



# FLORIDA DEPARTMENT OF Environmental Protection

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February 15, 2019

Mr. Steven Cutshaw  
Division of Recreation and Parks  
Department of Environmental Protection  
3900 Commonwealth Boulevard, MS 525  
Tallahassee, Florida 32399-3000

**RE: Dunns Creek State Park – Lease No. 4345**

Dear Mr. Cutshaw:

On **February 15, 2019**, the Acquisition and Restoration Council (ARC) recommended approval of the **Dunns Creek State Park** management plan. Therefore, 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 **Dunns Creek State Park** management plan. The next management plan update is due February 15, 2029.

Pursuant to s. 253.034(5)(a), F.S., each management plan is required to “describe both short-term and long-term management goals, and include measurable objectives to achieve those goals. Short-term goals shall be achievable within a 2-year planning period, and long-term goals shall be achievable within a 10-year planning period.” Upon completion of short-term goals, please submit a signed letter identifying categories, goals, and results with attached methodology to the Division of State Lands, Office of Environmental Services.

Pursuant to s. 259.032(8)(g), F.S., by July 1 of each year, each governmental agency and each private entity designated to manage lands shall report to the Secretary of Environmental Protection, via the Division of State Lands, on the progress of funding, staffing, and resource management of every project for which the agency or entity is responsible.

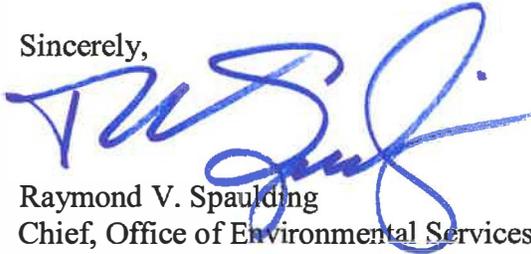
Pursuant to s. 259.036(2), F.S., management areas that exceed 1,000 acres in size, shall be scheduled for a land management review at least every 5 years.

Pursuant to s. 259.032, F.S., and Chapter 18-2.021, F.A.C., management plans for areas less than 160 acres may be handled in accordance with the negative response process. This process requires small management plans and management plan amendments be

submitted to the Division of State Lands for review, and the Acquisition and Restoration Council (ARC) for public notification. The Division of State Lands will approve these plans or plan amendments submitted for review through delegated authority unless three or more ARC members request the division place the item on a future council meeting agenda for review. To create better efficiency, improve customer service, and assist members of the ARC, the Division of State Lands will notice negative response items on Thursdays except for weeks that have State or Federal holidays that fall on Thursday or Friday. The Division of State Lands will contact you on the appropriate Friday to inform you if the item is approved via delegated authority or if it will be placed on a future ARC agenda by request of the ARC members.

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

Sincerely,



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

# Dunns Creek State Park

## **Approved Unit Management Plan**



**STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**Division of Recreation and Parks  
February 15, 2019**



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## INTRODUCTION

Dunns Creek State Park is located in Putnam County (see Vicinity Map). Access to the park is from US 17 between Pomona Park and Satsuma, the main gate is located on Sisco Road. The Vicinity Map also reflects significant land and water resources existing near the park.

Dunns Creek State Park was initially acquired on October 10, 2001. Currently, the park comprises 6,302.63 acres. The Board of Trustees of the Internal Improvement Trust Fund (Trustees) hold fee simple title to the park and on 12/17/2001, the Trustees leased (Lease Number #4345) the property to DRP under a fifty-year lease. The current lease will expire on 12/16/2051.

Dunns Creek State Park is designated single-use to provide public outdoor recreation and conservation. There are no legislative or executive directives that constrain the use of this property (see Addendum 1).

### Purpose and Significance of the Park

Dunn's Creek State Park was acquired for the purpose of providing exceptional resource-based outdoor recreation to Florida residents and visitors while ensuring the conservation and protection of unique natural communities, including steephead and sandhill areas, as well as significant cultural resources representative of several periods of Florida history.

### Park Significance

- Evidence of human activity at the park dates back to the Paleo-Indian period through the 20<sup>th</sup> century. Marked with remnants of the past, the park's history and cultural resources portray the region's legacy of commerce and agriculture.
- The park is bound by dynamic and contrasting natural features ranging from a steephead ravine, the Crescent City Ridge, and to the Dunns Creek floodplain. Each of these unique features offered by the terrain provide not only impressive vistas, but also robustly unique ecosystems.
- Thirty-three designated plant and animal species are present in the park including the hooded pitcherplant (*Sarracenia minor*), gopher tortoise (*Gopherus polyphemus*), wood stork (*Mycteria americana*), Sherman's fox squirrels (*Sciurus niger shermani*), and Florida manatee (*Trichechus manatus latirostris*). The combination of several unique natural communities in the park allows for the presence of diverse animal and plant species.
- Located within an hour's drive of nearly 1.6 million people, Dunn's Creek has a major impact on the quality of life within the region. Outdoor resource-

based recreational opportunities include cycling, hiking, wildlife viewing, and equestrian trails. The park provides access to extensive local trail networks including the Bartram Trail and the Putnam County Blueway.

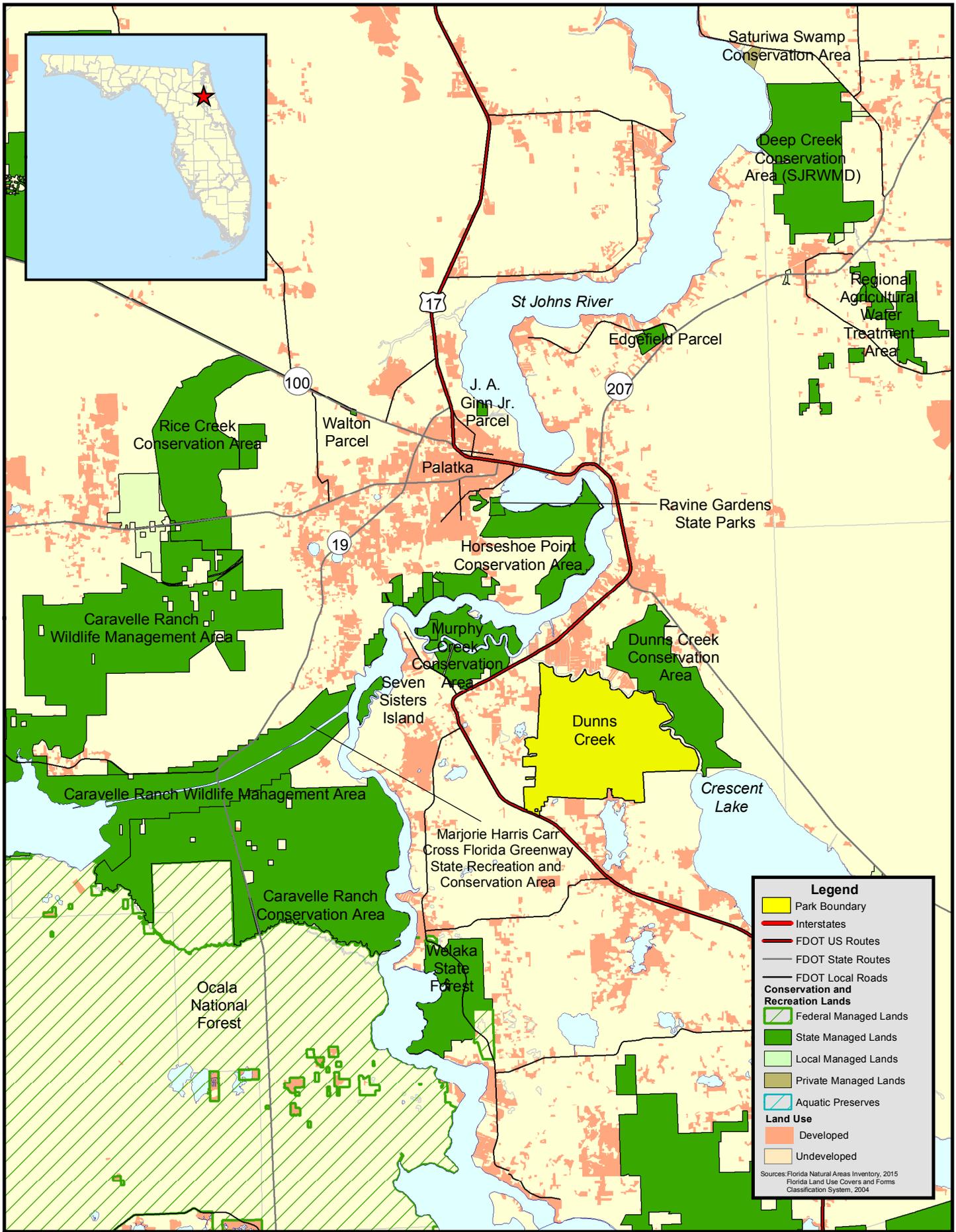
Dunns Creek State Park is classified as a state park in the DRP's unit classification system. In the management of a state park, a balance is sought between the goals of maintaining and enhancing natural conditions and providing various recreational opportunities. Natural resource management activities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

### **Purpose and Scope of the Plan**

This plan serves as the basic statement of policy and direction for the management of Dunns Creek 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 2004 approved plan.

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

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

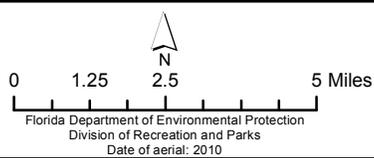


**Legend**

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

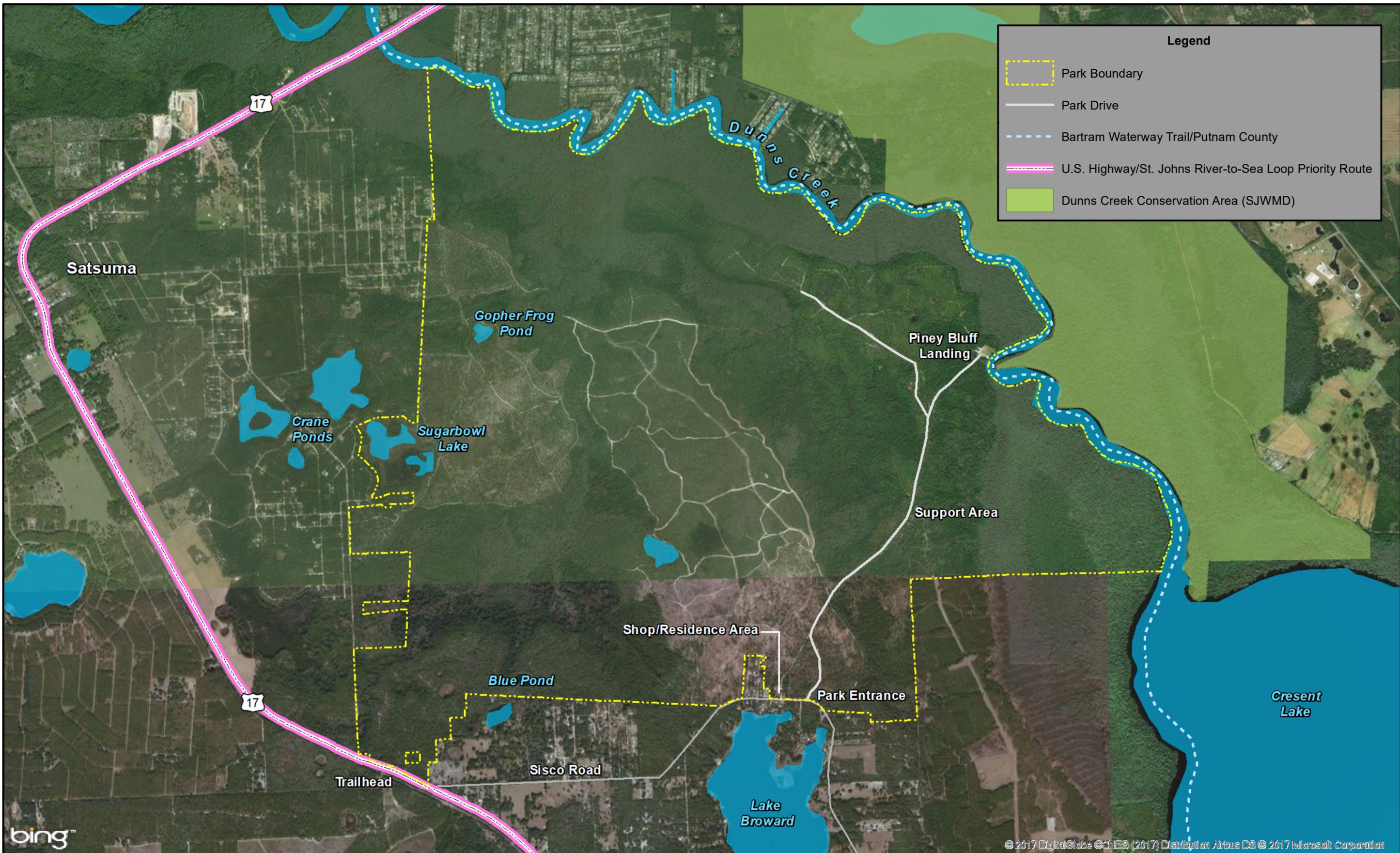
Sources: Florida Natural Areas Inventory, 2015  
Florida Land Use Covers and Forms Classification System, 2004

**DUNNS CREEK  
STATE PARK**

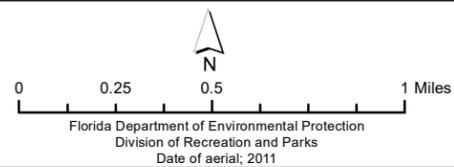


**VICINITY  
MAP**





DUNNS CREEK STATE PARK



REFERENCE MAP



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

In accordance with 253.034(5) F.S., 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's natural and cultural resources, management needs, aesthetic values, visitation and visitor experiences. For this park, it was determined that timber management activities as part of the park's natural community management and restoration activities could be accommodated in a manner that would be compatible and not interfere with the primary purpose of resource-based outdoor recreation and conservation. This (these) compatible secondary management purpose(s) is (are) addressed in the Resource Management Component of the plan.

DRP has determined that 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) would not be consistent with this plan or the management purposes of the park.

In accordance with 253.034(5) F.S. the potential for generating revenue to enhance management was also analyzed. Visitor fees and charges are the principal source of revenue generated by the park. It was determined that timber management activities as part of the park's natural community management and restoration activities could be appropriate at this park as an additional source of revenue for land management since it is are compatible with the park's primary purpose of resource-based outdoor recreation and conservation. Generating revenue from consumptive uses that are not a byproduct of resource management activities is not contemplated in this management plan.

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 (DRP) is charged with the responsibility of developing and operating Florida's recreation and parks system. These are administered in accordance with the following policy:

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

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

Many operating procedures are standardized system-wide and are set by internal direction. These procedures are outlined in the OM that covers such areas as personnel management, uniforms and personal appearance, training, signs,

communications, fiscal procedures, interpretation, concessions, public use regulations, resource management, law enforcement, protection, safety and maintenance.

### **Park Management Goals**

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

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

### **Management Coordination**

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

The Florida Department of Agriculture and Consumer Services (FDACS), Florida Forest Service (FFS), assists DRP staff in the development of wildfire emergency plans and provides the authorization required for prescribed burning. The Florida Fish and Wildlife Conservation Commission (FWC) assists staff in the enforcement of state laws pertaining to wildlife, freshwater fish and other aquatic life existing within the park. In addition, the FWC aids DRP with wildlife management programs, including imperiled species management. The Florida Department of State (FDOS), Division of Historical Resources (DHR) assists staff to ensure protection of archaeological and historical sites. The Florida Department of Environmental Protection (DEP), Florida Coastal Office (FCO) aids staff in aquatic preserves management programs. The DEP, Bureau of Beaches and Coastal Systems aids staff in planning and construction activities seaward of the Coastal Construction Control Line (CCCL). In addition, the Bureau of Beaches and Coastal Systems aid the staff in the development of erosion control projects.

## **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 October 2<sup>nd</sup> and 3<sup>rd</sup>, respectively. Meeting notices were published in the Florida Administrative Register, on September 21, 2018 in volume 44, issue 185, 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**

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

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

## **RESOURCE MANAGEMENT COMPONENT**

### **Introduction**

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

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.

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

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

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

<b>Table 1: Dunns Creek State Park Management Zones</b>			
<b>Management Zone</b>	<b>Acreage</b>	<b>Managed with Prescribed Fire</b>	<b>Contains Known Cultural Resources</b>
DC-A1	20.4	Y	Y
DC-A2	37.9	Y	Y
DC-A3	31.3	Y	N
DC-A4	33.8	Y	N
DC-A5	38	Y	N
DC-A6	34.4	Y	N
DC-A7	24.7	Y	N
DC-A8	45.3	Y	N
DC-A9	53.6	Y	N
DC-A10	15.6	Y	N
DC-A11	447.4	Y	N
DC-B1a	58.8	Y	N
DC-B1b	22.8	Y	N
DC-B1c	46.1	Y	N
DC-B2	64	Y	N
DC-B3	441.9	Y	N
DC-B4	207.3	Y	N
DC-B5a	36.6	Y	N
DC-B5b	38.3	Y	N
DC-B5c	53	Y	N
DC-B5d	8.2	Y	N
DC-B6a	110.9	Y	N
DC-B6b	71.9	Y	N
DC-B6c	19.1	Y	N
DC-B7	94.2	Y	N
DC-B8	45.1	Y	N
DC-B9	204.1	Y	N
DC-B10	32.3	Y	N
DC-C01a	66.3	Y	N
DC-C01b	25.7	Y	N
DC-C02	15.2	Y	N
DC-C03	54.7	Y	N
DC-C04	34.2	Y	N
DC-C05	20	Y	N
DC-C06	20.2	Y	N
DC-C07	43.1	Y	N
DC-C08	53.1	Y	N
DC-C09	6	Y	N
DC-C10	9.2	Y	N
DC-C11	5.9	Y	N
DC-C12	23.8	Y	N

DC-C13	24.43	Y	N
DC-C14	34.4	Y	N
DC-C15	17	Y	N
DC-C16	48.6	Y	N
DC-C17	34.3	Y	N
DC-C18	9.3	Y	N
DC-C19	51.5	Y	N
DC-C20	62	Y	N
DC-C21	27	Y	N
DC-C22	33.1	Y	N
DC-C23	83	Y	N
DC-C24	68	Y	N
DC-C25	116.1	Y	N
DC-C26	125.3	Y	N
DC-C27	59	Y	N
DC-C28	117.6	Y	Y
DC-C30	3.7	Y	Y
DC-D1	688.2	Y	Y
DC-D2	44.9	Y	N
DC-E1a	60.2	Y	Y
DC-E1b	80	Y	Y
DC-E2A	208.5	Y	N
DC-E2B	44.6	Y	N
DC-E3	208.8	Y	N
DC-E4	426.9	Y	N
DC-E5	7.5	N	Y
DC-F1	13	Y	N
DC-F2	156.5	Y	N
DC-F3	54.5	Y	Y
DC-F4	694.9	Y	N

## Resource Description and Assessment

### Natural Resources

#### Topography

Dunns Creek State Park is located within two physiographic regions following Brooks, 1991. The majority of the property is part of the Central Lake District: Crescent City-Deland Ridge with deep Plio-Pleistocene sand and shell on top of the Floridan Aquifer. Elevations in the park reach approximately 125 feet in the sand pine scrub and sandhill. Incised through these high, xeric habitats is Hammock Branch, a blackwater stream which has formed a ravine system as it flows between the sandhill and sand pine scrub communities at an elevation of approximately 15–20 feet. Flowing from the sandhills and emptying into Hammock Branch, are two areas of steepheads (see Topographic Map).

The second physiographic region represented in the park is called the Eastern Flatwoods: Palatka Anomalies–Crescent Lake Basin. This is a lowland area with underlying estuarine and lagoonal silts, clay and fine sand. Because the Ocala Limestone is near the surface in this area, Floridan Aquifer discharge has deposited marls in the low-lying areas along Dunns Creek State Park. Elevations in this region range from near sea level along the creek to approximately 25 feet in the flatwoods.

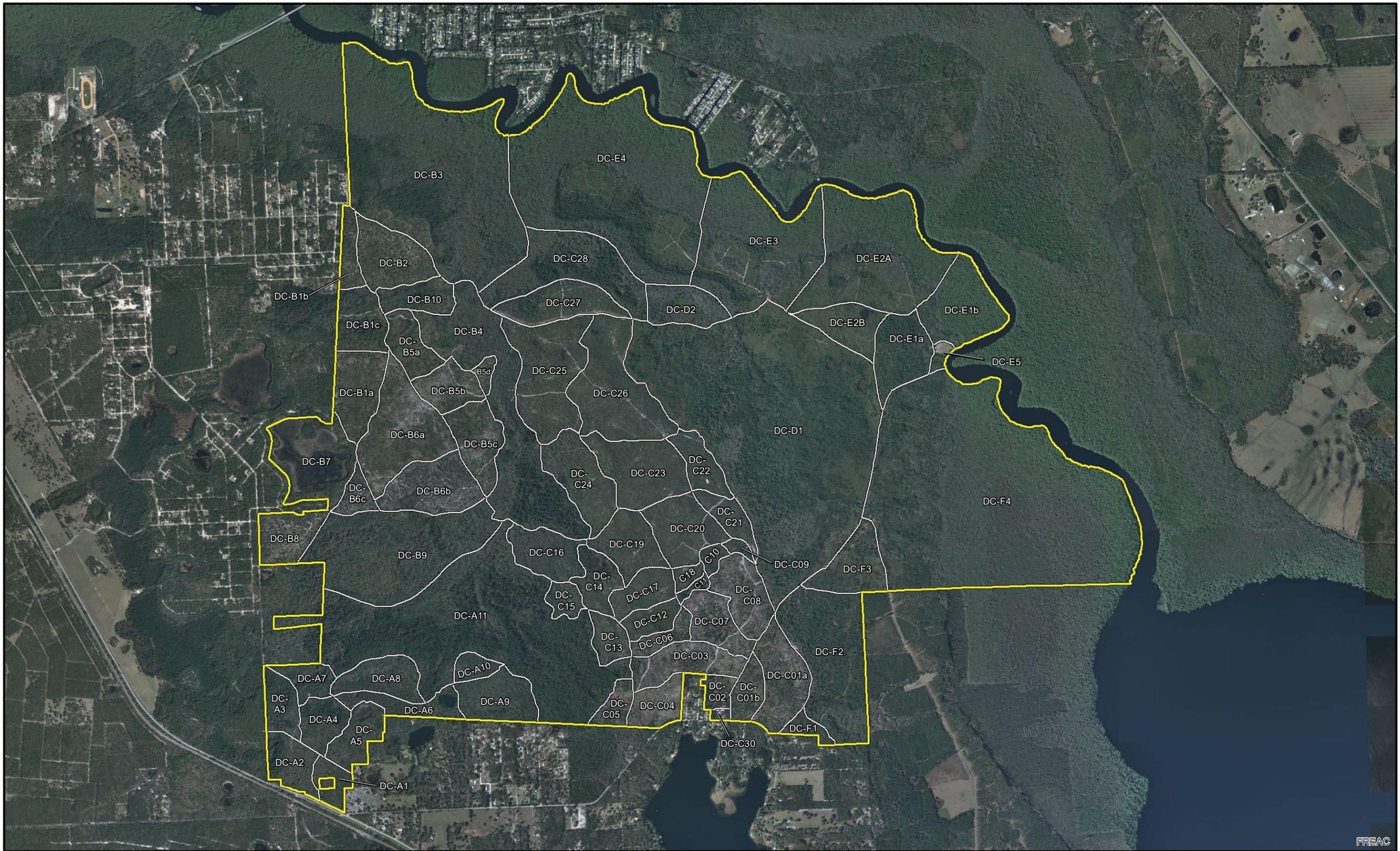
Due the wide range of relief found within the park, a topography map has been inserted into this plan to further illustrate extensive ridges and hills that exist within the park.

## **Geology**

The thick sequence of limestone and dolostone that makes up the Florida carbonate platform is mantled in Putnam County by sedimentary layers that include quartz sand, silt, clay, and organic matter in varying proportions. Formations in the park are not well exposed but regional mapping and well samples indicate that the park is developed mainly on the Late Pliocene Cypresshead Formation. The wetlands that flank Dunns Creek are mapped as Holocene fluvial sediments, a mixture of quartz sands, silt, clay, marl, and organic matter. The Cypresshead Formation consists of very fine to very coarse quartz sand with minor amounts of clay and mica. It commonly contains quartz gravel. The Cypresshead is reddish-orange in exposed sections due to the presence of iron oxides. From youngest to oldest the geological units that have influenced development of the landscape in the park are Holocene fluvial sediments, the Cypresshead Formation, the Nashua Formation, the Hawthorn Group, and the Ocala Limestone.

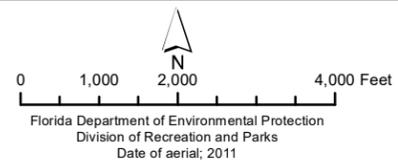
Geological formations comprise hydrogeologic units based on their roles as aquifers or confining units. The Cypresshead Formation and the interfingering Nashua Formation (also mainly a quartz sand) may be part of the surficial aquifer system in areas where their clay content is low. The Miocene-aged Hawthorn Group, a clayey silt layer lying above a very fine grained, poorly indurated limestone may act locally as the intermediate aquifer system or the confining unit for the Floridan aquifer system. The Eocene-aged Ocala Limestone is a very light orange to light gray limestone. It is the upper unit of the Floridan Aquifer system and is found at a depth of 90 feet below surface in a well (W-17173) located on the park.

This area is immediately seen to be unusual due to its relief of approximately 115 feet. The clay content of the Cypresshead Formation and the underlying Nashua Formation and Hawthorn Group has probably been essential in maintaining the higher elevations in the area. Dissolution of the carbonate sediments of the Hawthorn Group and the underlying Ocala Limestone has resulted locally in sinkholes. Steepheads develop as groundwater percolates downward through the quartz sands of the Cypresshead Formation and Nashua Formation. When the groundwater encounters the clay-rich sediments of the Hawthorn Group, it flows laterally along them. Eventually the water emerges as a small seep or spring. The flowing water undermines the poorly consolidated quartz sands that gradually slump off forming the steep-walled stream head. These processes continue over



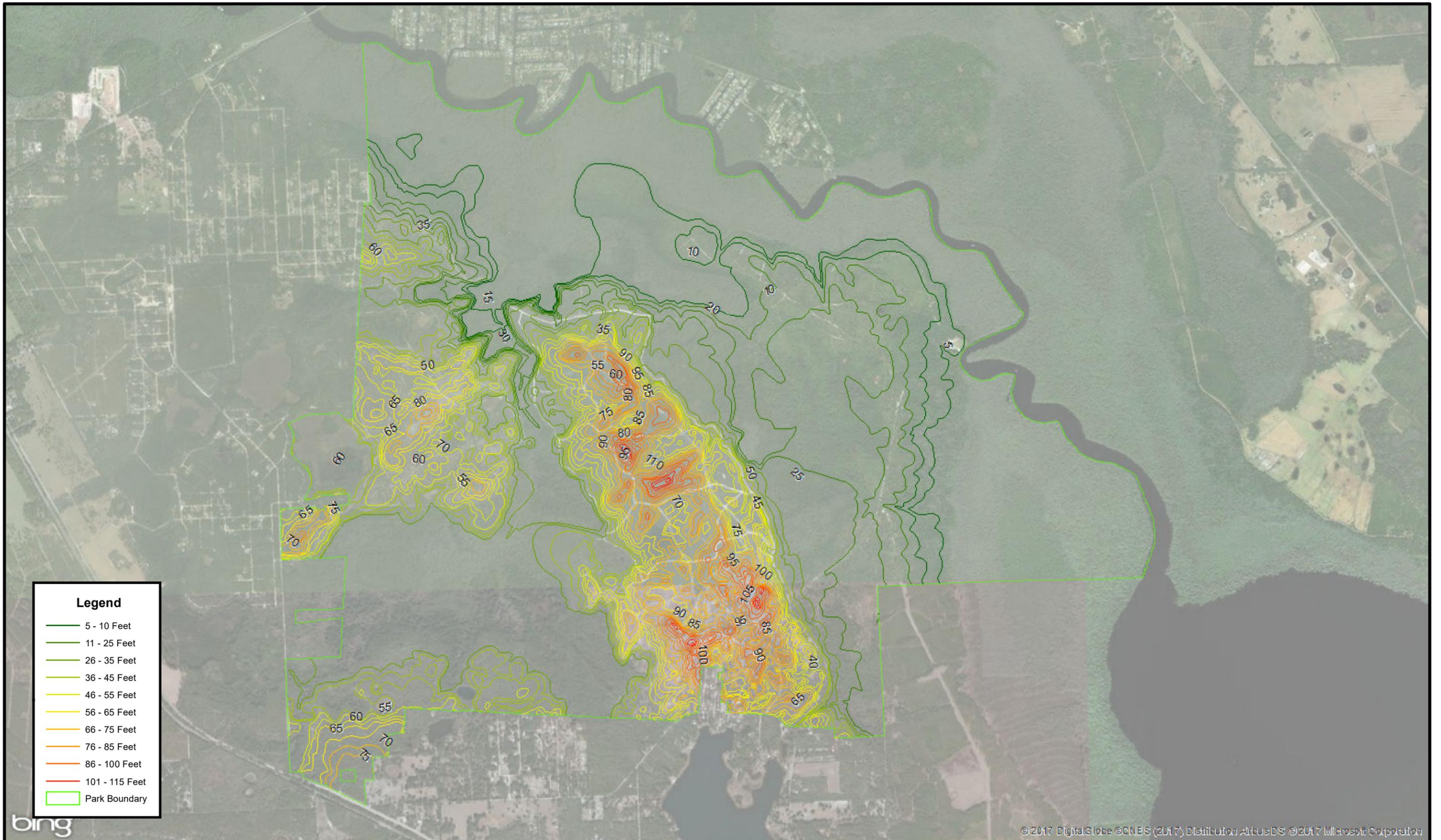
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DUNNS CREEK STATE PARK



MANAGEMENT ZONES MAP

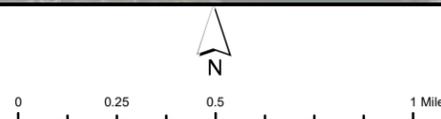




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DUNNS CREEK STATE PARK



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

TOPOGRAPHIC MAP



time so that the steephead migrates laterally away from the site of the original seep, cutting a ravine as it progresses.

Analysis of six monitoring wells on the property shows a relatively narrow Hawthorn Group throughout, with an average thickness of 10–15 feet. One well that was constructed near the steepheads went to a depth of 160 feet and found no Hawthorn Group or Ocala Limestone. On average, the wells encountered the Hawthorn Group at approximately 70 feet below ground surface and the Ocala Formation at 90 feet below ground surface. It is assumed that the steephead near the above mentioned well is located above a paleo-sink. Since there appears to be no confining layer between the surficial and Floridan aquifers in this immediate area, one can assume that the surficial aquifer in this area is vulnerable to Floridan groundwater withdrawals. Further, the natural communities associated with these steepheads (slope forest and seepage stream) are potentially vulnerable to those same withdrawals.

## **Soils**

Twenty-five soil types (see Soils Map) have been identified at Dunns Creek State Park (Readle, 1990). This impressive array of soil types allows for a rich diversity of natural communities on the site. Soil types range from excessively drained sands in the scrub and sandhill to poorly drained muck in the floodplain. Detailed soil descriptions are contained in Addendum 3.

Some areas of soil erosion have been documented on site. Some of the drivable trails are located on moderate to severe slopes on sandy soils. Both vehicle use and hard rains have led to moderate erosion on these slopes. These trails will be closed and allowed to restore.

Erosion has also been documented along Dunns Creek adjacent to the main midden site. Shards, banded mystery snail conglomerates, and bone can be found exposed along this eroded bank. Park staff will be working with the PLA archaeologist to mitigate this impact.

All management activities will follow generally accepted best management practices to prevent soil erosion and conserve soil resources on site.

## **Minerals**

No minerals of economic importance have been identified on this property.

## **Hydrology**

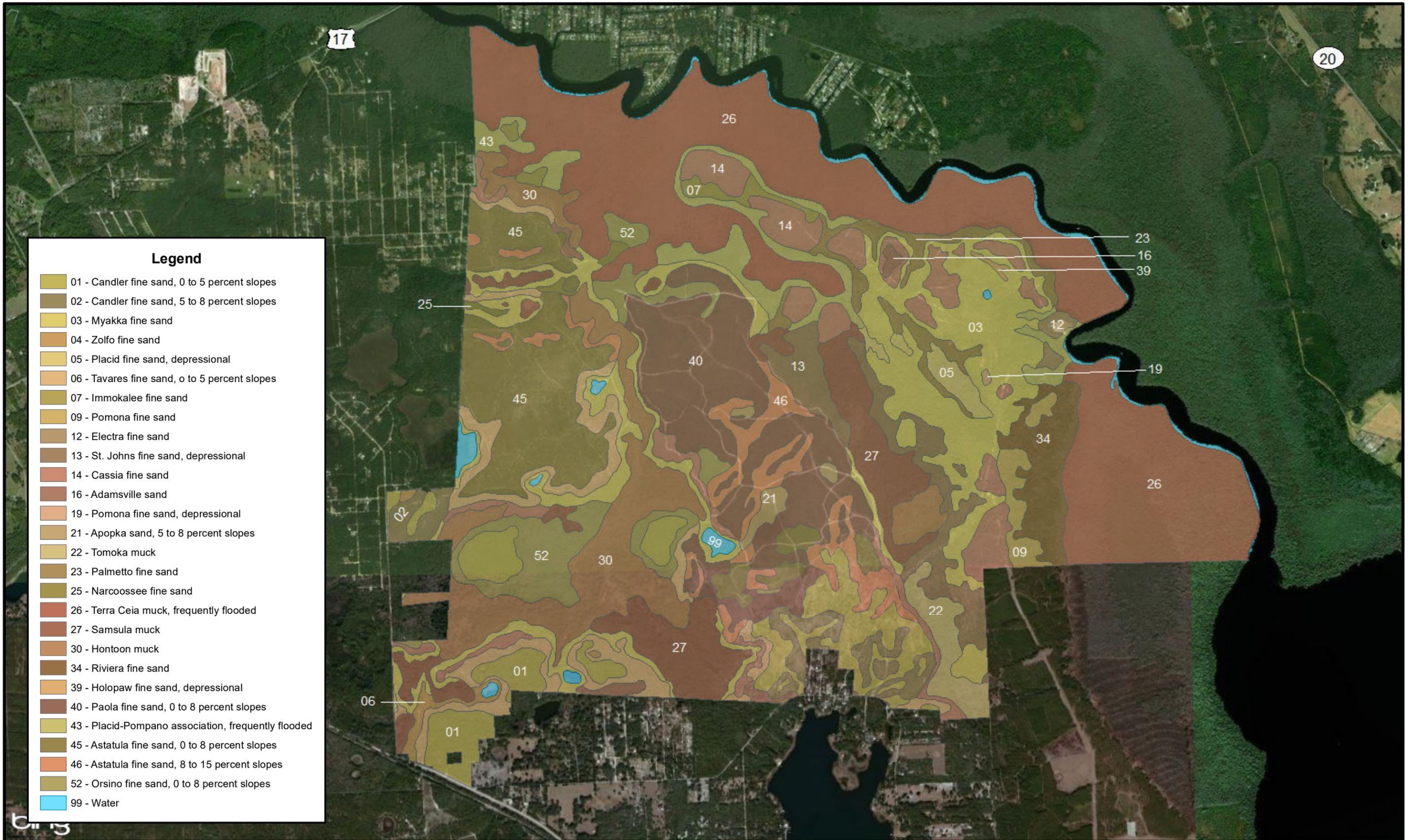
The hydrology of the park is dominated by groundwater seepage and surface water flows driven by the steep topography of its central sand ridges toward Dunns Creek. Highest points on the property occur along these sandy ridges (up to 115 feet elevation), which serve as prime recharge areas for the shallow Surficial Aquifer and perhaps the deeper Floridan Aquifer as well. There is substantial evidence of buried sinkholes scattered throughout these ridge areas, which may serve as locations of concentrated recharge to the Floridan, but which rarely, if

ever, exhibit any standing water. Several wetland ponds are also situated along the flanks of the ridges, most of them exhibiting seasonal hydroperiods. Several of which (e.g., Blue Pond, Sugarbowl Lake) contain standing water year around, suggesting that these sites are more deeply embedded within the Surficial Aquifer system or are more directly connected to the Floridan.

