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

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

Objective: Improve/repair 3 existing facilities and 0.1 miles of road.

Major repair projects for park facilities may be accomplished within the 10-year term of this management plan, if funding is available. These include the modification of existing park facilities to bring them into compliance with the Americans with Disabilities Act (a top priority for all facilities maintained by the DRP). The following discussion of other recommended improvements and repairs are organized by use area within the park.

The restroom facility in the picnic area of the original park property is in need of improvements for universal accessibility and upgrade of plumbing. These improvements will allow for more efficient operation during special events as well as improved access for daily visitors to the park.

The Rakestraw House is a former private residence located near Natural Bridge Road. It currently serves as a meeting space for park operations and volunteer events. In order to serve as a multi-purpose facility in the future for interpretive and educational programs, a ramp will be required to provide universal access. Improvements to the restroom facilities in the structure will also need to be expanded and improved to handle a higher level of public use during events and programs. Along with the universal accessibility improvements, interpretive exhibits should be established around the perimeter of the main room in the building as a supplement to interpretive and educational programs offered.

Parking in the main use area of the park is currently on an unpaved stabilized surface which is subject to erosion and requires frequent regrading. Pavement of the parking at this location is recommended to reduce maintenance and improve accessibility. Additionally, pavement of the area's parking will assist in organizing traffic circulation during special events. Further recommendations include coordinating with Leon County Public Works to establish road markings and signage to reduce pedestrian and vehicular conflicts for visitors going from the picnic area to the monument on the north side of Natural Bridge Road.

The existing unstabilized canoe/kayak launch on the north side of Natural Bridge Road has a long history of use by local residents and visitors to the park. Due to the lack of shoreline stabilization, this site has become difficult and unsafe to access. Stabilizing the surface of this site would enhance it as an access amenity for paddlers of the upper St. Marks River to Horn Spring. As the launch site is located on a small parcel that is leased to the DRP, any improvements to erosion control and access facilities must be coordinated with

the land owner. Paddlers will be able to drop-off canoes or kayaks at the launch and park vehicles at the nearby fishing area as discussed below.

Objective: Construct 5 new facilities and a 0.4-mile trail.

The existing residence on the original park property requires recurring maintenance and is in its last years of service. It is recommended to remove the mobile home residence and improve the site of the residence for a stabilized entrance road, parking area, and vehicle turnaround. It is also recommended to add picnic tables to this site which is popularly used for nature study or fishing along the banks of the St. Marks River. To reduce the erosion impacts of visitors traversing the shoreline, it is recommended to construct a linear fishing platform or boardwalk facility to protect the shoreline and designate the fishing area at the park to reduce conflicts with other recreational activities.

Proposed improvements to the nearby canoe/kayak launch on the other side of Natural Bridge are discussed above in the improvements section. Paddling upstream from the sink, paddlers will be able to access the upper the St. Marks River to Horn Spring.

Further recommended improvements include the construction of one additional large picnic pavilion in the existing picnic area on the original park property. The proposed picnic pavilion will help meet the current demand for this popular activity and provide opportunities for group picnicking and support special events.

With the proposed improvements and central location of the Rakestraw House, the building would be suitable for a variety of functions at the park. Supplemented by the proposed interpretive and educational improvements inside the building, a short natural trail is proposed in the adjacent area to provide opportunity to interpret the unique geological features and cultural landscape of the park. The 0.4-mile trail consists of a short loop around several of the park's larger karst features. Split-rail fencing and interpretive signage are recommended at the site of each karst feature.

Addition of the Gerrell Tract to the boundary of Natural Bridge Battlefield Historic State Park nearly doubled the acreage of the park and offers potential for various additional recreation opportunities, including access to the St. Marks River Rise Springhead on the southern end of Natural Bridge. This area is considered highly sensitive for natural and cultural resources, including karst geologic features, prehistoric sites, and Civil War artifacts. Road and trail to access the St. Marks River Rise through the park would require traversing this resource-sensitive terrain, which would result in adverse impacts. As additional lands are acquired and archaeological surveys are conducted, development of potential access facilities to the St. Marks River will be evaluated.

Facilities Development

Preliminary cost estimates for these recommended facilities and improvements are provided in the Ten-Year Implementation Schedule and Cost Estimates (Table 7), located in the Implementation Component of this plan. These cost estimates are based on the most cost-effective construction standards available at this time. Preliminary estimates are provided to assist the DRP in budgeting proposed park improvements, and may be revised as more information is collected through the planning and design processes.

New facilities and improvements to existing facilities recommended by the plan include:

Picnic Area

- Pave Parking Area
- Signage and Crosswalk to Monument
- Restroom Improvements
- Large Picnic Pavilion
- Interpretive Kiosk

Upper St. Marks River Fishing Access

- Remove Existing Residence
- Stabilized Entrance and Parking (up to 10 Cars)
- Scattered Picnic Tables
- Linear Fishing Platform (approximately 300 feet)

Canoe/Kayak Launch Improvements

- Shoreline Stabilization and Erosion Control
- Improve Canoe/Kayak Launch

Rakestraw House

- Interpretive Exhibits
- Restroom Improvements
- Accessibility Improvements

Interpretive Nature Trail

- 0.4 mile Nature Trail
- Interpretive Signage
- Protective Barriers at Karst Features

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.

Table 6. Recreational Carrying Capacity						
	Existing Capacity		Proposed Additional Capacity		Estimated Recreational Capacity	
	One Time	Daily	One Time	Daily	One Time	Daily
Trails						
Nature Trail			30	120	30	120
Picnicking	32	64	48	96	80	160
Interpretive Program	32	128			32	128
Fishing	8	16	22	44	30	60
Canoeing/Kayaking	10	20	10	20	20	40
TOTAL	82	228	110	280	192	508