Lowest elevations in the park occur along the floodplain of Dunns Creek (less than 5 feet), which forms the northern and eastern boundaries of the property. The plant community of the floodplain is directly influenced by seasonal changes in the stages of the creek and the nearby St. Johns River, periodic floods and, to a lesser extent, daily tidal fluctuations. Dunns Creek at this location is very large (its floodplain varies from approximately 2,000 feet to nearly a mile in width) and deep (reportedly up to 30 feet deep). It occupies an ancient coastal lagoon basin that also includes present-day Crescent Lake. The creek drains a large watershed that extends to Crescent Lake and its headwaters in Flagler and Volusia County, including the Haw Creek system and portions of the Tiger Bay complex. The floodplain of the creek is also situated within a zone of groundwater discharge – many of the larger Floridan Aquifer springs near the park occur within the floodplain below 10 feet (MSL) in elevation. However, no Floridan springs have been identified within the park itself.

Most of the land area between about 35 feet and 5 feet in elevation is pine flatwoods, seepage slopes, forested wetlands and small streams which are sustained by long-duration seepage of groundwater from adjacent sand hills and ridges. This zone occupies two distinct portions of the property: (1) a broad, swampy basin comprising the central portion of Hammock Branch—a small blackwater stream which dissects and drains the central sand ridge, and (2) the broad area of flatwoods extending downslope to the east and northeast of the main ridge to the Dunns Creek floodplain. In the latter area, flatwoods communities also once likely supported extensive pitcher plant glades in frequently burned seepage areas. Within the former area, several small steephead streams emerge from seepage faces on the flanks of the ridge and drain toward Hammock Branch. The main park drive bisects a large expanse of flatwoods heading from the sandhills on the south end of the property at Sisco Rd all the way down to Piney Bluff landing at Dunns Creek. The road dates to the late 19<sup>th</sup> or early 20<sup>th</sup> century where settlers would access the creek and a telephone line which went north along the road and then headed northwest into zones E2a and b, crossing the creek. Throughout time, the road was modified to allow passage during times of the year where the hydroperiod was higher than normal. A series of ditches were constructed on either side of the road to catch the sheet flow from the surrounding areas and the runoff from the road during storm events. The water was then directed toward the east into the baygalls or other drainage areas by at least three created ditches and two natural drainages. Restoration of these ditches will be discussed later in this plan.

The steepheads portion is primarily fed by seepage of shallow groundwater from the ridge, but may be unique in that they only occur within a very small portion of the property where Hammock Branch cuts through the ridge. They appear to be associated with highly eroded and buried (inactive) sinkhole features. The water table in this portion of the property is typically at, or very near, the ground surface



**Legend**

- 01 - Candler fine sand, 0 to 5 percent slopes
- 02 - Candler fine sand, 5 to 8 percent slopes
- 03 - Myakka fine sand
- 04 - Zolfo fine sand
- 05 - Placid fine sand, depressional
- 06 - Tavares fine sand, 0 to 5 percent slopes
- 07 - Immokalee fine sand
- 09 - Pomona fine sand
- 12 - Electra fine sand
- 13 - St. Johns fine sand, depressional
- 14 - Cassia fine sand
- 16 - Adamsville sand
- 19 - Pomona fine sand, depressional
- 21 - Apopka sand, 5 to 8 percent slopes
- 22 - Tomoka muck
- 23 - Palmetto fine sand
- 25 - Narcoossee fine sand
- 26 - Terra Ceia muck, frequently flooded
- 27 - Samsula muck
- 30 - Hontoon muck
- 34 - Riviera fine sand
- 39 - Holopaw fine sand, depressional
- 40 - Paola fine sand, 0 to 8 percent slopes
- 43 - Placid-Pompano association, frequently flooded
- 45 - Astatula fine sand, 0 to 8 percent slopes
- 46 - Astatula fine sand, 8 to 15 percent slopes
- 52 - Orsino fine sand, 0 to 8 percent slopes
- 99 - Water

DUNNS CREEK STATE PARK



SOILS MAP



for much of the year because of sustained downslope seepage, relatively flat terrain and proximity to surface streams. The rather abrupt break in slope that occurs near the top of this zone tends to force shallow groundwater flowing off the ridges to the ground surface, resulting in saturated conditions for much of the year. The Floridan Aquifer within this zone is artesian and the confining layer between the Surficial and Floridan Aquifers is relatively thin or absent. This suggests some potential for upwelling of deeper groundwater and mixing of water from various sources within the hill slope flow system.

The quality of the park's natural communities is dependent on their associated surface and groundwater resources. This is particularly true of those natural communities that are dependent on seepage, such as baygalls, seepage slopes, bogs, or any wetlands that are imbedded within the Floridan or surficial aquifers. Groundwater withdrawals that reduce the potentiometric elevation of these aquifers will adversely impact these natural resources. Therefore, it is important for the park to monitor these resources to avoid any degradation. The Division will work with the St. Johns River Water Management District and any other regulatory agencies to ensure that these resources are not compromised.

## **Natural Communities**

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

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

When a natural community within a park reaches the desired future condition, it is in a "maintenance condition." Required actions for sustaining a community's maintenance condition may include maintaining optimal fire return intervals for fire dependent communities, ongoing control of non-native plant and animal species, maintaining natural hydrological functions (including historic water flows and water quality), preserving a community's biodiversity and vegetative structure, protecting

viable populations of plant and animal species (including those that are imperiled or endemic), and preserving intact ecotones linking natural communities across the landscape.

The park contains 21 distinct natural communities as well as altered land types (see Natural Communities Map). A list of known plants and animals occurring in the park is contained in Addendum 5.

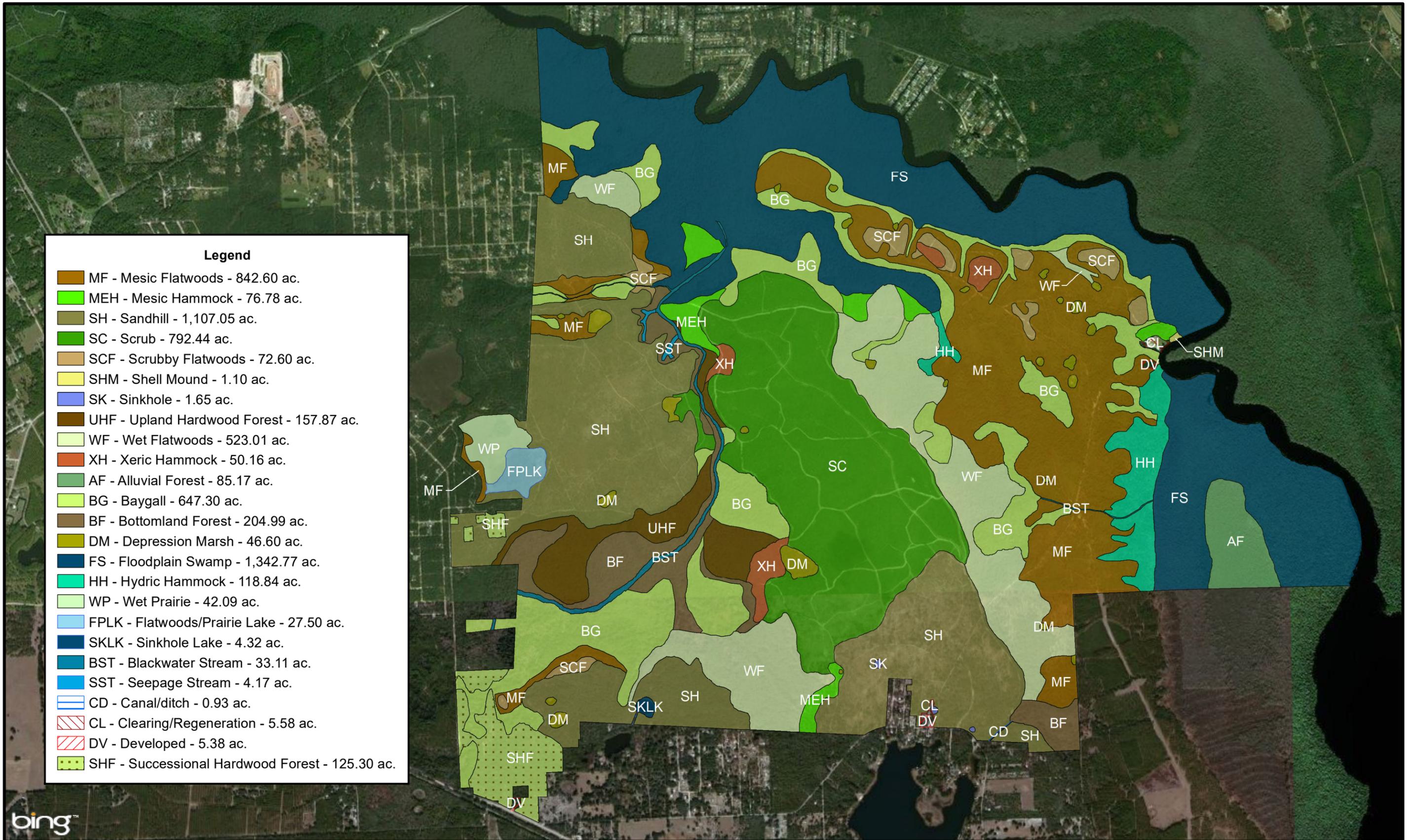
### Sandhill

*Desired future condition:* The dominant pine of sandhill is longleaf pine (*Pinus palustris*) at this park. Herbaceous cover will be very dense, typically of wiregrass (*Aristida stricta* var. *beyrichiana*), and low in stature. Most of the plant diversity is contained in the herbaceous layer including other three-awns (*Aristida* spp.), pineywoods dropseed (*Sporobolus junceus*), lopsided indiagrass (*Sorghastrum secundum*), gopher apple (*Licania michauxii*), bluestems (*Andropogon* spp.), and little bluestem (*Schizachyrium scoparium*). In addition to groundcover and pines, there will be scattered individual trees, clumps, or ridges of onsite oak species [usually turkey oaks (*Quercus laevis*), sand post oak (*Quercus margaretta*), and blue-jack oak (*Quercus incana*)]. In old growth conditions, sand post oaks will commonly be 150-200 years old, and some turkey oaks will be over 100 years old. The Optimal Fire Return Interval for this community is 1-3 years.

*Description and assessment:* This is the largest natural community in the park and is represented in three areas. The highest quality and largest area is located along the western boundary of the park between Sugarbowl Lake and Hammock Branch. Fire suppression has led to its current condition. The western side of this area has small scrub oak thickets scattered along its length. In addition, sand pines (*Pinus clausa*) have invaded some locations along the eastern side of the area. Many of the hardwoods were harvested in March 2011 during a fuel wood cut.

The next largest sandhill is the southern end of the park by the entrance to the park along Sisco Rd. This area contains some of the highest elevations in the park (> 100 feet) and some of the steepest slopes. Fire suppression has led to its current condition, as well. The area has a higher percentage of scrub oaks at approximately a 40% cover and sand pines at a 60-80% in the canopy. The ground cover is very sparse due to the approximately 80% canopy closer that existed prior to December 2010. This area was harvested in December 2010 during a Florida Forest Service sandpine harvest. All merchantable sandpines and sand live oaks were harvested. No other species were harvested.

The third sandhill area is located in the extreme southwest corner of the park along US17 at the Blue Pond day use area. It is the most disturbed and will be the most difficult to restore. Sizable portions of this area were cleared for agriculture and the development of the historic town of Sisco (ca. 1885). The ghost town of Sisco occupied an area 10 miles north of Crescent city off U.S Route 17. The old-field areas contain a canopy of diamondleaf oak (*Quercus hemisphaerica*) and laurel oak (*Quercus laurifolia*) with a sparse to non-existent ground cover. Scrub oak, laurel oak, and sand pine stands dominate many parts of this sandhill.



**Legend**

- MF - Mesic Flatwoods - 842.60 ac.
- MEH - Mesic Hammock - 76.78 ac.
- SH - Sandhill - 1,107.05 ac.
- SC - Scrub - 792.44 ac.
- SCF - Scrubby Flatwoods - 72.60 ac.
- SHM - Shell Mound - 1.10 ac.
- SK - Sinkhole - 1.65 ac.
- UHF - Upland Hardwood Forest - 157.87 ac.
- WF - Wet Flatwoods - 523.01 ac.
- XH - Xeric Hammock - 50.16 ac.
- AF - Alluvial Forest - 85.17 ac.
- BG - Baygall - 647.30 ac.
- BF - Bottomland Forest - 204.99 ac.
- DM - Depression Marsh - 46.60 ac.
- FS - Floodplain Swamp - 1,342.77 ac.
- HH - Hydric Hammock - 118.84 ac.
- WP - Wet Prairie - 42.09 ac.
- FPLK - Flatwoods/Prairie Lake - 27.50 ac.
- SKLK - Sinkhole Lake - 4.32 ac.
- BST - Blackwater Stream - 33.11 ac.
- SST - Seepage Stream - 4.17 ac.
- CD - Canal/ditch - 0.93 ac.
- CL - Clearing/Regeneration - 5.58 ac.
- DV - Developed - 5.38 ac.
- SHF - Successional Hardwood Forest - 125.30 ac.

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DUNNS CREEK STATE PARK



NATURAL COMMUNITIES MAP



The hoot owl ridge sandhills and the sandhills near the entrance to the park were all harvested between November 2010 and April 2011. All merchantable sand pines and sand live oaks were removed unless otherwise specified by the park biologist. Because of this harvest, sandpine and oak regeneration has been moderate to severe in many locations and next to none in some areas. This will be an ongoing problem as the sandhill restoration progresses. Most of the sandhill burn management zones have been burned at least once except for a few.

*General management measures:* Chainsaw crews and the use of mowing and herbicides will be needed to control the initial regrowth of sand pines and sand live oaks during this unit plan period. The primary management goal for the sandhill zones should be to reintroduce fire as often as possible and when suitable ground fuels are present to enable a good ground fire to carry in these zones with an overall long-term goal of achieving a 1-3 year fire return interval. A secondary fire goal would be encouraging early spring to summer burns to help control and reduce the oak density in areas of dense cover. Restoration priority should be given to those areas that have the best ground cover and canopy structure like the hoot owl ridge zones (B zones).

### Scrub

*Desired future condition:* Within scrub habitats, the dominant plant species will include scrub oak (*Quercus inopina*), sand live oak (*Quercus maritime*), myrtle oak (*Quercus myrtifolia*), Chapman's oak (*Quercus chapmani*), saw palmetto (*Serenoa repens*), and rusty staggerbush (*Lyonia ferruginea*). There will be a variety of oak age classes/heights between different scrub patches. There will be scattered openings in the canopy with bare patches of sand that support many imperiled and/or endemic plant species; these species will be regularly flowering and replenishing their seed banks. Sand pine (*Pinus clausa*), where present, will usually not be dominant in abundance, percent cover, or height. Some areas of mature sand pine may occur. The Optimal Fire Return Interval for this community is typically 4-15 years when aiming to achieve a mosaic of burned and unburned areas.

*Description and assessment:* The scrub community is one continuous piece located in the center of the property and represents the northern terminus of the Crescent City Ridge. It attains heights up to approximately 130 feet. Habitat quality varies within this community. Remaining sand pine stands are no older than about 40 years. Past logging activities have provided numerous old access roads throughout the habitat which have been expanded and improved for use of fire lanes.

Until August of 2010, most of the scrub contained sand pines dominating the canopy from anywhere between 40-90% cover. In 2010, a sand pine harvest removed a majority of the sand pine from the scrub and surrounding habitats with the exception of a few stands that were left for habitat diversity on the north part of the ridge. The shrub layer is dominated by scrub oaks at a 60-90% cover. Other dominant species are garberia (*Garberia heterophylla*), big flower pawpaw (*Asimina obovata*), scrub holly (*Ilex opaca* var. *arenicola*), and silk bay (*Persea borbonia* var. *humilis*). Due to the density of the shrub layer, the groundcover is somewhat

depauperate but since the harvest, other species such as Elliott's bluestem (*Andropogon gyrans*), fragrant eryngo (*Eryngium aromaticum*), Elliott's milkweed (*Galactia elliotii*), and Feay's prairieclover (*Dalea feayi*) have been observed.

Since the harvest was completed from April 2011 until late 2012, sand pine regeneration within the scrub habitat has been minimal other than some of the loading deck locations. Sand pine regeneration has been much more severe in the sandhill where bare ground and sparse herbaceous groundcover makes for a suitable pallet for sand pine. Currently, there are no exotic plant infestations in the scrub habitat but patrol and surveying will be ongoing, especially for species that have been found nearby in the sandhill such as Rose-natal grass (*Melinis repens*) and cogongrass (*Imperata cylindrical*).

Burning this habitat without additional mechanical treatment will be difficult due to the overall size of the zones, the topography of the site, and the surrounding zones. The scrub ridge contains many rolling hills with some in excess of 60ft or more incline within 200 feet which can dramatically affect the fire behavior, making more extreme and unpredictable. To the east of the scrub ridge is a large seepage slope in zone D1 which grades into baygall and pine flatwoods as you continue to the east with very few interior lines. Zone B4 to the west is a very long and linear zone with Hammock Branch running from south to north through it with only two locations to cross the branch. Only the western portion of this zone has been burned and many of the zones to the south and north of it have not been burned as on 2017. Also, there are many homes and housing developments to the west that would be impacted by the smoke produced from a large scrub burn. On April 30, 2010, D1 was burned with a SE wind and many residents in the San Mateo area and even in the city of Palatka complained of ash and embers landing in their yards. A good SW or W wind may be the best wind direction to burn with when burning the scrub at Dunns Creek.

Many new fire lines were constructed in the scrub zones in 2010-17 and many more are needed as funding and equipment allows. Park equipment has been used to low mow 30ft on each side of the fire lines throughout the scrub and on the 35ft on the scrub ridge/D1 transition in order to keep fuel heights low, to allow for a more herbaceous strip needed for a good black line, and to produce safer conditions for fire fighters.

The scrub and the sandhill at the park also contain a rare scrub endemic plant, *Condridina cygniflora* (previously *Condridina etonia*) which will be further discussed in the imperiled species section of this plan. This plant appears to respond favorably to mechanical treatment and burning. While mowing and widening fire lines in zone C9, new plants were being found along the edge of the road shortly after. A small population of the plants was burned in 2010 and 2012 in zone C2, top killing the plants each time. New individuals were found between 6 to 12 months later within 15 feet of the previous plant. Two populations located in zones C13 and C9 were run over by the timber crew in 2010 with many of the plants surviving and regenerating. Care should be given to not burn more than 50% of the overall plants within 3 years of one another so that the population at the park would not be

eliminated.

*General management measures:* The main challenge in managing the scrub at the park will be burning it effectively and on the rotation needed to increase the amount of bare ground available. Strategic burning is key to burn the ridge by burning down wind zones first and installing new fire lines in key locations to reduce the size of the zones if needed.

#### Xeric Hammock

*Desired Future Condition:* Typically considered a late successional stage of scrub or sandhill that generally occurs in small isolated patches on excessively well drained soils. Vegetation will consist of a low closed canopy dominated by live oak (*Quercus virginiana*) which provides shady conditions. Typical plant species may also include Chapman's oak and laurel oak. Sand pine, slash pine, or longleaf pine may also be a minor component. Understory of species will include saw palmetto, fetterbush (*Lyonia lucida*), and myrtle oak. A sparse groundcover layer of wiregrass (*Aristida stricta* var. *beyrichiana*) and other herbaceous species may exist but will typically be absent. A continuous leaf litter layer may be present. Overgrown scrub in need of fire and/or mechanical treatment should not be confused with true xeric hammock.

*Description and assessment:* The xeric hammock (otherwise referred to as the boneyard) at the park is located on pine island in zone E3. This is a small hammock that appears to have been used as a hunt camp in the early part of the 20<sup>th</sup> century to 2001. The canopy is dominated by large live and sand live oaks at 70% cover with scattered turkey oak and longleaf pine. The understory is relatively nonexistent in half of the hammock and appears to have been cleared in the 1940's and 50's when looking at the historic aerial imagery. The other half of the site's understory resembles overgrown scrubby flatwoods with myrtle oak, Chapman's oak, tarflower, and scatter saw palmetto. Ground cover in this half of the site has scattered wiregrass, gopher apple, and sedges. Much of the site appears to have been a small sandhill or scrubby flatwoods ridge surrounded by mesic flatwoods over 150 years ago.

*General management measures:* Prescribed fire will continue to be used in the mesic flatwoods habitat surrounding the xeric hammock which will continue to affect the edges and transition areas every 1-4 years. Exotic species control will be ongoing as new infestations are found.

#### Scrubby Flatwoods

*Desired future condition:* The dominant tree species in scrubby flatwoods will usually be longleaf pine and slash pine. Mature sand pines will typically not be present. There will be a diverse shrubby understory often with patches of bare white sand. A scrub-type oak "canopy" will contain a variety of oak age classes/heights across the landscape. Dominant shrubs will include sand live oak, myrtle oak, Chapman's oak, saw palmetto, rusty staggerbush (*Lyonia ferruginea*), and tarflower (*Bejaria racemosa*). Cover by herbaceous species will often be low to moderately dense. The Optimal Fire Return Interval for this community will be

regionally variable; typically, 5-15 years when aiming to achieve a mosaic of burned and unburned areas.

*Description and assessment:* At Dunns Creek this community is located on knolls and small ridges within the mesic flatwoods in the northeastern part of the park and along transition areas of near sandhill. Most of this habitat has a moderate shrub component, which should easily be restored with fire management. The dominant canopy is longleaf, slash pine, and scatter sand live oak. The shrub layer is typically comprised of rusty staggerbush, myrtle and Chapman's oak, coastalplain staggerbush (*Lyonia fruticosa*), tarflower, and saw palmetto. The dominant groundcover was wiregrass, Elliott's milkpea, narrow fruit horned beaksedge (*Rhynchospora megalocarpa*), and a variety of other herbs.

*General management measures:* The primary objective for the scrubby flatwoods on pine island (zones E2-E4) within the mesic flatwoods is to burn them on that same rotation as the surrounding habitat which would be every 2-4 years. The scrubby flatwoods do not need to burn every time. Every other to every third time may be the best fire management strategy to employ. The scrubby flatwoods found on the border of the sandhills in zones A6, A4, and C10 would all benefit from mechanical treatment using a Gyrotrac or comparable machinery to reduce the vertical structure of sand live oak and saw palmetto before fire. Exotic plant surveys will continue and exotics will be treated when found.

#### Shell Mound

*Desired future condition:* The shell mound community is largely the result of human activities instead of natural and physical processes. Shell mounds are small hills or mounds made up almost entirely of mollusk shells discarded by Native Americans. The soils will be circumneutral to slightly alkaline, contain minimal organic material, and very well drained. Undisturbed shell mounds can support a variety of hardwood trees and shrubs which may include white stopper (*Eugenia axillaris*), live oak, cabbage palm (*Sabal palmetto*), red cedar (*Juniperus virginiana*), torchwood (*Amyris elemifera*), wild lime (*Zanthoxylum fagara*), saffron plum (*Sideroxylon celastrinum*), soapberry (*Sapindus saponaria*), snowberry (*Chiococca alba*), and false mastic (*Sideroxylon foetidissimum*). Desired future conditions include minimizing erosion; including maintaining appropriate vegetation heights to minimize toppling of large trees, and protecting sites from illegal digging.

*Description and assessment:* There is one documented shell mound on the park. It is located at Piney Bluff adjacent to Dunns Creek and the floodplain swamp. It has been severely impacted by the removal of the shell material for mostly "road improvements" by previous owners and by the development. The dominant vegetation at this small site includes red buckeye (*Aesculus pavia*), parsley hawthorn (*Crataegus marshallii*), and dwarf palmetto (*Sabal minor*). The shell mound community most likely extended into where the open field is now to the south but all of the vegetation was cleared for an old homestead and goat farm in the 1940's.

*General management measures:* Exotic animal and plant control in the shell mound

will be ongoing to control hog rooting and damage to the site. Human access should be restricted to prevent disturbance to the area.

### Mesic Flatwoods

*Desired future condition:* Mesic flatwoods is characterized by an open canopy of tall pines such as longleaf pine and slash pine and a dense, low ground layer of low shrubs, grasses, and forbes. Saw palmetto will generally be present but not overly dominant. Other shrub species may include gallberry, fetterbush, runner oak (*Quercus elliotii*), dwarf live oak (*Quercus minima*), shiny blueberry (*Vaccinium myrsinites*), and dwarf huckleberry (*Gaylussacia dumosa*). The herbaceous layer is primarily grasses, including wiregrass, dropseeds (*Sporobolus curtissii*, *S. floridanus*), panicgrasses (*Dicanthelium* spp.), and broomsedge (*Andropogon* spp.). This community has minimal topographic relief and the soils contain a hardpan layer within a few feet of the surface which impedes percolation. Due to these factors, water can saturate the sandy surface soils for extended periods during the wet season but lengthy droughts also commonly occur during the dry season. The Optimal Fire Return Interval for this community is 1-4 years.

*Description and assessment:* The great majority of the mesic flatwoods at this site are situated between the Crescent City ridge and the floodplain of Dunns Creek. This broad, relatively flat area is interspersed with bayheads, wet flatwoods and scrubby flatwoods.

The canopy is dominated by longleaf pine and slash pine with scattered pond pine (*Pinus serotina*) and loblolly pine (*Pinus taeda*). The shrub layer is much more diverse. Common species include sweet gallberry (*Ilex coriacea*), gallberry, saw palmetto, and several species of oaks. The herbaceous layer is the most diverse, containing many graminoids. Typical species are wiregrass, bottlebrush threeawn (*Aristida spiciformis*), several species of *Polygala*, witchgrasses, *Liatris* sp. and vanilla leaf (*Carphephorus odoratissimus*).

Fire suppression and logging has impacted the quality of this natural community, but the ground cover is mostly intact. Saw palmetto is present at a much higher density than what historically would have been present in these flatwoods at a density of 70 to 90%. The overall appearance of this community can be deceiving since it is a relatively open community type. The open appearance can lead someone to the false conclusion that community is in maintenance and that no other actions are needed. Based on the results from multiple prescribed fires from 2008 to 2016 in both the growing and dormant seasons, it is recommended that roller chopping be used to reduce the density of saw palmetto in at least 50% of the zones while reducing the vertical structure around remaining pine trees. Fire behavior and intensity have been severe and have caused pine mortality regardless of firing technique or season. Growing season burning is the long-term goal for the mesic flatwoods, but more dominant season burns are recommended to reduce fuel build up and to protect the remaining trees.

In the early 1980s most of the flatwoods were logged. Today, there are very few longleaf or slash pines in this community older than 30-50 years. The margins of this community are being encroached upon by loblolly bay and sweet bay.

Successive fires between 2003 and 2016 have shown that fire alone can be an effective control, but may ignite organic soils on this transition and cause trees to fall over and uproot. A salvage cut conducted from December 2010 to March 2011 in zones D1, D2, F3, F4, and parts of F2, E2b, E2a, and E3. A severe drought in spring of 2010 followed most of the burning that was done in the mesic flatwoods that were burned in 2009 and 2010. Because of the stress of the burn combined with the severe drought, pine beetles moved into most of the stressed loblolly, slash, and some longleaf pines in those zones. The cutting of only the effected trees began immediately to save as many unaffected trees as possible. Parts of F2, E2b, E2a, and E3 were also harvested during this same time to prevent the spread of the beetles into these areas. In zone F2, large loblolly bays were harvested out of the flatwoods and hardwood forested areas while the timber crew was in there to burn them in the coming years. After the harvest, the ground cover recovered, but many areas of D1 and E3 were left devoid of trees. Longleaf pine plantings may be needed in these areas in the future.

Approximately 60 acres (two areas) of the mesic flatwoods in zone E2a were planted in slash pine rows in the mid-1980s and were slightly bedded. In 2009, the area was burned and then thinned the following year in December of 2010. After the burn, 40% of the trees were killed due to heavy fuel accumulation, the intensity of fire, and the pine beetles that moved in right after the burn. The planted area was then burned in July of 2012 which resulted in another 20% reduction. The stand currently resembles a more natural density.

There is section of mesic flatwoods located in zone B3 in the northwest portion of the park that has been encroached with loblolly bay trees due to the lack of fire over the years. Attempts were made in 2011 to thin this area but onsite conditions at the time did not allow for it. Soil moisture was high with many areas inundated, making harvesting impossible. Roller chopping was conducted along the perimeter of B3, a new fire line was constructed in 2009, and the area was burned in 2015. Multiple dormant season fires are recommended for this area.

The hooded pitcher plant (*Sarracenia minor*) can be found throughout the mesic flatwoods and in some of the lower lying areas around depression marshes and baygalls. Continuing to burn the flatwoods on a 2-4 year rotation will eliminate ground fuels which will encourage the growth of this species. Feral hogs have proven to be a problem to the pitcher plant and the mesic flatwoods by destroying and rooting up large areas of habitat year after year. Intensive hog removal has been taking place at the park since 2007 by USDA (United State Department of Agriculture) Wildlife service and park staff. Continuous hog removal will be needed to protect pitcher plant, mesic flatwoods, and depression marsh communities long-term.

*General management measures:* Continue prescribed fire activities on a 2-4 year rotation, utilizing dormant and growing season fires where needed. Conduct wide scale roller chopping in zones E1 through E4, chopping lightly with a goal of treating approximately 50% of the habitat in areas where saw palmetto is most dense. Investigate the feasibility of planting long leaf pine in large areas devoid of an

intact pine canopy in zones F3, D1, and in the zones E. Continue to monitor and treat exotic plants and animals, with a focus on torpedo grass and feral hogs.

### Mesic Hammock

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

*Description and assessment:* The mesic hammock at the park can be found in several locations in the park, typically before flatwoods transitions into a swamp. The most noticeable mesic hammock is at Piney Bluff north of the field and to the south of the group camp. The mesic hammock condition is as described above with the addition of sand live oak sharing the canopy. Shrub vegetation is dense and contains some wax myrtle as you head north toward a small drainage. No exotic plants infestations have been found in the hammock but since it is immediately adjacent to the large clearing that contains Bahia and other disturbed old field grasses, the potential is always there for those grasses to spread into the hammock where a thick leaf litter layer is absent.

*General management measures:* It is important to monitor this community when developing the surrounding facilities in the future. The small creek to the north of the hammock which crosses the group camp road, often backs up and can flood parts of the hammock for a short time. Exotic plant control and surveying will be ongoing.

### Wet Flatwoods

*Desired future condition:* Dominate pines are usually longleaf pine, slash pine, pond pine, and/or loblolly pine. Pond cypress (*Taxodium ascendens*) may reach the canopy in some locations. The canopy will be open, with pines being widely scattered and of variable age classes. Native herbaceous cover is dense and includes pitcher plants and other plants such as terrestrial orchids may be present and abundant in some areas. Common shrubs will include sweet pepperbush (*Clethra alnifolia*), fetterbush, gallberry, and wax myrtle (*Myrica cerifera*). The Optimal Fire Return Interval for this community is 2-4 years.

*Description and assessment:* The wet flatwoods at Dunns Creek are found in depressional areas within the mesic flatwoods or adjacent to scrub ridge in zone

D1, F2, and C5 as seepage percolates out of the ground at the base of the ridge. Typically dominated by pond pines and slash pine in the canopy, they have longer hydroperiods than comparable mesic flatwoods. The shrub layer commonly contains gallberry, fetterbush, swamp doghobble, and saw palmetto. The diverse groundcover is comprised of wiregrass and bottlebrush threeawn with many species of wildflowers such as meadowbeauties and marsh pinks.

Most likely, this community was much more extensive throughout the park in the past. Because of the lack of fire, these areas succeeded to a hardwood forest or a baygall community where sweet gum trees, black gum, red maple and loblolly bay trees have invaded and changed the entire structure of the habitat. It may be possible to reclaim some of the historic wet flatwoods at the park by allowing fire to run in or hit the transition areas while doing some mechanical treatment such as harvesting or mowing.

In 2003, the park used a gyrotrac machine to mow down the edge of the D1 about 35 feet to 50 feet into zone D1 and then it was burned in 2004 with a helicopter. Zone D1 was again burned using ground ignition in April 2010 where 4-6 inches of duff burned during one burn along the slope. Many trees fell along the western line of D1 during and after the burn, causing a major safety concern for the fire fighters. Later that year, the park experienced a severe drought and many of the loblolly pine, slash pine, and bay trees died due to the stress from the burn, a prolonged drought, and an infestation of pine beetles (eips and sawyers). The dead and dying timber was then harvested in January 2011. Skid trails and access roads were difficult to locate due to the deep and hydrated organic soils. After the harvest, all trees within 50 feet of east scrub road were removed and all other trees within zone D1 were thinned by 60%. The wet flatwoods in zone F2 were also harvested in the January 2011 and then burned in 2015. The visual effect from burning and the timber harvest can be seen along the entire western border of zone D1 where one can now see over 300 feet or more into the zone and through most of the wet flatwoods. Groundcover diversity has increased and the cover of saw palmetto has decreased by approximately 30%. Further palmetto, bay, and pine reduction is needed to meet desired future conditions for this community.

The wet flatwoods of A11 has no fire lines and therefore, has not been burned. Future plans include installing new fire lines and conducting a thinning harvest in the area.

*General management measures:* Restoration of the community will be ongoing and will expanded into zone A11 during this management plan period once perimeter and interior fire lines are installed. The wet flatwoods should be maintained using prescribed fire on a 2-4 year fire return interval, favoring a burn every 2 years for multiple dormant seasons to reduce fuel and duff accumulation. Growing season burning can begin once these fuels have been reduced. The park will investigate the feasibility of using other methods to restore this community focusing on shrub and palmetto reduction using mechanical and/or chemical means. Staff will continue to monitor and treat exotic plants and animals with a focus on torpedo grass and feral hogs.

### Upland Hardwood Forest

*Desired future condition:* Mature, closed canopy hardwood forest typically occurring on slopes and rolling hills with generally mesic conditions. Overstory tree species may consist of southern magnolia, sweetgum (*Liquidambar styraciflua*), live oak, laurel oak (*Quercus laurifolia*), Florida maple (*Acer saccharum* subsp. *floridanum*), white oak (*Quercus alba*), and American beech (*Fagus grandifolia*). Understory species will include trees and shrubs such as American holly, flowering dogwood (*Cornus florida*), eastern redbud (*Cercis canadensis*), red bay (*Persea borbonia*), horse sugar (*Symplocos tinctoria*), and beautyberry. Ground cover will comprise of shade tolerant herbaceous species, sedges and vines including spring ephemerals.

*Description and assessment:* Much of this community is in the southwest part of the park and is situated up slope from the upstream portions of Hammock Branch and the associated baygall. A significant portion of this community was high-grade timbered in the 1970s. Typical canopy and tree species include pignut hickory, southern magnolia, sweet gum, and bluebeech (*Carpinus caroliniana*). The common shrubs include sparkleberry, swamp doghobble (*Leucothoe racemosa*), and American beautyberry. Typical groundcover is eggleaf witchgrass (*Dicanthelium ovale*), coastal bedstraw (*Galium hispidulum*), and Virginia snakeroot (*Aristolochia serpentaria*).

Other areas are found along the slopes of the steep head ravines which were formally described as slope forest by FNAI (Florida Natural Areas Inventory). Areas that were once mapped as slope forest for this area of the State are now mapped as upland hardwood forest. This area is found on the steep banks of the two ravines in the hoot owl ridge sand hill complex, grading between xeric uplands to Hammock Branch, a blackwater stream, and its seepage stream tributaries. The upper portions of the slope exhibit xeric species such as pignut hickory (*Carya glabra*), diamondleaf oak (*Quercus hemisphaerica*), and big flower pawpaw. Down slope quickly grades into mesic species such as southern magnolia (*Magnolia grandiflora*), pipestem (*Agarista populifolia*), swamp dogwood (*Cornus foemina*), and bluff oak (*Quercus sinuata*).

*General management measures:* This community is in a relatively good condition and exotic control of feral hogs and plants. The transition area along the tops of the ravines grading into the sandhills will most likely be impacted by periodic fires when the sandhill is burned. Care must be given to ensure that adequate soil moisture is present before fire could be run toward the upland hardwood forest in this area. Controlling feral hogs and exotic plants is the main management objective for this community and will be dealt with as they are found.

### Baygall

*Desired future condition:* Baygall consists of a wet densely forested, peat filled depressions typically near the base of a slope. Seepage from adjacent uplands will maintain saturated conditions. Medium to tall trees consist of sweetbay, loblolly bay, and/or swamp bay. Occasionally sparse pines may also exist. A thick understory consisting of gallberry, fetterbush (*Lyonia lucida*), dahoon holly (*Ilex*

*cassine*), and red maple is typical with climbing vines such as greenbriar (*Smilax* spp.) and muscadine grape (*Vitis* spp.). The dominant baygall species are fire intolerant indicating an infrequent Optimal Fire Return Interval of 25-100 years. Frequent fires from adjacent communities should be allowed to enter baygall ecotone however, being aware of the problems associated with peat fires.

*Description and assessment:* This is one of the largest natural communities in the park with many representative areas located adjacent to the sandhill and scrub ridge. This seepage-driven natural community is typically dominated by a canopy of loblolly bay and sweet bay. The shrub layer is normally composed of gallberry, fetterbush, dog hobble, and saw palmetto with scattered muscadine vines. Due to the density of the canopy and shrub layer, the groundcover is sparse. Typical species are sphagnum, eggleaf witchgrass, and scattered patches of ferns such as cinnamon fern (*Osmunda cinnamomea*) and chain fern (*Woodwardia virginica*).

The baygall community today is most likely much larger than what historically existed at the park. Much of the wet flatwoods depression marshes and possibly wet prairie areas that once existed are now baygall due to fire suppression and past timbering practices. Bay trees occupied a majority of wet flatwoods portion in zone D1 up until 2004 when fire was reintroduced to this community. Since then, bay trees and the current baygall community have been pushed back considerably. Much of the wet and mesic flatwoods communities in zone F2 resembled a baygall in 2009 before the area was timbered and many of the smaller loblolly bay trees were removed during the 2010-2011 salvage cut.

*General management measures:* Feral hogs have disturbed many baygall stands within the park, especially during dry times of the year when water levels are low elsewhere. An active and consistent hog control program must continue in order to protect this community from disturbance and the introduction of exotic plants. Prescribed fire will continue to be used to control bay encroachment out into the surrounding natural communities when the surrounding or adjacent community is a fire type community. Baygall toward Sisco Bay near US 17 exists within a matrix of upland hardwood forest and bottomland forest which most like did not receive fire except during extreme drought conditions.

#### Depression Marsh

*Desired future condition:* Depression marsh is characterized as containing low emergent herbaceous and shrub species which will be dominant over most of the area and include open vistas. Trees will be few and if present, will occur primarily in the deeper portions of the community. There will be little accumulation of dead grassy fuels due to frequent burning; one can often see the soil surface through the vegetation when the community is not inundated. Dominant vegetation in depression marsh may include maidencane, panic grasses (*Panicum* spp.), cutgrass (*Leersia* sp.), common reed (*Phragmites australis*), pickerelweed (*Pontederia cordata*), arrowheads (*Sagittaria* sp.), buttonbush (*Cephalanthus occidentalis*), St. John's wort (*Hypericum fasciculatum*), and carolina willow (*Salix caroliniana*). The Optimal Fire Return Interval for this community at Dunns Creek is 1-5 years depending on fire frequency of adjacent communities.

*Description and assessment:* There are numerous depression marshes at Dunns Creek. They are found within the flatwoods, sandhill, and scrub communities. Several of them are large enough to have longer hydroperiods than the smaller ones. They are differentiated from sandhill upland lakes by having high water outlets and inlets.

The marshes are typically dominated with a concentric band of sand cordgrass on the upland margin. In the wetter areas blue maidencane, maidencane, and redroot are common. Usually towards the middle of the marsh is the deepest and/or wettest. Typical vegetation found there includes several species of sedges and arrowhead (*Sagittaria graminea*).

Many of the depression marshes are surrounded by a concentric band of slash pine or bay trees most likely due to years of fire suppression and organic buildup around the edge of the marsh. Fire shadows can also be seen on some of the ponds where a fire moved into a marsh and burned one side of it but not the other side. Most of these marshes are burned with a southwest wind direction due to their location in the sandhill on hoot owl ridge or in the pine flatwoods on pine island which tends to produce a fire shadow over time.

Two particular marshes appear to be a very important gopher frog (*Rana capito*) breeding ponds. Perhaps other ponds in the park will support breeding gopher frogs, as well as, other ephemeral wetland-breeding amphibians.

*General management measures:* The depression marshes at the park are vulnerable to disturbance by feral hogs. Continuous trapping pressure must be applied to these areas to protect this valuable habitat for listed species such as the gopher frog and sandhill crane. Prescribed fire will be utilized on a fire return interval that is applied to the surrounding fire type communities which is typically every 1-5 years. The depression marshes at the park suffer from hardwood and pine encroachment that has occurred over many years due to fire suppression in the surrounding pyrogenic communities. To decrease the pine basal area in and surrounding the lakes as well as reduce the hardwoods and shrubby components, timber thinning is recommended to remove trees safely. Fire should be applied to impact the fire shadow and pine/bay tree edge around some of these marshes by burning them with different wind directions or using differing ignition techniques to impact the surrounding edge.

### Bottomland Forest

*Desired Future Condition:* Bottomland forest is a low lying, mesic to hydric community prone to periodic flooding. Vegetation will consist of a mature closed canopy of deciduous and evergreen trees. Overstory species may consist of species such as sweetgum (*Liquidambar styraciflua*), sweetbay (*Magnolia virginiana*), loblolly bay (*Gordonia lasianthus*), water oak (*Quercus nigra*), live oak (*Quercus virginiana*), swamp chestnut oak (*Quercus michauxii*), loblolly pine (*Pinus taeda*), and spruce pine (*Pinus glabra*). Red maple (*Acer rubrum*) and bald cypress (*Taxodium distichum*) may also be present. Understory may be open or dense.

Understory species will typically include wax myrtle (*Myrica cerifera*), dwarf palmetto (*Sabal minor*), and swamp dogwood (*Cornus foemina*). Presence of groundcover will be variable and may consist of witchgrass (*Dicanthelium* sp.) and various sedges (*Carex* spp.).

*Description and assessment:* The park contains bottomland forest that occurs in several locations in the park, mainly along the low-lying creek beds of Hammock Branch that are frequently inundated. This community is also associated with a small drain located in zone F2 on the southeastern perimeter of the park within wet flatwoods. Species present include: bald cypress, water oak, laurel oak, sweetgum, hackberry, Walter's viburnum (*Viburnum obovatum*), rattan vine, silverling, bluestem palmetto (*Sabal minor*), and common yellowstar grass (*Hypoxis curtissii*). Hydroperiods appear to somewhat mimic historic levels in this community.

*General management measures:* Invasive species removal of plants and feral hogs should continue.

### Alluvial Forest

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

*Description and assessment:* The alluvial forest at Dunns Creek is located in the widest portion of the floodplain swamp at a slightly higher elevation. During high water conditions, it is flooded. The plant diversity and composition is very similar to floodplain swamp. The only difference noted was a general shift towards a more mesic canopy with trees such as laurel oak and sweetgum being more common.

*General management measures:* This community is in good condition. It is important to control feral hogs within the alluvial forest due to the devastation they cause to the groundcover and the soil surface. These types of disturbances favor the proliferation of exotic plant species. Exotic plant removal is ongoing within this community, with priority given to wild taro and Chinese tallow.

### Floodplain Swamp

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

*Description and assessment:* This is the second largest natural community in the park. It extends along Dunns Creek for approximately six miles and varies from 1000 feet to over 1 mi. wide. Water levels in the forest vary with the stage of Dunns Creek. The diversity of canopy trees is high with most of the larger trees being quite large and buttressed. Typical canopy species include swamp bay (*Persea palustris*), swamp tupelo (*Nyssa sylvatica* var. *biflora*), red maple, bald cypress, Carolina ash (*Fraxinus caroliniana*), American elm, and swamp dogwood. The shrub layer was dominated by buttonbush, wax myrtle, Virginia willow (*Itea virginica*), swamp rose (*Rosa palustris*), and elderberry (*Sambucus canadensis*).

*General management measures:* As with other communities, it is important to control feral hogs within the alluvial forest due to the devastation they cause to the groundcover and the soil surface which in turn can lead to exotic plants taking root. Exotic plant removal will be ongoing within this community, with priority given to wild taro and Chinese tallow.

#### Wet Prairie

*Desired future condition:* Trees will be few or absent. Groundcover will be dense and exceptionally species-rich. Dominant species will be wiregrass and/or sedges (*Carex* spp.). In the peninsula, blue maidencane, and Curtiss' dropseed will also be dominant. Pitcherplants or other carnivorous plant species and terrestrial orchids will be present and abundant in some areas.

*Description and assessment:* The only representative form of this natural community at Dunns Creek is associated with a large prairie lake, Sugarbowl Lake. The wet prairie in the northern portion of the lake is dominated by St. Johns wort (*Hypericum brachyphyllum*), redroot, and maidencane.

Burning this community has proven difficult for a number of reasons. In 2017, a wildfire broke out on the north portion of the lake and spread onto the park, burning the entire B7 management zone which included the prairie, lake, and portions of adjacent sandhill. The fire burned for several months and several plow lines were installed in and along the ecotones. Several pieces of land need to be acquired to be able to burn this community along with the prairie lake on the recommended fire return interval.

*General management measures:* Prescribed fire will be used to maintain this community in a grassy condition at a fire return interval of 1-3 years. Perimeter fire line improvement is needed along with feral hog control to protect this community.

#### Prairie Lake

*Desired future condition:* A prairie lake is often associated with depression marshes and is characterized as shallow, generally round or elliptical depressions, vegetated with concentric bands of aquatic vegetation. Depending upon the depth and slope of the depression, an open water zone, with or without floating plants, may occur at the center. The hydrosol will typically be acidic sand with some peat and occasionally a clay lens. Although water levels may fluctuate significantly, water will

typically be present year-round.

*Description and assessment:* Sugarbowl Lake represents the only example of a prairie lake at the park and is located along the western boundary. Approximately 85% of the lake is located within the park boundary. Associated with Sugarbowl Lake is a wet prairie as described above. The lake is mostly open water dominated by floating vegetation such as American white waterlily (*Nymphaea odorata*) and spatterdock (*Nuphar lutea*). Sandhill cranes are commonly seen feeding in this lake. It is common to see at least one pair breeding in the lake each year. Approximately one-third of the lake contains water year-round depending on drought conditions and the groundwater table.

A bog is located on the margins of the lake and consists of a series of floating, peat mats. The upper edges of the bog contain blue maidencane and sand cordgrass with scattered slash pine and swamp tupelo. The herbaceous component is very diverse. Typical species include sphagnum (*Sphagnum* sp.), *Xyris* (at least two species), pennywort (*Hydrocotyle bonariensis*), red root, and pale meadowbeauty (*Rhexia mariana*). Some common listed plants include spoon-leaved sundew (*Drosera intermedia*) and rose pogonia (*Pogonia ophioglossioides*). Other ground orchids are present as well. In the open, deeper areas associated with the bog, emergent species such as American white water lily and big floatingheart (*Nymphoides aquatica*), are common.

*General management measures:* Prescribed fire will be used to maintain this community in a grassy condition at a fire return interval of 1-3 years when enough water is present in the lake. The park needs to acquire several more properties to be able to burn this community as planned. Feral hog control will be needed to protect this community from damage.

### Sinkhole

*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 like sinkhole lakes. Depending on the age of the sinkhole, the vegetation of sandy sinkholes may represent a well-developed forest including southern magnolia, sweetgum, wax myrtle, grape vines (*Vitis* spp.), Virginia creeper (*Parthenocissus quinquefolia*), water oak (*Quercus nigra*), and pignut hickory (*Carya glabra*). Sinkholes with vertical limestone walls may be covered by a variety of mosses, liverworts, ferns, and small herbs. Sinkholes will generally have a very moist microclimate due to seepage and being buffered by the lower elevation and a tree canopy. Desired future conditions include limiting unnatural erosion and protecting the microclimate from disturbance.

*Description and assessment:* Sinkholes can be found in high sandhills on the south side of the park along Sisco Rd. and the entrance to the park. The vegetation in these sinkholes varies but typically consists of laurel oak, sand live oak, sweetgum tree, and longleaf or slash pine, with very little to no groundcover vegetation due to a thick layer of leaf litter accumulation. When present, ground cover consists of typical sandhill species such as wiregrass and various other forbs.

All the sinkholes at the park are dry and do not appear to hold water for any considerable length of time. Fire has been applied to a few of the sinkholes when the surrounding sandhill community is burned with very little noticeable effects.

*General management measures:* Use prescribed fire to burn the adjacent communities to control hardwood encroachment into these communities. Exotic plant control is ongoing.

### Sinkhole Lake

*Desired future condition:* A sinkhole lake can be described as a relatively permanent and typically deep lake 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. Typical plant species may include smartweed (*Polygonum hydropiperoides*), duckweed (*Lemna* spp.), bladderwort (*Utricularia* spp.), and rushes (*Juncus* spp.). Desired conditions include minimizing disturbances that cause unnatural erosion and minimizing pollution to the connected aquifer system.

*Description and assessment:* Blue Pond is a circular lake located near the southwest corner of the park within the sandhills of the US 17 trail system. This sinkhole lake is currently in good condition. There is no observed exposed limestone, but the elevation at the bottom of the lake is below the potentiometric elevation of the Floridan Aquifer in this area. During the extreme drought of the late 1990s and, early 2000s the lake did not show any significant drop in water level. Blue Pond has steep slopes with a limited littoral shelf. No submerged aquatic vegetation is apparent and water clarity is very clear. A small band of American white waterlily is present. Torpedograss, a Category I FLEPPC plant is present along the entire shoreline of the pond and appears to be spreading.

A limited bathymetric survey of the pond was conducted in approximately 2004 by the park biologist and the SJRWMD. It was discovered that the lake is very deep (in excess of 50 feet) in the center. A very thick and concentric band of saw palmetto, sand live oak and various pines is present around the entire lake. Restoration efforts in the future may focus on the reduction of this band either through mechanical treatment or prescribed fire.

*General management measures:* Efforts to control torpedograss must be taken immediately. The band of vegetation in the surrounding edge will be addressed when mechanical treatment funding is made available and when prescribed fire is applied to the adjacent communities.

### Blackwater Stream

*Desired future condition:* Blackwater stream can be characterized as perennial or intermittent watercourses originating in lowlands where extensive wetlands with organic soils collect rainfall and runoff, discharging it slowly to the stream. The stained waters will be laden with tannins, particulates, and dissolved organic matter

derived from drainage through adjacent swamps resulting in sandy bottoms overlain by organic matter. Emergent and floating vegetation [including golden club (*Orontium aquaticum*), smartweeds (*Polygonum* spp.), and grasses and sedges] may occur but is often limited by steep banks and dramatic seasonal fluctuations in water levels. Desired conditions include minimizing disturbance and alterations and preserving adjacent natural communities.

*Description and assessment:* There are three streams classified as blackwater streams in the park. The largest is Hammock Branch, which has its headwaters within the park during all but the highest flood conditions. It starts as a dark, meandering stream in the large baygall (Sisco Bay) in the southwest portion of the park. From there, it flows between a sandhill and a scrub ridge. At this point, it becomes deeply incised and receives seepage water from the flanks of the ridges. At the point that it passes the last seepage stream, the water can become quite clear depending on the amount of flow from the baygall. From this point, it flows towards Dunns Creek and diffuses into the baygall and floodplain swamp. Vegetation in the stream is relatively absent. The dominant plant is golden club (*Orontium aquaticum*). The stream bank is carpeted with bryophytes and numerous small, herbaceous plants.

The other two blackwater streams are small with one unnamed stream flowing into Hammock Branch downstream of the seepage streams. Dunns Creek is a large blackwater stream, but the park boundary only goes to the edge of the floodplain swamp.

*General management measures:* This community is currently in good condition. Exotic plant control is ongoing.

### Seepage Stream

*Desired future condition:* A seepage stream is characterized as a narrow, relatively short perennial or intermittent stream formed by percolating water from adjacent uplands. As they are typically sheltered by a dense overstory of broad-leaved hardwoods which block out much of the sunlight, the flora within seepage streams is often depauperate but may include filamentous algae, ferns and liverworts growing in clumps at the streams edge. Water color will be clear to slightly colored, with a slow flow rate and constant temperature. Bottom substrate is typically sandy, but may include gravel or limestone.

*Description and assessment:* This community is currently in good condition. There are multiple seepage streams that all flow into Hammock Branch. They are confined to one small area, in the northwest portion of the park. Most of the streams are less than 100 feet long, but the longest is approximately 1000 feet long. The majority of the flow comes from the main steephead, but numerous seepage areas occur along the stream's paths. Based on water quality data, it appears that the source of the water is the Surficial Aquifer. The headwaters of the seepage streams contain numerous mosses and liverworts. Future floral survey work may find some rare and unusual species of mosses and liverworts. The only observed submerged vegetation is golden club, which is typically located in the lower sections of the streams.

*General management measures:* Exotic plant control will be ongoing. Feral hog control will be needed to protect this community from damage.

### Hydric Hammock

*Desired future condition:* Hydric hammock will be characterized with a closed canopy, evergreen hardwood and/or palm forest with a variable understory dominated by palms, with sparse to moderate ground cover of grasses and ferns. Typical canopy species will include laurel oak (*Quercus laurifolia*), cabbage palm (*Sabal palmetto*), live oak (*Quercus virginiana*), sweetbay (*Magnolia virginiana*), swamp tupelo (*Nyssa sylvatica biflora*), American elm (*Ulmus americana*), and red maple (*Acer rubrum*). Soils will be poorly drained but only occasionally flooded. Hydric hammock should occasionally burn by allowing fires to naturally burn across ecotones from fires originating in adjacent upland natural communities.

*Description and assessment:* The hydric hammock community at the park is mainly located in zones F3, F4 and D1. The community is in good condition with some disturbance from old roads and logging operations. Fire should be infrequent however, since it is located next to mesic flatwoods, fire will run into the ecotone when conditions are dry. Fire rotation will be determined by the surrounding upland natural community, with fire only approaching the edges of the hammock. Hydrology of this community is rainfall and river stage dependent. Exotic plants have not been found but camphor tree and coral ardisia are both possible threats. Feral hog damage can be found throughout the park including in these areas.

*General Management Measures:* The hydric hammock requires little direct management. Infrequent fire encroaching on the edges from the adjacent uplands may be beneficial. Exotic plants surveys are ongoing.

## **Altered Landcover Types**

### Clearing

*Desired future condition:* The clearings in the park will be left in their current state for recreational purposes. The largest clearing can be found at Piney Bluff at the old homestead site. This site has been used for thousands of years by humans. Shoreline stabilization will be an ongoing problem as vegetation becomes removed from the clearing at Piney Bluff and as boat wakes continue. To maintain the integrity of the site, the shoreline of the clearing must be stabilized as problems arise.

### Canal/Ditch

It may be possible to restore the ditches that extend out into zone F4 from the main park drive by using ditch blocks or by backfilling them. A hydrological model will be needed to determine if the road could remain high and dry without them.

Many of the ditches within the park are from the construction of the main park drive road that began in the late 1800's. There are three main ditches that extend out into the mesic flatwoods to the east of the road in F4 that brings the

stormwater from the ditches along the road to the wetlands in zone F4 where it drains into the floodplain swamp. If these ditches were to be restored, it would have to be determined if the road could remain high and dry during a stormwater event. A hydrologic study may be needed before restoration of these ditches can take place.

There is a large ditch that may have been constructed by the Civilian Conservation Corps (CCC) that connects the lake to the south of Sisco Road to the wetlands found in zone F2. From time to time, a small stream has been seen flowing through the bottom of this ditch, but it does not seem to be significantly impacting the surrounding areas. Investigations should occur on the feasibility of restoring the ditches in zone F4 to a more natural appearance either by using ditch blocks or by back filling them to restore sheet flow and the correct hydro period the mesic flatwoods community.

### Developed

The developed areas within the park are comprised of a park residence, shop, and a day use parking area. 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 (FLEPPC 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. These sites will be maintained in their current condition during this unit management plan period. Invasive plant and animal control will be ongoing which includes the removal of house cats and invasive landscaping plants.

### **Imperiled Species**

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

#### False Rosemary (*Conridina cyniflora*)

Based on current surveys, nine designated plant species are recorded from the park. The rarest plant, Etonia false rosemary, is a scrub endemic. To date, four populations of this plant are present in the park. The populations will be monitored as restoration efforts occur in the scrub.

Eight designated animal species find habitat at Dunns Creek. Two of these use Dunns Creek and will not be managed under DRP given that the reach of management responsibility does not extend into the river beyond the edge of the floodplain swamp.

#### Gopher Tortoise (*Gopherus polyphemus*)

The gopher tortoise appears to be doing well at this park, particularly in the sandhill where the herbaceous layer is present. The overall numbers of tortoises per acres

appear to be relatively low in the mesic flatwoods on Pine Island but that is to be expected due to the depth to the water table and overall palmetto densities. Burrow surveys will occur as the fire management program progresses where tortoise burrows are counted and inventoried. A survey conducted in 2008 in zone C1 yielded approximately 8 tortoises per acre. Part of the survey will involve inventorying burrow commensals when observed.

#### Florida Gopher Frog (*Rana capito*)

Gopher frog tadpoles have been observed in two ephemeral ponds on numerous occasions. One pond is called Gopher frog pond after this animal and the other pond is located on Pine Island to the south of the Flatwoods Trail in zone E2b. A gopher frog and striped newt survey was conducted in 2011 by FWC biologist Kevin Enge along with several volunteers and park staff. Pond levels were low and only a handful of pond/depression marshes could be surveyed at that time. A few ponds near Blue pond in zones A5 and A6 were surveyed with no results along with many ponds on Pine Island. It is recommended that striped newt and gopher frog surveys continue, especially when water levels return to normal. Gopher frog adults have been observed on the mouths of tortoise burrows in zone E2b just north of the south fire line. Feral hog control is also recommended to address the wide-scale damage that they can cause to these ephemeral wetlands and surrounding habitats.

#### Sherman's Fox Squirrel (*Sciurus niger shermani*)

Sherman's fox squirrels currently occur on the park in small numbers, but the population appears to be expanding after the timber harvest of 2010-11. Fox squirrels tended to be found in only a couple of locations prior to the harvest around the proposed shop area and two locations by Sugarbowl Lake, but now they have been observed in multiple units such as C1-C5, F2-F4, and B1, B6, and B7. A fox squirrel nest was found in zone F2 along the perimeter line near the adjacent property. The park's population will continue to be assessed and GPS coordinates logged for individual sightings.

#### Florida Sandhill Crane (*Grus canadensis pratensis*)

The Florida Sandhill Crane utilizes many areas in the park, both for breeding and for forage. Sugarbowl Lake in zone B7, Gopher Frog Pond in zone B5, scrub pond in zone C10, and Flatwoods Pond in zone E2b have all been used by this species for nesting purposes. The birds have been most successful in Sugarbowl Lake and Flatwoods Pond, producing numerous nest and young within the last 10 years. It is important to keep as much disturbance away from these areas during nesting as possible to not cause premature nest abandonment. These ponds also should be investigated prior to prescribed burns. In 2010, the north part of zone B5 was not burned because sandhill cranes were observed nesting in the southwest corner of the pond in some cordgrass. Feral hogs also pose a possible threat to these birds due the habitat destruction that they can cause; they should be controlled by trapping and shooting.

#### Florida Black Bear (*Ursus americanus floridanus*)

The park is part of the St. Johns River Florida black bear population. The Florida

Fish and Wildlife Conservation Commission's bear management program conducted some limited hair snaring efforts in 2002-2003 to assess the local population. Large males, females, and cubs along with their tracks can be found year-round in the park in all sections of the park. Tracks are often seen along trails in Pine Island and along the scrub ridge.

Manatee (*Trichechus manatus*)

Manatees are occasionally observed in Dunns Creek. No special protection measures are warranted at this time, however, as the Piney Bluff Landing area of the park is being developed and visitation increases, it is recommended that a "No Wake" zone be established primarily for public safety reasons to control boat speeds in and adjacent to the hairpin turn along Dunns Creek. The park will work with FWC and local authorities to investigate the feasibility of setting up a no-wake-zone in this area.

Other possible species

The scrub of this park has been identified in an ongoing Florida State Park system-wide evaluation to be a site of "probable historic occurrence" of the Florida scrub-jay (Erik Johnson, pers. comm.). In that evaluation it has been determined that the scrub lies ~5-6 miles south-southeast of one historic Florida scrub-jay occurrence and ~13-14 miles east of the type locality of the species (based on data in Cox 1987). The scrub lies ~10 miles northeast of extant Florida scrub-jay family groups in Ocala National Forest (based on data in Stith 1999). Reed Bowman, an avian research biologist at Archbold Biological Station, thinks that if the park's scrub did not support the species in the recent past (i.e., within 20-30 years), it likely did in the historical past (pers. comm. to Erik Johnson). Reestablishment would likely require translocation of individuals to the park after a consensus was reached in the conservation community that such an effort would be desirable/feasible and only after restoration of suitable habitat is assured.

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

**Table 2: Imperiled Species Inventory**

Common and Scientific Name	Imperiled Species Status				Management Actions	Monitoring Level
	FFWCC	USFWS	FDACS	FNAI		
<b>PLANTS</b>						
Cardinal flower <i>Lobelia cardinalis</i>			LT		10	Tier 1
Hooded pitcherplant <i>Sarracenia minor</i>			LT		1,6,7,10,14	Tier 1
Etonia False Rosemary <i>Conradina etonia</i>			LE	S1	1,6,10	Tier 3
<b>FISH</b>						
Atlantic sturgeon <i>Acipenser oxyrinchus</i>		LE		S2	13	Tier 1
<b>REPTILES</b>						
Gopher tortoise <i>Gopherus polyphemus</i>	FT			S3	1,6,7,8,10,13	Tier 1 Tier 2
Eastern indigo snake <i>Drymarchon corais couperi</i>		LT		S3	1,13	Tier 1
<b>BIRDS</b>						
Florida Sandhill Crane <i>Grus canadensis pratensis</i>	FT			S2S3	1,4,14	Tier 2
Tricolored Heron <i>Egretta tricolor</i>	FT			S4	4	Tier 1
Wood Stork <i>Mycteria americana</i>		LE		S2	4	Tier 1
<b>MAMMALS</b>						
Sherman's fox squirrel <i>Sciurus niger shermani</i>	SSC			S3	1,6,7,10	Tier 2
Florida Manatee <i>Trichechus manatus latirostris</i>	FE	LE		S2	10,13	Tier 1

**Management Actions:**

1. Prescribed Fire
2. Exotic Plant Removal
3. Population Translocation/Augmentation/Restocking
4. Hydrological Maintenance/Restoration

5. Nest Boxes/Artificial Cavities
6. Hardwood Removal
7. Mechanical Treatment
8. Predator Control
9. Erosion Control
10. Protection from visitor impacts (establish buffers)/law

enforcement  
11. Decoys (shorebirds)  
12. Vegetation planting

13. Outreach and Education  
14. Other. Exotic Animal Removal

## Monitoring Level:

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

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

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

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

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

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

## Exotic Species

Exotic species are plants or animals not native to Florida. Invasive exotic species can 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.

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

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

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.

Preliminary plant and animal surveys at Dunns Creek have documented a relatively small number of exotic plants and animals. Those deemed as invasive are discussed below.

### Plants

Most of the invasive plants documented to date are wetland-dependent and

generally confined to the alluvial forest along Dunns Creek. These include Chinese tallow (*Sapium sebiferum*), torpedograss (*Panicum repens*), and wild taro (*Colocasia esculenta*). The notable upland species are cogongrass (*Imperata cylindrica*), camphor tree (*Cinnamomum camphora*), and small infestations of Rose-natal grass (*Melinis repens*). Coral ardisia (*Ardisia crenata*) has been found in zone F2 along the south perimeter line in small numbers.

An exotic plant removal plan is developed annually with the highest priority given to those plants found on the Florida Exotic Pest Plant Council's Category I and II list.

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, 2017). 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.

<b>Table 3: Inventory of FLEPPC Category I and II Exotic Plant Species</b>			
<b>Common and Scientific Name</b>	<b>FLEPPC Category</b>	<b>Distribution</b>	<b>Management Zone (s)</b>
<b>PLANTS</b>			
Wild taro <i>Colocasia esculenta</i>	I	6	B3, E1, E2, E3, E4
Torpedo grass <i>Panicum repens</i>	I	2	A5, B8
Cogongrass <i>Imperata cylindrica</i>	I	2	B1b, C2, C4
Camphor tree <i>Cinnamomum camphora</i>	I	2	F2
Rose-natal grass <i>Melinis repens</i>	I	1	C4, C7, C8
Chinese tallow <i>Sapium sebiferum</i>	I	2	B3, C3, C4, E1, E2, E3, E4, F4
Coral ardisia <i>Ardisia crenata</i>	I	2	F2

### **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.

Four notable exotic animals have been documented at the park: feral hog (*Sus scrofa*), nine-banded armadillo (*Dasypus novemcinctus*), house cat (*Felis catus*), and the coyote (*Canis latrans*). Stray hunting dogs have been observed at the park trying to dig up gopher tortoises on Hoot Owl Ridge.

Feral hogs are the park's highest priority for removal, due to the sensitivity of many of the natural communities to extreme soil disturbance. The Park Service along with the SJRWMD have invested funding into the Dunns Creek each year for hog control purposes. USDA Wildlife Services employees have been actively trapping hogs on and off when funding was available. When they could, they also captured a few coyotes that were removed because they posed a threat to imperiled species onsite.

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**

This park contains numerous appealing vistas, most notably along Dunns Creek and Sugarbowl Lake. Due to the significant topographic relief on-site, vistas in the sandhills and scrub will improve as fire management and restoration activities proceed.

The ravine system and the seepage stream community are extremely noteworthy features. Not only do they contain rare plants and animals, but their visual appeal also draws visitors. Unfortunately, they are vulnerable to degradation from both direct impacts (erosion) and indirect impacts (groundwater withdrawals). Special consideration will be made to the ravine system to prevent impacts from erosion or other degradation.

### **Cultural Resources**

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

## **Condition Assessment**

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

## **Level of Significance**

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

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

The following is a summary of the FMSF inventory along with a brief history of the park. In addition, this inventory contains the evaluation of significance.

Dunns Creek State Park falls within what archaeologists term the East and Central Archaeological Culture Area of Florida. This culture area is comprised of the St. Johns River basin, the adjacent coastal and inland area, and the central Florida lakes district (Milanich 1994). Archaeological regions, or culture areas, are used by archaeologists to identify and describe cultural traditions. The Late Archaic Period's cultural landscape in Florida is shaped by common traits and features throughout the state as well as regionally-unique characteristics. In the East and Central Cultural Area, certain common cultural traits, such as pottery form and design, begin to appear in the archaeological record around 2,500 years ago. These are due in part to human adaptation to specific environmental settings. These distinctive

traits become increasingly more apparent through time.

**Paleoindian period:** Evidence of human occupation in Florida begins with the Paleoindian Period (ca.10,000-14,000 B.P.) near the end of the last Ice Age. Rather radical climatic fluctuations associated with this period led to vegetative shifts and surface water sources that were either abundant or scarce depending on the conditions. Many rivers in Florida- including the St. Johns, usually did not support flowing water during the most intense dry episodes- however, at other times these channels discharged copious runoff to the sea during wet episodes.

Paleo Indians lived in nomadic or semi-nomadic bands and hunted now-extinct Pleistocene megafauna like the mammoth, bison, and giant tortoise as well as a whole host of extant animal species. The gathering of wild plant foods, fishing, and shellfish collection probably also provided the basics of the Paleo-Indian diet.

**Archaic period:** Beginning around 10,000 B.P., the climatic and environmental changes that took place at the close of the Pleistocene epoch brought with them changes in the types and distribution of game animals available to prehistoric hunters. Humans adapted to their new environment and began to exploit a wider range of food sources, including more small game, fish, mollusks and nuts, and they became increasingly more sedentary than their predecessors. Additionally, the tool kit used by these people became more varied and complex.

**Mount Taylor and Orange periods:** The people of the Mount Taylor and Orange cultures of East Florida were living full-time along the coast and in riverine settings, exploiting the rich, diverse resources of the now developed coastal marshes and adjacent hardwood forests. The major distinguishing characteristic between the two cultures is the presence of ceramics; a fiber-tempered ceramic is representative of the Orange Period culture. The earliest Orange vessels were plain, undecorated wares, but soon incised and punctuated designs were prevalent.

**St. Johns period:** The St. Johns I and II cultures developed out of the fiber-tempered Orange culture that occupied the same region during the Late Archaic. By around 2,500 B.P., pottery from this era was made from clay rich in microscopic spicules of freshwater sponges. St. Johns pottery continued to be manufactured for the next 2,000 years. The St. Johns cultures were highly adapted to the coastal marshes and the areas surrounding the St. Johns River. Many of the St. Johns II people were Timucuan-speaking. People of this cultural tradition were present in the northeast region of Florida at the time of European contact. Dunns Creek Red, a distinctive bright red St. Johns ware was named for the Dunns Creek Mound (8PU14) located not far from the park.

**European Contact and Early Settlement:** From the 16<sup>th</sup> century through the beginning of the 18<sup>th</sup> century, the Spanish occupied Florida and established missionary and military outposts. During the 17<sup>th</sup> and 18<sup>th</sup> centuries the Spanish developed several cattle ranching areas and issued large land grants, many along the St. Johns River, encouraging ranching and agriculture. But it was during the British Period (1763-1783) that this system became more focused, with an increase in the development of plantations, especially along the St. Johns River.

The name Dunn's Creek comes from John Dunn, an attorney and coffee planter. He received a grant in 1765 that allowed him to farm an area "between the two lakes"

(Alvers and McHaffey 1995) in Putnam County near Dunns Creek State Park.

**19<sup>th</sup> through 20<sup>th</sup> Century Development:** During the latter part of the 19<sup>th</sup> century, the names Crescent Lake and Dunns Creek became formalized, changing from the earlier designations Lake Dunn, Lake Rolles, Lake Gordon, and Deep River (Alvers and McHaffey 1995). Along the southwestern boundary of the State Park is the town of Sisco, settled in 1884 along the Jacksonville, Tampa, and Key West Railroad. For the next forty years or so, the population of the town ranged from 150 people to 60 people and, at times, had a post office, hotel, general store and a steam sawmill (Alvers and McHaffey 1995). Ownership of the area's land would trade between the railway system, an African American Mason organization, and various industries. The state property has experienced turpentine logging, logging, cattle ranching, and farming within the 20<sup>th</sup> century and it is likely that additional research will help in documenting cultural resources related to these more modern uses as well as the earlier uses of the property.

### **Prehistoric and Historic Archaeological Sites**

PU723 – Piney Bluff Landing and Midden

*Description:* The site, Piney Bluff Landing site is a prehistoric shell midden. Artifacts related to Orange, St. Johns I, and St. Johns II periods have been found at the site and artifacts dating to the Archaic Period have been found in the Creek adjacent to the site.

Testing by the C.A.R.L. Archaeological Survey in June of 2002, and the observation of artifacts on the surface by DEP personnel, have confirmed that the site is larger than originally documented. While the shell midden material appears to be concentrated in the originally documented area, artifacts dating to the same time periods are present across a much larger area. A report outlining the C.A.R.L. work and revised site boundaries have been completed. Other types of prehistoric and contact period sites, such as campsites, extractive sites, and artifact scatters, may also be found with additional testing and examination. The possibility of finding sites around the ravines and steepheads and on some of the higher areas of the property exists.

*Condition assessment:* The site has experienced damage from 20<sup>th</sup> century shell mining and erosion, but portions of the midden appear to be intact. The condition assessment is fair.

*General management measures:* Stabilization methods will be used to slow or halt the erosion that is occurring on the bank of Dunns Creek. The park uses the area around the midden for all its major events. During these events, a boat landing is set up to bring visitors down the river. Formalizing a docking structure while adding hardened material along the bank will stabilize the site.

PU1642 - Blue Pond Homestead Site

*Description:* This site is located on the south side of the park along US 17 in the old town of Sisco. The first part of the site was once host of a mid-20<sup>th</sup> century foundation to a home with associated debris. The site is seen on the 1968 aerials but is no longer standing. The second part of the homestead site is just to the south

of the house and consists of a pile of discarded herty pots.

*Condition Assessment:* The old house material and debris were removed in approximately 2007 as a part of a clean-up operation to prep the area for the new trailhead. The site remains were dangerous and were not found to be significant. The second part to the site, however, remains and is in fair rather than good condition due to looting and the construction of the inholding right next to the site in 2017. The pots had been covered with soil by park staff and volunteers several times, but looting was a persistent issue.

*General Management Measures:* Working with the adjacent land owner and recovering the site are two ways to preserve this site.

#### PU1465 - Bait Shop Bottle Dump

*Description:* This site is an old bottle dump located along an old dirt road along US 17 on the south side of the park. This site consists of different trash dumps dating from the 1930's to the early 1960's. All are small and covered with soil and leaf litter. This site has been called the Bait Shop Bottle Dump because of the some of the artifacts discovered here such as outboard motor oil, fishing gear, motor parts, with various beverage bottles, and cans.

*Condition assessment:* This site is in good condition and not considered to be significant.