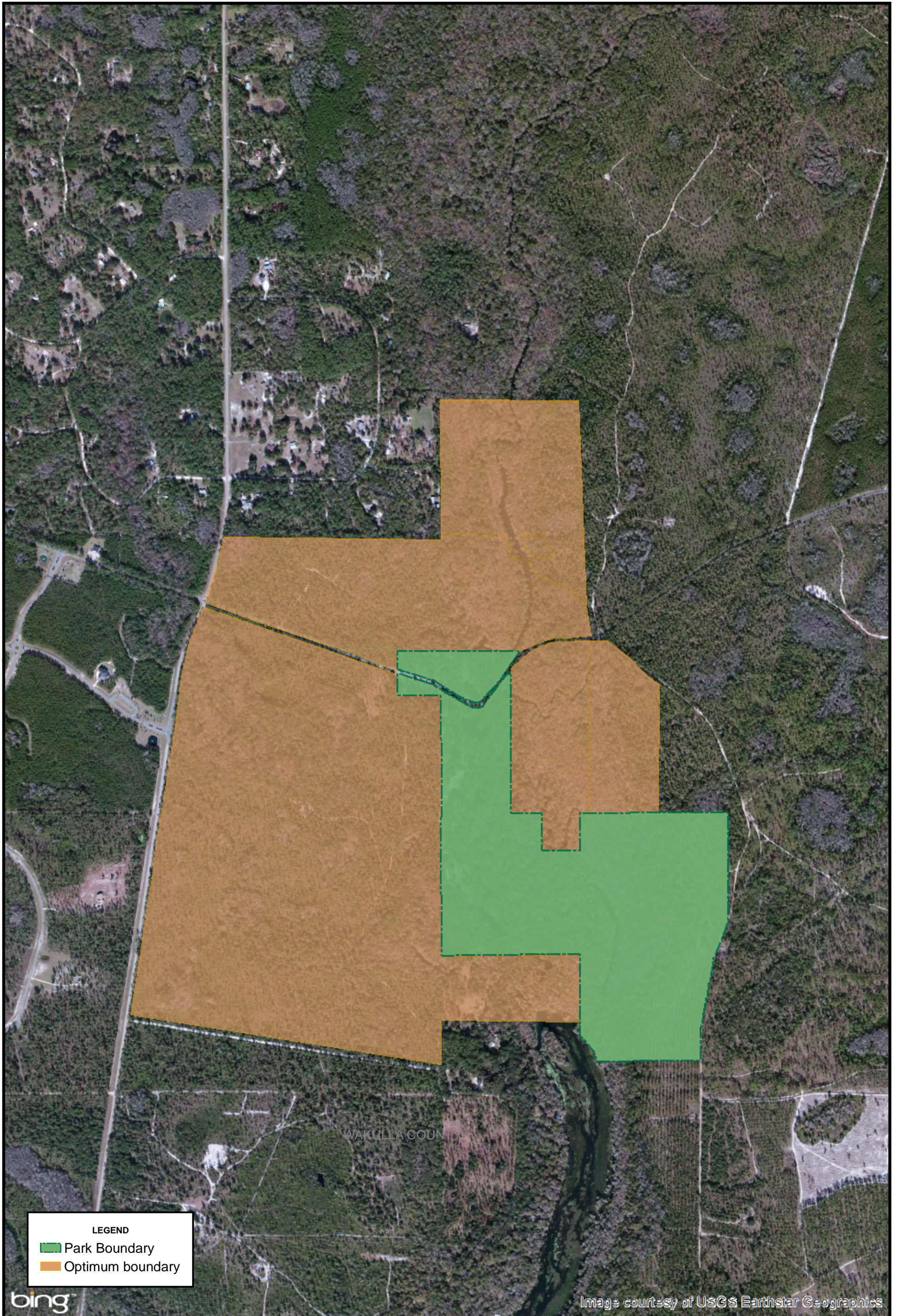
Optimum Boundary

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

Identification of parcels on the optimum boundary map is intended solely for planning purposes. It is not to be used in connection with any regulatory purposes. Any party or governmental entity should not use a property's identification on the optimum boundary map to reduce or restrict the lawful 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. At this time, no lands are considered surplus to the needs of the park.

Approximately 425 acres surrounding the park have been identified as optimum boundary. These lands include the entire historic battlefield and contain desirable natural resources. Additional acquisitions would also provide feasible access to the St. Marks River south of Natural Bridge. At this time, no lands are considered surplus to the management needs of the park.



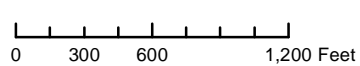
LEGEND

- Park Boundary
- Optimum boundary

bing

Image courtesy of USGS Earthstar Geographics

NATURAL BRIDGE BATTLEFIELD HISTORIC STATE PARK



Florida Department of Environmental Protection
Division of Recreation and Parks
Date of aerial 2010

OPTIMUM BOUNDARY MAP

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 DRP's 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 10-year period of this plan are provided for each action and objective, and the costs are summarized under standard categories of land management activities.

MANAGEMENT PROGRESS

Since the approval of the last management plan for Natural Bridge Battlefield Historic State Park in 2003, 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

- Acquired the Rakestraw property; an additional 54 acres of land south of the original park boundary in February 2009.
- Acquired the Gerrell Property; an additional 55 acres of land southeast of the original park boundary in May 2011.

Park Administration and Operations

- Since the new acquisition of the Rakestraw property the park, district and DRP staff have worked closely with the Park's CSO to write and receive a \$25,000 grant from the Florida Department of State, Division of Historical Resources (DHR). The grant was administered by the park and district staff and received over \$30,000 of in-kind matching funds in the completion of the grant.
- Over a two day period, the parks staff, CSO and a trained archeologist worked with over 100 volunteers on an archaeological field day. The time and effort provided by these volunteers provided over \$30,000 of in-kind matching funds. The additional effort of park staff and CSO members went a long way in building community relations.

Resource Management

Natural Resources

- A botanical survey was undertaken at the park, following the acquisition of the Rakestraw property, with a biological staff member and a professional botanist during FY 2009-2010. Visits were made during different times of the year in order to maximize the plant species diversity recorded.
- Park and district staff members met on site with an invasive aquatic vegetation expert from the Florida Fish and Wildlife Conservation Commission to address treatment options for hydrilla and water lettuce infestations in several of the karst features located on the northern portion of the Rakestraw property. A plan is being developed to provide initial and maintenance treatments for these areas.
- There are ongoing efforts by park staff to locate and treat terrestrial invasive plant species as encountered. As a result of these activities, exotic plants are infrequently observed on these lands.

Cultural Resources

- Through coordination with the Natural Bridge Historical Society, conducted a phase I archaeological survey of the original park boundary and the newly acquired Rakestraw property.
- The park worked closely with DHR staff and has conducted several Archeological Resource Management (ARM) training programs at the site. The park is rich in archeological sites and provides an excellent opportunity for surveys. The ARM training program was developed to insure staff from the parks and other agencies are monitoring ground disturbance activities that are conducted on state lands. This training helps State Staff to identify cultural resources and insure that they are properly protected and managed.

Recreation and Visitor Services

- Park staff is developing visitor programs for the new additions to the park. Programs will soon be given on the weekends and when requested.

Park Facilities

- Two of the three structures on the property have been turned into park residences to provide security and protection of the site. The Rakestraw House is currently being used as a multi-use facility for meetings, interpretation, and is planned for future educational programs.

MANAGEMENT PLAN IMPLEMENTATION

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

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

Statewide priorities for all aspects of land management are evaluated each year as part of the process for developing the DRP's annual legislative budget requests. When preparing these annual requests, the DRP considers the needs and priorities of the entire state park system and the projected availability of funding from all sources during the upcoming fiscal year. In addition to annual legislative appropriations, the DRP pursues supplemental sources of funds and staff resources wherever possible, including grants, volunteers and partnerships with other entities. The DRP's ability to accomplish the specific actions identified in the plan will be determined largely by the availability of funds and staff for these purposes, which may vary from year to year. Consequently, the target schedules and estimated costs identified in Table 7 may need to be adjusted during the 10-year management planning cycle.

Table 7
Natural Bridge Battlefield Historic State Park Ten-Year Implementation Schedule and Cost Estimates
Sheet 1 of 3

NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.				
Goal I: Provide administrative support for all park functions.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Continue day-to-day administrative support at current levels.	Administrative support ongoing	C	\$6,706
Objective B	Expand administrative support as new lands are acquired, new facilities are developed, or as other needs arise.	Administrative support expanded	UFN	\$8,112
Goal II: Protect water quality and quantity in the park, restore hydrology to the extent feasible, and maintain the restored condition.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Restore natural hydrological conditions and functions to approximately 0.02 acres of bottomland forest natural community.	# Acres restored	UFN	\$6,400
Action 1	Draft restoration plan to restore soil disturbance and sheetflow to bottomland forest natural community.	Plan completed	ST	\$200
Action 2	Restore hydrological conditions to bottomland forest community.	# Acres restored	LT	\$6,200
Goal III: Restore and maintain the natural communities/habitats of the park.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Within 10 years, have 23.8 acres of the park maintained within the optimum fire return interval.	# Acres within fire return interval target	C	\$21,000
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 4 - 10 acres annually, as identified by the annual burn plan.	Average # acres burned annually	C	\$5,000
Objective B	Conduct habitat/natural community restoration activities on 10.6 acres of altered landcover communities.	# Acres restored or with restoration underway	UFN	\$52,000
Action 1	Develop/update site specific natural community restoration plan.	Plan developed/updated	ST	\$2,000
Action 2	Implement restoration plan for 10.6 acres of pine plantation.	# Acres with restoration underway	UFN	\$50,000
Objective C	Conduct habitat/natural community improvement activities on 0.1 acres of altered landcover communities.	# Acres restored or with restoration underway	UFN	\$12,000
Action 1	Develop/update site specific natural community improvement plan.	Plan developed/updated	ST	\$2,000
Action 2	Implement restoration plan for 0.1 acres of clearings.	# Acres with restoration underway	UFN	\$10,000