*General management measures:* Management of this site will consist of periodic inspections to determine if looting is present and maintaining fencing material nearby.

#### PU1659 – Dunns Creek Bottle Dump #1

*Description:* This site is a surface scatter of early 20<sup>th</sup> century glass bottles and jars with an unknown subsurface component. Site boundaries are uncertain due to lack of subsurface testing.

*Condition Assessment:* The site is in poor condition and is not considered eligible for nomination to the National Register of Historic Places.

*General Management Measures:* Preservation and further investigation if ground disturbing activity is proposed.

### **Historic Structures**

There are two historic structures located onsite, the Piney Bluff House (PU1653), the Piney Bluff Shed (PU 1654), and the Blue Pond Homestead (PU1462).

In some cases, DRP may elect to demolish or otherwise remove a historic structure when there is justification. Prior to removal, measures are taken to created detailed documentation of the structure. Historic structures slated for removal are indicated in the table below.

PU1653 – Piney Bluff House

*Description:* The ruin of a 1943-1953 block house on the Piney Bluff Midden site which has been, and still is, known as the Goat Farm because the previous residents used to have a goat farm in the field surrounding the house. Locals would know that they were almost to Crescent Lake while going down Dunns Creek when they saw the Goat Farm. This house contained a small kitchen, two bedrooms, a bathroom, a living room, and a one car garage.

*Condition Assessment:* This structure was in poor shape when the property was acquired. The structure was removed in 2016 due to its deteriorating condition, lack of significance, unsafe conditions, and the future plans for the park. The location where the house once stood will be the main use area for the park.

PU 1654 - Piney Bluff Shed

*Description:* The shed was constructed between 1943-1953 along with the piney bluff house. It is a small 35X8ft building made of concrete block with a metal roof with wood rafters. There are two doors on the shed with several boarded-up windows. The structure has been modified several times since it was built. An outside shower was added around 2008.

*Condition Assessment:* The structure has been marked for demolition in the future. The structure is not significant and is located right in the middle of the main use area for the park. The structure is currently being used for storage by the CSO to store materials and supplies for various events.

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

<b>Table 4: Cultural Sites Listed in the Florida Master Site File</b>					
<b>Site Name and FMSF #</b>	<b>Culture/Period</b>	<b>Description</b>	<b>Significance</b>	<b>Condition</b>	<b>Treatment</b>
Piney Bluff Landing PU723	Prehistoric	Shell Midden	NE	F	ST
Piney Bluff House PU1653	Historic	House (removed)	NS	P	R

Table 4: Cultural Sites Listed in the Florida Master Site File					
Site Name and FMSF #	Culture/Period	Description	Significance	Condition	Treatment
Piney Bluff Shed PU1654	Historic	Shed	NS	G	R
Bottle Dump #1 PU1659	Historic	Bottle Dump	NS	P	P
Blue Pond Homestead Site PU1462	Historic	Building remains, surface scatter	NS	F	ST
Bait Shop Bottle Dump PU1465	Historic	Bottle Dump	NS	G	P

**Significance:**

NRL National Register listed  
 NR National Register eligible  
 NE not evaluated  
 NS not significant

**Condition**

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

**Recommended Treatment:**

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

**Resource Management Program**

**Management Goals, Objectives and Actions**

Measurable objectives and actions have been identified for each of DRP's management goals for Dunns Creek 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 DRP utilizes the ten-year management plan to serve as the basic statement of policy and future direction for each park, a number of annual work plans provide more specific guidance for DRP staff to accomplish many of the resource management goals and objectives of the park. Where such detailed planning is appropriate to the character and scale of the park's natural resources, annual work plans are developed for prescribed fire management, exotic plant management, and imperiled species management. Annual or longer-term work plans are developed for natural community restoration and hydrological restoration. The work plans provide 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, DRP's resource management strategies are systematically evaluated to determine their effectiveness. The process and the information collected is used to refine techniques, methodologies, and strategies, and ensures that each park's prescribed management actions are monitored and reported as required by Sections 253.034 and 259.037, Florida Statutes.

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

## **Natural Resource Management**

### **Hydrological Management**

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

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

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

Action 1 Determine if ditches could be filled to return the hydrology back to natural wetland communities.

A hydrological study to determine the impacts of the main park drive road from the sandhill to Piney Bluff Landing is needed to target and rank restoration priorities.

***Objective B: Restore natural hydrological conditions and functions to approximately 300 acres of mesic flatwoods and baygall natural communities by removing 2 miles of ditches.***

Action 1 Fill 2 miles of drainage ditches.

Action 2 Install multiple low-water crossings or culverts.

Based on the findings of the hydrological study conducted in the previous objective,

it will determine if the approximately 2 miles of ditches in zone F4 can safely be removed without adversely affecting the current condition of the road. There are also several locations in the park that would benefit from a low water crossing with granite rock or comparable substrate.

## Natural Communities Management

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

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 A: Within 10 years, have 3,426.2 acres of the park maintained within the optimum fire return interval.***

- Action 1      Develop/update annual burn plan
- Action 2      Manage fire dependent communities by burning between 753-1,982 acres annually.

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.

<b>Table 5: Prescribed Fire Management</b>		
Natural Community	Acres	Optimal Fire Return Interval (Years)
Sandhill	1107	1-3
Mesic Flatwoods	842.6	2-4
Scrub	792.4	10-25
Wet Flatwoods	523	2-5
Wet Prairie	42	1-3
Depression Marsh	46.6	1-5

<b>Table 5: Prescribed Fire Management</b>		
Natural Community	Acres	Optimal Fire Return Interval (Years)
Scrubby Flatwoods	72.6	3-5
Annual Target Acreage*	753-1982	
*Annual Target Acreage Range is based on the fire return interval assigned to each burn zone. Each burn zone may include multiple natural communities.		

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

There are four main fire management units in the park broken up by geographical location. The first unit is Pine Island, which is located along the main park drive going north to the creek. This unit consists of fair to good condition mesic and wet flatwoods with depression marshes, baygall, and basin swamps intermixed. Most of the management zones within this first unit have been burned several times with both dormant and growing season fire. The gopher frog is common in this area along with gopher tortoise, Brown-headed Nuthatch, and pitcher plants. Over half of this unit is on a growing season fire rotation but there are other areas that need mechanical treatment in the form of roller chopping and timber thinning. In zone D1 for example, the saw palmetto density is almost 100% with an average height of 6-8ft in areas that need treatment. Fires have not penetrated the center of D1 well enough due to thick canopies and hydric conditions.

The second unit would be considered the central scrub ridge of the park, from the shop north to the floodplain swamp. This unit consists of mainly unburned scrub and fair to good condition sandhill with some of the best areas along the main park drive at the main entrance to the park. All of the sandhill zones have been burned several times on a 1-3 year rotation with both growing and dormant season fires. The sandhill zones need reforestation due to the lack of a good canopy of mature long leaf pine from historic timbering operations. Zones C3-8 have been planted with longleaf pine in 2017 at 350 trees per acre density but was followed by a severe drought where many of the trees died. Hardwood control with herbicide such as Velpar or Garlon will be necessary to control sand live oak sprouts from the previous 2010 hardwood/sand pine harvest that took place in this unit. All the scrub ridge was harvested in 2010 and the south half was roller chopped in 2017. The roller chopped areas were burned along with the Etonia rosemary zones. Roller chopping and a fuelwood harvest are still needed for the north and western portions of this unit.

The third unit of the park is referred to as “hoot owl” and is found on the western portion of the park. This area consists of mainly sandhill with depression marshes, scrubby flatwoods, and mesic flatwoods found in pockets. The highest quality of sandhill can be found in this portion of the park which contains a good canopy of long leaf pine, abundant ground cover, and a mix of imperiled species. Sherman’s fox squirrel, gopher tortoise, lupine, diamondback rattlesnake, and the gopher frog all utilize this area of the park. Most of the zones within this area of the park have been burned more than once and others not at all. In 2017, zones B1b, B2, B3, B4 north, and several other key areas were mowed which will allow for fire to better penetrate some of these zones. Hardwood control via herbicide is a must in this area of the park in zones where the hardwood regeneration in the sandhill is at 80% or more ground cover. Fire and mechanical treatments have proven to not be enough to control and reduce the density of hardwoods in these areas. Zone B2, B3, B1b, and B5 or are the worst areas needing herbicide treatments with Velpar or Garlon products.

The fourth unit of the park is referred to as “blue pond” area and contains the old settlement town of Sisco and poor condition sandhill intermixed with baygall, mesic flatwoods, depression pond, and a sink hole lake. No fire management has taken place in this area intentionally, but one wildfire burned a portion of zone A3 in 2015. This unit needs to be harvested with a chipping/fuelwood harvest to remove sand pine, sand live oak, and various other hardwoods such as laurel and water oaks if this area is to be restored to a more natural state. Past and current efforts have been focused on the first three units of the park described above due to funding and staffing restrictions, the poor fuelwood market, and the higher degree of imperiled species in those sections of the park. Annually 753-1,982 acres should be burned.

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

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

Following are the natural community/habitat restoration and maintenance actions recommended to create the desired future conditions in the sandhill, mesic flatwoods, wet flatwoods, and scrub communities. (see Desired Future Conditions Map).

***Objective B: Conduct habitat/natural community restoration activities on approximately 200 acres of overgrown sandhill and successional hardwood forest.***

- |          |   |
|----------|---|
| Action 1 | Develop/update a site specific restoration plan   |
| Action 2 | Implement restoration plan                        |
| Action 3 | Conduct hardwood removal on 200 acres of sandhill |

A fuelwood/chipping harvest is needed in management zones A5, A6, and A8-11 on the south side of the park along US 17. This area of the park has been relatively untouched with no prescribed fire or other management activities and contained the only day use area for the first 15 years of the park's existence. The sandhill and associated habitats are dominated by sand pine and sand live oak at a 60-80% canopy. The only time when fire can penetrate these areas in its current state is during extreme drought and unsafe weather conditions.

*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 C: Conduct natural community/habitat improvement activities on 450 acres of natural communities with mechanical treatment.***

- |          |   |
|----------|---|
| Action 1 | Roller chop or mow 300 acres of scrub in zones          |
| Action 2 | Roller chop 150 acres mesic flatwoods and wet flatwoods |

The "pine island" mesic and wet flatwoods habitats in zones E1a-E4 as well as D1 would benefit from roller chopping to reduce the density of saw palmetto. Areas with the highest densities would be selected for this treatment which would also be dependent on hydrology and funding. The northern portion of the scrub ridge, zones C24-C26, have not been mechanically treated aside from the 2010 sand pine harvest. These zones would need to be chopped for DRP to safely reintroduce fire into these management zones. This habitat would be a good introduction site for the Florida Scrub-jay because of its size and diversity. DRP will continue to explore the possibility of a translocation to the site with USFWS and FWC.

***Objective D: Conduct natural community/habitat improvement activities on***

## ***200 acres of sandhill community***

- |          |   |
|----------|---|
| Action 1 | Herbicide sprouting oak regeneration and girdle larger oaks |
| Action 2 | Use chainsaw crews in sensitive groundcover areas           |
| Action 3 | Mow using low ground pressure track machines                |

A majority of the sandhill found in both the central scrub ridge and the hoot owl areas suffer from hardwood encroachment and sand pine regeneration due to the many years of fire suppression. Simple mechanical treatment with mowing alone has proven to be effective for introducing fire but only for that single event. To control oaks and sand pines in these areas, it is necessary to use selective herbicides like Velpar and Garlon to control these species. DRP staff biologists will target areas within these 200 acres with preference given to areas that are not near wetlands, along fire lines, and are core habitats for imperiled species.

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

Ongoing inventory and monitoring of imperiled species in the state park system is necessary to meet 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 A: Update baseline imperiled species occurrence inventory lists for plants and animals.**

Action 1 Conduct regular surveys.

Imperiled species are surveyed on a regular basis by park biologists, FWC, and USFWS partners. Data obtained is entered into several DRP databases for tracking which creates the species occurrence list for this unit management plan.

**Objective B: Monitor 3 selected imperiled animal species in the park.**

Action 1 Continue monitoring protocols for 3 imperiled animal species

The Sherman's fox squirrel, gopher tortoise, and Florida sandhill crane will be monitored annually using recommended survey methods developed by FWC and partners.

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

Action 1 Implement monitoring protocols for 1 imperiled plant species

Etonia false rosemary (*Conridina cyniflora*) occurs in four populations along the scrub/sandhill ecotone on the central ridge of the park. The populations will be monitored as restoration efforts occur in the scrub. An annual census of the population is conducted each fall. Data is submitted to USFWS when requested. No specific threats to this species has been identified.

## Exotic Species Management

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

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 A: Annually treat 2 infested acres of exotic plant species in the park.**

Action 1 Annually develop/update exotic plant management work plan.  
Action 2 Implement annual work plan by treating 2 infested acres in the park, annually, and continuing maintenance and follow-up treatments, as needed.

Dunns Creek State Park is fortunate not to have an invasive plant species problem

at the park. Only a few small infestations of cogongrass, coral ardisia, Rose-natal grass, and Chinese tallow exist in the park that we know of. These species are surveyed for and treated several times a year to keep them from spreading while working toward complete eradication. Additional surveying is needed in some of the more inaccessible locations such as the floodplain swamp and wet flatwoods.

***Objective B: Implement control measures on 3 nuisance and exotic animal species in the park.***

- |          |   |
|----------|---|
| Action 1 | Increase efforts to control and remove feral hogs |
| Action 2 | Control coyotes and armadillos when possible      |

DRP will continue to train staff to remove hogs where possible using traps and free shooting. USDA Wildlife Services personnel have worked on the site off and on since 2006. When an increase in the population is noticed, USDA is contacted to begin trapping. Coyotes have become a problem more recently at the park. Several gopher tortoise burrows have been dug into causing disturbance to the animal and potentially to tortoise nests. Visitors and staff have seen coyotes running in packs, causing disturbance to both visitors and threatening their safety. Coyotes will be removed opportunistically during hog removal efforts.

**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 will implement the following goals, objectives, and actions as funding becomes available to preserve the cultural resources found in Dunns Creek 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 the 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 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 the DHR.

**Objective A: Assess and evaluate 4 of 6 recorded cultural resources in the park.**

- Action 1 Complete 2 assessments/evaluations of archaeological sites.
- Action 2 Complete 1 Historic Structures Report (HSR's) for historic buildings and cultural landscapes. Prioritize stabilization, restoration, and rehabilitation projects.

Each archaeological site should be assessed annually for potential threats such as erosion, looting, or animal damage. Four sites are existing and 2 have been removed (Piney Bluff House and Blue Pond Homestead).

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

- Action 1 Ensure all known sites are recorded or updated in the Florida Master Site File.
- Action 2 Complete a predictive model for high, medium, and low probability of locating archaeological sites within the park.
- Action 3 Conduct oral history interviews.

A survey should be completed to record areas of high turpentine activity. There is the possibility of a higher likelihood of cultural resources to be found near the river, so a predictive model for high, medium, and low probability of locating archaeological sites within the park could enhance efforts to discover new sites. Conducting oral history interviews with past land owners would help discern the purpose of numerous park features.

**Objective C: Bring 2 of 6 recorded cultural resources into good condition.**

- Action 1 Implement regular monitoring programs for 4 cultural sites.
- Action 2 Create and implement a cyclical maintenance program for each cultural resource.
- Action 3 The PU723 Piney Bluff Site should be brought into good condition.

Each resource should be monitored quarterly for any needed maintenance, which should be performed when feasible. Some erosion exists at the Piney Bluff Landing PU723 site from the river and from boats pulling up on the site. DRP will evaluate if shoreline hardening is a potential solution to this problem. A minimum wake zone may aid in the protection of this site.

## **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.

Dunns Creek State Park (Dunns Creek) is designated as a single-use park. As such, timber management is only permitted as a method of natural community restoration and maintenance rather than as an ongoing extractive activity. The feasibility of managing/harvesting timber at Dunns Creek during the period covered by the UMP was considered pursuant to the DRP statutory responsibilities to analyze 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 natural characteristics to the degree practicable, except in those natural communities specifically managed for a structure that differs from that described in the timber assessment found at reference sites for those communities established by the Florida Natural Areas Inventory (FNAI). In the case of imperiled species, the management of certain natural communities may differ from standard treatments to provide optimum habitat conditions within the park.

Most natural communities evaluated at Dunns Creek had overstory pine stocking levels within the range identified for corresponding FNAI Reference Sites. Conversely, hardwood overstory stocking levels were above the upper limits identified for corresponding FNAI Reference Sites. The Timber Management Analysis found in Addendum 8 provides additional details. Overstory thinning is a management tool that may be utilized in areas which have overstocked conditions. However, the specific management goals and objectives for each natural community are detailed in the Resource Management Component. Activities related to stand improvement, including palmetto and midstory reduction, are ongoing in many areas, as well.

### **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. DRP considered recommendations of the land management review team and updated this plan accordingly.

Dunns Creek State Park was subject to a land management review on September 3, 2015.

The review team made the following determinations:

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



## **LAND USE COMPONENT**

### **Introduction**

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

The general planning and design process begins with an analysis of the natural and cultural resources of the unit, and then proceeds through the creation of a conceptual land use plan that culminates in the actual design and construction of park facilities. Input to the plan is provided by experts in environmental sciences, cultural resources, park operation and management. Additional input is received through public workshops, and through environmental and recreational-user groups. With this approach, the DRP objective is to provide quality development for resource-based recreation throughout the state with a high level of sensitivity to the natural and cultural resources at each park.

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

### **External Conditions**

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

Dunns Creek State Park is located within Putnam County about 20 miles south of Palatka, 8 miles west of Crescent City, and 35 miles southeast of Interlachen in the northeast part of the state. Approximately 346,000 people live within 30 miles of the park (U.S. Census 2010).

The population of Putnam County is relatively diverse in terms of demographic characteristics. According to the U.S. Census Data (2010), approximately 29% of residents in the county identify as black, Hispanic or Latino, or another minority group. Half of residents can be described as youth or seniors (U.S. Census 2010). In the surrounding population, 62% are of working age (16 to 65) (U.S. Census Bureau 2010). As of 2016, Putnam County's per capita personal income was \$33,003 (below the statewide average of \$41,497) (U.S. Bureau of Economic Analysis 2016).

A significant amount of resource-based recreation opportunities exists within 15 miles of Dunns Creek State Park and include the listed below:

<b>Table 6. Resource-Based Recreational Opportunities Near Dunns Creek State Park</b>									
<b>Name</b>	<b>Biking</b>	<b>Hiking</b>	<b>Swim/ Beach</b>	<b>Boating/ Paddling</b>	<b>Fishing</b>	<b>Wildlife Viewing</b>	<b>Overnight Stay</b>	<b>Hunting</b>	<b>Equestrian Facilities</b>
Dunns Creek Conservation Area	✓	✓			✓	✓	✓	✓	✓
Marjorie Harris Carr Cross Florida Greenways	✓	✓		✓	✓	✓	✓		✓
Ocala National Forest	✓	✓		✓	✓	✓	✓	✓	✓
Haw Creek Preserve State Park				✓		✓			
Ravine Gardens State Park	✓	✓							
Palatka to Lake Butler State Trail	✓	✓							
Etoniah Creek State Forest	✓	✓			✓	✓	✓	✓	✓
Caravelle Ranch Wildlife Management Area	✓	✓		✓	✓	✓	✓	✓	✓
Matanzas State Forest WMA	✓	✓		✓	✓	✓	✓		✓

The park is located in the Northeast Vacation Region, which includes Baker, Clay, Duval, Flagler, Nassau, Putnam, and St. Johns counties (Visit Florida 2013). According to the 2013 Florida Visitor Survey, approximately 6.6% of domestic visitors to Florida visited this region. Roughly 86% visitors to the region traveled for leisure purposes. The top activities for domestic visitors were visiting friends or relatives and beach/waterfront. Summer was the most popular travel season, but visitation was generally spread throughout the year. Most visitors traveled by non-air (81%), reporting an average of 3.5 nights and spending an average of \$115 per person per day (Visit Florida 2013).

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

The existing use of surrounding properties are predominantly agricultural. Dunns Creek bounds the park to the north. Lands to the north bank of the creek are owned by the St. Johns Water Management District and are zoned for agriculture. Residential single-family development exists to the west and south. Existing land use around the park is in large part dominated by agriculture and silviculture. Other land uses include pockets of open space for recreational purposes.

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

The population of Putnam County stood at 74,364 at the time of the 2010 census count (U.S. Census Bureau 2010). Between 2010 and 2017, the population has decreased by 1.6%, and is anticipated to stagnate to a population of 73,600 by 2020 (Bureau of Economic and Business Research 2017). The county is within Florida's First Coast region in the northeast part of the state. The built environment is oriented around the St. Johns River and agricultural activities. Putnam and surrounding counties are part of the North Central Rural Area of Opportunity, designated by the Department of Economic Opportunity. The North Florida Economic Development Opportunity identifies the key industries in this region to include manufacturing, timber, agriculture, and technology among others. The region is seeking to incentivize companies in those fields to invest in the area and further spur economic development. Like Putnam County, most counties in the region are rural and heavily dependent on the agriculture and service sectors. As the region seeks to become more economically diverse, there have been several policy changes to attract development of an ecotourism industry (NEFRC 2011). Surrounding public lands in Putnam County allow for camping, boating, fishing, hunting, and wildlife viewing. Palatka, a few miles to the north of Dunns Creek State Park, is considered the "bass capital" of the state and hosts several fishing tournaments annually (FDEP 2012). The county has also implemented the Putnam Blueways and Trails program that established paddling trails along the St. Johns River, Dunns Creek, and Crescent Lake. These trails connect park and conservation

lands to Palatka's waterfront (FDEP 2012). The county is also a destination along the St. Johns River-to-Sea Loop, a part of the East Coast Greenway. The loop is projected to be 260 miles in length running through five counties in northeast and central Florida. The multi-use trail, if completed, would be the longest of its kind in the American Southeast (FDEP 2012). Palatka has also been engaged with riverfront redevelopment projects that connect historic neighborhoods and downtown areas to the waterfront. Projects include pedestrian and vehicular improvements, canoe/kayak/boat launches, and a water taxi. These features are intended to promote the city's tourism and attract users to nearby outdoor recreational activities (FDEP 2012).

Surrounding properties to the state park are designated for agricultural activities. Lands specified for silviculture and general agriculture are allotted the highest percentage of land acreage, as the county's economy depends heavily on these two industries. St. Johns Water Management lands are specified for conservation uses, as well as land to the southeast of the park along the water. Rural residential development is designated for properties to the south and west of Dunns Creek State Park. A district of urban reserve (UR) use is designated toward the northwest corner of the park. Lands in this category are intended for residential and agricultural use. Though, commercial, industrial, and public facilities are permitted. The St. Johns River, to the north of the park, has been a primary factor in land development decisions. The concentration of Putnam County's population is located near the river. Residential development is anticipated mostly in the east and northwest corners of Putnam County (Putnam County 2006).

### **Florida Greenways and Trails System (FGTS)**

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

In some cases, existing or planned priority trails run through or are adjacent to state parks, or they may be in close proximity and can be connected by a spur trail. State parks can often serve as trailheads, points-of-interest, and offer amenities such as camping, showers and laundry, providing valuable services for trail users while also increasing state park visitation.

Dunn's Creek Paddling Trail is a segment within the Putnam County Blueways and Trails program and runs adjacent to the park property. This segment is also part of the larger Putnam County Bartram Trail. The St. Johns River Paddling Trail is just north of the park. The Marjorie Harris Carr Cross Florida Greenway, part of the Florida National Scenic Trail is 8 miles away from Dunns Creek to the east. As the park develops its trails and blueways, efforts will be made to provide connections to these nearby trails, as extrapolated on in the Dunns Creek Master Plan.

The St. Johns River to Sea Loop is designated as a priority trail by FGTS, and when completed, will allow for greater connectivity throughout five counties over 260 miles of trail. Portions of the trail have already been developed or fully funded for developed, the rest of the trail has either been only partially developed or remains unfunded. The trail has considerable support throughout the region, as evidenced in the existing funding of the trail in most of the segments.

### **Property Analysis**

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

#### **Recreational Resource Elements**

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

#### **Land Area**

Dunns Creek contains more than 6,300 acres of diverse landscapes that can provide a full range of land-based recreational opportunities. Hiking, biking, horseback riding, picnicking, paddling, fishing, and wildlife viewing can be accommodated within the park's array of natural communities including flatwoods, sandhill, scrub, slope forest, and upland mixed woodland.

## **Water Area**

Dunns Creek has three blackwater streams with Hammock Branch being the largest. The park's ecosystem supports multiple seepage streams, floodplain swamp, depression marshes, baygall, and a few small lakes. These areas provide abundant opportunities for wildlife viewing and shoreline fishing.

## **Shoreline**

The park is bounded on the north and northeastern sides by Dunns Creek. Approximately six river miles of shoreline exists within the confines of the park, however, only about 2,000 feet is truly accessible for recreation at Piney Bluff Landing. This area provides opportunities for boating, paddling, fishing, and wildlife viewing.

## **Natural Scenery**

The sandy north to south ridge in the center of the park affords panoramic views from elevations that reach more than 110 feet in some locations. This scenic experience is unique for northeast Florida.

## **Significant Habitat**

The park's large size, highly variable topography, and intricate mosaic of 21 natural communities provide important habitat for unique and imperiled plant and animal species. Twenty-four designated animal species and nine designated plant species are found at the park including gopher tortoises, gopher frogs, wading birds, Etonia false rosemary, and Sherman's fox squirrels. The park is considered a very important site for scrub endemics.

## **Natural Features**

Dunns Creek State Park contains several notable natural features including Dunns Creek, Sugarbowl Lake, steephead ravines, and the slope forests and seepage stream communities. Dunns Creek and Sugarbowl Lake are the most scenic of the natural features while the slope forests and seepage stream communities may be the most significant because of their association with the steepheads, the populations of rare plants and animals they support, and their visual appeal.

## **Archaeological and Historical Features**

The history of the Dunns Creek and St. Johns River area is quite rich, dating back to prehistoric times. Dunns Creek was occupied and utilized by Native Americans during the full sequence of Pre-Columbian cultural periods from the Paleoindians through the St. Johns Periods. The only recorded prehistoric archaeological site in the park, a shell midden at Piney Bluff Landing on Dunns Creek, provides tangible evidence for interpreting the park's distant past.

The pioneering developer, Henry W. Sisco, established the town of Sisco near the southwest corner of the park in 1844. Though very little remains of this once thriving community, at its peak it enjoyed the benefits of agricultural development and proximity to the railroad. Interpretive opportunities at the park facilitate the narrative of this economic hub that fed the region's early industries in farming, timbering, and turpentine production.

### **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**

Areas along Dunns Creek were utilized by prehistoric and historic peoples alike, with the European settlement of the area spurring more intensive use of the land than previously experienced. The Spanish, French, and British, in turn, all claimed and explored the north Florida coast and the interior behind it. The land that has since become Dunns Creek, was mostly likely part of a larger plantation that produced cash crops such as sugar, molasses, rum, rice, and indigo.

In the 1880s, the Dunns Creek property played a vital role in the development of the Palatka area by housing a railroad station, post office, express office, general store, and lodging facility developed by Mr. Henry W. Sisco along the Jacksonville, Tampa, and Key West Railroad. The old homestead in the Piney Bluff area of the park that recently had to be removed was referred to as "the goat farm" by locals. A more comprehensive documentation of the park's history has yet to be formally recorded but it is evident that the property served many uses across the years. The Dunns Creek property was sold to the Nature Conservancy in the 1990s which, in turn, transferred ownership to the state for the continued preservation, restoration and management of its natural and cultural features in perpetuity by the Division.

#### **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 allow typical state park uses and facilities necessary for the provision of resource-based recreation.

The current future land use designation is conservation in order to protect the floodplains and wetlands of the St. Johns River and Dunns Creek. The county's future land use element has set aside over 127,000 acres of unincorporated land area for conservation (Putnam County 2006). The current zoning

designation for the entire park is agriculture. Agriculture allows for a wider range of development than a conservation classification. As the park is within St. Johns Water Management District jurisdiction, additional permits may be required for development regarding environmental resource impacts (FDEP 2012). There are no expected conflicts between the future land use or zoning designations and typical state park land uses.

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

The park has seen limited development over the last ten years. The DRP has focused primarily on restoration of the park's unique scrub habitat and establishment of the park's prescribed fire program. The park is managed in conjunction with Ravine Gardens State Park, and staff is primarily shared between the parks. The park has an active Citizen Support Organization that hosts an annual Earth Day Celebration in the spring. Recreational areas include the picnic area and trailhead located on U.S. 17, north of Pomona Park and the day use area located within the main entrance on Sisco Road. At the Blue Pond Trailhead there are four marked shared-use trails. This includes a 1.5-mile hiking and bicycling trail that takes visitors to the pristine waters of Blue Pond. Hikers, bikers and equestrians can explore the park's sandhills, mesic flatwoods, baygall, and seepage slope. The trails vary in length from a short 10-minute walk to a full two-hour hike. At the Piney Bluff Trailhead located off the main park drive in the day use area, two of the four trails have been blazed, with lengths that vary from 1.4 miles to 6.1 miles. Ranger led hikes are also available through prior arrangement with park staff. Aside from recreational use on the land, the park also facilitates paddling and fishing usage with its newly built canoe/kayak launch and boardwalk. Geocaching is supported by the park, and some geocaches are located within the park and along the trails. Piney Bluff Landing is the only area within the park with direct access to Dunns Creek. Historically, this portion of the park has been a popular place to fish and picnic.

Dunns Creek State Park recorded 61,198 visitors in FY 2017/2018. By DRP estimates, the FY 2017/2018 visitors contributed \$5.1 million in direct economic impact, the equivalent of adding 71 jobs to the local economy (FDEP 2018).

### **Other Uses**

The St. Johns River Water Management District monitors several wellheads across the property.

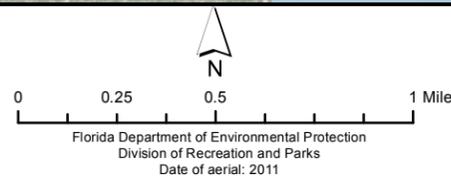
### **Protected Zones**

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, and shops or maintenance areas) are not permitted in protected zones. Facilities with minimal resource



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DUNNS CREEK STATE PARK



BASE MAP



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 Dunns Creek, all wetlands, sandhill, scrub, and flatwood communities have been designated as protected zones as delineated on the conceptual land use plan. The entire area around the ravines are especially sensitive ecologically and therefore access to this area will be limited to foot traffic only. The park's current protected zone is delineated on the Conceptual Land Use Plan.

### **Existing Facilities**

The trailhead and picnic area on U.S. 17 has parking for 10 cars, a picnic pavilion, restroom, and interpretive kiosk. Four shared-use trails allow visitors to access the southwest corner of the park. The support area is located on the park's southern boundary and is accessed from Sisco Road. It contains a staff residence, small office building, and a shop building (see Base Map).

The recently developed piney bluff day use area provides visitors excellent opportunities to explore the surrounding area by kayak. This includes a kayak launch, fishing platform, restroom, scattered picnic tables, and a trailhead leading to two marked shared-use trails. There are two more trails in this system that will be marked by the end of 2018.

### **Recreation Facilities**

#### **Blue Pond Picnic Area**

Trailhead  
Parking (10 spaces)  
Picnic pavilion  
Restroom  
Shared-use trails

#### **Support Facilities**

Staff residence  
Office  
Shop  
Interpretive kiosk

#### **Piney Bluff Day Use Area**

Parking  
Restroom  
Scattered picnic tables and grills  
Boardwalk and fishing deck  
Canoe/kayak launch  
Shared -use trails

## Conceptual Land Use Plan

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

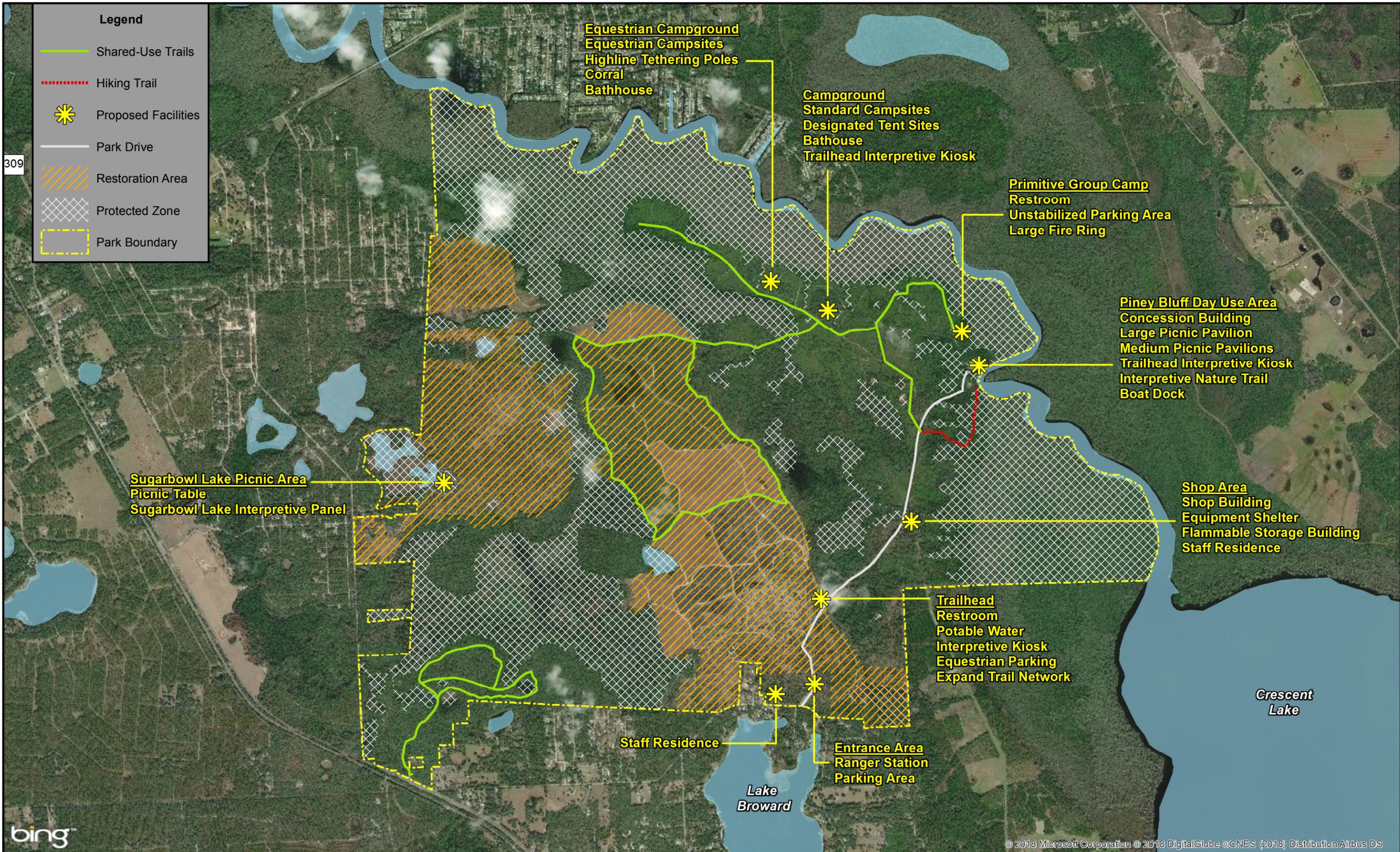
During the development of the conceptual land use plan, the DRP assessed the potential impact of proposed uses or development on the park resources and applied that analysis to determine the future physical plan of the park as well as the scale and character of proposed development. Potential resource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

### **Potential Uses**

#### **Public Access and Recreational Opportunities**

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

The existing recreational activities and programs of this state park are appropriate to the natural and cultural resources contained in the park and should be continued. Florida's Statewide Comprehensive Outdoor Recreation Plan (SCORP) indicates that participation rates in this region for saltwater beach activities, freshwater fishing, freshwater boat-ramp use, visiting archaeological and historic sites, wildlife viewing, bicycle riding, hiking, and camping are



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**Legend**

- Shared-Use Trails
- ⋯ Hiking Trail
- ✱ Proposed Facilities
- Park Drive
- Restoration Area
- Protected Zone
- Park Boundary

**Equestrian Campground**  
 Equestrian Campsites  
 Highline Tethering Poles  
 Corral  
 Bathhouse

**Campground**  
 Standard Campsites  
 Designated Tent Sites  
 Bathhouse  
 Trailhead Interpretive Kiosk

**Primitive Group Camp**  
 Restroom  
 Unstabilized Parking Area  
 Large Fire Ring

**Piney Bluff Day Use Area**  
 Concession Building  
 Large Picnic Pavilion  
 Medium Picnic Pavilions  
 Trailhead Interpretive Kiosk  
 Interpretive Nature Trail  
 Boat Dock

**Sugarbowl Lake Picnic Area**  
 Picnic Table  
 Sugarbowl Lake Interpretive Panel

**Shop Area**  
 Shop Building  
 Equipment Shelter  
 Flammable Storage Building  
 Staff Residence

**Trailhead**  
 Restroom  
 Potable Water  
 Interpretive Kiosk  
 Equestrian Parking  
 Expand Trail Network

Staff Residence

**Entrance Area**  
 Ranger Station  
 Parking Area

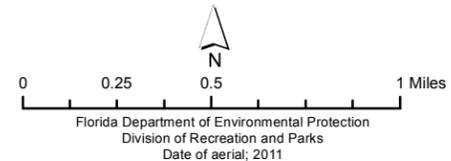
Lake Broward

Crescent Lake



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**DUNNS CREEK STATE PARK**



**CONCEPTUAL LAND USE PLAN**



higher than the state average with demand for additional facilities increasing through 2020 (FDEP 2013). Horseback riding has high resident participation rates and equestrians in Florida often suggest that “horse tourism” is a niche outdoor recreational activity that could be economically beneficial for rural communities (FDEP 2008). New and improved activities and programs are recommended and discussed below.

***Objective: Maintain the park’s current recreational carrying capacity of 360 users per day.***

The park will continue to provide opportunities for picnicking, hiking, biking, horseback riding, paddling, fishing, and wildlife viewing.

***Objective: Expand the park’s recreational carrying capacity by 1,146 users per day.***

Improvements are proposed that will expand access to recreational pursuits including picnicking, hiking, paddling, horseback riding, camping, and wildlife study. These improvements are listed below in more detail.

***Objective: Continue to provide the current repertoire of 3 interpretive, educational, and recreational programs on a regular basis.***

Three interpretive, educational, and recreational programs are currently offered to park visitors. These included guided hikes led by park rangers, which cover topics such as ecosystems, gopher tortoises, birding, and plants. Kayaking 101 classes are offered by the Friends of Dunns Creek State Park, approximately once a month. Participants learn the basics of paddling while viewing the wildlife on the creek. Fishing programs are also offered every few months. Visitors can learn how to fish while a park ranger teaches them about the local species in our area. The Friends of Dunns Creek State Park also host several special events each year, including the Putnam County Earth Day Celebration.

***Objective: Develop 3 new interpretive, educational, and recreational programs.***

There is potential for providing additional interpretive programs at Dunns Creek State Park to enhance nature and heritage-based tourism. Interpretive content should focus on the importance and ecological significance of prescribed burning, the history of the park and area, and the variety of natural communities found at the park. Kayak tours could be offered to park visitors that reinforce these concepts. Interpretive kiosks should be developed at entrances and several points throughout the park to provide an understanding of the historical and natural significance of the park. Division staff should expand the frequency and content of existing programming and encourage the involvement of other land managing agencies, public and private sector

interests, and citizen volunteers in the development and delivery of interpretive programs at the park.

## **Proposed Facilities**

### **Capital Facilities and Infrastructure**

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

The existing facilities of this state park are appropriate to the natural and cultural resources contained in the park and should be maintained. New construction, as discussed further below, is recommended to improve the quality and safety of the recreational opportunities, to improve the protection of park resources, and to streamline the efficiency of park operations. The following is a summary of improved and new facilities needed to implement the conceptual land use plan for Dunns Creek 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 1 existing facility, 10 miles of trail, and 1 mile of road.***

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

The procurement of any funding for park facility development is subject to many variables and processes; sequentially, it is suggested that when funding is allocated to this park it should first be put towards improvements to existing recreational and support facilities. The park is currently able to accommodate a limited number of recreational activities, and any new recreation type such as camping will generally require significantly more resources compared to enhancements to existing facilities. Development of new recreational facilities should only occur after enhancements to what is existing in the park have been adequately addressed. Though, all proposals detailed below, including new facilities, are part of the larger long-term vision for the park. However, it is critical to recognize that the execution of the following proposals will require

significant time and resources; and therefore, it is not certain how long it might take to achieve the recreational vision of the property.

**Residence Area:** One additional staff residence is proposed for this area near the entrance of the park adjacent to a neighborhood. Alternatively, this residence could also be placed closer to the proposed campground if it is deemed necessary for security or accessibility purposes.

**Trails:** The network of shared-use trails will be expanded in the main body of the park to provide opportunities for hiking, biking, and equestrian use. The land area can support more than ten miles of trails but the layout of the system will need to be coordinated with restoration efforts and may be adjusted over time as restoration proceeds. The expanded trails should fall along fire breaks or other paths used for support purposes in order to prevent any unnecessary erosion to the surrounding landscape.

**Parkwide:** The park drive has recently been paved from the entrance on Sisco Road to the Piney Bluff Day Use Area, a distance of 2 miles. A second phase of paving will be implemented to include the road segment from Piney Bluff Day Use Area to the proposed campground, a distance of approximately one mile. Sustainable paving options should be considered in the development of the rest of the main park drive. Sustainable elements of the park drive could include landscaping features such as bioswales or infrastructural alternatives like permeable pavement.

***Objective: Construct 8 new facilities.***

**Entrance Area:** The main entrance to the park is located on Sisco Road just north of Lake Broward. A ranger station is proposed to the north of the entrance gate in an area with good sight lines for the safety of visitors as they enter and exit the park. Parking and pull-offs will be provided for the convenience and safety of visitors and staff. Turnarounds should be incorporated into the driveway design to accommodate large recreational vehicles and trucks with horse trailers. Standard entrance signage, fencing, and landscaping will be installed.

**Entrance Trailhead:** This trailhead located along the park drive will provide critical connections to shared-use trails and park amenities. To better accommodate a range of recreational activities while preventing congestion of use areas, this entrance area trailhead should be chiefly oriented to equestrians. The main trailhead for all other visitors is located at the Piney Bluff Day Use Area. This equestrian entrance area trailhead should accommodate up to 5 trailers and include two separate car spaces. A composting restroom, potable drinking water, and interpretive and wayfinding information will

complete the trailhead. Elements such as pervious surfaces should be considered in the development of the trailhead to lessen the impact of the trailhead on the surrounding natural area. Given that the primary community type is sandhill around the entrance, any development should proceed with caution.

**Sugarbowl Lake Picnic Area:** A picnic table and interpretive panel are proposed for the east side of Sugarbowl Lake to provide trail users with a scenic wayside stop and wildlife viewing area on the edge of this prairie lake, a popular breeding location for sandhill cranes. This picnic area will not be developed until after the network of shared use trails is completed and extended to this area.

**Piney Bluff Landing Day Use Area:** A small intermittent stream bisects the area into two distinct zones, a broad wooded area with an open understory and a large open field. The open area is well-suited for special events. It has recently been equipped with a parking area, restroom, scattered picnic tables and grills, fishing deck/boardwalk, and canoe and kayak launch.

The canoe/kayak launch and fishing platform provide scenic views and protection of the shoreline in addition to offering recreational opportunities. The addition of a boat dock in this day use area will provide the opportunity to connect to the City of Palatka's proposed water taxi service and improve blueway connectivity. A proposed multipurpose structure for possible use as a concession is sited on an elevated location with clear visibility from the creek. This structure should be relatively small to better integrate with the low-impact, more primitive setting of the park's land use. Connections to interpretive trails are located within a short walking distance from the parking area. There is a trailhead at the Piney Bluff Day Use Area providing visitors access to the park's network of shared-use trails. A kiosk will be installed at this location to provide trail wayfinding and interpretive information. A large picnic pavilion and two medium picnic pavilions should be added to accommodate a growing number of visitors. During times of high demand for parking, the adjacent disturbed field may continue to be used for spillover parking. Consultation with the Division of Historical Resources will be ongoing to ensure protection of recorded and potential archaeological resources in the area.

**Primitive Group Camp:** A primitive group camp is proposed for a site just north of the Piney Bluff Day Use Area. This area will accommodate up to 30 campers. A large fire ring, composting restroom, and a small unstabilized parking area will be provided.

It is not certain how much demand there will be for primitive camping at Dunns Creek. However, if it happens that following the development of the group camp there is a greater demand than can be accommodated through the one primitive group camp in the Piney Bluff area, an additional small primitive camping area with around 5 individual sites may be considered. The site of this primitive camping area would need to be thoroughly vetted to prevent damages to sensitive areas of the park. These sites would differ from the group camp in that they would largely be targeted for the paddlers accessing Dunns Creek along the Bartram Trail in Putnam County.

**Campground:** The campground will be in a shady 40-acre area dominated by large live oaks with very little understory. It will feature two camping loops with 15 sites each. One loop will be full service, with most pull-thru sites and full utility hookups capable of serving modern recreational vehicles. The other loop will be dedicated to tent and pop-up campers only. All 30 campsites will be within a short walk of a full-service bathhouse, and the two loops will contain universally accessible campsites. Each site will be chosen with care, to protect as many specimen trees as possible and provide visitor privacy. A trailhead is proposed for the campground to provide campers with access to the park's network of shared-use trails. A kiosk will be installed here to provide trail wayfinding and interpretive information. Consultation with the Division of Historical Resources will be ongoing to ensure protection of archaeological resources in the area.

**Equestrian Campground:** This campground will contain up to 12 pull-thru sites, with personal high-line tethering poles and utility hookups at each site. The layout of the camping area should be designed to facilitate camping by larger groups, with the potential for expansion to include a corral. A centrally located bathhouse and a manure shed will be provided.

**Shop Area:** Facilities proposed for the support area include a shop building, flammable storage building, staff residence, and equipment shelter.

### **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. The preliminary estimates are provided to assist DRP in budgeting future park improvements and may be revised as more information is collected through the planning and design processes. New facilities and improvements to existing facilities recommended by the plan include:

**Entrance Area**

Standard entrance package  
 Ranger station  
 Parking area (10 spaces)

**Sugarbowl Lake Picnic Area**

Picnic table  
 Interpretive panel

**Trailhead**

Restroom  
 Potable water  
 Interpretive kiosk  
 Equestrian parking (5 spaces)  
 Car parking (2 spaces)

**Trails**

Shared-use trails (10 mi.)

**Piney Bluff Landing Day Use Area**

Concession building  
 Large picnic pavilion  
 Medium picnic pavilion (2)  
 Trailhead interpretive kiosk  
 Interpretive nature trail  
 Boat Dock

**Residence Area**

Staff residence

**Shop Area**

Shop building (4-bay)  
 Equipment shelter (4-bay)  
 Flammable storage building  
 Staff residence

**Parkwide**

Park drive paving (1 mi.)

**Primitive Group Camp**

Large fire ring  
 Restroom  
 Unstabilized parking area

**Campground**

Standard campsite (15)  
 Tent only campsite (15)  
 Bathhouse (1)  
 Trailhead interpretive kiosk

**Equestrian Campground**

Equestrian campsites (12)  
 Highline tethering poles  
 Bathhouse  
 Corral

**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 7. Recreational Carrying Capacity**

<b>Activity/Facility</b>	<b>Existing Capacity*</b>		<b>Proposed Additional Capacity</b>		<b>Estimated Recreational Capacity</b>	
	<b>One Time</b>	<b>Daily</b>	<b>One Time</b>	<b>Daily</b>	<b>One Time</b>	<b>Daily</b>
<b>Trails</b>						
Shared-use	40	160	100	400	140	560
<b>Picnicking</b>	16	32	136	272	152	304
<b>Fishing</b>						
Shoreline			25	50	25	50
<b>Boating</b>						
Canoeing/kayaking	84	168	21	42	105	210
<b>Camping</b>						
Standard			240	240	240	240
Equestrian			96	96	96	96
Primitive Group			30	30	30	30
<b>TOTAL</b>	<b>140</b>	<b>360</b>	<b>648</b>	<b>1130</b>	<b>788</b>	<b>1490</b>

\*Existing capacity revised from approved plan according to DRP guideline

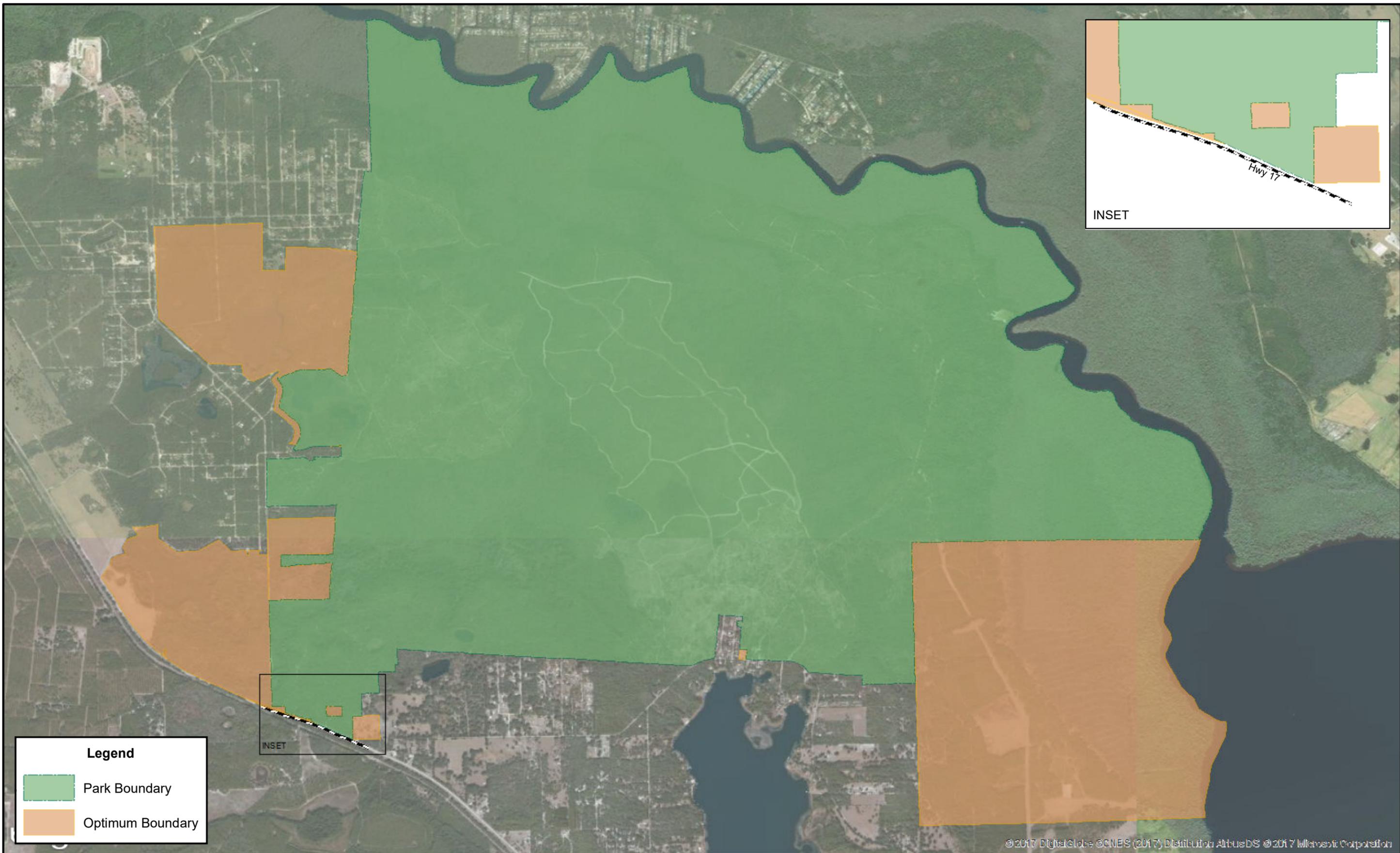
**Optimum Boundary**

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.

The optimum boundary for Dunns Creek State Park includes three parcels totaling approximately 2,000 acres. A 400-acre parcel on the west side would protect the Crane Pond and Sugarbowl Lake wetlands. A 370-acre parcel on the southwest corner would help to buffer and protect an area of baygall that is connected to wetlands within the park. A 1,230-acre parcel on the park's southeast corner would protect wetlands along the northwest corner of Crescent Lake. The acquisition of several small lots along U.S. 17 and Sisco Road are also proposed. Together, these acquisitions would improve park operations and management, enhance the park's resource base, and allow for potential future expansion of recreational activities and facilities (see Optimum Boundary Map).



**Legend**

- Park Boundary
- Optimum Boundary

INSET

INSET

Hwy 17

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DUNNS CREEK STATE PARK

0 0.25 0.5 1 Mile

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

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 Division of Recreation and Parks (DRP) progress toward achieving resource management, operational and capital improvement goals and objectives since approval of the previous management plan for this park. This component also compiles the management goals, objectives and actions expressed in the separate parts of this management plan for easy review. Estimated costs for the ten-year period of this plan are provided for each action and objective, and the costs are summarized under standard categories of land management activities.

### **MANAGEMENT PROGRESS**

Since the approval of the last management plan for Dunns Creek State Park in 2004, significant work has been accomplished and progress made towards meeting the DRP's management objectives for the park. These accomplishments fall within four of the five categories that encompass the mission of the park and the DRP.

#### **Park Administration and Operations**

- Acquired three OPS park ranger positions and one FTE park services specialists position

#### **Resource Management**

##### **Natural Resources**

- Burned 9,300 acres total since the approval of the last plan
- Conducted an 800-acre crooked wood cut
- Completed a 1100-acre sand pine harvest and 600-acre fuel wood harvest
- Completed a 900-acre salvage cut from a pine beetle infestation
- Installed 40 photo points
- Installed 9 miles of new fire lines and improved over 20 miles of existing fire lines
- Treated 25.5 infested acres of exotics
- Roller chopped 200 acres of mesic flatwoods and 430 acres of scrub habitat
- Installed 3 hiking trails
- Planted 60,000 longleaf pine trees
- Chainsaw removed sand pines on over 200 acres of sandhill
- Conducted maintenance and hardwood reduction projects on sandhill
- Monitored several listed species such as gopher tortoise, etoniah rosemary, fox squirrel.

## **Cultural Resources**

- Removed two historic buildings with DHR approval
- Completed a state wide cultural predictive model

## **Recreation and Visitor Services**

- Paved the park drive, allowing access to the day use area at Dunns Creek off of Sisco Road, and established an honor entrance station.
- Piney Bluff Day Use Area was established with a 30-vehicle parking lot, a fishing pier, a floating kayak/canoe launch, and a vault restroom.
- A trail system with a trail head at Piney Bluff was developed.

## **Park Facilities**

- A two-bay shop and a modular park office have been installed in the Residence Area.
- A park residence was acquired.

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

Statewide priorities for all aspects of land management are evaluated each year as part of the process for developing the DRP's annual legislative budget requests.

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



**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.**

		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
<b>Goal I : Provide administrative support for all park functions.</b>				
<b>Objective A</b>	Continue day-to-day administrative support at current levels.	Administrative support ongoing	C	\$143,825
<b>Objective B</b>	Expand administrative support as new lands are acquired, new facilities are developed, or as other needs arise.	Administrative support expanded	C	\$399,511
<b>Goal II : Protect water quality and quantity in the park, restore hydrology to the extent feasible, and maintain the restored condition.</b>				
		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
<b>Objective A</b>	Conduct/obtain an assessment of the park's hydrological needs.	Assessment conducted	ST	\$35,000
Action 1	Determine if ditches could be filled to return the hydrology back to natural wetland communities		UFN	\$35,000
<b>Objective B</b>	Restore natural hydrological conditions and function to approximately 300 acres of mesic flatwoods and bayall natural communities by removing 2 miles of ditches.	# Acres restored or with restoration underway	UFN	\$250,000
Action 1	Eg.: Fill approximately 2 miles of drainage ditches.	# Miles of ditches filled	UFN	\$150,000
Action 2	Eg.: Install multiple low-water crossings or culverts.	# Crossings/culverts installed	UFN	\$100,000
<b>Goal III : Restore and maintain the natural communities/habitats of the park.</b>				
		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
<b>Objective A</b>	Within 10 years have 3,426.2 acres of the park maintained within optimal fire return interval.	# Acres within fire return interval target	LT	\$610,000
Action 1	Develop/update annual burn plan.	Plan updated	C	\$10,000
Action 2	Manage fire dependent communities for ecosystem function, structure, and processes by burning between 753 - 1,982 acres annually.	Average # acres burned annually	C	\$600,000
<b>Objective B</b>	Conduct habitat/natural community restoration activities on 200 acres of overgrown sandhill and successional hardwood forest.	# Acres improved or with improvements underway	ST	\$80,000
Action 1	Develop/update site specific restoration plan		ST	\$5,000

\* 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



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

Action 2	Implement restoration plan		ST	\$0
Action 3	Conduct hardwood removal on 200 acres of sandhill		UFN	\$75,000
<b>Objective C</b>	<b>Conduct natural community/ habitat improvement activities on 450 acres of natural communities with mechanical treatment.</b>			<b>\$65,000</b>
Action 1	Roller chop or mow 300 acres of scrub in zones		UFN	\$50,000
Action 2	Roller chop 150 acres of mesic flatwoods and wet flatwoods		UFN	\$15,000
<b>Objective D</b>	<b>Conduct natural community/habitat improvement activities on 200 acres of sandhill community</b>			<b>\$205,000</b>
Action 1	Herbicide sprouting oak regeneration and girdle larger oaks		UFN	\$80,000
Action 2	Use chainsaw crews in sensitive groundcover areas		UFN	\$25,000
Action 3	Mow using low ground pressure track machines		UFN	\$100,000
<b>Goal IV: Maintain, improve or restore imperiled species populations and habitats in the park.</b>				
		<b>Measure</b>	<b>Planning Period</b>	<b>Estimated Manpower and Expense Cost* (10-years)</b>
<b>Objective A</b>	<b>Update baseline imperiled species occurrence inventory lists for plants and animals, as needed.</b>	Imperiled Species List	C	<b>\$50,000</b>
Action 1	Conduct regular surveys			\$50,000
<b>Objective B</b>	<b>Monitor and document 3 selected imperiled animal species in the park.</b>	# Species monitored	C	<b>\$50,000</b>
Action 2	Continue monitoring protocols for 3 imperiled animal species	# Species monitored	C	\$50,000
<b>Objective C</b>	<b>Monitor and document 1 selected imperiled plant species in the park.</b>	# Species monitored	C	<b>\$25,000</b>
Action 1	Implement monitoring protocols for 1 selected imperiled species in the park.	# Protocols developed	ST	\$25,000
<b>Goal V: Remove exotic and invasive plants and animals from the park and conduct needed maintenance-control.</b>				
		<b>Measure</b>	<b>Planning Period</b>	<b>Estimated Manpower and Expense Cost* (10-years)</b>
<b>Objective A</b>	<b>Annually treat 2 acres of exotic plant species in the park.</b>	# Acres treated	C	<b>\$35,000</b>
Action 1	Annually develop/update exotic plant management work plan.	Plan developed/updated	C	\$10,000
Action 2	Implement annual work plan by treating 2 acres in park, annually, and continuing maintenance and follow-up treatments, as needed.	Plan implemented		\$25,000
<b>Objective B</b>	<b>Implement control measures on 3 exotic and nuisance animal species in the park.</b>	# Species for which control measures	C	<b>\$105,000</b>

\* 2015 Dollars

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

Action 1	Increase effort to control and remove feral hogs				\$105,000
Action 2	Control coyotes and armadillos when possible				\$0
<b>Goal VI : Protect, preserve and maintain the cultural resources of the park.</b>					
		<b>Measure</b>	<b>Planning Period</b>	<b>Estimated Manpower and Expense Cost* (10-years)</b>	
<b>Objective A</b>	<b>Assess and evaluate 4 of 6 recorded cultural resources in the park.</b>	Documentation complete	LT	<b>\$7,500</b>	
Action 1	Complete 2 assessments/evaluations of archaeological sites. Prioritize preservation and stabilization	Assessments complete	LT, ST	\$5,000	
Action 2	Complete 1 Historic Structures Reports (HSR's) for historic buildings and cultural landscape. Prioritize stabilization, restoration and rehabilitation projects.	Reports and priority lists completed	LT	\$2,500	
<b>Objective B</b>	<b>Compile reliable documentation for all recorded historic and archaeological sites.</b>	Documentation complete	C	<b>\$5,000</b>	
Action 1	Ensure all known sites are recorded or updated in the Florida Master Site File.	# Sites recorded or updated	ST	\$5,000	
Action 3	Conduct oral history interviews.	Interviews complete	LT	\$0	
<b>Objective C</b>	<b>Bring 2 of 6 recorded cultural resources into good condition.</b>	# Sites in good condition	LT	<b>\$50,000</b>	
Action 1	Design and implement regular monitoring programs for 4 cultural sites	# Sites monitored	ST	\$5,000	
Action 2	Create and implement a cyclical maintenance program for each cultural resource.	Programs implemented	ST	\$5,000	
Action 3	Bring the Piny Bluff Site into good condition	Projects completed	LT, ST	<b>\$40,000</b>	
<b>Goal VII : Provide public access and recreational opportunities in the park.</b>					
		<b>Measure</b>	<b>Planning Period</b>	<b>Estimated Manpower and Expense Cost* (10-years)</b>	
<b>Objective A</b>	<b>Maintain the park's current recreational carrying capacity of 360 users per day.</b>	# Recreation/visitor	C	<b>\$143,825</b>	
<b>Objective B</b>	<b>Expand the park's recreational carrying capacity by 1,130 users per day.</b>	# Recreation/visitor	ST or LT	<b>\$399,51</b>	
<b>Objective C</b>	<b>Continue to provide the current repertoire of 3 interpretive, educational and recreational programs on a regular basis.</b>	# Interpretive/education programs	C	<b>\$15,000</b>	
<b>Objective D</b>	<b>Develop 3 new interpretive, educational and recreational programs.</b>	# Interpretive/education programs	ST or LT	<b>\$15,000</b>	

\* 2015 Dollars

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UFN = currently unfunded need



**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 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	\$215,738
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	ST or LT	\$200,000
Objective C	Improve and/or repair 1 existing facility, 10 miles of trail, and 1 mile of road as identified in the Land Use Component.	# Facilities/Miles of Trail/Miles of Road	LT	\$765,750
Objective D	Construct 8 new facilities	# Facilities/Miles of	LT	\$6,700,000
Objective E	Expand maintenance activities as existing facilities are improved and new facilities are developed.	Facilities maintained	C	\$599.27

\* 2015 Dollars

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C = long term or short term actions that are continuous or cyclical

UFN = currently unfunded need



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

Summary of Estimated Costs	
<b>Management Categories</b>	<b>Total Estimated Manpower and Expense Cost* (10-years)</b>
Resource Management	<b>\$1,572,500</b>
Administration and Support	<b>\$144,225</b>
Capital Improvements	<b>\$7,466,349</b>
Recreation Visitor Services	<b>\$144,225</b>
Law Enforcement Activities	Note: Law enforcement activities in Florida State Parks are conducted by the FWC Division of Law Enforcement and by local law enforcement agencies.

\* 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**



**Dunns Creek State Park Acquisition History**

<b>LAND ACQUISITION HISTORY REPORT</b>					
<b>Park Name</b>	Dunns Creek State Park				
<b>Date Updated</b>	12/5/2017				
<b>County</b>	Putnam County, Florida				
<b>Trustees Lease Number</b>	Trustees Lease No. 4345				
<b>Current Park Size</b>	6,302.63 acres				
<b>Legal Description</b>	A legal description is available upon request to the Department of Environmental Protection				
<b>Purpose of Acquisition</b>	The Board of Trustees of the Internal Improvement Trust Fund of the State of Florida has acquired Dunns Creek State Park to preserve, protect and manage the property's natural and cultural resources.				
<b>Acquisition History (includes only acquisition of parcels with area of 10 acres or more)</b>					
<b>Parcel Name or Parcel DM-ID</b>	<b>Date Acquired</b>	<b>Initial Seller</b>	<b>Initial Purchaser</b>	<b>Size in acres</b>	<b>Instrument Type</b>
DMID309212	10/10/2001	The Nature Conservancy	The Board of Trustees of the Internal Improvement Trust Fund of the State of Florida (Trustees)	6,230.93	Warranty Deed
DMID360003	7/30/2009	Emilio Cirelli and Kelly Scofield	Trustees	66.94	Warranty Deed

DMID333823	2/9/2004	Donald W. Frazee and Phyllis R. Frazee	Trustees	13.64	Warranty Deed

**Management Lease**



Parcel Name or Lease Number	Date Leased	Initial Lessor	Initial Lessee	Current Term	Expiration Date
Lease No. 4345	12/17/2001	The Board of Trustees of the Internal Improvement Trust Fund of the State of Florida	The State of Florida Department of Environmental Protection, Division of Recreation and Parks	50 (fifty) years	12/16/2051

Outstanding Issue	Type of Instrument	Brief Description of the Outstanding Issue	Term of the Outstanding Issue
There is no known deed related outstanding issue that applies to Dunns Creek State Park.			

## **Addendum 2—Advisory Group Members and Report**



## Dunns Creek State Park

### Advisory Group Members and Report

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**Joseph Svingala**

Mayor  
Pomona Park

**Bill Pickens**

District 1 Commissioner  
Putnam County  
Board of County Commissioners

**Theo Siehler**

Chairman  
Putnam Soil and Water  
Conservation District

**Terri Newmans**

Park Manager  
Division of Recreation and Parks

**Tess Simpson**

Putnam County  
Parks and Recreation

**Doug Longshore**

Florida Forest Service

**Byron Smith**

Captain  
FWC Northeast Region

**Heather Venter**

St. Johns River  
Water Management District

**Jason O'Donoghue**

Archaeologist III  
Division of Historical Resources

**Whitey Markle**

Chair  
Suwannee-St. Johns Group  
Sierra Club

**Dan Bowser**

Adjacent Landowner

**Willy Losen**

Conservation Director  
Putnam Land Conservancy

**Timothy Keyser**

President  
Putnam County Environmental Council

**Edward Rickosky**

Chair- Black Bear Chapter  
Florida Trail Association

**Vicky Thompson**

Ride Coordinator  
American Endurance Ride Conference

**Laura Berkelman**

President  
Santa Fe Audubon Society

**Sam Carr**

Vice President  
Friends of Dunns Creek State Park

**Dana Jones**

President  
Putnam County Chamber of  
Commerce

## Dunns Creek State Park

### Advisory Group Members and Report

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The advisory group meeting to review the proposed unit management plan (UMP) for Dunns Creek State Park was held in the city of Palatka on Wednesday, October 3, 2018 at 9:00 AM.

Joseph Svingala, Theo Siehler, Dan Bowser, Timothy Keyser, Edward Rickosky, Jason O'Donoghue, and Laura Berkelman were not present. Bill Pickens was unable to attend the advisory group meeting but came to the public meeting the previous evening. All other advisory group members were in attendance. Staff present at the meeting included Robert Yero, Jason Depue, Terri Newmans, and Holly Cramer.

Ms. Cramer began the meeting by explaining the purpose of the advisory group and reviewing the meeting agenda. A brief overview of the plan was provided and then Ms. Cramer asked each member of the advisory group to express his or her comments on the draft plan. After all comments were shared, Ms. Cramer described the next steps for drafting the plan and the meeting was adjourned.

#### **Summary of Advisory Group Comments:**

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**Sam Carr (Citizen Support Organization)** began by summarizing his written comments to the group which largely centered around offering more recreational opportunities at the park. Mr. Carr requested that the upper trailhead be designated as the "Ed Alford Trailhead" and the equestrian trailhead be designated as the "Gene and Prissy Dechaine Trailhead". He continued his comments by stressing the need for camping facilities at the park. He would like staff to consider primitive camping at Piney Bluff that is geared towards paddlers utilizing the Bartram National Recreation Trail which encompasses Dunns Creek. He offered assistance from the CSO for the management of a small primitive camping area at this location by taking reservations. Again, stressing the lack of camping opportunities in the region, he asked if there are other funding mechanisms that could be pursued to expedite the execution of the proposed family campground. He recommended that equestrian use be restricted from the Blue Pond Day Use Area given limited facilities and potential user conflicts. Mountain biking was a rare offering in the area he commented, and went on to say that a mountain biking trail near the park entrance would be ideal. On the issue of access, he said that staff should consider an additional entrance at the back of the park. Mr. Carr brought up the topic of funding at the end of his comments and encouraged DRP to focus its monetary resources on recreation in the park and seek additional resources so that the park's conceptual land use may actually come to fruition.

**Whitey Markle (Sierra Club)** asked DRP to consider pervious pavement options for any new development in the park. Mr. Markle inquired about the carrying capacity table and language in the plan, and how it functions. Ms. Cramer went on to explain the purpose of carrying capacity, what the parameters are based on, and

## Dunns Creek State Park

### Advisory Group Members and Report

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how we enforce the guidelines spelled out. A brief discussion on the ways in which DRP is looking to improve the carrying capacity section of the plan followed. A topic of particular interest among the whole group was regarding funding, to which Mr. Markle asked where exactly funding for park development comes from and which projects in the plan would require a substantial amount of funding. Robert Yero helped explain to the group the process for funding projects and the obstacles involved with budget constraints and legislative restrictions. Sam Carr added to the conversation by asking how the park could secure more funding.

**Byron Smith (FWC)** said that he was pleased to be at the meeting and be a part of the process. He noted that he was impressed with the amount of work that is done given the scarce monetary resources the park operates on.

**Vicky Thompson (American Endurance Ride Conference)** began her comments by explaining her relationship with the park and the events that she coordinates for equestrians in the area. She commended park staff on the level of accommodations they have provided for groups like hers during events. Her concerns regarding the unit management plan proposals were geared towards how the park will be able to host conflicting user groups in the same day use areas in a way that doesn't impede on any one group's ability to enjoy the park and host events. She would like the park to be cognizant of the way it will develop so that it may be able to continue to host the large equestrian events. Ms. Thompson also mentioned a number of grants that the park's slated projects would be competitive for through various organizations. She expressed willingness to help the park pursue these grants and actively pursue alternative funding opportunities.

**Tess Simpson (Putnam County Parks and Recreation)** stated that she was happy to be at the meeting and be included in the process.

**Doug Longshore (FFS)** asked when the plan's timber assessment had been drafted, to which Jason Depue, district biologist, replied that it had been recently updated. Mr. Longshore, Mr. Carr, and Jason Depue then all engaged in a conversation detailing timber harvests at the park, restoration efforts, and future resource management activities planned. Jason Depue also helped to explain how the money made from timber harvests is reinvested into the park.

**Heather Venter (St. John's River Water Management District)** noted that her primary concern was regarding carrying capacity at the park. She also stressed the importance of working together with the park given that the WMD's Dunns Creek Conservation Area is adjacent to park property.

**Dana Jones (Putnam County Chamber of Commerce)** began by saying that she had learned quite a bit about the park and planning process from the prior discussion. As a representative of an economically-driven organization, she was very supportive of the campground proposal and its revenue generation potential.

## Dunns Creek State Park

### Advisory Group Members and Report

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Like others, Ms. Jones said that there is an extreme lack of camping opportunities in the area, and Dunns Creek State Park could help to fill that void and meet the demonstrated demand. She also inquired about the potential of entering public-private partnerships to help with the development of the plan's proposals.

**Willy Losen (Putnam Land Conservancy)** gave an update to the group on the various parcels that his organization is pursuing for acquisition to give to the park. He explained that his organization was experiencing difficulties in working with the state to pursue parcels along the park boundary that would be ideal for acquisition but may not be a priority for the Division of State Lands.

#### Summary of Public Comments:

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**Marjorie O'Loughlin (St. John's County Horse Council)** commented on the need for ample equestrian facilities in the park. As a representative of an equestrian group, she emphasized the need for the park to continue to provide space for equestrian events as it develops over the coming years and attracts other user groups. Her comments spurred questions on how the park manages events and what guidelines must be followed.

**Joy Mitchell (Friends of Dunns Creek)** explained to the group the role that the CSO plays in coordinating with park staff to help operate events and facilitate awareness and use of the park in general. The topic of funding came up again as she stressed the CSO's active role in seeking funding for the park's development proposals. A conversation on concessionaires then followed and the possibility of utilizing a concessionaire if Dunns Creek were to struggle with having adequate staffing in the future.

#### Staff Recommendations:

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- Following discussion both at the public meeting and advisory group on the topic of camping, it is evident that Dunns Creek could offer camping opportunities in an area where the demand far outweighs the current supply of overnight accommodations. Further language should be added in the Land Use Component to clarify that primitive camping sites should be strongly considered near the primitive group camp if there is a demonstrated demand for primitive camping that exceeds the amount of accommodations that a the primitive group camp can offer once it is developed at the park.
- The optimum boundary map in the final draft of the plan should be updated to reflect parcels recently identified as being advantageous to pursue should they be available for acquisition.