* 2015 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
 Natural Bridge Battlefield Historic State Park Ten-Year Implementation Schedule and Cost Estimates
 Sheet 2 of 3

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 IV: Maintain, improve or restore imperiled species populations and habitats in the park.		Measure	Planning Period	Estimated Manpower and Expense Cost * (10-years)
Objective A	Update baseline imperiled species occurrence inventory lists for plants and animals, as needed.	List developed updated	C	\$4,000
Objective B	Monitor and document 1 selected imperiled animal species in the park.	# Species monitored	C	\$550
Action 1	Implement monitoring protocols for imperiled gopher tortoises within the park.	# Species monitored	C	\$350
Goal V: Remove exotic and invasive plants and animals from the park and conduct needed maintenance-control.		Measure	Planning Period	Estimated Manpower and Expense Cost * (10-years)
Objective A	Annually treat 1 acre of exotic plant species in the park.	# Acres treated	C	\$26,000
Action 1	Update exotic plant management annual work plan.	Plan Updated	C	\$16,000
Action 2	Implement annual work plan by treating 1 acre in park, annually, and continuing maintenance and follow-up treatments, as needed.	# Acres treated	C	\$10,000
Objective B	Implement control measures on 1 exotic and nuisance animal species in the park.	# Species for which control measures implemented	C	\$1,500
Goal VI: Protect, preserve and maintain the cultural resources of the park.		Measure	Planning Period	Estimated Manpower and Expense Cost * (10-years)
Objective A	Assess and evaluate 3 of 4 recorded cultural resources in the park.	Documentation complete	LT	\$239
Objective B	Compile reliable documentation for all recorded historic and archaeological sites.	Documentation complete	C	\$7,382
Action 1	Develop and adopt a scope of collections statement.	Statement Developed	ST	\$2,229
Action 2	Continue to pursue past and present publications regarding the cultural resources located at the park.	Research conducted	C	\$3,762
Action 3	Conduct oral interviews.	# Interviews conducted	LT	\$1,072
Objective C	Bring 1 of 4 cultural resources into good condition.	# Sites in good condition	UFN	\$11,000
Action 1	Design and implement a cyclical monitoring program for the monument.	Program developed/implemented	UFN	\$1,000
Action 2	Conduct restoration activities to preserve the monument's good condition.	Activities complete	UFN	\$10,000

* 2015 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
 Natural Bridge Battlefield Historic State Park Ten-Year Implementation Schedule and Cost Estimates
 Sheet 3 of 3

NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.				
Goal VII: Provide public access and recreational opportunities in the park.				
		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Maintain the park's current recreational carrying capacity of 228 users per day.	# Recreation/visitor opportunities per day	C	\$20,117
Objective B	Expand the park's recreational carrying capacity by 280 users per day.	# Recreation/visitor opportunities per day	UFN	\$24,335
Objective C	Continue to provide the current repertoire of 5 interpretive, educational and recreational programs on a regular basis.	# Interpretive/Education programs	C	\$15,000
Objective D	Develop 2 new interpretive, educational and recreational programs.	# Interpretive/Education programs implemented	UFN	\$137,300
Action 1	Update and implement Statement for Interpretation	Statement Updated/Implemented	ST	\$7,300
Action 2	Develop 2 new interpretive programs.		UFN	\$130,000
Goal VIII: Develop and maintain the capital facilities and infrastructure necessary to meet the goals and objectives of this management plan.				
		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Maintain all public and support facilities in the park.	Facilities maintained	C	\$26,823
Objective B	Continue to implement the park's transition plan to ensure facilities are accessible in accordance with the American with Disabilities Act of 1990.	Plan implemented	LT	
Objective C	Improve and/or repair 3 existing facilities and 0.1 miles of road as identified in the Land Use Component.	# Facilities/Miles of Road	UFN	\$447,250
Objective D	Construct 5 new facilities and 0.4 miles of trail as identified in the Land Use Component.	# Facilities/Miles of Trail/Miles of Road	UFN	\$536,200
Objective E	Expand maintenance activities as existing facilities are improved and new facilities are developed.	Facilities maintained	UFN	\$32,447
Summary of Estimated Costs				
	Management Categories			Total Estimated Manpower and Expense Cost* (10-years)
	Resource Management			\$140,571
	Administration and Support			\$14,817
	Capital Improvements			\$983,450
	Recreation Visitor Services			\$196,752
	Law Enforcement Activities ¹			\$0
		¹ Law enforcement activities in Florida State Parks are conducted by the DEP Division of Law Enforcement and by local law enforcement agencies.		

* 2015 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

LAND ACQUISITION HISTORY REPORT

Park Name	Natural Bridge Battlefield Historic State Park
Date Updated	10/28/2015
County	Leon
Trustees Lease Number	3635 (originally Lease No. 2324)
Current Park Size	135.20 acres

Purpose of Acquisition	The State of Florida initially acquired Natural Bridge Battlefield State Park to establish and maintain suitable park and erect a monument and memorial at the scene of the Battle of Natural Bridge.
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Acquisition History

Parcel Name or Parcel DM-ID	Date Acquired	Initial Seller	Initial Purchaser	Size in acres	Instrument Type
MDID359819	2/25/2009	James F. & Elania T. Rakestraw, John B. & Reta A. Rakestraw, and Irma Patricia Richardson (also known as I Patricia Hodnett)	The Board of Trustees of the Internal Improvement Trust Fund of the State of Florida (Trustees)	55.913	Warranty Deed
MDID368192	9/16/2011	Gerrell Plantation, Inc.	Trustees	55.736	Warranty Deed

Management Lease

Parcel Name or Lease Number	Date Leased	Initial Lessor	Initial Lessee	Current Term	Expiration Date
Lease No. 3635 (originally Lease No. 2324)	(original lease) 01/23/1968	The Trustees of the Internal Improvement Fund of the State of Florida	The Florida Board of Parks and Historic Memorials	99 years	1/22/2067

Outstanding Issue	Type of Instrument	Brief Description of the Outstanding Issue	Term of the Outstanding Issue
There is no known deed restriction or encumbrance that applies to Natural Bridge Battlefield Hitoric State Park.			

Addendum 2—Advisory Group Members and Report

**Natural Bridge Battlefield Historic State Park
Advisory Group Members and Report**

Local Government Officials

The Honorable Andrew Gillum, Mayor
City of Tallahassee

The Honorable Bill Proctor, Chair
Leon County Board of
County Commissioners

Agency Representatives

Rob Lacy, Park Manager

Billy Sermons, District Wildlife Biologist
Florida Fish and Wildlife Conservation
Commission

Mike Wisenbaker, Archaeology
Supervisor
Bureau of Archaeological Research
Florida Division of Historical Resources

David Wright
Natural Bridge Timberlands, LLC.

Stan Peacock, Chairman
Leon Soil and Water Conservation
District

Jason Love, Supervisory Forester
Florida Division of Forestry

Tourist Development Council

Lee Daniel, Executive Director
Leon County Tourist
Development Council

Environmental Representatives

Sean McGlynn
Apalachee Chapter of Florida Audubon

Linda Smith, President
Florida Native Plant Society
Sarracenia Chapter

Cultural Resource Representatives

Anne Peery, Executive Director
Florida Trust for Historic Preservation

User Groups

Cathy Briggs, President
Apalachee Canoe and Kayak Club

Citizen Support Organization

Buzz (William) Gifford, President
Natural Bridge Historical Society, Inc.