### **Addendum 3—References Cited**



**Dunns Creek State Park**  
**References Cited**

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**Dunns Creek State Park  
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## **Addendum 4—Soil Descriptions**



## Dunns Creek State Park Soil Descriptions

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**(1,2) Candler sand** - This soil is strongly sloping to steep and excessively drained with a high-water table at a depth of more than 80 inches. The available water capacity is very low or low in the surface layer and upper part of the subsurface layer. The permeability is rapid. Rainfall is rapidly absorbed, but runoff is rapid in areas without vegetation during intense rains. If a vegetation cover crop is not left on the surface, the hazard of erosion is severe. Most of the acreage of this soil is in natural vegetation that includes turkey oak and scrub live oak and a few longleaf pines. The understory vegetation includes pineland threeawn and bluestem.

**(3) Myakka fine sand** – This is a flatwoods soil which is nearly level and is poorly drained. Typically, it has a high water table depth of less than 12 inches. The available water capacity is very low in the surface and subsurface layers, medium in the subsoil, and low in the substratum. The permeability is rapid. Typical natural vegetation is slash and longleaf pine, saw palmetto, gallberry, and pineland threeawn.

**(4) Zolfo fine sand** – This soil is nearly level and somewhat poorly drained. Typically, it has a high water table depth of 24-40 inches. The available water capacity is medium in the surface, low in the subsurface, and medium to high in the subsoil. The upper soil layers have rapid permeability. Typical native vegetation includes longleaf pine, turkey oak, live oak, slash pine, and a sparse understory of wiregrass and bluestem.

**(5,43) Placid fine sand, depressional** – This is a very poorly drained, level soil. The typical high water table is above the surface for about 6 months per year. The available water capacity is high in the upper soils and low in the underlying material. The permeability is rapid. Typical native vegetation ranges from hardwoods such as cypress, black gum and red maple to marsh dominated by maidencane and sawgrass.

**(6) Tavares fine sand, 0-5 % slopes** – This soil is nearly level to gently sloping and is moderately well drained. The typical high water table depth is between 40–80 inches. The available water capacity is low with rapid permeability. Typical native vegetation is turkey oak, longleaf pine, and threeawn.

**(7) Immokalee fine sand** - This soil is level and poorly drained. It is typical of broad flatwood areas and long, narrow areas bordering drainageways. The typical high water table is at a depth of less than 12 inches. The available water capacity is typically low with fairly high permeability. Typical native vegetation is longleaf and slash pines with saw palmetto and gallberry in the understory.

**(9) Pomona fine sand** - This soil is poorly drained and nearly level. The typical high water table is at a depth of less than 12 inches. The available water capacity is typically low with rapid permeability. Typical native vegetation is longleaf and slash pines with saw palmetto and gallberry in the understory.

**(12) Electra fine sand** – This is a nearly level and poorly drained soil found primarily along drainageways in the flatwoods. The typical high water table is found between 25-40 inches deep. The available water capacity is low with rapid permeability which decreases with depth. Typical native vegetation includes

## Dunns Creek State Park Soil Descriptions

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scrub, live, and laurel oaks with bluestem and saw palmetto in the understory.

**(13) St. Johns fine sand, depressional** – This is a very poorly drained, level soil found in depressional areas in the flatwoods and uplands. The typical high water table is 1-2 ft. above the ground surface. The available water capacity is medium with rapid permeability which decreases with depth. Typical native vegetation includes bays, wax myrtle, gums and maples with maidencane and St. Johns wort in the understory.

**(14) Cassia fine sand** – This soil is nearly level and somewhat poorly drained found on small knolls in the flatwoods. The typical high water table is at a depth of 15-40 inches. The available water capacity is low with rapid permeability which decreases with depth. Typical native vegetation includes slash pine, live oak, saw palmetto and pineland threeawn.

**(16) Adamsville sand** - This soil is nearly level and somewhat poorly drained found on small knolls in the flatwoods. The typical high water table is at a depth of 20-40 inches. The available water capacity is low with rapid permeability. Typical native vegetation includes water, live and laurel oaks with some pines and a sparse understory which includes pineland threeawn and lopsided indiagrass.

**(21) Apopka sand** - This soil is sloping and is well drained and is on the uplands. The typical high water table is at a depth of more than 80 inches. The available water capacity is low with rapid permeability. Typical native vegetation includes turkey oak, longleaf pine and scattered live oaks with an understory of pineland threeawn and lopsided indiagrass.

**(22) Tomoka muck** – This organic soil is nearly level and very poorly drained. It formed in moderately thick beds of hydrophytic, non-woody plant remains and is typically found in depressional area in the flatwoods. The typical high water table at or above the surface except in extended droughts. The available water capacity is very high in the muck layer, low in the sandy area, and medium in the loamy layer. The permeability is rapid. Typical native vegetation includes bays, cypress, maples and other hardwoods. Some areas can contain marsh dominated by sawgrass and maiden cane.

**(23) Palmetto fine sand** - This soil is nearly level and poorly drained found in broad flatwood areas. The typical high water table is at a depth of 12 inches. The available water capacity is low with rapid permeability. Typical native vegetation includes longleaf and slash pine with galberry and scattered palmetto in the understory.

**(25) Narcoossee fine sand** - This soil is nearly level and somewhat poorly drained found on small knolls and ridges in the flatwoods. The typical high water table is at a depth of 24-40 inches. The available water capacity is low with rapid permeability. Typical native vegetation includes scrub live oak, laurel oak, saw palmetto and pineland threeawn.

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

## Dunns Creek State Park Soil Descriptions

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the gradient less than 1 percent.

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

**(27) Samsula muck** - This organic soil is nearly level and very poorly drained. It formed in moderately thick beds of hydrophytic, non-woody plant remains and is typically found in depressional area. The typical high water table at or above the surface except in extended droughts. The available water capacity is very high in the muck layer and low in the underlying material. The permeability is rapid. Typical native vegetation includes bays, cypress, maples and other hardwoods. Some areas can contain marsh dominated by sawgrass and maiden cane.

**(30) Hontoon muck** - This organic soil is nearly level and very poorly drained. It formed in moderately thick beds of hydrophytic, non-woody plant remains and is typically found in depressional area in the flatwoods. The typical high water table at or above the surface except in extended droughts. The available water capacity is very high. The permeability is rapid. Typical native vegetation includes bays, cypress, maples and other hardwoods. Some areas can contain marsh dominated by sawgrass and maiden cane.

**(34) Riviera fine sand** - This soil is nearly level and poorly drained found on broad, low areas in the flatwoods. The typical high water table is at a depth of less than 12 inches. The available water capacity is low with rapid permeability near the surface, decreasing with depth. Typical native vegetation includes longleaf and slash pine, cabbage palm with an understory of gallberry, wax myrtle and threeawn.

**(39) Holopaw fine sand, depressional** - This soil is nearly level and very poorly drained and is found in depressional areas in the flatwoods. The typical high water table is 1-2 feet above the ground surface. The available water capacity is low with rapid permeability which decreases with depth. Typical native vegetation includes cypress, sweetgum, red maple, and bays. Areas of sparse tree growth can have an understory component dominated by cordgrass and maiden cane.

**(40) Paola fine sand 0-8% slopes** – This soil is level to sloping, excessively drained and is located on ridges in the uplands. The soil has a high water table at a depth of more than 72 inches throughout the year. The available water capacity is very low and permeability is very rapid. Typical native vegetation is sand pine, scrub oaks and some saw palmetto.

**(45,46) Astatula fine sand 0-15% slopes** - This soil is nearly level to sloping and is excessively drained found on ridges and knolls in the uplands. The typical high water table is at a depth of more than 72 inches. The available water

## Dunns Creek State Park Soil Descriptions

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capacity is very low with very rapid permeability. Typical native vegetation includes longleaf pines, turkey oak, and scrub oaks. The understory is generally sparse dominated by threeawns and bluestem.

**(52) Orsino fine sand 0-8% slopes** - This soil is nearly level to sloping, moderately well drained and very rapidly permeable. It is found on slopes and ridges in the uplands. The typical high water table is at a depth of 40-60 inches. The available water capacity is low. Typical native vegetation includes oaks, saw palmetto, pineland threeawn and bluestems.

## **Addendum 5—Plant and Animal List**





Dunns Creek State Park Plants

Primary Habit

Codes

Common Name                      *Scientific Name*                      (for imperiled species)

Tailed Bracken fern.....	<i>Pteridium aquilinum var. pseudocaudatum</i>
Marsh fern.....	<i>Thelypteris palustris var. pubescens</i>
Netted chain fern.....	<i>Woodwardia areolata</i>
Virginia chain fern.....	<i>Woodwardia virginica</i>

**GYMNOSPERMS**

Red cedar.....	<i>Juniperus virginiana</i>
Sand pine.....	<i>Pinus clausa</i>
Slash pine.....	<i>Pinus elliottii</i>
South Florida slash pine.....	<i>Pinus elliottii var. densa</i>
Longleaf pine.....	<i>Pinus palustris</i>
Pond pine.....	<i>Pinus serotina</i>
Loblolly pine.....	<i>Pinus taeda</i>
Pond-cypress.....	<i>Taxodium ascendens</i>
Bald-cypress.....	<i>Taxodium distichum</i>

**MONOCOTS**

Blue maidencane.....	<i>Amphicarpum muhlenbergianum</i>
Bushy bluestem.....	<i>Andropogon glomeratus var. hirsutior</i>
Bushy bluestem.....	<i>Andropogon glomeratus var. pumilus</i>
Elliott's bluestem.....	<i>Andropogon gyrans</i>
Splitbeard bluestem.....	<i>Andropogon ternarius</i>
Broomsedge bluestem.....	<i>Andropogon virginicus var. decipiens</i>
Chalky Bluestem.....	<i>Andropogon virginicus var. glaucus</i>
Jack-in-the-pulpit.....	<i>Arisaema triphyllum</i>
Arrowfeather threeawn.....	<i>Aristida purpurascens</i>
Bottlebrush threeawn.....	<i>Aristida spiciformis</i>
Wiregrass.....	<i>Aristida stricta</i>
Switchcane.....	<i>Arundinaria gigantea</i>
Densetuft hairsedge.....	<i>Bulbostylis ciliatifolia</i>
Ware's hairsedge.....	<i>Bulbostylis warei</i>
Grassleaf roseling.....	<i>Callisia graminea</i>
Tuberous grasspink.....	<i>Calopogon tuberosus</i>
Giant sedge.....	<i>Carex gigantea</i>
Southern sandbur.....	<i>Cenchrus echinatus</i>
Spikegrass.....	<i>Chasmanthium laxum</i>
Jamaica swamp sawgrass.....	<i>Cladium jamaicense</i>
Wild taro; Dasheen; Coco yam.....	<i>Colocasia esculenta*</i>
Dayflower.....	<i>Commelina diffusa</i>
Whitemouth dayflower.....	<i>Commelina erecta</i>
Seven-sisters; String-lily.....	<i>Crinum americanum</i>
Grassleaf roseling.....	<i>Cuthbertia graminea</i>
Jointed flatsedge.....	<i>Cyperus articulatus</i>

\* Non-native Species

Dunns Creek State Park Plants

Primary Habit

Codes

Common Name                      *Scientific Name*                      (for imperiled species)

Swamp flatsedge.....	<i>Cyperus distinctus</i>	
Redroot flatsedge.....	<i>Cyperus erythrorhizos</i>	
Umbrella plant.....	<i>Cyperus involucratus</i> *	
Pinebarren flatsedge.....	<i>Cyperus retrorsus</i>	
Strawcolored flatsedge.....	<i>Cyperus strigosus</i>	
Needleleaf witchgrass.....	<i>Dichantherium aciculare</i>	
Rough witchgrass.....	<i>Dichantherium leucothrix</i>	
Eggleaf witchgrass.....	<i>Dichantherium ovale</i>	
Fall witchweed.....	<i>Digitaria cognata</i>	
Common water-hyacinth.....	<i>Eichhornia crassipes</i> *	
Conecup spikerush.....	<i>Eleocharis tuberculosa</i>	
Green-fly orchid.....	<i>Epidendrum conopseum</i>	
Flattened pipewort.....	<i>Eriocaulon compressum</i>	
Tenangle pipewort.....	<i>Eriocaulon decangulare</i>	
Ravenel's pipewort.....	<i>Eriocaulon ravenelii</i>	
Saltmarsh fingergrass.....	<i>Eustachys glauca</i>	
Coastalplain umbrellasedge.....	<i>Fuirena scirpoidea</i>	
Shortleaf skeletongrass.....	<i>Gymnopogon brevifolius</i>	
Toothpetal false reinorchid.....	<i>Habenaria floribunda</i>	
White gingerlily*.....	<i>Hedychium coronarium</i> *	
Cogongrass*.....	<i>Imperata cylindrical</i> *	
Shore rush; Grassleaf rush.....	<i>Juncus marginatus</i>	
Bighead rush.....	<i>Juncus megacephalus</i>	
Carolina redroot.....	<i>Lachnanthes caroliniana</i>	
Hairawn Muhly grass.....	<i>Muhlenbergia capillaris</i>	
Spatterdock.....	<i>Nuphar advena</i>	
American white waterlily.....	<i>Nymphaea odorata</i>	
Woodsgrass; Basketgrass.....	<i>Oplismenus hirtellus</i>	
Goldenclub; Neverwet.....	<i>Orontium aquaticum</i>	
Beaked panicum.....	<i>Panicum anceps</i>	
Maidencane.....	<i>Panicum hemitomon</i>	
Torpedograss.....	<i>Panicum repens</i> *	
Redtop panicum.....	<i>Panicum rigidulum</i>	
Warty panicgrass.....	<i>Panicum verrucosum</i>	
Field paspalum.....	<i>Paspalum leave</i>	
Bahiagrass.....	<i>Paspalum notatum</i> *	
Thin paspalum.....	<i>Paspalum setaceum</i>	
Vaseygrass.....	<i>Paspalum urvillei</i> *	
Green arrow arum.....	<i>Peltandra virginica</i>	
Water-lettuce.....	<i>Pistia stratiotes</i>	
Rose pogonia; Snakemouth orchid.....	<i>Pogonia ophioglossoides</i>	
Pickerelweed.....	<i>Pontederia cordata</i>	
Needle palm.....	<i>Rhapidophyllum hystrix</i>	
Baldwin's beaksedge.....	<i>Rhynchospora baldwinii</i>	
Looshead Beaksedge.....	<i>Rhynchospora chalarocephala</i>	
Starrush whitetop.....	<i>Rhynchospora colorata</i>	

\* Non-native Species

Dunns Creek State Park Plants

Primary Habit

Codes

Common Name                      *Scientific Name*                      (for imperiled species)

Fascicled beaksedge.....	<i>Rhynchospora fascicularis</i>	
Narrowfruit horned beaksedge..	<i>Rhynchospora inundata</i>	
Sandyfield beaksedge.....	<i>Rhynchospora megalocarpa</i>	
Millet beaksedge.....	<i>Rhynchospora miliacea</i>	
Featherbristle beaksedge.....	<i>Rhynchospora oligantha</i>	
Scrub palmetto.....	<i>Sabal etonia</i>	
Dwarf palmetto; Bluestem palm.....		<i>Sabal minor</i>
Cabbage palm.....	<i>Sabal palmetto</i>	
Grassy arrowhead.....	<i>Sagittaria graminea</i>	
Bulltongue arrowhead.....	<i>Sagittaria lancifolia</i>	
Water spangles.....	<i>Salvinia minima*</i>	
Little bluestem.....	<i>Schizachyrium scoparium</i>	
Tall nutgrass; Whip nutrush.....	<i>Scleria triglomerata</i>	
Saw palmetto.....	<i>Serenoa repens</i>	
Yellow bristlegrass; Yellow foxtail.....		<i>Setaria parviflora</i>
Earleaf greenbrier.....	<i>Smilax auriculata</i>	
Cat greenbrier; Wild sarsaparilla.....		<i>Smilax glauca</i>
Laurel greenbrier.....	<i>Smilax laurifolia</i>	
Sarsaparilla vine.....	<i>Smilax pumila</i>	
Bristly greenbrier.....	<i>Smilax tamnoides</i>	
Coral greenbrier.....	<i>Smilax walteri</i>	
Lopsided Indiangrass.....	<i>Sorghastrum secundum</i>	
Sand cordgrass.....	<i>Spartina bakeri</i>	
Smutgrass.....	<i>Sporobolus indicus*</i>	
Pineywoods dropseed.....	<i>Sporobolus junceus</i>	
Bantam-buttons.....	<i>Syngonanthus flavidulus</i>	
Bartram's airplant.....	<i>Tillandsia bartramii</i>	
Spanish moss.....	<i>Tillandsia usneoides</i>	
Perennial sandgrass.....	<i>Triplasis americana</i>	
Fakahatcheegrass.....	<i>Tripsacum dactyloides</i>	
Coastalplain yelloweyed grass.....	<i>Xyris ambigua</i>	
Baldwin's yelloweyed grass.....	<i>Xyris baldwiniana</i>	
Carolina yelloweyed grass.....	<i>Xyris caroliniana</i>	
Adam's needle.....	<i>Yucca filamentos</i>	

**DICOTS**

Slender threeseed mercury.....	<i>Acalypha gracilens</i>	
Red maple.....	<i>Acer rubrum</i>	
Red buckeye.....	<i>Aesculus pavia</i>	
Beach false foxglove.....	<i>Agalinis fasciculata</i>	
Pipestem.....	<i>Agarista populifolia</i>	
Silktree, mimosa*.....	<i>Albizia julibrissin*</i>	
Alligatorweed*.....	<i>Alternanthera philoxeroides</i>	*
Common ragweed.....	<i>Ambrosia artemisiifolia</i>	
Bastard false indigobush.....	<i>Amorpha fruticosa</i>	

\* Non-native Species

Dunns Creek State Park Plants

Codes	Common Name	Scientific Name	Primary Habit (for imperiled species)
	Peppervine.....	<i>Ampelopsis arborea</i>	
	Groundnut.....	<i>Apios americana</i>	
	Nodding nixie.....	<i>Apteria aphylla</i>	
	Devil's walkingstick.....	<i>Aralia spinosa</i>	
	Virginia snakeroot.....	<i>Aristolochia serpentaria</i>	
	Florida indian plantain.....	<i>Arnoglossum floridanum</i>	
	Pinewoods milkweed.....	<i>Asclepias humistrata</i>	
	Savannah milkweed.....	<i>Asclepias pedicellata</i>	
	Swamp milkweed.....	<i>Asclepias perennis</i>	
	Slimleaf pawpaw.....	<i>Asimina angustifolia</i>	
	Woolly pawpaw; Polecat bush.....	<i>Asimina incana</i>	
	Bigflower pawpaw.....	<i>Asimina obovata</i>	
	Smallflower pawpaw.....	<i>Asimina parviflora</i>	
	White-topped aster.....	<i>Aster reticulatus</i>	
	White-topped aster.....	<i>Aster tortifolius</i>	
	Groundsel tree; Sea myrtle.....	<i>Baccharis halimifolia</i>	
	Lemon bacopa; Blue waterhyssop.....	<i>Bacopa caroliniana</i>	
	Coastalplain honeycombhead.....	<i>Balduina angustifolia</i>	
	Pineland wild indigo.....	<i>Baptisia lecontii</i>	
	Tarflower.....	<i>Bejaria racemosa</i>	
	Alabama supplejack; Rattan vine.....	<i>Berchemia scandens</i>	
	Soft greeneyes.....	<i>Berlandiera pumila</i>	
	Florida greeneyes.....	<i>Berlandiera subacaulis</i>	
	Beggarticks; Romerillo.....	<i>Bidens alba</i>	
	Crossvine.....	<i>Bignonia capreolata</i>	
	False nettle, Bog hemp.....	<i>Boehmeria cylindrica</i>	
	American beautyberry.....	<i>Callicarpa americana</i>	
	Trumpet creeper.....	<i>Campsis radicans</i>	
	Coastalplain chaffhead.....	<i>Carphephorus corymbosus</i>	
	Vanillaleaf.....	<i>Carphephorus odoratissimus</i>	
	American hornbeam; Bluebeech.....	<i>Carpinus caroliniana</i>	
	Water hickory.....	<i>Carya aquatic</i>	
	Pignut hickory.....	<i>Carya glabra</i>	
	Chinquapin.....	<i>Castanea pumila</i>	
	Spadeleaf.....	<i>Centella asiatica</i>	
	Spurred butterfly pea.....	<i>Centrosema virginianum</i>	
	Common buttonbush.....	<i>Cephalanthus occidentalis</i>	
	Florida rosemary; Sand heath.....	<i>Ceratiola ericoides</i>	
	Eastern redbud.....	<i>Cercis canadensis</i>	
	Partridge pea.....	<i>Chamaecrista fasciculata</i>	
	Sensitive pea.....	<i>Chamaecrista nictitans</i>	
	Sensitive pea.....	<i>Chamaecrista nictitans var. aspera</i>	
	Spotted Water Hemlock.....	<i>Cicuta maculata</i>	
	Camphortree.....	<i>Cinnamomum camphora</i> *	
	Thistle.....	<i>Cirsium sp.</i>	
	Swamp leather-flower.....	<i>Clematis crispa</i>	

\* Non-native Species

Dunns Creek State Park Plants

Codes	Common Name	Scientific Name	Primary Habit (for imperiled species)
	Netleaf leather-flower.....	<i>Clematis reticulata</i>	
	Coastal sweetpepperbush.....	<i>Clethra alnifolia</i>	
	Tread-softly; Finger-rot.....	<i>Cnidoscolus stimulosus</i>	
	Etonia rosemary.....	<i>Conradina etonia</i>	
	Canadian horseweed.....	<i>Conyza canadensis</i>	
	Flowering dogwood.....	<i>Cornus florida</i>	
	Swamp dogwood; Stiff dogwood.....	<i>Cornus foemina</i>	
	May haw; May hawthorn.....	<i>Crataegus aestivalis</i>	
	Parsley hawthorn.....	<i>Crataegus marshallii</i>	
	Dwarf hawthorn.....	<i>Crataegus uniflora</i>	
	Slender scratchdaisy.....	<i>Croptilon divaricatum</i>	
	Pursh's rattlebox.....	<i>Crotalaria purshii</i>	
	Rabbitbells.....	<i>Crotalaria rotundifolia</i>	
	Silver croton; Healing croton.....	<i>Croton argyranthemus</i>	
	Rushfoil; Michaux's croton.....	<i>Croton michauxii</i>	
	Titi.....	<i>Cyrilla racemiflora</i>	
	Feay's prairieclover.....	<i>Dalea feayi</i>	
	Summer farewell.....	<i>Dalea pinnata</i> var. <i>adenopoda</i>	
	Summer farewell.....	<i>Dalea pinnata</i> var. <i>pinnata</i>	
	Willow-herb; Swamp loosestrife.....	<i>Decodon verticillatus</i>	
	Cowitch vine.....	<i>Decumaria Barbara</i>	
	Ticktrefoil; Zarzabacoa comun.....	<i>Desmodium incanum</i> *	
	Carolina ponysfoot.....	<i>Dichondra caroliniensis</i>	
	Poor joe; Rough buttonweed.....	<i>Diodia teres</i>	
	Virginia buttonweed.....	<i>Diodia virginiana</i>	
	Common persimmon.....	<i>Diospyros virginiana</i>	
	White top aster.....	<i>Doellingeria reticulata</i>	
	Water sundew; Spoonleaf sundew.....	<i>Drosera intermedia</i>	
	Tall elephantsfoot.....	<i>Elephantopus elatus</i>	
	Smooth elephantsfoot.....	<i>Elephantopus nudatus</i>	
	American burnweed; Fireweed.....	<i>Erechtites hieracifolia</i>	
	Oakleaf fleabane.....	<i>Erigeron quercifolius</i>	
	Dogtongue wild buckwheat.....	<i>Erigonum tomentosum</i>	
	Fragrant eryngo.....	<i>Eryngium aromaticum</i>	
	Button rattlesnakemaster.....	<i>Eryngium yuccifolium</i>	
	Coralbean; Cherokee bean.....	<i>Erythrina herbacea</i>	
	American strawberrybush.....	<i>Euonymus americanus</i>	
	White thoroughwort.....	<i>Eupatorium album</i>	
	Dogfennel.....	<i>Eupatorium capillifolium</i>	
	Yankeeweed.....	<i>Eupatorium compositifolium</i>	
	Falsefennel.....	<i>Eupatorium leptophyllum</i>	
	Justiceweed.....	<i>Eupatorium leucolepsis</i>	
	Rough boneset.....	<i>Eupatorium pilosum</i>	
	Slender goldenrod.....	<i>Euthamia caroliniana</i>	
	Carolina ash; Water ash; Pop ash.....	<i>Fraxinus caroliniana</i>	
	Green ash; Pumpkin ash.....	<i>Fraxinus pennsylvanica</i>	

\* Non-native Species

Dunns Creek State Park Plants

Codes	Common Name	Scientific Name	Primary Habit (for imperiled species)
	Cottonweed; Plains snakecotton		<i>Froelichia floridana</i>
	Elliott's milkpea	<i>Galactia elliotii</i>	
	Eastern milkpea	<i>Galactia regularis</i>	
	Downy milkpea	<i>Galactia volubilis</i>	
	Coastal bedstraw	<i>Galium hispidulum</i>	
	Garberia	<i>Garberia heterophylla</i>	
	Dwarf huckleberry	<i>Gaylussacia dumosa</i>	
	Confederate huckleberry	<i>Gaylussacia nana</i>	
	Hairytwig huckleberry	<i>Gaylussacia tometosa</i>	
	Yellowjessamine; Carolinajessamine	<i>Gelsemium sempervirens</i>	
	Water locust	<i>Gleditsia aquatica</i>	
	Loblolly bay	<i>Gordonia lasianthus</i>	
	Rough hedgehyssop	<i>Gratiola hispida</i>	
	American witchhazel	<i>Hamamelis virginiana</i>	
	Innocence	<i>Hedyotis procumbens</i>	
	Clustered mille graine	<i>Hedyotis uniflora</i>	
	Carolina frostweed	<i>Helianthemum carolinianum</i>	
	Camphorweed	<i>Heterotheca subaxillaris</i>	
	Scarlet rosemallow	<i>Hibiscus coccineus</i>	
	Queen-devil	<i>Hieracium gronovii</i>	
	Innocence; Roundlet bluet	<i>Houstonia procumbens</i>	
	Largeleaf marshpennywort	<i>Hydrocotyle bonariensis</i>	
	Coastalplain St. John's-wort	<i>Hypericum brachyphyllum</i>	
	Roundpod St. John's-wort	<i>Hypericum cistifolium</i>	
	Pineweeds; Orangegrass	<i>Hypericum gentianoides</i>	
	St. Andrew's-cross	<i>Hypericum hypericoides</i>	
	Dwarf St. John's-wort	<i>Hypericum mutilum</i>	
	Fourpetal St. John's-wort	<i>Hypericum tetrapetalum</i>	
	Common yellow stargrass	<i>Hypoxis curtissii</i>	
	Fringed yellow stargrass	<i>Hypoxis juncea</i>	
	Clustered bushmint; Musky mint		<i>Hyptis alata</i>
	Tropical bushmint*	<i>Hyptis mutabilis</i>	
	Mountain holly	<i>Ilex ambigua var. monticola</i>	
	Dahoon holly	<i>Ilex cassine var. cassine</i>	
	Large gallberry; Sweet gallberry		<i>Ilex coriacea</i>
	Inkberry; Gallberry	<i>Ilex glabra</i>	
	American Holly	<i>Ilex opaca</i>	
	Scrub holly	<i>Ilex opaca var. arenicola</i>	
	Carolina indigo	<i>Indigofera caroliniana</i>	
	Moonflowers	<i>Ipomoea alba</i>	
	Tievine	<i>Ipomoea cordatotriloba</i>	
	Virginia willow; Virginia sweetspire		<i>Itea virginica</i>
	Wicky; Hairy laurel	<i>Kalmia hirsute</i>	
	Virginia saltmarsh mallow	<i>Kosteletzkya virginica</i>	
	Japanese clover	<i>Kummerowia striata*</i>	
	Drysand pinweed	<i>Lechea divaricata</i>	

\* Non-native Species

Dunns Creek State Park Plants

Primary Habit

Codes

Common Name                      *Scientific Name*                      (for imperiled species)

Thymeleaf pinweed.....	<i>Lechea minor</i>	
Virginia pepperweed.....	<i>Lepidium virginicum</i>	
Hairy lespedeza.....	<i>Lespedeza hirta</i>	
Swamp doghobble.....	<i>Leucothoe racemosa</i>	
Shortleaf gayfeather.....	<i>Liatris tenuifolia</i>	
Gopher apple.....	<i>Licania michauxii</i>	
Sweetgum.....	<i>Liquidambar styraciflua</i>	
Cardinalflower.....	<i>Lobelia cardinalis</i>	
Peruvian primrosewillow.....	<i>Ludwigia peruviana</i> *	
Savannah primrosewillow.....	<i>Ludwigia virgate</i>	
Skyblue lupine.....	<i>Lupinus diffuses</i>	
Taperleaf waterhorehound.....	<i>Lycopus rubellus</i>	
Rose-rush.....	<i>Lygodesmia aphylla</i>	
Rusty staggerbush.....	<i>Lyonia ferruginea</i>	
Coastalplain staggerbush.....	<i>Lyonia fruticosa</i>	
Maleberry.....	<i>Lyonia ligustrina var. foliosiflora</i>	
Fetterbush.....	<i>Lyonia lucida</i>	
Piedmont staggerbush.....	<i>Lyonia mariana</i>	
Southern magnolia.....	<i>Magnolia grandiflora</i>	
Sweetbay.....	<i>Magnolia virginiana</i>	
Florida milkvine.....	<i>Matelea floridana</i>	
Snow squarestem.....	<i>Melanthera nivea</i>	
Climbing hempvine.....	<i>Mikania scandens</i>	
Sensitive briar.....	<i>Mimosa quadrivalvis</i>	
Partridgeberry; Twinberry.....	<i>Mitchella repens</i>	
Spotted beebalm.....	<i>Monarda punctata</i>	
Indianpipe.....	<i>Monotropa uniflora</i>	
Red mulberry.....	<i>Morus rubra</i>	
Wax Myrtle; southern bayberry.....	<i>Myrica cerifera</i>	
Big floatingheart.....	<i>Nymphoides aquatica</i>	
Swamp tupelo.....	<i>Nyssa sylvatica var. biflora</i>	
Clustered mille graine.....	<i>Oldenlandia uniflora</i>	
Pricklypear.....	<i>Opuntia humifusa</i>	
Prickly-pear cactus.....	<i>Opuntia sp.</i>	
Wild olive.....	<i>Osmanthus americanus</i>	
Eastern hophornbeam.....	<i>Ostrya virginiana</i>	
Common yellow woodsorrel.....	<i>Oxalis corniculata</i>	
Virginia creeper; Woodbine.....	<i>Parthenocissus quinquefolia</i>	
Buckroot.....	<i>Pediomelum canescens</i>	
Avocado.....	<i>Persea americana</i> *	
Red bay.....	<i>Persea borbonia</i>	
Silk bay, scrub bay.....	<i>Persea borbonia var. humilis</i>	
Swamp bay.....	<i>Persea palustris</i>	
Florida false sunflower.....	<i>Phoebanthus grandifloras</i>	
Mistletoe.....	<i>Phoradendron serotinum</i>	
Red chokeberry.....	<i>Photinia pyrifolia</i>	

\* Non-native Species

Dunns Creek State Park Plants

Codes	Common Name	Scientific Name	Primary Habit (for imperiled species)
	Turkey tangle fogfruit; Capeweed		<i>Phyla nodiflora</i>
	Chamber bitter	<i>Phyllanthus urinaria</i> *	
	Fevertree	<i>Pinckneya bracteata</i>	
	Blueflower butterwort	<i>Pinguicula caerulea</i>	
	Yellow butterwort	<i>Pinguicula lutea</i>	
	Small butterwort	<i>Pinguicula pumila</i>	
	Narrowleaf silkgrass	<i>Pityopsis graminifolia</i>	
	Sweetscent	<i>Pluchea odorata</i>	
	Rosy camphorweed	<i>Pluchea rosea</i>	
	Orange milkwort	<i>Polygala lutea</i>	
	Candyroot	<i>Polygala nana</i>	
	Coastalplain milkwort	<i>Polygala setacea</i>	
	Tall jointweed	<i>Polygonella gracilis</i>	
	Mild waterpepper; Swampsmartweed		<i>Polygonum hydropiperoides</i>
	Rustweed; Juniperleaf	<i>Polypremum procumbens</i>	
	Combleaf mermaidweed	<i>Proserpinaca pectinate</i>	
	Carolina laurelcherry	<i>Prunus caroliniana</i>	
	Black cherry	<i>Prunus serotina</i>	
	Blackroot	<i>Pterocaulon pycnostachyum</i>	
	Chapman's oak	<i>Quercus chapmanii</i>	
	Sand live oak	<i>Quercus geminata</i>	
	Darlington oak	<i>Quercus hemisphaerica</i>	
	Bluejack oak	<i>Quercus incana</i>	
	Turkey oak	<i>Quercus laevis</i>	
	Laurel oak; Diamond oak	<i>Quercus laurifolia</i>	
	Small post oak	<i>Quercus margaretta</i>	
	Water oak	<i>Quercus nigra</i>	
	Bluff oak; Bastard white oak	<i>Quercus sinuata</i>	
	Dwarf live oak	<i>Quercus minima</i>	
	Myrtle oak	<i>Quercus myrtifolia</i>	
	Virginia live oak	<i>Quercus virginiana</i>	
	Savannah meadowbeauty	<i>Rhexia alifanus</i>	
	Pale meadowbeauty	<i>Rhexia mariana</i>	
	Nuttall's meadowbeauty	<i>Rhexia nuttallii</i>	
	Sweet pinxter azalea;	<i>Rhododendron canescens</i>	
	Swamp azalea	<i>Rhododendron viscosum</i>	
	Winged sumac	<i>Rhus copallinum</i>	
	Brownhair snoutbean	<i>Rhynchosia cinerea</i>	
	Doubleform snoutbean	<i>Rhynchosia difformis</i>	
	Dollarleaf	<i>Rhynchosia reniformis</i>	
	Tropical Mexican clover	<i>Richardia brasiliensis</i> *	
	Swamp rose	<i>Rosa palustris</i>	
	Sawtooth blackberry	<i>Rubus argutus</i>	
	Sand blackberry	<i>Rubus cuneifolius</i>	
	Southern dewberry	<i>Rubus trivialis</i>	
	Shortleaf rosegiantian	<i>Sabatia brevifolia</i>	

\* Non-native Species

Dunns Creek State Park Plants

Primary Habit

Codes

Common Name                      *Scientific Name*                      (for imperiled species)

Coastal rosegentian.....	<i>Sabatia calycina</i>	
Carolina willow.....	<i>Salix caroliniana</i>	
Lyreleaf sage.....	<i>Salvia lyrata</i>	
American elder; Elderberry.....	<i>Sambucus nigra ssp. canadensis</i>	
Popcorn tree; Chinese tallow tree.....	<i>Sapium sebiferum</i> *	
Hooded pitcherplant.....	<i>Sarracenia minor</i>	
Lizard's tail.....	<i>Saururus cernuus</i>	
Sweetbroom; Licoriceweed.....	<i>Scoparia dulcis</i>	
Whitetop aster; Dixie Aster.....	<i>Seriocarpus tortifolius</i>	
Bladderpod; Bagpod.....	<i>Sesbania vesicaria</i>	
Yaupon black senna.....	<i>Seymeria cassioides</i>	
Gum bully.....	<i>Sideroxylon lanuginosum</i>	
Buckthorn bully.....	<i>Sideroxylon lycioides</i>	
Tough bully.....	<i>Sideroxylon tenax</i>	
Aniscented Goldenrod.....	<i>Solidago odora var. odora</i>	
Queensdelight.....	<i>Stillingia sylvatica</i>	
Coastal plain dawnflower.....	<i>Stylisma patens</i>	
American snowbell.....	<i>Styrax americanus</i>	
Eastern silver aster.....	<i>Symphyotricum concolor</i>	
Elliott's aster.....	<i>Symphyotricum elliotii</i>	
Walter's aster.....	<i>Symphyotricum walteri</i>	
Scurf hoary pea.....	<i>Tephrosia chrysophylla</i>	
Florida hoary pea.....	<i>Tephrosia florida</i>	
Carolina basswood.....	<i>Tilia americana var. caroliniana</i>	
Eastern Poison Ivy.....	<i>Toxicodendron radicans</i>	
Poison Sumac.....	<i>Toxicodendron vernix</i>	
Wavyleaf noseburn.....	<i>Tragia urens</i>	
Virginia marsh St. John's-wort.....	<i>Triadenum virginicum</i>	
American elm.....	<i>Ulmus americana</i>	
Florida yellow bladderwort.....	<i>Utricularia floridana</i>	
Sparkleberry; Farkleberry.....	<i>Vaccinium arboretum</i>	
Highbush blueberry.....	<i>Vaccinium corymbosum</i>	
Darrow's blueberry.....	<i>Vaccinium darrowii</i>	
Elliott's blueberry.....	<i>Vaccinium elliotii</i>	
Shiny blueberry.....	<i>Vaccinium myrsinites</i>	
Deerberry.....	<i>Vaccinium stamineum</i>	
Possumhaw.....	<i>Viburnum nudum</i>	
Common blue violet.....	<i>Viola sororia</i>	
Summer grape.....	<i>Vitis aestivalis</i>	
Muscadine.....	<i>Vitis rotundifolia</i>	
Frost grape.....	<i>Vitis vulpina</i>	
Tallow wood; Hog plum.....	<i>Ximenia americana</i>	
Hercules'-club.....	<i>Zanthoxylum clava-herculis</i>	