Adjacent Landowners

Peter Gerrell

Barbara Edwards, President
Butler Forest HOA

Lake Jackson Mounds Archaeological State Park Natural Bridge Battlefield Historic State Park Advisory Group Staff Report

The Advisory Group meeting to review the proposed unit management plans (UMP) for Lake Jackson Mounds Archaeological State Park and Natural Bridge Battlefield Historic State Park was held at the Downtown Tallahassee Visitor Information Center on Thursday, December 10, 2015 at 9:00 AM.

Jamie Van Pelt represented Mayor Andrew Gillum. Commissioner John Dailey represented the Leon County Board of County Commissioners. Joe Davis represented Billy Sermons. Matthew Vickery represented David Wright. Gary Stogner represented Lee Daniel. John Lorenz represented Cathy Briggs. Linda Smith, William Gifford, Peter Gerrell, and Barbara Edwards were not in attendance. Mike Wisenbaker submitted written comments in advance of the meeting. All other appointed Advisory Group members were present.

Attending Division of Recreation and Parks (DRP) staff members were Tony Tindell, Arthur Stiles, Rob Lacy, Martha Robinson, Ralph Perkins, Jennifer Carver, Alexandra Beesting, Eric Pate, Tyler Maldonado, and Daniel Alsentzer.

Mr. Alsentzer began the meeting by explaining the purpose of the Advisory Group and reviewing the meeting agenda. He provided a brief overview of the DRP's planning process and summarized public comments received during the public hearings of the previous two evenings as well as the written comments received from members not in attendance. Mr. Alsentzer then asked each member of the Advisory Group to express his or her comments on the draft plans. After all comments were shared, Mr. Alsentzer described next steps for the drafting of the plans. The meeting was concluded at 9:35 AM.

Summary of Advisory Group Comments

Sean McGlynn (Apalachee Chapter of Florida Audubon) expressed concern about proposed legislation to allow private individuals to own artifacts found on public land and noted that the Rakestraw acquisition is vulnerable to artifact collecting. Mr. McGlynn also noted that the park's sinkholes and springs have unique flora and fauna and are among the most endangered natural features in Florida. He encouraged acquisition of properties adjacent to Natural Bridge to provide access to the St. Marks Rise, including properties to the east of the existing park boundary. Mr. McGlynn commented that the St. Marks River and its associated springs should be considered equally if not even more ecologically and culturally significant than other major features of Florida, such as Wakulla Springs. He additionally noted that Lake Jackson Mounds is adjacent to the Lake Jackson Aquatic Preserve, which increases the importance of the park. He noted that, like Natural Bridge, the geologic character of Lake Jackson is also defined by karst.

John Lorenz (Apalachee Canoe and Kayak Club) stated that he supports the proposed improvements to the existing canoe/kayak launch at Natural Bridge, but he advised against "overbuilding." Mr. Lorenz recommended a simple design that utilizes the natural surface of the site.

Jamie Van Pelt (Office of the Mayor, City of Tallahassee) stated that his primary purpose in attending was to listen and provide support from the City. Mr. Pelt noted that even though

Lake Jackson Mounds Archaeological State Park Natural Bridge Battlefield Historic State Park Advisory Group Staff Report

these parks are not located within city limits, they are both considered nearby assets of Tallahassee. He stated that the continued improvement and growth of these parks is valuable for the region as a whole, particularly for regional tourism.

Joe Davis (Florida Fish and Wildlife Conservation Commission (FWC)) commented that the FWC and DRP share related mission statements. He stated that the proposed plans for both parks are consistent with the management practices of FWC for all natural and cultural resources. Mr. Davis urged continued management and restoration of areas within the existing park boundaries. He emphasized the importance of management for imperiled species, including gopher tortoise. He recommended a survey of karst invertebrates (e.g., cave crayfish, etc.) at Natural Bridge, if such a survey has not already been conducted, to determine whether terrestrial land management affects those species. Mr. Davis concurred with the proposed management actions, including prescribed burns. He further commented that both parks are jewels in the historic fabric of Florida. He emphasized that the DRP does a good job of interpreting and protecting archaeological and historic sites. Mr. Davis noted strong concern over the implications of a proposed bill to allow private ownership of discovered artifacts. Drawing comparisons to FWC lands in the Aucilla area, Mr. Davis stated that looting could pose a serious threat to the resources of both parks. He encouraged the DRP to coordinate with FWC law enforcement to address any issues regarding enforcement, particularly as it applies to looting. He added that FWC law enforcement is also available to assist with other management issues such as fees, vandalism, or poaching. Mr. Davis later commented that the long-term vision for the Natural Bridge area is to acquire additional lands along the St. Marks River corridor to connect the existing state and county conservation areas. He noted that this connectivity would benefit FWC habitat and species conservation efforts in the watershed where protected parcels are currently disjointed.

Stan Peacock (Leon Soil and Water Conservation District) commented that the parks are assets to the community. He commended the acquisition of the Rakestraw property and house. He supported using the Rakestraw house as a museum and for interpretive programming. Mr. Peacock recommended interpreting how the land in both parks was used throughout history. In addition to the Civil War Battle, he suggested telling the overall story, from prehistory through early 20th century history, including human settlement as well as wildlife. Mr. Peacock reiterated the concerns of other advisory group members over unauthorized digging for artifacts. He also noted concern over impacts to the springs and water quality at Natural Bridge.

Gary Stogner (Leon County Tourist Development Council) commented that both parks play key roles in tourism for telling the overall story of the area's history. He stated that the parks do a good job of interpretation and presenting information to the public. He supported efforts to improve interpretive and educational programming at the parks. Mr. Stogner stated that protection of resources is critical to tourism and also sends a valuable message to the public about the importance of the state's history. He added that Lake Jackson Mounds is included in the Leon County trails website, *Trailahassee*, and provides opportunities to touch both the recreation and historic aspects of the area. Mr. Peacock is glad to find a point of connection between outdoor recreation and learning about history.

Lake Jackson Mounds Archaeological State Park Natural Bridge Battlefield Historic State Park Advisory Group Staff Report

Jason Love (Florida Forest Service) commented that the plans are well-written and that both properties are well-managed. Mr. Love noted that the parks have several common characteristics, but are each unique. For both parks, but particularly Natural Bridge, he recommended careful management of the upland natural communities. He cautioned that pine beetle infestation at Natural Bridge could pose a significant threat to the surrounding neighborhoods and that fire and timber thinning are key methods for reducing this risk. Mr. Love recognized that Lake Jackson Mounds is more difficult to manage as it is adjacent to an urban area. Responding to other advisory group member comments, Mr. Love later noted that the entire St. Marks River corridor is on the Florida Forever acquisition list.

Matt Vickery (Natural Bridge Timberlands/Desert Ranches) supported adequate recreational access and the proposed interpretive programming at Natural Bridge. He acknowledged that the paddling launch on the north side of Natural Bridge Road is located on Natural Bridge Timberlands property, and the company wants to be a good partner in continuing this public recreational access.

John Dailey (Leon County Board of County Commissioners, District 3) stated that Lake Jackson Mounds is located within District 3 of the Leon County and provides a significant recreational and educational benefit to the entirety of Leon County. Commissioner Dailey emphasized that Leon County is appreciative of its ongoing partnerships with these state parks. He described a vision to connect all parks and trails within the County. Recognizing the significance of cultural resource protection at these parks, he stated that the County may add the issue to its legislative priorities to monitor. Commissioner Dailey was glad that the City of Tallahassee was also participating in the public process for the parks and would like to continue coordinating between the County, City, and State. Lastly, Commissioner Dailey noted that Leon County's new Okeeheepkee Prairie Park, which is adjacent to Lake Jackson Mounds, would be hosting its opening event at 1:00 PM.

Anne Peery (Florida Trust for Historic Preservation) stated that the Florida Trust for Historic Preservation supports the management practices and proposed improvements for both parks and always has an interest in the protection of cultural, architectural, and archaeological resources. She was grateful to have opportunity to comment. She echoed the concerns of other advisory group members regarding potential looting as a result of the proposed artifact bill. As her organization does not have staff specialized in archaeological resources, she recommended that the DRP communicate with the Florida Public Archaeology Network (FPAN) to help at the micro-level. She stated that in every aspect, the plans address concerns of the Florida Trust for Historic Preservation. Ms. Peery commented that agency budgets allocations do not include sufficient funding to maintain all historic structures in the parks, but that the DRP should look for additional revenues to address preservation needs. Ms. Peery encouraged the use of both parks for heritage tourism and would like to bring the Heritage Conference to Tallahassee next year, ideally using both sites for conference sessions. She noted that tourism associated with cultural heritage sites tends to attract longer-staying visitors and more revenue. She recommended engaging with Visit Tallahassee and Visit Florida more to have sites marketed to right kind of visitor interested in history.

Lake Jackson Mounds Archaeological State Park Natural Bridge Battlefield Historic State Park Advisory Group Staff Report

Summary of Written Comments

Mike Wisenbaker (Division of Historical Resources, Bureau of Archaeological Research) provided written comments that were shared at the Advisory Group meeting.

Lake Jackson Mounds Archaeological State Park: Mr. Wisenbaker commented that DHR strongly concurs with conducting additional research and interpretive planning for the Butler Mill site located within the park. He offered DHR's assistance in this endeavor. He noted that additional research on the Mississippian mound complex has recently been completed within the park and should be referenced in the resource management component. Mr. Wisenbaker also noted that three archaeological sites and one resource group are missing from the park's site inventory. Documentation and location of these sites was included with Mr. Wisenbaker's comments. He commended the DRP for the interpretation that is taking place within the state park.

Natural Bridge Battlefield Historic State Park: Mr. Wisenbaker remarked that the DRP has done an excellent job of addressing the historical resources of this highly significant state park. Mr. Wisenbaker concurs with the language of the resource management component that combines the Natural Bridge site and Rakestraw Field as one cultural site, but noted that the features remain listed under separate site files. He encouraged the DRP to request merging these files in the Florida Master Site File. With regard to the text under the objective "*Compile reliable documentation for all historic and archaeological resources,*" Mr. Wisenbaker recommended that the entire park be considered a high probability area for archaeological and historic sites. Mr. Wisenbaker noted that there is no mention in the plan of DHR's Archaeological Resource Monitoring (ARM) training and commented that, at a historical park such as Natural Bridge, it is extremely important for all staff working there to attend such training. He recommended that ARM training be mentioned in the plan.

Staff Recommendations

The staff recommends approval of the proposed management plan for Lake Jackson Mounds Archaeological State Park and Natural Bridge Historic State Park as presented, with the following significant changes:

Lake Jackson Mounds Archaeological State Park

- Language will be added to reference ARM training for DRP staff in the cultural resource management section of the resource management component of the plan.
- The DRP will revise the inventory of archaeological sites and resource groups to match the Florida Master Site File records and park boundary.

Natural Bridge Battlefield Historic State Park

- Language will be added to reference ARM training for DRP staff in the cultural resource management section of the resource management component of the plan.
- Language will be added to the resource management component to plan for timber management to assist restoration and resource management efforts in the park's uplands.

Lake Jackson Mounds Archaeological State Park Natural Bridge Battlefield Historic State Park Advisory Group Staff Report

Additional revisions were made throughout the document to address editorial corrections, consistency of spellings and notations, and other minor corrections.

Notes on Composition of the Advisory Group

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

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

Advisory groups that are composed in compliance with these requirements complete the review of state park management plans. Additional members may be appointed to the groups, such as a representative of the park’s Citizen Support Organization (if one exists), representatives of the recreational activities that exist in or are planned for the park, or representatives of any agency with an ownership interest in the property. Special issues or conditions that require a broader representation for adequate review of the management plan may require the appointment of additional members. DRP’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.

Addendum 3—References Cited

Natural Bridge Battlefield Historic State Park References Cited

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- Leon County. 2010. Leon County Comprehensive Plan 2010. Leon County, Florida.

Addendum 4—Soil Descriptions

Natural Bridge Battlefield Historic State Park Soil Descriptions

7 - **Chaires fine sand** - This nearly level, poorly drained soil is on broad flatwoods. Slopes are 0 to 2 percent. Typically, the surface layer is dark brown fine sand about 7 inches thick. The subsurface layer is fine sand to a depth of 28 inches - the upper 10 inches is dark grayish brown, and the lower 11 inches is light gray. The upper part of the subsoil, to about 54 inches, is very dark brown, dark reddish brown, and dark yellowish brown fine sand. The lower part of the subsoil is gray and light greenish gray sandy clay loam that extends to a depth of 80 inches or more. Included with this soil in mapping are small areas of Talquin, Leon, Pelham, Sapelo, Plummer, and Lutterloh soils. These inclusions make up less than 20 percent of the map unit.

This Chaires soil has a water table at a depth of 10 inches for 1 to 3 months during high rainfall and within 20 to 40 inches for 6 months or more in most years. 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. Available water capacity is very low in the surface and subsurface layers and medium in the subsoil.

The native trees include scattered bluejack, blackjack, laurel oak, water oak, longleaf pine, and sweetgum; in the understory are saw palmetto, dwarf blueberry, greenbrier, fetterbush, gallberry, bromegrass, and pineland threeawn.

This soil has very severe limitations for cultivated crops. Because of wetness and sandy texture, good water control and soil-improving crops are necessary. A water control system that removes excess water after heavy rainfall and serves to supply subsurface irrigation during dry seasons is needed.

This soil is well suited for pasture and hay crops; however, a good water control system is needed to remove excess water. regular applications of fertilizer and lime are needed. Controlled grazing helps maintain vigorous plant growth.

This soil has a moderately high potential for pine trees. Slash pines are the best suited trees to plant for commercial woodland production. Equipment use limitations, seedling mortality, and plant competition are management concerns. Planting the trees on beds lowers the effective depth of the water table. This Chaires soil is in the capability subclass IVw.

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 to 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

Natural Bridge Battlefield Historic State Park Soil Descriptions

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 layers 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 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 bald cypress on the Dorovan soils and slash and loblolly pine on the Pamlico soils. The Pamlico and Dorovan soil are in capability subclass IVw.

47 – Talquin fine sand. This poorly drained, nearly level soil is on broad flatwoods. Slopes are 0 to 2 percent and smooth to concave. Typically, the surface layer is dark gray fine sand 7 inches thick. The subsurface layer is light gray fine sand about 15 inches thick. The subsoil is fine sand about 12 inches thick – the upper 2 inches is very dark gray and the lower 10 inches is brown. Below the subsoil is light yellowish brown fine sand that extends to 80 inches or more.

Natural Bridge Battlefield Historic State Park Soil Descriptions

Included with this soil in mapping are small areas of Chaires, Leon, Plummer, Rutledge, and Sapelo soils. Total inclusions make up about 15 percent of the map unit.

This Talquin soil has a water table 10 inches below the surface for 1 to 3 months in most years and is at depths of 20 to 40 inches 9 or more months in most years. Available water capacity is very low in the surface, subsurface, and substratum layers and low in the subsoil. Permeability is rapid in the surface, subsurface, and substratum layers and moderate to moderately rapid in the subsoil. Natural fertility is low. Native plants include longleaf and slash pine, scattered water oaks and wax myrtle, and a tick undergrowth of saw palmetto, running oak, fetterbush, gallberry, and pineland three awn.

This soil has very severe limitations for cultivated crops. Because of wetness and sandy texture, a water control system that removes excess water after heavy rainfall and supplies subsurface irrigation during the dry seasons is needed for high yields. With good water control, this soil is fairly well suited to most local crops. These crops respond well to lime and fertilizer. Returning crop residue and cover crops to the soil helps to protect the soils from erosion. This soil is well suited to pasture and hay crops; however, a good water control system is needed to remove excess water. Fertilizer and lime are needed. Controlled grazing helps maintain vigorous plant growth.