**ARACHNIDA**

\* Non-native Species



## Dunns Creek State Park Plants and Animals

Common Name	<i>Scientific Name</i>	Primary Habitat Codes (for imperiled species)
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### FISH

Shortnose sturgeon.....	<i>Acipenser brevirostrum</i>	
Blueback herring.....	<i>Alosa aestivalis</i>	
Snail bullhead.....	<i>Ameiurus brunneus</i>	
White catfish.....	<i>Ameiurus catus</i>	
Yellow bullhead.....	<i>Ameiurus natalis</i>	
Brown bullhead.....	<i>Ameiurus nebulosus</i>	
Bowfin.....	<i>Amia calva</i>	
American eel.....	<i>Anguilla rostrata</i>	
Pirate perch.....	<i>Aphredoderus sayanus</i>	
Yellowfin menhaden.....	<i>Brevoortia smithi</i>	
Atlantic menhaden.....	<i>Brevoortia tyrannus</i>	
Irish pompano.....	<i>Diapterus auratus</i>	
Gizzard shad.....	<i>Dorosoma cepedianum</i>	
Threadfin shad.....	<i>Dorosoma petenense</i>	
Everglades pygmy sunfish.....	<i>Elassoma evergladei</i>	
Okefenokee pygmy sunfish.....	<i>Elassoma okefenokee</i>	
Blue-spotted sunfish.....	<i>Enneacanthus gloriosus</i>	
Lake chubsucker.....	<i>Erimyzon sucetta</i>	
Redfin pickerel.....	<i>Esox americanus</i>	
Chain pickerel.....	<i>Esox niger</i>	
Swamp darter.....	<i>Etheostoma fusiforme</i>	
Golden topminnow.....	<i>Fundulus chrysotus</i>	
Lined topminnow.....	<i>Fundulus lineolatus</i>	
Seminole killfish.....	<i>Fundulus seminolis</i>	
Mosquitofish.....	<i>Gambusia holbrooki</i>	
Naked goby.....	<i>Gobiosoma bosc</i>	
Least killifish.....	<i>Heterandria formosa</i>	
Channel catfish.....	<i>Ictalurus punctatus</i>	
Flagfish.....	<i>Jordanella floridae</i>	
Brook silverside.....	<i>Labidesthes sicculus</i>	
Longnose gar.....	<i>Lepisosteus osseus</i>	
Florida Gar.....	<i>Lepisosteus platyrhincus</i>	
Red-breasted sunfish.....	<i>Lepomis auritus</i>	
Warmouth.....	<i>Lepomis gulosus</i>	
Bluegill.....	<i>Lepomis macrochirus</i>	
Dollar sunfish.....	<i>Lepomis marginatus</i>	
Red-eared sunfish.....	<i>Lepomis microlophus</i>	
Spotted sunfish.....	<i>Lepomis punctatus</i>	
Pygmy killifish.....	<i>Leptolucania ommata</i>	
Bluefin killifish.....	<i>Lucania goodei</i>	
Inland silverside.....	<i>Menidia beryllina</i>	

Dunns Creek State Park Plants and Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Clown goby.....	<i>Microgobius gulosus</i>	
Largemouth bass.....	<i>Micropterus salmoides</i>	
Striped bass.....	<i>Morone saxatilis</i>	
Sunshine bass.....	<i>Morone saxatilis</i> X <i>M. chrysops</i>	
Striped mullet.....	<i>Mugil cephalus</i>	
Golden shiner.....	<i>Notemigonus crysoleucas</i>	
Taillight shiner.....	<i>Notropis maculatus</i>	
Tadpole madtom.....	<i>Noturus gyrinus</i>	
Speckled madtom.....	<i>Noturus leptacanthus</i>	
Atlantic thread herring.....	<i>Opisthonema oglinum</i>	
Blue tilapia*.....	<i>Oreochromis aureus</i> *	
Southern flounder.....	<i>Paralichthys lethostigma</i>	
Sailfin molly.....	<i>Poecilia latipinna</i>	
Speckled perch.....	<i>Pomoxis nigromaculatus</i>	
Sailfin shiner.....	<i>Pteronotropis hypselopterus</i>	
Atlantic needlefish.....	<i>Strongylura marina</i>	
Hogchoker.....	<i>Trinectes maculatus</i>	

**AMPHIBIANS**

Two-toed Amphiuma.....	<i>Amphiuma means</i>	
Oak toad.....	<i>Bufo quercicus</i>	
Southern Toad.....	<i>Bufo terrestris</i>	
Greenhouse Frog.....	<i>Eleutherodactylus planirostris</i> *	
Dwarf Salamander.....	<i>Eurycea quadridigitata</i>	
Eastern Narrowmouth Toad.....	<i>Gastrophryne carolinensis</i>	
Green Treefrog.....	<i>Hyla cinerea</i>	
Pine Woods Treefrog.....	<i>Hyla femoralis</i>	
Squirrel Treefrog.....	<i>Hyla squirella</i>	
Cuban treefrog.....	<i>Osteopilus septentrionalis</i> *	
Southeastern Slimy Salamander.....	<i>Plethodon grobmoni</i>	
Little Grass Frog.....	<i>Pseudacris ocularis</i>	
Rusty Mud Salamander.....	<i>Pseudotriton montanus floridanus</i>	
Florida gopher frog.....	<i>Rana capito aesopus</i>	
Bronze frog.....	<i>Rana clamitans</i>	
Pig Frog.....	<i>Rana grylio</i>	
River Frog.....	<i>Rana heckscheri</i>	
Southern Leopard Frog.....	<i>Rana utricularia</i>	

**REPTILES**

Dunns Creek State Park Plants and Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Eastern Cottonmouth.....	<i>Agkistrodon piscivorus</i>	
American Alligator.....	<i>Alligator mississippiensis</i>	
Green Anole.....	<i>Anolis carolinensis</i>	
Florida Softshell Turtle.....	<i>Apalone ferox</i>	
Six-lined racerunner.....	<i>Aspidoscelis sexlineatus</i>	
Florida Snapping Turtle.....	<i>Chelydra serpentina</i>	
Southern Black Racer.....	<i>Coluber constrictor</i>	
Eastern Diamondback Rattlesnake.....	<i>Crotalus adamanteus</i>	
Ringneck Snake.....	<i>Diadophis punctatus</i>	
Corn Snake.....	<i>Elaphe guttata</i>	
Yellow Rat Snake.....	<i>Elaphe obsoleta</i>	
Peninsula mole skink.....	<i>Eumeces egregius</i>	
Five-lined Skink.....	<i>Eumeces fasciatus</i>	
Eastern Mud Snake.....	<i>Farancia abacura</i>	
Gopher Tortoise.....	<i>Gopherus polyphemus</i>	
Striped Mud Turtle.....	<i>Kinosternon baurii</i>	
Eastern Coachwhip.....	<i>Masticophis flagellum</i>	
Eastern Coral Snake.....	<i>Micrurus fulvius</i>	
Florida Banded Water Snake.....	<i>Nerodia fasciata</i>	
Rough Green Snake.....	<i>Opheodrys aestivus</i>	
Peninsula Cooter.....	<i>Pseudemys floridana peninsularis</i>	
Florida Redbelly Turtle.....	<i>Pseudemys nelsoni</i>	
Southern Fence Lizard.....	<i>Sceloporus undulatus</i>	
Ground Skink.....	<i>Scincella lateralis</i>	
Dusky Pigmy Rattlesnake.....	<i>Sistrurus miliarius</i>	
Peninsula crowned snake.....	<i>Tantilla relicta relicta</i>	
Florida Box Turtle.....	<i>Terrapene carolina</i>	
Ribbon Snake.....	<i>Thamnophis sauritus</i>	
Garter Snake.....	<i>Thamnophis sirtalis</i>	

**BIRDS**

**Grebes**

Pied-billed Grebe.....*Podilymbus podiceps*

**Pelicans**

Brown Pelican.....*Pelecanus occidentalis*

**Cormorants**

Double-crested Cormorant.....*Phalacrocorax auritus*

Dunns Creek State Park Plants and Animals

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

Anhinga.....*Anhinga anhinga*

**Hérons, Egrets and Bitterns**

Great Egret (Common).....*Ardea alba*  
Great Blue Heron.....*Ardea herodias*  
Cattle Egret.....*Bubulcus ibis* \*  
Green Heron.....*Butorides virescens*  
  
Little Blue Heron.....*Egretta caerulea*  
Snowy Egret.....*Egretta thula*  
Tricolored Heron.....*Egretta tricolor*

**Ibis and Spoonbills**

White Ibis.....*Eudocimus albus*  
Glossy Ibis.....*Plegadis falcinellus*

**Storks**

Wood Stork.....*Mycteria americana*

**Waterfowl**

Wood Duck.....*Aix sponsa*  
Mottled Duck (Florida).....*Anas fulvigula*  
Hooded Merganser.....*Lophodytes cucullatus*  
Red-breasted Merganser.....*Mergus serrator*

**New World Vultures**

Black Vulture.....*Coragyps atratus*  
Turkey Vulture.....*Cathartes aura*

**Hawks, Eagles, and Kites**

Red-tailed Hawk.....*Buteo jamaicensis*  
Red-shouldered Hawk.....*Buteo lineatus*  
Swallow-tailed Kite.....*Elanoides forficatus*  
Bald Eagle.....*Haliaeetus leucocephalus*  
Osprey.....*Pandion haliaetus*

**Falcons and Caracaras**

Merlin.....*Falco columbarius*  
American Kestrel.....*Falco sparverius*

**Pheasants, Grouse, Quail and Turkeys**

Dunns Creek State Park Plants and Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Wild Turkey.....	<i>Meleagris gallopavo</i>	
<b>New World Quails</b>		
Northern Bobwhite.....	<i>Colinus virginianus</i>	
<b>Rails and Coots</b>		
American Coot.....	<i>Fulica americana</i>	
Common Moorhen (Gallinule).	<i>Gallinula chloropus</i>	
Purple Gallinule.....	<i>Porphyrio martinicus</i>	
Sora.....	<i>Porzana carolina</i>	
<b>Cranes</b>		
Florida Sandhill Crane.....	<i>Grus canadensis pratensis</i>	
<b>Plovers and Lapwings</b>		
Common Snipe.....	<i>Gallinago gallinago</i>	
Solitary Sandpiper.....	<i>Tringa solitaria</i>	
<b>Pigeons and Doves</b>		
Common Ground Dove.....	<i>Columbina passerina</i>	
Mourning Dove.....	<i>Zenaida macroura</i>	
Old World Cuckoos		
Yellow-billed Cuckoo.....	<i>Coccyzus americanus</i>	
<b>Owls</b>		
Great Horned Owl.....	<i>Bubo virginianus</i>	
Eastern Screech-Owl.....	<i>Otus asio</i>	
Barred Owl.....	<i>Strix varia</i>	
<b>Nightjars</b>		
Chuck-will's-widow.....	<i>Caprimulgus carolinensis</i>	
Common Nighthawk.....	<i>Chordeiles minor</i>	
<b>Swifts</b>		
Chimney Swift.....	<i>Chaetura pelagica</i>	
<b>Kingfishers</b>		
Belted Kingfisher.....	<i>Megaceryle alcyon</i>	
<b>Woodpeckers</b>		
Northern Flicker.....	<i>Colaptes auratus</i>	

Dunns Creek State Park Plants and Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Pileated Woodpecker.....	<i>Dryocopus pileatus</i>	
Red-bellied Woodpecker.....	<i>Melanerpes carolinus</i>	
Red-headed Woodpecker.....	<i>Melanerpes erythrocephalus</i>	
Downy Woodpecker.....	<i>Picoides pubescens</i>	
Yellow-bellied Sapsucker.....	<i>Sphyrapicus varius</i>	
<b>Tyrant Flycatchers</b>		
Great Crested Flycatcher.....	<i>Myiarchus crinitus</i>	
Eastern Phoebe.....	<i>Sayornis phoebe</i>	
Eastern Kingbird.....	<i>Tyrannus tyrannus</i>	
Gray Kingbird.....	<i>Tyrannus dominicensis</i>	
<b>Shrikes</b>		
Loggerhead Shrike.....	<i>Lanius ludovicianus</i>	
<b>Vireos and Allies</b>		
Yellow-throated Vireo.....	<i>Vireo flavifrons</i>	
White-eyed Vireo.....	<i>Vireo griseus</i>	
Red-eyed Vireo.....	<i>Vireo olivaceus</i>	
<b>Crows and Jays</b>		
American Crow.....	<i>Corvus brachyrhynchos</i>	
Fish Crow.....	<i>Corvus ossifragus</i>	
Blue Jay.....	<i>Cyanocitta cristata</i>	
<b>Swallows</b>		
Barn Swallow.....	<i>Hirundo rustica</i>	
Tree Swallow.....	<i>Tachycineta bicolor</i>	
<b>Tits and Allies</b>		
Tufted Titmouse.....	<i>Baeolophus bicolor</i>	
Carolina Chickadee.....	<i>Poecile carolinensis</i>	
Brown-headed Nuthatch.....	<i>Sitta pusilla</i>	
<b>Wrens</b>		
Carolina Wren.....	<i>Thryothorus ludovicianus</i>	
<b>Old World Warblers</b>		
Blue-gray Gnatcatcher.....	<i>Polioptila caerulea</i>	
<b>Thrushes</b>		
Swainson's Thrush.....	<i>Catharus ustulatus</i>	
Eastern Bluebird.....	<i>Sialia sialis</i>	

Dunns Creek State Park Plants and Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
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American Robin.....*Turdus migratorius*

**Mockingbird and Thrashers**

Gray Catbird.....*Dumetella carolinensis*

Northern Mockingbird.....*Mimus polyglottos*

Brown Thrasher.....*Toxostoma rufum*

**New World Warblers**

Yellow-rumped Warbler.....*Dendroica coronata*

Palm Warbler.....*Dendroica palmarum*

Chestnut-sided Warbler.....*Dendroica pensylvanica*

Pine Warbler.....*Dendroica pinus*

Common Yellowthroat.....*Geothlypis trichas*

Black-and-white Warbler.....*Mniotilta varia*

Kentucky Warbler.....*Oporornis formosus*

Northern Parula.....*Parula americana*

Prothonotary Warbler.....*Protonotaria citrea*

Ovenbird.....*Seiurus aurocapillus*

American Redstart.....*Setophaga ruticilla*

**Tanagers**

Summer Tanager.....*Piranga rubra*

**Sparrows and Allies**

Eastern Towhee.....*Pipilo erythrophthalmus*

**Cardinals, Grosbeaks and Buntings**

Northern Cardinal.....*Cardinalis cardinalis*

**Blackbirds and Allies**

Red-winged Blackbird.....*Agelaius phoeniceus*

Boat-tailed Grackle.....*Quiscalus major*

Common Grackle.....*Quiscalus quiscula*

Eastern Meadowlark.....*Sturnella magna*

**MAMMALS**

**Marsupials**

Virginia Opossum.....*Didelphis virginiana*

**Bats**

Rafinesque's Big-eared Bat.....*Corynorhinus rafinesquii*

Brazilian free-tailed bat.....*Tadarida brasiliensis*

Dunns Creek State Park Plants and Animals

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

Nine-banded Armadillo.....*Dasyus novemcinctus* \*

**Lagomorphs**

Eastern Cottontail.....*Sylvilagus floridanus*

**Rodents**

- Southeastern Pocket Gopher.....*Geomys pinetis*
- Southern Flying Squirrel.....*Glaucomys volans*
- Eastern Woodrat.....*Neotoma floridana*
- Golden mouse.....*Ochrotomys nuttalli*
- Cotton Mouse.....*Peromyscus gossypinus*
- Gray Squirrel.....*Sciurus carolinensis*
- Sherman's Fox Squirrel.....*Sciurus niger shermani*
- Hispid Cotton Rat.....*Sigmodon hispidus*

**Canids**

- Coyote.....*Canis latrans*
- Gray Fox.....*Urocyon cinereoargenteus*

**Felids**

Bobcat.....*Felis rufus*

**Mustelids**

River Otter.....*Lutra canadensis*

**Procyonids**

Raccoon.....*Procyon lotor*

**Ursids**

Florida Black Bear.....*Ursus americanus floridanus*

**Artiodactyls**

- White-tailed Deer.....*Odocoileus virginianus*
- Wild Pig.....*Sus scrofa* \*



## **Addendum 6—Imperiled Species Ranking Definitions**



## **Imperiled Species Ranking Definitions**

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

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

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

### **FNAI GLOBAL RANK DEFINITIONS**

- G1 ..... Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or fabricated factor.
- G2 ..... Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
- G3 ..... Either very rare or local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction of other factors.
- G4 ..... apparently secure globally (may be rare in parts of range)
- G5 ..... demonstrably secure globally
- GH ..... of historical occurrence throughout its range may be rediscovered (e.g., ivory-billed woodpecker)
- GX ..... believed to be extinct throughout range

## Imperiled Species Ranking Definitions

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- GXC ..... extirpated from the wild but still known from captivity or cultivation
- G#? ..... Tentative rank (e.g., G2?)
- G#G# ..... range of rank; insufficient data to assign specific global rank (e.g., G2G3)
- G#T# ..... rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definition as above (e.g., G3T1)
- G#Q..... rank of questionable species - ranked as species but questionable whether it is species or subspecies; numbers have same definition as above (e.g., G2Q)
- G#T#Q..... same as above, but validity as subspecies or variety is questioned.
- GU ..... due to lack of information, no rank or range can be assigned (e.g., GUT2).
- G?..... Not yet ranked (temporary)
- S1..... Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
- S2..... Imperiled in Florida because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
- S3..... Either very rare or local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction of other factors.
- S4..... apparently secure in Florida (may be rare in parts of range)
- S5..... demonstrably secure in Florida
- SH ..... of historical occurrence throughout its range, may be rediscovered (e.g., ivory-billed woodpecker)
- SX..... believed to be extinct throughout range
- SA..... accidental in Florida, i.e., not part of the established biota
- SE..... an exotic species established in Florida may be native elsewhere in North America
- SN ..... regularly occurring but widely and unreliably distributed; sites for conservation hard to determine

## Imperiled Species Ranking Definitions

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SU ..... due to lack of information, no rank or range can be assigned (e.g., SUT2).

S? ..... Not yet ranked (temporary)

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

## Imperiled Species Ranking Definitions

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### LEGAL STATUS

#### **FEDERAL**

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

LE ..... Listed as Endangered Species in the List of Endangered and Threatened Wildlife and Plants under the provisions of the Endangered Species Act. Defined as any species that is in danger of extinction throughout all or a significant portion of its range.

PE ..... Proposed for addition to the List of Endangered and Threatened Wildlife and Plants as Endangered Species.

LT ..... Listed as Threatened Species. Defined as any species that is likely to become an endangered species within the near future throughout all or a significant portion of its range.

PT ..... Proposed for listing as Threatened Species.

C ..... Candidate Species for addition to the list of Endangered and Threatened Wildlife and Plants. Defined as those species for which the USFWS currently has on file sufficient information on biological vulnerability and threats to support proposing to list the species as endangered or threatened.

E(S/A) ..... Endangered due to similarity of appearance.

T(S/A) ..... Threatened due to similarity of appearance.

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)**

## Imperiled Species Ranking Definitions

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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

## Imperiled Species Ranking Definitions

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

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

- LE ..... Listed as Endangered Plants in the Preservation of Native Flora of Florida Act. Defined as species of plants native to the state that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue, and includes all species determined to be endangered or threatened pursuant to the Federal Endangered Species Act of 1973, as amended.
- LT ..... Listed as Threatened Plants in the Preservation of Native Flora of Florida Act. Defined as species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in such number as to cause them to be endangered.

## **Addendum 7—Cultural Information**



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

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

### **A. General Discussion**

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

### **B. Agency Responsibilities**

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

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

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

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

### **C. Statutory Authority**

Statutory Authority and more in depth information can be found 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)**

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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](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

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

- 1) Districts, sites, buildings, structures, and objects may be considered to have significance in American history, architecture, archaeology, engineering, and/or culture if they possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
  - a) are associated with events that have made a significant contribution to the broad patterns of our history; and/or
  - b) are associated with the lives of persons significant in our past; and/or
  - c) embody the distinctive characteristics of type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; and/or
  - d) have yielded, or may be likely to yield, information important in prehistory or history.
  
- 2) Ordinarily cemeteries, birthplaces, or graves of historical figures; properties owned by religious institutions or used for religious purposes; structures that have been moved from their original locations; reconstructed historic buildings; properties primarily commemorative in nature; and properties that have achieved significance within the past 50 years shall not be considered eligible for the *National Register*. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories:
  - a) a religious property deriving its primary significance from architectural or artistic distinction or historical importance; or
  - b) a building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or
  - c) a birthplace or grave of an historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life; or
  - d) a cemetery which derives its primary significance from graves of persons of transcendent importance, from age, distinctive design features, or association with historic events; or 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
  - e) a property achieving significance within the past 50 years, if it is of exceptional importance.

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

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

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

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

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

## **Addendum 8—Timber Management Analysis**



# Timber Management Analysis

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## Addendum 8 Timber Management Analysis

### **1. Management Context and Best Management Practices**

Timber management at Dunns Creek State Park (Dunns Creek) is based on the desired future condition (DFC) of a management zone or natural community (NatCom) as determined by the DRP Unit Management Plans, along with guidelines developed by the FNAI. In most cases, the DFC will be closely related to the historic NatCom. However, it is important to note, that in areas where the historic community has been severely altered by past land use practices, the DFC may not always be the same as the historic NatCom. All timber management activities undertaken will adhere to or exceed the current Florida Silvicultural Best Management Practices (BMPs) and Florida Forestry Wildlife BMPs for State Imperiled Species. DRP shall take all measures necessary to protect water quality and wildlife species of concern while conducting timber management activities. DRP has contracted with a private sector, professional forest management firm to complete this timber assessment: F4 Tech.

### **2. Purpose of Timber Management Activities**

Timber management activities may be conducted to help improve or maintain current conditions to achieve the associated DFC. Timber management will primarily be conducted in upland NatComs. Candidate upland NatCom types may include mesic flatwoods, wet flatwoods, sandhill, upland pine, and upland mixed woodland along with scrubby flatwoods, scrub, and altered landcover types such as successional hardwood forest and pine plantations. There will likely be no scheduled timber management activities in historically hardwood-dominated or wetland NatCom types, e.g., upland hardwood forest, hydric hammock, and slope forest. In some circumstances, timber management may include the harvesting and removal of overstory invasive/exotic trees. Descriptions of community types are detailed in the in the Resource Management Component.

### **3. Potential Silvicultural Treatments**

Several silvicultural treatments may be considered and utilized over the next ten years. The various types of timber harvests may include pine thinning, targeted hardwood overstory removal, and clearcutting. Silvicultural treatments will be selectively implemented to minimize potential impacts to water and soil resources, non-target vegetation, and wildlife (see BMPs). Depending upon the condition and marketability of the timber being manipulated, it is possible to generate revenue from the harvest. It is also possible the timber removal could be a cost to DRP. In all decisions, the mission of preserving and restoring natural communities will be the guiding factor.

Thinning is conducted to reduce the basal area (BA) or density of trees/stems in a stand to improve forest health and growth conditions for residual trees. Allowing trees more room to grow has the potential to increase tree and forest vigor, which helps mitigate the potential for damaging insect and disease outbreaks. Most tree harvesting/removals also increase sunlight reaching the forest floor and fine fuels that facilitate consistent fire return intervals and responses, which can benefit

## Timber Management Analysis

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groundcover vegetation abundance, species richness, and overall ecological diversity. The disruption of natural fire regimes and fire return intervals can often result in the need to remove undesirable or overstocked hardwood stems that currently occupy growing space in the canopy and sub-canopy. Clearcutting may be used to support restoration goals by removing off-site pine or hardwood species and is a precursor to establishing site-appropriate species. It can also be used to control insect infestations that are damaging or threatening forest resources and ecosystem conditions.

On occasion, salvage cuts may need to be conducted to remove small volumes of wood damaged by fire, wind storm, insect or other natural causes. The decision whether or not to harvest the affected timber will depend on the threat to the surrounding stands, risk of collateral ecological damage, and the volume/value of the trees involved. For example, small, isolated lightning-strike and beetle kills are a natural part of a healthy ecosystem and normally would not be cut. However, if a drought caused the insect infestation to spread, the affected trees and buffer zone might have to be removed to prevent significant damage.

#### **4. Inventory Data and Potential Actions per Area of Interest or Management Zone**

Dunns Creek comprises 6,319 acres in Putnam County. A total of 3,337 acres are associated with five (5) upland natural community (NatCom) types that are potential candidates for timber management. Between April and May 2016, an inventory based on field plots was conducted across and within these areas to quantify overstory, midstory and understory conditions. Various park-level and NatCom-level summary statistics can be found in the following tables.

This timber assessment was based on management zone and NatCom boundary GIS data provided by DRP in September 2018. It is not intended to be prescriptive. Stakeholders and DRP staff are encouraged to view this timber assessment and inventory data as supplemental information for future consideration. Given the dynamic land management activities at Dunns Creek, together with the timeframe required to create or update a UMP, it is possible that some tabular data may be dated. Therefore, NatCom acreages and recent treatments that occurred after the September 2018 period may not be reflected in the following tables.

**Table 1. General summary statistics for Dunns Creek State Park**

Number of Management Zones within the Park	71
Upland NatCom acres	3,622

#### **Mesic Flatwoods (842.5 acres)**

Longleaf pine (*Pinus palustris*) is the preferred overstory pine species in this natural

## Timber Management Analysis

community. The FNAI reference site in this natural community for mesic flatwoods contains longleaf pine at a basal area (BA) of 10 to 50 square feet per acre with non-pine at a density of 0 trees per acre (TPA). The following table shows the overstory condition for this natural community at Dunns Creek and target overstory condition for mesic flatwoods in this natural community.

MZ ID	Mesic Flatwoods (Acres)	Current Average Overstory Conditions							Target Overstory Conditions	
		Pine BA (ft <sup>2</sup> /ac)	Pine TPA	Pine Volume (tons/ac)	Non-Pine BA (ft <sup>2</sup> /ac)	Non-Pine TPA	Non-Pine Volume (tons/ac)	Total Pine and Non-Pine Volume (tons/ac)	FNAI Reference Condition Pine BA Range (ft <sup>2</sup> /ac)	FNAI Reference Condition Non-Pine TPA Range
DC-A11	12.5	25.0	15.8	24.0	60.0	314.9	10.7	34.8	10-50	0 - 0
DC-A4	1.7	40.0	60.0	23.7	20.0	31.4	0.0	23.7	10-50	0 - 0
DC-A7	4.8	30.0	77.9	20.8	40.0	265.1	7.8	28.6	10-50	0 - 0
DC-A8	1.2	--	--	--	--	--	--	--	--	--
DC-B10	8.0	--	--	--	--	--	--	--	--	--
DC-B1C	18.8	35.0	40.6	28.3	5.0	36.2	0.0	28.3	10-50	0 - 0
DC-B2	2.4	10.0	18.3	6.8	0.0	0.0	0.0	6.8	10-50	0 - 0
DC-B3	27.2	12.5	13.1	8.1	70.0	358.3	20.1	28.2	10-50	0 - 0
DC-B4	0.4	--	--	--	--	--	--	--	--	--
DC-B5A	2.7	--	--	--	--	--	--	--	--	--
DC-B7	6.4	--	--	--	--	--	--	--	--	--
DC-D1	305.1	34.3	72.2	25.6	3.8	11.2	2.5	28.1	10-50	0 - 0
DC-E1A	35.2	63.3	88.5	53.9	26.7	75.6	15.0	68.9	10-50	0 - 0
DC-E1B	0.8	--	--	--	--	--	--	--	--	--
DC-E2A	69.1	11.7	26.4	8.2	0.0	0.0	0.0	8.2	10-50	0 - 0
DC-E2B	37.6	28.3	57.3	18.4	0.0	0.0	0.0	18.4	10-50	0 - 0
DC-E3	43.1	10.0	6.9	8.0	2.9	17.2	0.8	8.8	10-50	0 - 0
DC-E4	67.5	33.3	57.5	24.8	13.3	20.5	3.6	28.4	10-50	0 - 0
DC-E5	0.6	--	--	--	--	--	--	--	--	--
DC-F2	36.5	20.0	17.9	14.5	6.7	41.2	1.0	15.4	10-50	0 - 0
DC-F3	50.5	44.0	52.7	32.2	6.0	4.0	1.5	33.6	10-50	0 - 0
DC-F4	110.5	23.9	20.6	18.3	18.5	43.1	9.0	27.3	10-50	0 - 0
<b>Total</b>	<b>842.5</b>									

### Sandhill (1,106.9 acres)

Longleaf pine (*Pinus palustris*) is the preferred overstory pine species in this natural community. The FNAI reference site in this natural community for sandhill contains longleaf pine at a basal area (BA) of 20 to 60 square feet per acre with non-pine species between 0 and 79 trees per acre (TPA). The following table shows the overstory condition for this natural community at Dunns Creek and target overstory

## Timber Management Analysis

condition for sandhill in this natural community.

MZ ID	Sandhill (Acres)	Current Average Overstory Conditions							Target Overstory Conditions	
		Pine BA (ft2/ac)	Pine TPA	Pine Volume (tons/ac)	Non-Pine BA (ft2/ac)	Non-Pine TPA	Non-Pine Volume (tons/ac)	Total Pine and Non-Pine Volume (tons/ac)	FNAI Reference Condition Pine BA Range (ft2/ac)	FNAI Reference Condition Non-Pine TPA Range
DC-A10	15.3	15.0	23.0	10.5	45.0	124.3	25.0	35.5	20 - 60	0 - 79
DC-A11	11.6	20.0	15.1	16.6	60.0	344.3	15.9	32.5	20 - 60	0 - 79
DC-A4	1.8	--	--	--	--	--	--	--	--	--
DC-A5	14.4	0.0	0.0	0.0	30.0	34.0	17.7	17.7	20 - 60	0 - 79
DC-A6	28.7	56.0	160.8	32.2	48.0	130.6	18.4	50.7	20 - 60	0 - 79
DC-A7	0.3	--	--	--	--	--	--	--	--	--
DC-A8	38.0	46.7	138.1	28.7	50.0	221.6	10.0	38.7	20 - 60	0 - 79
DC-A9	51.3	20.0	23.6	15.4	60.0	181.3	24.3	39.7	20 - 60	0 - 79
DC-B10	9.8	--	--	--	--	--	--	--	--	--
DC-B1A	58.8	32.0	104.1	21.0	19.0	62.6	5.4	26.4	20 - 60	0 - 79
DC-B1B	22.8	16.0	47.4	10.6	2.0	4.2	1.2	11.8	20 - 60	0 - 79
DC-B1C	16.4	--	--	--	--	--	--	--	--	--
DC-B2	61.6	2.2	8.6	1.3	4.4	18.2	2.1	3.4	20 - 60	0 - 79
DC-B3	24.0	2.5	2.0	1.8	2.5	4.0	1.6	3.4	20 - 60	0 - 79
DC-B4	21.0	8.6	18.0	5.6	21.4	48.7	13.3	18.9	20 - 60	0 - 79
DC-B5A	28.2	35.0	132.4	20.0	0.0	0.0	0.0	20.0	20 - 60	0 - 79
DC-B5B	37.5	5.0	15.7	3.2	0.0	0.0	0.0	3.2	20 - 60	0 - 79
DC-B5C	42.3	7.5	23.7	4.8	1.3	6.2	0.0	4.8	20 - 60	0 - 79
DC-B5D	8.2	5.0	21.1	3.3	5.0	9.4	3.7	7.0	20 - 60	0 - 79
DC-B6A	110.9	18.0	63.6	12.2	12.5	32.5	5.0	17.2	20 - 60	0 - 79
DC-B6B	68.6	9.2	33.6	5.1	9.2	20.7	4.1	9.2	20 - 60	0 - 79
DC-B6C	19.1	6.7	23.6	4.0	0.0	0.0	0.0	4.0	20 - 60	0 - 79
DC-B7	18.2	--	--	--	--	--	--	--	--	--
DC-B8	34.6	6.0	20.5	2.6	6.0	17.7	0.0	2.6	20 - 60	0 - 79
DC-B9	18.8	10.0	32.6	5.9	30.0	159.7	8.0	13.9	20 - 60	0 - 79
DC-C01A	66.0	8.2	12.7	4.9	11.8	13.7	7.8	12.7	20 - 60	0 - 79
DC-C01B	25.7	7.5	12.6	4.9	12.5	15.7	7.2	12.1	20 - 60	0 - 79
DC-C02	13.6	2.5	12.3	1.3	27.5	38.6	19.7	21.0	20 - 60	0 - 79
DC-C03	51.6	2.6	3.5	1.8	5.3	4.5	4.4	6.2	20 - 60	0 - 79
DC-C04	34.2	2.0	5.1	0.9	8.0	11.3	4.5	5.4	20 - 60	0 - 79
DC-C05	8.3	5.0	6.1	3.1	35.0	83.5	3.4	6.4	20 - 60	0 - 79
DC-C06	19.8	2.5	1.6	2.3	7.5	9.0	5.5	7.7	20 - 60	0 - 79
DC-C07	42.9	13.0	19.6	9.0	9.0	14.9	5.5	14.5	20 - 60	0 - 79

## Timber Management Analysis

MZ ID	Sandhill (Acres)	Current Average Overstory Conditions							Target Overstory Conditions	
		Pine BA (ft2/ac)	Pine TPA	Pine Volume (tons/ac)	Non-Pine BA (ft2/ac)	Non-Pine TPA	Non-Pine Volume (tons/ac)	Total Pine and Non-Pine Volume (tons/ac)	FNAI Reference Condition Pine BA Range (ft2/ac)	FNAI Reference Condition Non-Pine TPA Range
DC-C08	52.9	4.2	16.8	2.6	7.5	20.9	4.3	6.9	20 - 60	0 - 79
DC-C09	1.0	--	--	--	--	--	--	--	--	--
DC-C10	0.6	--	--	--	--	--	--	--	--	--
DC-C11	1.6	--	--	--	--	--	--	--	--	--
DC-C12	1.2	--	--	--	--	--	--	--	--	--
DC-C30	1.3	--	--	--	--	--	--	--	--	--
DC-D1	2.1	--	--	--	--	--	--	--	--	--
DC-F1	12.0	15.0	21.0	8.0	42.5	103.6	14.4	22.4	20 - 60	0 - 79
DC-F2	10.4	0.0	0.0	0.0	30.0	18.1	25.9	25.9	20 - 60	0 - 79
<b>Total</b>	<b>1,106.9</b>									

### Scrub (792.5 acres)

Sand pine (*Pinus clausa*) is the preferred overstory pine species in this natural community. The FNAI reference site in this natural community for scrub contains sand pine at a basal area (BA) of 0 to 20 square feet per acre with non-pine at a density of 0 to 26 trees per acre (TPA). The following table shows the overstory condition for this natural community at Dunns Creek and target overstory condition for scrub in this natural community.