This soil has moderately high potential for pine trees. Equipment limitations, seedling mortality, and plant competition are management concerns. Planting the trees on beds lowers the effective depth of the water table. Slash and longleaf pine are the best suited trees to plant for commercial woodland production. This Talquin soil is in the capacity subclass IVw.

Addendum 5—Plant and Animal List

Natural Bridge Battlefield Historic State Park

Plants

Common Name	Scientific Name	Primary Habitat Codes (for designated species)
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PLANTS

Red Maple	<i>Acer rubrum</i>	
Mimosa *	<i>Albizia julibrissin</i>	
Common ragweed	<i>Ambrosia artemisiifolia</i>	
Broomsedge	<i>Andropogon virginicus</i>	
Wiregrass	<i>Aristida stricta</i>	
Three awn grass	<i>Aristida sp.</i>	
Cane	<i>Arundinaria gigantea</i>	
Slim leaf paw paw	<i>Asimina angustifolia</i>	
Small flowered paw paw	<i>Asimina parviflora</i>	
Salt bush	<i>Baccharis halimifolia</i>	
Rattan vine	<i>Berchemia scandans</i>	
Crossvine	<i>Bignonia capreolata</i>	
Heart of Jesus *	<i>Caladium bicolor</i>	
Beauty berry	<i>Callicarpa americana</i>	
Trumpet vine	<i>Campsis radicans</i>	
Sedge	<i>Carex sp.</i>	
Deer's tongue	<i>Carphephorus odoratissimus</i>	
Blue beech	<i>Carpinus caroliniana</i>	
Pignut hickory	<i>Carya glabra</i>	
Sugarberry	<i>Celtis laevigata</i>	
Buttonbush	<i>Cephalanthus occidentalis</i>	
Redbud	<i>Cercis canadensis</i>	
Partridge pea	<i>Chamaecrista fasciculata</i>	
Slender woodoats	<i>Chasmanthium laxum</i>	
Fringe-tree	<i>Chionanthus virginicus</i>	
Maryland goldenaster	<i>Chrysopsis mariana</i>	
Spotted water hemlock	<i>Cicuta maculata</i>	
Deer lichen	<i>Cladina sp.</i>	
Stinging nettle	<i>Cnidoscolus stimulosus</i>	
Swamp dogwood	<i>Cornus femina</i>	
Flowering dogwood	<i>Cornus florida</i>	
Seven sisters	<i>Crinum americana</i>	
Rabbit-bells	<i>Crotalaria rotundifolia</i>	
Healing croton	<i>Croton argyranthemus</i>	
Titi	<i>Cyrilla racemiflora</i>	
Woodvamp	<i>Decumaria barbara</i>	
Beggar's lice	<i>Desmodium rotundifolium</i>	
Witchgrass	<i>Dichantherium sp.</i>	
Carolina ponysfoot	<i>Dichondra caroliniensis</i>	
Persimmon	<i>Diospyros virginiana</i>	
Water hyacinth *	<i>Eichhornia crassipes</i>	
Elephant's foot	<i>Elephantopus sp.</i>	
Centipede grass *	<i>Eremochloa ophiuroides</i>	
Dog fennel	<i>Eupatorium capillifolium</i>	

*Non-native Species

Natural Bridge Battlefield Historic State Park

Plants

Common Name	Scientific Name	Primary Habitat Codes (for designated species)
Euphorbia	<i>Euphorbia inundata</i>	
American beech	<i>Fagus grandifolia</i>	
Carolina ash	<i>Fraxinus caroliniana</i>	
Cottonweed	<i>Froelichia floridana</i>	
Southern garua	<i>Garua angustifolia</i>	
Dwarf huckleberry	<i>Gaylussacia dumosa</i>	
Trumpetflower	<i>Gelsemium sempervirens</i>	
Rabbit-tobacco	<i>Gnaphalium obtusifolium</i>	
Loblolly bay	<i>Gordonia lasianthus</i>	
Witch hazel	<i>Hamamelis virginiana</i>	
Roundleaf bluet	<i>Houstonia procumbens</i>	
Marsh pennywort	<i>Hydrocotyl sp.</i>	
Hydrilla *	<i>Hydrilla verticillata</i>	
Spider-lily	<i>Hymenocallis rotata</i>	
St. Andrew's cross	<i>Hypericum hypericoides</i>	
Gallberry	<i>Ilex glabra</i>	
American holly	<i>Ilex opaca</i>	
Yaupon	<i>Ilex vomitoria</i>	
Florida anise-tree	<i>Illicium floridanum</i>	
Virginia willow	<i>Itea virginica</i>	
Leathery rush	<i>Juncus coriaceus</i>	
Soft rush; Lamp rush	<i>Juncus effusus</i>	
Eastern red cedar	<i>Juniperus virginiana</i>	
Lantana *	<i>Lantana camara</i>	
Duckweed	<i>Lemna sp.</i>	
Sweetgum	<i>Liquidambar styraciflua</i>	
Creeping primrose-willow	<i>Ludwigia repens</i>	
Rusty staggerbush	<i>Lyonia ferruginea</i>	
Coastal plain staggerbush	<i>Lyonia fruticosa</i>	
Fetterbush lyonia	<i>Lyonia lucida</i>	
Southern magnolia	<i>Magnolia grandiflora</i>	
Sweet bay	<i>Magnolia virginiana</i>	
Climbing hempvine	<i>Mikania scandens</i>	
Partridge berry	<i>Mitchella repens</i>	
Red mulberry	<i>Morus rubra</i>	
Southern bayberry	<i>Myrica caroliniensis</i>	
Wax myrtle	<i>Myrica cerifera</i>	
American white waterlily	<i>Nymphaea odorata</i>	
Swamp tupelo	<i>Nyssa biflora</i>	
Black gum	<i>Nyssa sylvatica</i>	
Basket grass	<i>Oplismenus sp.</i>	
Prickly pear	<i>Opuntia humifusa</i>	
Cinnamon fern	<i>Osmunda cinnamomea</i>	
Sorrel	<i>Oxalis dillenii</i>	
Butterweed	<i>Packera glabella</i>	
Beaked panicum	<i>Panicum anceps</i>	

*Non-native Species

Natural Bridge Battlefield Historic State Park

Plants

Common Name	Scientific Name	Primary Habitat Codes (for designated species)
Maiden cane	<i>Panicum hemitomon</i>	
Virginia creeper	<i>Parthenocissus quinquefolia</i>	
Bahiagrass	<i>Paspalum notatum</i>	
Green arrow arum	<i>Peltandra virginica</i>	
Red bay	<i>Persea borbonia</i>	
Swamp bay	<i>Persea palustris</i>	
Mistletoe	<i>Phoradendron serotinum</i>	
Slash pine	<i>Pinus elliottii</i>	
Spruce pine	<i>Pinus glabra</i>	
Longleaf pine	<i>Pinus palustris</i>	
Loblolly pine	<i>Pinus taeda</i>	
Water lettuce	<i>Pistia stratioides</i>	
Narrowleaf silkgrass	<i>Pityopsis graminifolia</i>	
Sycamore	<i>Platanus occidentalis</i>	
Tall jointweed	<i>Polygonella gracilis</i>	
Resurrection fern	<i>Polypodium polypodioides</i>	
Pickernelweed	<i>Pontederia cordata</i>	
Waterweed	<i>Potamogeton sp.</i>	
American plum	<i>Prunus americana</i>	
Chickasaw plum	<i>Prunus angustifolia</i>	
Black cherry	<i>Prunus serotina</i>	
Bracken fern	<i>Pteridium aquilinum</i>	
Blackroot	<i>Pterocaulon pycnostachyum</i>	
White oak	<i>Quercus alba</i>	
Sand live oak	<i>Quercus geminata</i>	
Laurel oak	<i>Quercus hemisphaerica</i>	
Turkey oak	<i>Quercus laevis</i>	
Diamond leaf oak	<i>Quercus laurifolia</i>	
Sand post oak	<i>Quercus margaretta</i>	
Swamp chestnut oak	<i>Quercus michauxii</i>	
Dwarf live oak	<i>Quercus minima</i>	
Water oak	<i>Quercus nigra</i>	
Runner oak	<i>Quercus pumila</i>	
Virginia live oak	<i>Quercus virginiana</i>	
Pink azalea	<i>Rhododendron canescens</i>	
Winged sumac	<i>Rhus copallinum</i>	
Beakrush	<i>Rhynchospora sp.</i>	
Dewberry	<i>Rubus trivialis</i>	
Ruellia	<i>Ruellia sp.</i>	
Dwarf palmetto	<i>Sabal minor</i>	
Cabbage palm	<i>Sabal palmetto</i>	
Swamp pink	<i>Sabatia calycina</i>	
Grassy arrowhead	<i>Sagittaria graminea</i>	
Black willow	<i>Salix nigra</i>	
Lyre-leaved sage	<i>Salvia lyrata</i>	
Elderberry	<i>Sambucus nigra</i>	

Natural Bridge Battlefield Historic State Park

Plants

Common Name	Scientific Name	Primary Habitat Codes (for designated species)
Black horse root	<i>Sanicula smallii</i>	
Sassafras	<i>Sassafras albidum</i>	
Lizard's tail	<i>Saururus cernuus</i>	
Saw palmetto	<i>Serenoa repens</i>	
Gum bully	<i>Sideroxylon languinosum</i>	
Blue-eyed grass	<i>Sisyrinchium nashii</i>	
Catbrier	<i>Smilax pumila</i>	
Greenbrier	<i>Smilax sp.</i>	
Marsh ladiestresses	<i>Spiranthes odorata</i>	
Dropseed	<i>Sporobolus sp.</i>	
St. Augustine grass	<i>Stenotaphrum secundatum</i>	
Horse sugar	<i>Symplocos tinctorum</i>	
American baldcypress	<i>Taxodium distichum</i>	
American basswood	<i>Tilia americana</i>	
Ball moss	<i>Tillandsia recurvata</i>	
Poison ivy	<i>Toxicodendron radicans</i>	
American elm	<i>Ulmus americana</i>	
Sparkleberry	<i>Vaccinium arboreum</i>	
Blueberry	<i>Vaccinium darrowi</i>	
Elliot's blueberry	<i>Vaccinium elliotii</i>	
Shiny blueberry	<i>Vaccinium myrsinites</i>	
Deer berry	<i>Vaccinium stamineum</i>	
Small-leaf arrowleaf	<i>Viburnum obovatum</i>	
Violet	<i>Viola sp.</i>	
Wild grape	<i>Vitis sp.</i>	
Netted chain fern	<i>Woodwardia areolata</i>	
Yellow eyed grass	<i>Xyris sp.</i>	
Adam's needle	<i>Yucca filimentosa</i>	

Natural Bridge Battlefield Historic State Park

Animals

Common Name	Scientific Name	Primary Habitat Codes (for all species)
AMPHIBIANS		
Cricket frog	<i>Acris gryllus</i>	31, 33
Southern toad	<i>Bufo terrestris</i>	MTC
Green treefrog	<i>Hyla cinerea</i>	17, 50
Bullfrog	<i>Rana catesbeiana</i>	31, 33
Bronze frog	<i>Rana clamitans clamitans</i>	31, 33
Southern leopard frog	<i>Rana utricularia</i>	31, 33
REPTILES		
Cottonmouth	<i>Agkistrodon piscivorus</i>	31, 33
American alligator	<i>Alligator mississippiensis</i>	50, 53
Green anole	<i>Anolis carolinensis carolinensis</i>	MTC
Common snapping turtle	<i>Chelydra serpentina</i>	50, 53
Suwannee cooter	<i>Chrysemys concinna</i>	50, 53
Florida cooter	<i>Chrysemys floridana</i>	50, 53
Southern black racer	<i>Coluber constrictor priapus</i>	MTC
Eastern diamondback rattlesnake	<i>Crotalus adamanteus</i>	8, 28
Gray rat snake	<i>Elaphe obsoleta</i>	MTC
Southeastern five-lined skink	<i>Eumeces inexpectatus</i>	MTC
Broad-headed skink	<i>Eumeces laticeps</i>	MTC
Gopher tortoise	<i>Gopherus polyphemus</i>	13, 81
Eastern kingsnake	<i>Lampropeltis getula</i>	MTC
Alligator snapping turtle	<i>Macrochelys termmincki</i>	50, 53
Brown water snake	<i>Nerodia taxispilota</i>	50, 53
Box turtle	<i>Terrapene carolina</i>	MTC
Southern fence lizard	<i>Sceloporus undulatus</i>	MTC
Ground skink	<i>Scincella laterale</i>	MTC
BIRDS		
Red-winged blackbird	<i>Agelaius phoeniceus</i>	53, 81
Wood duck	<i>Aix sponsa</i>	50, 53
Northern pintail	<i>Anas acuta</i>	50, 53
Blue-winged teal	<i>Anas discors</i>	50, 53
Limpkin	<i>Aramus guarauna</i>	33, 53
Ruby-throated hummingbird	<i>Archilochus colubris</i>	MTC
Great egret	<i>Ardea alba</i>	53
Great blue heron	<i>Ardea herodias</i>	53
Tufted titmouse	<i>Baeolophus bicolor</i>	MTC
Cedar waxwing	<i>Bombycilla cedrorum</i>	MTC
Red-shouldered hawk	<i>Buteo lineatus</i>	OF
Red-tailed hawk	<i>Buteo jamaicensis</i>	MTC
Chuck-will's-widow	<i>Caprimulgus carolinensis</i>	OF

Natural Bridge Battlefield Historic State Park

Animals

Common Name	Scientific Name	Primary Habitat Codes (for all species)
Northern cardinal	<i>Cardinalis cardinalis</i>	MTC
Great egret	<i>Casmerodius albus</i>	53
Turkey vulture	<i>Cathartes aura</i>	MTC
Chimney swift	<i>Chaetura pelagica</i>	81
Common nighthawk	<i>Chordeiles minor</i>	OF
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	MTC
Northern bobwhite	<i>Colinus virginianus</i>	OF
Common ground-dove	<i>Columbina passerina</i>	MTC
Black vulture	<i>Coragyps atratus</i>	MTC
American crow	<i>Corvus brachyrhynchos</i>	81
Fish crow	<i>Corvus ossifragus</i>	81
Blue jay	<i>Cyanocitta cristata</i>	81
Pine warbler	<i>Dendroica pinus</i>	31, 81
Pileated woodpecker	<i>Dryocopus pileatus</i>	13, 81
Little blue heron	<i>Egretta caerulea</i>	53
Swallow-tailed kite	<i>Elanoides forficatus</i>	OF
Acadian flycatcher	<i>Empidonax virescens</i>	81
Southern bald eagle	<i>Haliaeetus leucocephalus</i>	31
Mississippi kite	<i>Ictinia mississippiensis</i>	31
Belted kingfisher	<i>Megaceryle alcyon</i>	33, 53
Red-bellied woodpecker	<i>Melanerpes carolinus</i>	MTC
Red-headed woodpecker	<i>Melanerpes erythrocephalus</i>	28, 81
Wild turkey	<i>Meleagris gallopavo</i>	OF
Northern mockingbird	<i>Mimus polyglottos</i>	81
Brown-headed cowbird	<i>Molothrus ater</i>	MTC
Wood stork	<i>Mycteria americana</i>	OF
Great-crested flycatcher	<i>Myiarchus crinitus</i>	MTC
Osprey	<i>Pandion haliaetus</i>	OF
Northern parula	<i>Parula americana</i>	31, 81
Tufted titmouse	<i>Parus bicolor</i>	31, 81
Painted bunting	<i>Passerina ciris</i>	81
Downy woodpecker	<i>Picoides pubescens</i>	MTC
Hairy woodpecker	<i>Picoides villosus</i>	8, 28
Rufous-sided towhee	<i>Pipilo erythrophthalmus</i>	81
Summer tanager	<i>Piranga rubra</i>	31
Carolina Chickadee	<i>Poecile carolinensis</i>	28, 81
Blue-gray gnatcatcher	<i>Polioptila caerulea</i>	31, 81
Purple martin	<i>Progne subis</i>	81
Prothonotary warbler	<i>Prothonotaria citrea</i>	31, 81
Eastern bluebird	<i>Sialia sialis</i>	81
Yellow-bellied sapsucker	<i>Sphyrapicus varius</i>	28, 81
Barred owl	<i>Strix varia</i>	31
European starling*	<i>Sturnus vulgaris</i>	81
Carolina wren	<i>Thryothorus ludovicianus</i>	31, 81
Brown thrasher	<i>Toxostoma rufum</i>	81
American robin	<i>Turdus migratorius</i>	MTC

*Non-native Species

Natural Bridge Battlefield Historic State Park

Animals

Common Name	Scientific Name	Primary Habitat Codes (for all species)
Northern mockingbird	<i>Turdus polyglottos</i>	81
Yellow-throated vireo	<i>Vireo flavifrons</i>	28, 31
White-eyed vireo	<i>Vireo griseus</i>	31
Red-eyed vireo	<i>Vireo olivaceus</i>	31
Mourning dove	<i>Zenaida macroura</i>	31, 81

MAMMALS

North American beaver	<i>Castor canadensis</i>	53
Nine-banded armadillo *	<i>Dasypus novemcinctus</i>	28, 81
Virginia opossum	<i>Didelphis virginiana</i>	28, 81
Northern yellow bat	<i>Lasiurus intermedius</i>	OF
River otter	<i>Lutra canadensis</i>	53
Whitetail deer	<i>Odocoileus virginianus</i>	MTC
Raccoon	<i>Procyon lotor</i>	MTC
Gray squirrel	<i>Sciurus carolinensis</i>	28, 81
Feral hog *	<i>Sus scrofa</i>	MTC
Eastern cottontail	<i>Sylvilagus floridanus</i>	28, 81
Gray fox	<i>Urocyon cinereoargenteus</i>	MTC
Black bear	<i>Ursus americanus</i>	MTC

*Non-native Species

Habitat Codes

TERRESTRIAL

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

PALUSTRINE

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

LACUSTRINE

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

LACUSTRINE—Continued

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

RIVERINE

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

ESTUARINE

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

MARINE

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

SUBTERRANEAN

79. Aquatic Cave
80. Terrestrial Cave

MISCELLANEOUS

81. Ruderal
82. Developed

MTC Many Types Of Communities

OF Overflying

Addendum 6—Imperiled Species Ranking Definitions

Imperiled Species Ranking Definitions

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

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

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

FNAL GLOBAL RANK DEFINITIONS

- G1 Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or fabricated factor.
- G2 Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
- G3 Either very rare or local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction of other factors.
- G4 apparently secure globally (may be rare in parts of range)
- G5 demonstrably secure globally
- GH of historical occurrence throughout its range may be rediscovered (e.g., ivory-billed woodpecker)
- GX believed to be extinct throughout range
- GXC extirpated from the wild but still known from captivity or cultivation
- G#? Tentative rank (e.g., G2?)
- G#G# range of rank; insufficient data to assign specific global rank (e.g., G2G3)
- G#T# rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definition as above (e.g., G3T1)

Imperiled Species Ranking Definitions

- G#Q..... rank of questionable species - ranked as species but questionable whether it is species or subspecies; numbers have same definition as above (e.g., G2Q)
- G#T#Q..... same as above, but validity as subspecies or variety is questioned.
- GU due to lack of information, no rank or range can be assigned (e.g., GUT2).
- G?..... Not yet ranked (temporary)
- S1..... Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
- S2..... Imperiled in Florida because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
- S3..... Either very rare or local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction of other factors.
- S4..... apparently secure in Florida (may be rare in parts of range)
- S5..... demonstrably secure in Florida
- SH of historical occurrence throughout its range, may be rediscovered (e.g., ivory-billed woodpecker)
- SX..... believed to be extinct throughout range
- SA..... accidental in Florida, i.e., not part of the established biota
- SE..... an exotic species established in Florida may be native elsewhere in North America
- SN regularly occurring but widely and unreliably distributed; sites for conservation hard to determine
- SU due to lack of information, no rank or range can be assigned (e.g., SUT2).
- S?..... Not yet ranked (temporary)
- N Not currently listed, nor currently being considered for listing, by state or federal agencies.

LEGAL STATUS

FEDERAL

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

- LE Listed as Endangered Species in the List of Endangered and Threatened Wildlife and Plants under the provisions of the Endangered Species Act. Defined as any species that is in danger of extinction throughout all or a significant portion of its range.
- PE Proposed for addition to the List of Endangered and Threatened Wildlife and Plants as Endangered Species.
- LT Listed as Threatened Species. Defined as any species that is likely to become an endangered species within the near future throughout all or a significant portion of its range.

Imperiled Species Ranking Definitions

- PT Proposed for listing as Threatened Species.
- C Candidate Species for addition to the list of Endangered and Threatened Wildlife and Plants. Defined as those species for which the USFWS currently has on file sufficient information on biological vulnerability and threats to support proposing to list the species as endangered or threatened.
- E(S/A) Endangered due to similarity of appearance.
- T(S/A) Threatened due to similarity of appearance.
- EXPE, XE..... Experimental essential population. A species listed as experimental and essential.
- EXPN, XN.... Experimental non-essential population. A species listed as experimental and non-essential. Experimental, nonessential populations of endangered species are treated as threatened species on public land, for consultation purposes.

STATE

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

- FE Federally-designated Endangered
- FT Federally-designated Threatened
- FXN..... Federally-designated Threatened Nonessential Experimental Population
- FT(S/A) Federally-designated Threatened species due to similarity of appearance
- ST..... Listed as Threatened Species by the FWC. Defined as a species, subspecies, or isolated population, which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat, is decreasing in area at a rapid rate and therefore is destined or very likely to become an endangered species within the near future.
- SSC..... Listed as Species of Special Concern by the FWC. Defined as a population which warrants special protection, recognition or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance or substantial human exploitation that, in the near future, may result in its becoming a threatened species.

Imperiled Species Ranking Definitions

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

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

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

Addendum 7—Cultural Information

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

A. General Discussion

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

B. Agency Responsibilities

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

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

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

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

C. Statutory Authority

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

D. Management Implementation

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

Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties (revised March 2013)

Managers of state lands must coordinate any land clearing or ground disturbing activities with the Division to allow for review and comment on the proposed project. Recommendations may include, but are not limited to: approval of the project as submitted, cultural resource assessment survey by a qualified professional archaeologist, modifications to the proposed project to avoid or mitigate potential adverse effects.

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

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

E. Minimum Review Documentation Requirements

In order to have a proposed project reviewed by the Division, certain information must be submitted for comments and recommendations. The minimum review documentation requirements can be found at:

http://www.flheritage.com/preservation/compliance/docs/minimum_review_documentation_requirements.pdf .

* * *

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

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

Phone: (850) 245-6425

Toll Free: (800) 847-7278

Fax: (850) 245-6435

Eligibility Criteria for National Register of Historic Places

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

Eligibility Criteria for National Register of Historic Places

- 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

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

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

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

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