MZ ID	Scrub (Acres)	Current Average Overstory Conditions							Target Overstory Conditions	
		Pine BA (ft2/ac)	Pine TPA	Pine Volume (tons/ac)	Non-Pine BA (ft2/ac)	Non-Pine TPA	Non-Pine Volume (tons/ac)	Total Pine and Non-Pine Volume (tons/ac)	FNAI Reference Condition Pine BA Range (ft2/ac)	FNAI Reference Condition Non-Pine TPA Range
DC-A11	3.5	--	--	--	--	--	--	--	--	--
DC-B4	22.7	0.0	0.0	0.0	70.0	261.1	0.0	0.0	0 - 20	0 - 26
DC-B5B	0.5	--	--	--	--	--	--	--	--	--
DC-B5C	6.2	--	--	--	--	--	--	--	--	--
DC-C06	0.5	--	--	--	--	--	--	--	--	--
DC-C07	0.2	--	--	--	--	--	--	--	--	--
DC-C08	0.2	--	--	--	--	--	--	--	--	--
DC-C09	4.9	--	--	--	--	--	--	--	--	--
DC-C10	8.7	--	--	--	--	--	--	--	--	--
DC-C11	4.2	--	--	--	--	--	--	--	--	--
DC-C12	22.5	--	--	--	--	--	--	--	--	--

## Timber Management Analysis

MZ ID	Scrub (Acres)	Current Average Overstory Conditions							Target Overstory Conditions	
		Pine BA (ft <sup>2</sup> /ac)	Pine TPA	Pine Volume (tons/ac)	Non-Pine BA (ft <sup>2</sup> /ac)	Non-Pine TPA	Non-Pine Volume (tons/ac)	Total Pine and Non-Pine Volume (tons/ac)	FNAI Reference Condition Pine BA Range (ft <sup>2</sup> /ac)	FNAI Reference Condition Non-Pine TPA Range
DC-C13	23.7	0.0	0.0	0.0	5.0	29.2	1.6	1.6	0 - 20	0 - 26
DC-C14	22.6	0.0	0.0	0.0	11.7	43.8	0.0	0.0	0 - 20	0 - 26
DC-C15	8.5	0.0	0.0	0.0	20.0	9.2	0.0	0.0	0 - 20	0 - 26
DC-C16	1.2	--	--	--	--	--	--	--	--	--
DC-C17	34.4	--	--	--	--	--	--	--	--	--
DC-C18	9.3	--	--	--	--	--	--	--	--	--
DC-C19	51.2	--	--	--	--	--	--	--	--	--
DC-C20	62.0	--	--	--	--	--	--	--	--	--
DC-C21	27.0	--	--	--	--	--	--	--	--	--
DC-C22	33.1	0.0	0.0	0.0	7.5	46.3	0.0	0.0	0 - 20	0 - 26
DC-C23	82.9	0.0	0.0	0.0	2.5	28.7	0.0	0.0	0 - 20	0 - 26
DC-C24	67.8	0.0	0.0	0.0	27.8	170.0	0.8	0.8	0 - 20	0 - 26
DC-C25	109.8	0.0	0.0	0.0	4.7	25.0	0.0	0.0	0 - 20	0 - 26
DC-C26	125.2	0.0	0.0	0.0	6.0	40.3	0.0	0.0	0 - 20	0 - 26
DC-C27	49.9	0.0	0.0	0.0	6.7	54.2	0.0	0.0	0 - 20	0 - 26
DC-C28	0.3	--	--	--	--	--	--	--	--	--
DC-D1	9.5	--	--	--	--	--	--	--	--	--
<b>Total</b>	<b>792.5</b>									

### Scrubby Flatwoods (72.6 acres)

Longleaf pine (*Pinus palustris*) and pond pine (*Pinus serotina*) are the preferred overstory pine species in the natural community. The FNAI reference site in this area for scrubby flatwoods contains longleaf pine at a basal area (BA) of 10 to 60 square feet per acre with non-pine at a density of 0 to 26 trees per acre (TPA). The following table shows the overstory condition for this natural community at Dunns Creek and target overstory condition for scrubby flatwoods in this natural community.

MZ ID	Scrubby Flatwoods (Acres)	Current Average Overstory Conditions							Target Overstory Conditions	
		Pine BA (ft <sup>2</sup> /ac)	Pine TPA	Pine Volume (tons/ac)	Non-Pine BA (ft <sup>2</sup> /ac)	Non-Pine TPA	Non-Pine Volume (tons/ac)	Total Pine and Non-Pine Volume (tons/ac)	FNAI Reference Condition Pine BA Range (ft <sup>2</sup> /ac)	FNAI Reference Condition Non-Pine TPA Range
DC-A11	0.6	--	--	--	--	--	--	--	--	--
DC-A4	0.6	--	--	--	--	--	--	--	--	--
DC-A7	1.1	--	--	--	--	--	--	--	--	--
DC-A8	6.2	0.0	0.0	0.0	20.0	25.5	0.0	0.0	10 - 60	0 - 26

## Timber Management Analysis

MZ ID	Scrubby Flatwoods (Acres)	Current Average Overstory Conditions							Target Overstory Conditions	
		Pine BA (ft <sup>2</sup> /ac)	Pine TPA	Pine Volume (tons/ac)	Non-Pine BA (ft <sup>2</sup> /ac)	Non-Pine TPA	Non-Pine Volume (tons/ac)	Total Pine and Non-Pine Volume (tons/ac)	FNAI Reference Condition Pine BA Range (ft <sup>2</sup> /ac)	FNAI Reference Condition Non-Pine TPA Range
DC-B10	5.8	0.0	0.0	0.0	60.0	143.1	0.0	0.0	10 - 60	0 - 26
DC-B3	3.0	--	--	--	--	--	--	--	--	--
DC-B4	1.8	--	--	--	--	--	--	--	--	--
DC-D1	2.3	--	--	--	--	--	--	--	--	--
DC-E1A	1.1	--	--	--	--	--	--	--	--	--
DC-E1B	5.8	20.0	31.4	12.9	0.0	0.0	0.0	12.9	10 - 60	0 - 26
DC-E2A	12.9	0.0	0.0	0.0	3.3	4.5	2.0	2.0	10 - 60	0 - 26
DC-E2B	4.4	20.0	61.2	12.0	10.0	58.5	0.0	12.0	10 - 60	0 - 26
DC-E3	14.3	10.0	14.1	5.8	0.0	0.0	0.0	5.8	10 - 60	0 - 26
DC-E4	12.6	--	--	--	--	--	--	--	--	--
<b>Total</b>	<b>72.6</b>									

### Wet Flatwoods (522.8 acres)

Slash pine (*Pinus elliottii*) is the preferred overstory pine species in the natural community. The FNAI reference site in this natural community for wet flatwoods contains slash pine at a basal area (BA) of 10 to 50 square feet per acre with non-pine at a density of 0 trees per acre (TPA). The following table shows the overstory condition for this natural community at Dunns Creek and target overstory condition for wet flatwoods in this natural community.

MZ ID	Wet Flatwoods (Acres)	Current Average Overstory Conditions							Target Overstory Conditions	
		Pine BA (ft <sup>2</sup> /ac)	Pine TPA	Pine Volume (tons/ac)	Non-Pine BA (ft <sup>2</sup> /ac)	Non-Pine TPA	Non-Pine Volume (tons/ac)	Total Pine and Non-Pine Volume (tons/ac)	FNAI Reference Condition Pine BA Range (ft <sup>2</sup> /ac)	FNAI Reference Condition Non-Pine TPA Range
DC-A10	0.4	--	--	--	--	--	--	--	--	--
DC-A11	151.9	73.0	70.4	56.0	28.0	44.6	16.2	72.2	10-50	0 - 0
DC-A9	2.3	--	--	--	--	--	--	--	--	--
DC-B3	30.0	52.0	36.4	49.0	72.0	183.6	45.4	94.3	10-50	0 - 0
DC-C05	1.7	--	--	--	--	--	--	--	--	--
DC-C13	0.7	--	--	--	--	--	--	--	--	--
DC-C15	0.2	--	--	--	--	--	--	--	--	--
DC-D1	235.5	26.7	34.0	19.4	19.6	35.1	16.2	35.6	10-50	0 - 0
DC-D2	15.8	5.0	3.4	3.7	2.5	2.7	0.0	3.7	10-50	0 - 0
DC-E2A	6.0	--	--	--	--	--	--	--	--	--
DC-F2	74.3	31.0	24.8	24.6	6.0	22.1	2.2	26.7	10-50	0 - 0

## Timber Management Analysis

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MZ ID	Wet Flatwoods (Acres)	Current Average Overstory Conditions							Target Overstory Conditions	
		Pine BA (ft <sup>2</sup> /ac)	Pine TPA	Pine Volume (tons/ac)	Non-Pine BA (ft <sup>2</sup> /ac)	Non-Pine TPA	Non-Pine Volume (tons/ac)	Total Pine and Non-Pine Volume (tons/ac)	FNAI Reference Condition Pine BA Range (ft <sup>2</sup> /ac)	FNAI Reference Condition Non-Pine TPA Range
DC-F3	4.0	--	--	--	--	--	--	--	--	--
<b>Total</b>	<b>522.8</b>									

**Addendum 9—Local Government Comprehensive Plan Compliance**



## Putnam County Comprehensive Plan Compliance

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Efforts were made to contact officials at Putnam County to request a review of this unit management plan and its compliance with local zoning designations and land use regulations. No response was received following DRP's communication attempts. Below is a copy of the email from DRP requesting a review of the unit management plan for compliance with the comprehensive plan of Putnam County.

**From:** Baxley, Demi  
**Sent:** Friday, September 07, 2018 10:12 AM  
**To:** mike brown  
**Cc:** Cramer, Holly  
**Subject:** Request for County Compliance Review of DUNNS CREEK STATE PARK Unit Management Plan  
**Attachments:** 6 - DCSP\_AG\_DraftUMP.PDF

Good Morning Mr. Brown,

Hope all is well. We had some communication not too long ago regarding our submitting requests such as this. As a reminder, here's the background and reasoning for the request ... The Florida Department of Environmental Protection, Division of Recreation and Parks, Office of Park Planning is responsible for the unit management planning of all Florida State Parks. As part of this planning process, prior to the unit management plan being presented to its Acquisition and Restoration Council for consideration, the Office of Park Planning is now required to connect and communicate with the area's agency that is responsible for the local comprehensive plan to determine if the park unit management plan is in compliance with the comprehensive plan. Specifically, we want to make sure we are accurately citing the future land use and zoning designations for the park and would like to confirm that our proposed developments in the conceptual land use section comply with those designations. The existing facilities section will also need to be reviewed.

We would like to have the attached Dunns Creek State Park's unit management plan reviewed. Please let me know, if possible, an approximate turn-around time for the review. If you need any clarification regarding the attached document or its contents, please contact Holly Cramer at [holly.cramer@floridadep.gov](mailto:holly.cramer@floridadep.gov) or 850.245.3051. Ms. Cramer, who has been copied with this communication, is the Planner assigned to handle this park's management planning and will be able to answer any questions regarding the attached plan. Of course, as Ms. Cramer's assistant, I am also available to assist if you need any other information or have any questions.

Thank you for your all your help.

Have a good rest of the day!



**Demi P. Baxley**

Government Operations Consultant  
OFFICE OF PARK PLANNING  
Division of Recreation and Parks  
3800 Commonwealth Blvd., MS#525  
Tallahassee, FL 32399  
[Demi.Baxley@floridadep.gov](mailto:Demi.Baxley@floridadep.gov)  
Office: 850.245.3051  
Direct: 850.245.3052  
<https://floridadep.gov/parks>



**Addendum 10 —Land Management Review**



**FLORIDA DEPARTMENT OF  
ENVIRONMENTAL PROTECTION**

**MEMORANDUM**

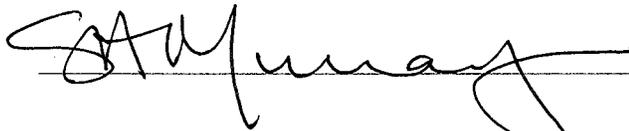
**TO:** Aric Larson, Governmental Operations Consultant III  
Division of State Lands

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

**Parks Small** Digitally signed by Parks Small  
Date: 2016.03.25 11:35:35  
-04'00'

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Sine Murray, Chief, Office of Park Planning  
Division of Recreation and Parks

 4/5/2016

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**SUBJECT:** Response to Draft Land Management Review (LMR)  
Dunns Creek State Park

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

Attached is DRP's Managing Agency Response to the draft LMR report. The responses were prepared via a coordinated effort of the park, district office, and our offices.

Thank you for your attention.

/ca

# 2015 Land Management Review Team Report for Dunns Creek State Park

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## 1. Introduction

Section 259.036, F.S. requires a periodic on-site review of conservation and recreation lands titled in the name of the Board of Trustees to determine (1) whether the lands are being managed for the purposes for which they were acquired and (2) whether they are being managed in accordance with their land management plan adopted pursuant to s. 259.032, F.S. In case where the managed areas exceed 1,000 acres in size, such a review must be scheduled at least every five years. In conducting this review, a statutorily constructed review team “shall evaluate the extent to which the existing management plan provides sufficient protection to threatened or endangered species, unique or important natural or physical features, geological or hydrological functions or archaeological features. The review shall also evaluate the extent to which the land is being managed for the purposes for which it was acquired and the degree to which actual management practices, including public access, are in compliance with the adopted management plan.”

The land management review teams are coordinated by the Division of State Lands and consist of representatives from the Division of Recreation and Parks (DEP), the Florida Forest Service (DACS), the Fish and Wildlife Conservation Commission, the local government in which the property is located, the DEP District in which the parcel is located, the local soil and water conservation district, a conservation organization member, and a local private land manager.

Each Land Management Review Report is divided into three sections. Section 1 provides the details of the property being reviewed as well as the overall results of the report. Section 2 provides details of the Field Review, in which the Review Team inspects the results of management actions on the site. Section 3 provides details of the Land Management Plan Review, in which the team determines the extent to which the Management Plan provides for and documents adequate natural and recreational resource protection.

Finally, each report may also contain an Appendix that lists individual team member comments. This is a compilation of feedback, concerns or other thoughts raised by individual team members, but not necessarily indicative of the final consensus reached by the Land Management Review Team.

## 1.1. Property Reviewed in this Report

**Name of Site:** Dunns Creek State Park

**Managed by:** Department of Environmental Protection, Division of Recreation and Parks

**Acres:** 6,302.63

**County:** Putnam

**Purpose(s) for Acquisition:** To protect habitat for such wildlife as manatee - which occasionally use the creek - gopher tortoise, and wading birds, and will give the public a scenic area in which to enjoy a host of activities such as canoeing, camping, and hiking (CARL Annual Report, 1999).

**Acquisition Program(s):** P2000 / CARL

**Original Acquisition Date:** 10/10/01

**Area Reviewed:** Entire Property

**Last Management Plan Approval Date:** 9/01/04

**Review Date:** 9/3/15

### Agency Manager and Key Staff Present:

- Mark Giblin, Park Manager
- Ashley Regelski, Park Services Specialist
- Jason DePue, DRP District 3 Biologist
- Justin Flinchum, Asst. Park Manager

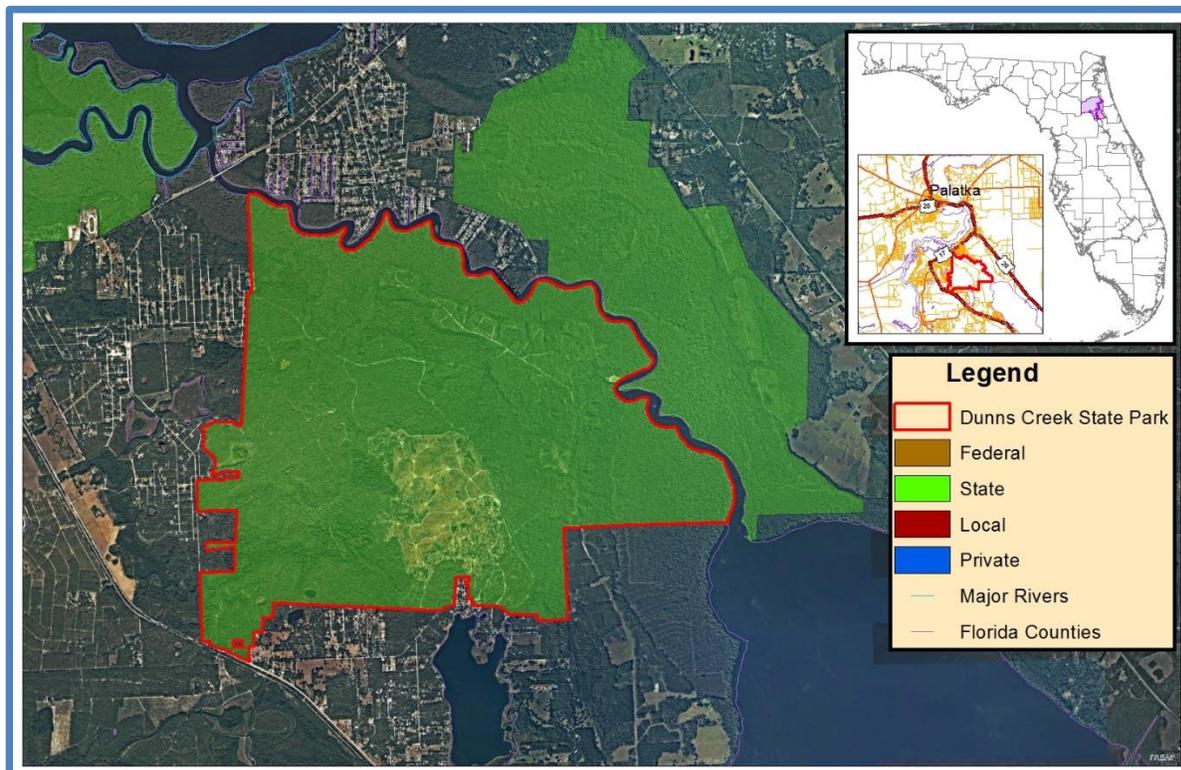
### Review Team Members Present (voting)

- DRP: Alice Bard
- FWC: Jimmy Conner
- FFS: Doug Longshore
- DEP: Kimberly Pearce
- SWCD:
- Local gov't:
- Conservation organization: Walter Bryant
- Private land manager:

### Other Non-Team Members Present (attending)

- Aric Larson, DEP/DSL
- John Kunzer, FWC/IPMS

## 1.2 Property Map



### 1.3. Overview of Land Management Review Results

**Is the property managed in accordance with the purposes for which it was acquired?**

**Yes = 5, No = 0**

**Are the management practices, including public access, in compliance with the management plan?**

**Yes = 5, No = 0**

Table 1 shows the average scores received for each applicable category of review. *Field Review* scores refer to the adequacy of management actions in the field, while *Management Plan Review* scores refer to adequacy of discussion of these topics in the management plan. Scores range from 1 to 5 with 5 signifying excellence. For a more detailed key to the scores, please see Appendix A.

Table 1: Results at a glance.

Major Land Management Categories	Field Review	Management Plan Review
Natural Communities / Forest Management	4.23	2.88
Prescribed Fire / Habitat Restoration	4.47	2.47
Hydrology	3.71	3.00
Imperiled Species	4.25	3.47
Exotic / Invasive Species	3.93	2.87
Cultural Resources	4.50	4.20
Public Access / Education / Law Enforcement	4.14	3.66
Infrastructure / Equipment / Staffing	3.03	N/A

Color Code (See Appendix A for detail)

Excellent	Above Average	Below Average	Poor
-----------	---------------	---------------	------

#### 1.3.1 Consensus Commendations for the Managing Agency

The following commendations resulted from discussion and vote of the review team members:

1. The team commends the DRP staff for natural community restoration efforts, including the use of roller chopping and fuelwood harvests as management tools. (5+, 0-)
2. The team commends the DRP staff for implementing a successful and proactive fire management program. (5+, 0-)
3. The team commends the DRP staff for aggressive invasive plant control efforts. (5+, 0-)
4. The team commends the DRP staff for management of the diverse natural communities within the park; to include prescribed burning, invasive species control, and restoration, all executed with minimal staff and funding. (5+, 0-)
5. The team commends the DRP staff for efforts to expand public access and recreational opportunities within the park. (5+, 0-)

### 1.3.2. Consensus Recommendations to the Managing Agency

The following recommendations resulted from a discussion and vote of review team members. The next management plan update should include information about how these recommendations have been addressed:

1. The team recommends that DRP staff implement pertinent wildlife surveys to help gauge the success of habitat management / restoration efforts. (5+, 0-)

**Managing Agency Response:** *Agree. DRP is currently monitoring species diversity and richness within select areas of the restoration area; however this effort can be expanded to include other wildlife species.*

2. The team recommends that DRP staff continue the aggressive invasive plant and animal control efforts at the park. (5+, 0-)

**Managing Agency Response:** *Agree. DRP will continue to control invasive exotic species on the park as we understand the ecological damage that can be caused by these species. A variety of methods and techniques have been used such as USDA Wildlife Services and in-house trapping in order to control the spread of these species within the area.*

3. The team recommends that DRP staff consider implementing the use of broadcast herbicide on a “test” basis in appropriate situations for comparison of results and costs. (5+, 0-)

**Managing Agency Response:** *Agree. DRP has used VELPAR (Hexazinone) within the three management zones within the sandhill restoration areas in order to attempt to control the density of hardwoods with great results. Foliar and basal applications of Garlon products has also proven to be valuable tool in control densities of shrubby vegetation. DRP will continue to expand this project into other areas of the park to test the suitability and usefulness of herbicides for broadcast application.*

4. The team recommends that DRP competitively bid out any future fuelwood harvests (which aid in restoration) to cover harvest expenses, if possible. (5+, 0-)

**Managing Agency Response:** *Agree. There is one main area near the Blue Pond trailhead that is currently on the list for a future fuelwood harvest. Once the park burns and improves some of the other areas that were harvested in 2011 and 2012, then the next phase is to branch out and harvest the Blue Pond area.*

5. The team recommends that DRP seek the necessary funding for additional longleaf pine planting for natural community restoration. (5+, 0-)

**Managing Agency Response:** *Agree. DRP is currently looking at several opportunities to find funding to purchase and install longleaf pines in the park such as The Longleaf Alliance, FWC Legacy funding, and other grants that relate to this type of restoration activities.*

6. The team recommends that when conducting fire line prep/maintenance in areas of known invasive plant occurrences, staff utilize acceptable BMPs such as portable decontamination equipment to avoid spreading these infestations. (5+, 0-)

**Managing Agency Response:** *Agree. DRP has been diligent in attempting to control invasive exotic species in the park and will continue to expand on its control and prevention methods.*

7. The team recommends that DRP seek funding to conduct a comprehensive hydrologic study for the park, with a focus on the main park drive vicinity. (5+, 0-)

**Managing Agency Response:** *Agree. A hydrological assessment is needed for this area and will be listed as a need in the next Unit Management Plan for the park.*

## 2. Field Review Details

### 2.1. Field Review Checklist Findings

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

1. **Natural Communities; specifically mesic flatwoods, scrub, scrubby flatwoods, slope forest, upland mixed forest, xeric hammock, baygall, depression marsh, floodplain forest, floodplain swamp, wet flatwoods, sandhill upland lake, sinkhole lake, seepage stream, and blackwater stream:**
2. **Listed Species Protection and Preservation; for listed animal species in general, listed plant species in general, and specifically for *Conradina signiflora*.**
3. **Natural Resources Survey/Monitoring Resources; specifically other habitat management effects monitoring, and invasive species survey and monitoring:**
4. **Cultural Resources; specifically cultural resource survey, and protection and preservation:**
5. **Prescribed Fire; specifically area being burned, frequency, and quality:**
6. **Restoration of scrub, sandhill, and seepage slope:**
7. **Forest Management; specifically timber harvesting and site preparation:**
8. **Non-Native, Invasive & Problem Species; specifically prevention and control of plants and animals:**
9. **Hydro-alteration; specifically roads/culverts:**
10. **Ground Water Monitoring, specifically for water quality and water quantity:**
11. **Resource Protection; specifically boundary survey, gates and fencing, and signage:**
12. **Public Access; specifically access by boat:**
13. **Environmental Education and Outreach, specifically pertaining to wildlife, Invasive species, habitat management activities, and management of visitor impacts:**
14. **Management Resources; specifically waste disposal, sanitary facilities, and equipment:**

## 2.2. Items Requiring Improvement Actions in the Field

The following items received low scores on the review team checklist, which indicates that management actions noted during the Field Review were not considered sufficient (less than 3.0 score on average).

Please note that overall good scores do not preclude specific recommendations by the review team requiring remediation. **The management plan update should include information on how these items have been addressed:**

1. **The maintenance condition of the Natural Communities, specifically for wet prairie, received below average scores. The review team is asked to evaluate, based on their perspective, what percent of the natural community is in maintenance condition. The scores range from 1 to 5, with 1 being 0-20% in maintenance condition, 2 being 21-40%, 3 being 41-60%, 4 being 61-80% and 5 being 81-100%.**

*Managing Agency Response: Agree. Only a small portion of this community exists on the edge of the property within Sugarbowl Lake on the western portion of the property. The park currently does not own all of the lake which makes conducting a prescribed fire in the community difficult because of the lack of control lines around the unit. Also, this community suffers from a lack of hydrology due to the fluctuation in the water table in the last several decades, making the site overall dry with the potential of a muck fire if it is burned.*

2. **Management Resources; specifically buildings, staff, and funding, received a below average score. The review team is asked to evaluate, based on information provided by the managing agency, whether management resources are sufficient.**

*Managing Agency Response: Agree. However, no new staff can be assigned to this or any other park unit unless they are appropriated by the Legislature or reassigned from other units. Funding is determined annually by the Florida Legislature.*

## 2.3. Field Review Checklist and Scores

Field Review Item	Reference #	Anonymous Team Members								Average
		1	2	3	4	5	6	7	8	
<b>Natural Communities ( I.A )</b>										
Mesic Flatwoods	I.A.1	5	5	5	5	5				5.00
Sandhill	I.A.2	4	4	3	4	4				3.80
Scrub	I.A.3	5	4	4	3	4				4.00
Scrubby Flatwoods	I.A.4	5	5	5	4	5				4.80
Slope Forest	I.A.6	5	5	5	5	5				5.00
Upland Mixed Forest	I.A.7	5	5	4	5	5				4.80
Xeric Hammock	I.A.8	5	5	5	5	5				5.00
Baygall	I.A.9	5	4	4	4	4				4.20

Depression Marsh	I.A.11	4	4	4	5	4				4.20
Floodplain Forest	I.A.12	5	5	5	5	5				5.00
Floodplain Swamp	I.A.13	5	5	5	4	4				4.60
Seepage Slope	I.A.14	3	4	3	3	3				3.20
Wet Flatwoods	I.A.15	5	2	3	5	5				4.00
Wet Prairie	I.A.16	3	1	1	3	3				2.20
Sandhill Upland Lake	I.A.17	5	5	5	5	4				4.80
Sinkhole Lake	I.A.18	4	5	4	4	4				4.20
Seepage Stream	I.A.19	5	5	5	5	5				5.00
Blackwater Stream	I.A.20	5	5	4	5	4				4.60
<b>Natural Communities Average Score</b>										4.36

<b>Listed Species: Protection &amp; Preservation ( I.B )</b>										
Animals	I.B.1	3	5		5	4				4.25
Plants	I.B.2	3	5		4	4				4.00
<i>Conradina signaflora</i>	I.B.2.a	3	5	5		5				4.50
<b>Listed Species Average Score</b>										4.25

<b>Natural Resources Survey/Management Resources (I.C)</b>										
Listed species or their habitat monitoring	I.C.2	4	5	3	3	4				3.80
Other non-game species or their habitat monitoring	I.C.3	4	5	2	3	4				3.60
Fire effects monitoring	I.C.4	4	4	2	3	4				3.40
Other habitat management effects monitoring	I.C.5	4	5	4	3	4				4.00
Invasive species survey / monitoring	I.C.6	5	5	5	5	4				4.80

<b>Cultural Resources (Archeological &amp; Historic sites) (II.A, II.B )</b>										
Cultural Res. Survey	II.A	5	4	5	4	4				4.40
Protection and preservation	II.B	5	5	5	4	4				4.60
<b>Cultural Resources Average Score</b>										4.50

<b>Resource Management, Prescribed Fire (III.A)</b>										
Area Being Burned (no. acres)	III.A1	5	5	4	5	5				4.80
Frequency	III.A.2	5	5	4	5	4				4.60
Quality	III.A.3	5	4	5	5	4				4.60
<b>Resource Management, Prescribed Fire Average Score</b>										4.67

<b>Restoration (III.B)</b>										
Scrub	III.B.1	5	4	5	4	4				4.40
Sandhill	III.B.2	5	3	5	4	4				4.20
Seepage Slope	III.B.3	5	3	5	4	4				4.20
<b>Restoration Average Score</b>										4.27

<b>Forest Management (III.C)</b>										
Timber Inventory	III.C.1	4	4	4	4	3				3.80
Timber Harvesting	III.C.2	5	4	5	4	4				4.40
Reforestation/Afforestation	III.C.3	4	2	5	4	3				3.60
Site Preparation	III.C.4	5	5	5	4	4				4.60
<b>Forest Management Average Score</b>										4.10

<b>Non-Native, Invasive &amp; Problem Species (III.D)</b>										
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<b>Prevention</b>										
prevention - plants	III.D.1.a	5	5	5	3	3				4.20
prevention - animals	III.D.1.b	5	5	5	3	3				4.20
prevention - pests/pathogens	III.D.1.c	5	3	5	3	3				3.80
<b>Control</b>										
control - plants	III.D.2.a	5	4	5	3	3				4.00
control - animals	III.D.2.b	5		5	3	3				4.00
control - pest/pathogens	III.D.2.c	3	3	5	3	3				3.40
<b>Non-Native, Invasive &amp; Problem Species Average Score</b>										3.93
<b>Hydrologic/Geologic function Hydro-Alteration (III.E.1)</b>										
Roads/culverts	III.E.1.a	5	4	5	3	3				4.00
Ditches	III.E.1.b	5	X	5	2	3				3.75
Hydro-period Alteration	III.E.1.c	5	2	4	3	3				3.40
<b>Hydrologic/Geologic function, Hydro-Alteration Average Score</b>										3.72
<b>Ground Water Monitoring (III.E.2)</b>										
Ground water quality	III.E.2.a	4	5	5	5	3				4.40
Ground water quantity	III.E.2.b	4	5	5	5	3				4.40
<b>Ground Water Monitoring Average Score</b>										4.40
<b>Surface Water Monitoring (III.E.3)</b>										
Surface water quality	III.E.3.a	5	1	4	2	3				3.00
<b>Surface Water Monitoring Average Score</b>										3.00
<b>Resource Protection (III.F)</b>										
Boundary survey	III.F.1	5	5	5	4	5				4.80
Gates & fencing	III.F.2	5		5	2	4				4.00
Signage	III.F.3	5	4	5	4	3				4.20
Law enforcement presence	III.F.4	4	4	4	4	3				3.80
<b>Resource Protection Average Score</b>										4.20
<b>Adjacent Property Concerns (III.G)</b>										
<b>Land Use</b>										
Expanding development	III.G.1.a	4	4	5	3	3				3.80
Exotics from Adjacent Residential	III.G.1.b	4		4	3	2				3.25
Inholdings/additions	III.G.2	5	5	4	3	2				3.80
<b>Public Access &amp; Education (IV.1, IV.2, IV.3, IV.4, IV.5)</b>										
<b>Public Access</b>										
Roads	IV.1.a	5	4	2	3	3				3.40
Parking	IV.1.b	5	5	2	3	3				3.60
Boat Access	IV.1.c	5	5	5	3	3				4.20
<b>Environmental Education &amp; Outreach</b>										
Wildlife	IV.2.a	5	5	5	4	4				4.60
Invasive Species	IV.2.b	5	5	5	4	4				4.60
Habitat Management Activities	IV.2.c	5	5	5	4	4				4.60
Interpretive facilities and signs	IV.3	5	4	3	4	2				3.60
Recreational Opportunities	IV.4	5	5	2	5	2				3.80
Management of Visitor Impacts	IV.5	5	5	4	5	3				4.40

<b>Public Access &amp; Education Average Score</b>										4.09
<b>Management Resources (V.1, V.2, V.3, V.4)</b>										
<b>Maintenance</b>										
Waste disposal	V.1.a	4	5	5	4	3				4.20
Sanitary facilities	V.1.b	4	5	5	4	2				4.00
<b>Infrastructure</b>										
Buildings	V.2.a	2	4	2	3	3				2.80
Equipment	V.2.b	5	5	5	5	5				5.00
Staff	V.3	1	2	1	1	1				1.20
Funding	V.4	1	1	1	1	1				1.00
<b>Management Resources Average Score</b>										3.03
Color Code:		Excellent	Above Average	Below Average	Poor	See Appendix A for detail				
		Missing Vote	Insufficient Information							

### 3. Land Management Plan Review Details

#### 3.1 Items Requiring Improvements in the Management Plan

The following items received low scores on the review team checklist, which indicates that the text noted in the Management Plan Review does not sufficiently address this issue (less than 3.0 score on average.). Please note that overall good scores do not preclude specific recommendations by the review team requiring remediation. The next management plan update should address the checklist items identified below:

1. **Natural Communities; specifically mesic flatwoods, sandhill, scrub, scrubby flatwoods, slope forest, upland mixed forest, xeric hammock, baygall, depression marsh, floodplain forest, floodplain swamp, seepage slope, wet flatwoods, wet prairie, sandhill upland lake, sinkhole lake, seepage stream, and blackwater stream, received below average scores. This is an indication that the management plan does not sufficiently address current or desired condition and/or future management actions to protect or restore natural communities.**

**Managing Agency Response:** *Agree. A current condition assessment and future desired conditions for each natural community will be included in the next unit management plan (UMP) for the park scheduled for 2016. The current plan was reviewed by the relevant agencies and was in full compliance with Chapters 253 and 259, F.S., and Chapter 18-2, F.A.C., when it was approved by ARC. The next update of this plan will be in full compliance with changes made to the statutes noted above by the Florida Legislature in 2008.*

2. **Resource management, prescribed fire; specifically fire frequency and quality, received a below average score. This is an indication that the management plan does not sufficiently address prescribed fire.**

**Managing Agency Response:** *Agree. The current plan does not address these variables but they will be included in the next UMP of the park scheduled for 2016. The current plan was reviewed by the relevant agencies and was in full compliance with Chapters 253 and 259, F.S., and Chapter 18-2, F.A.C., when it was approved by ARC. The next update of this plan will be in full compliance with changes made to the statutes noted above by the Florida Legislature in 2008.*

- 3. Restoration; specifically for scrub, sandhill, and seepage slope, received below average scores. This is an indication that the management plan does not sufficiently address restoration.**

**Managing Agency Response:** *Agree. When the property was acquired in 2001, a separate restoration plan for the park was written by TNC. Because of its size, it was not included in the parks UMP; however, a goals and objectives for restoration will be included in the next UMP for the park. The current plan was reviewed by the relevant agencies and was in full compliance with Chapters 253 and 259, F.S., and Chapter 18-2, F.A.C., when it was approved by ARC. The next update of this plan will be in full compliance with changes made to the statutes noted above by the Florida Legislature in 2008.*

- 4. Forest Management, specifically reforestation, received a below average score. This is an indication that the management plan does not sufficiently address reforestation.**

**Managing Agency Response:** *Agree. Reforestation goals and objectives will be included in the next UMP for the park. The current t plan was reviewed by the relevant agencies and was in full compliance with Chapters 253 and 259, F.S., and Chapter 18-2, F.A.C., when it was approved by ARC. The next update of this plan will be in full compliance with changes made to the statutes noted above by the Florida Legislature in 2008.*

- 5. Non-native, Invasive & Problem Species, specifically prevention and control of pests/pathogens, received below average scores. This is an indication that the management plan does not sufficiently address prevention of pests/pathogens.**

**Managing Agency Response:** *Disagree. The current UMP does outline control methods and prevention of exotic species, but these areas could be expanded upon in the next UMP for the park. The current plan was reviewed by the relevant agencies and was in full compliance with Chapters 253 and 259, F.S., and Chapter 18-2, F.A.C., when it was approved by ARC. The next update of this plan will be in full compliance with changes made to the statutes noted above by the Florida Legislature in 2008.*

- 6. Hydrologic/Geologic function, Hydro-Alteration; specifically roads/culverts, ditches, and hydro-period alteration, received a below average score. This is an indication that the management plan does not sufficiently address hydrologic and geologic function.**

**Managing Agency Response:** *Agree. At the time the current plan was developed, some of the hydrological alterations were not known. A hydrological assessment is needed and will be addressed in the next UMP for the park. Still the current plan was reviewed by the relevant agencies and was in full compliance with Chapters 253 and 259, F.S., and Chapter 18-2, F.A.C., when it was approved by ARC. The next update of this plan will be in full compliance with changes made to the statutes noted above by the Florida Legislature in 2008.*

7. **Surface Water Monitoring, specifically water quality, received a below average score. This is an indication that the management plan does not sufficiently address surface water quality monitoring.**

**Managing Agency Response:** *Agree. DRP currently does not monitor surface water quality but the SJRWMD is monitoring groundwater and surface water in the adjacent areas and will notify the park of a problem if one is found to exist. The current plan was reviewed by the relevant agencies and was in full compliance with Chapters 253 and 259, F.S., and Chapter 18-2, F.A.C., when it was approved by ARC. The next update of this plan will be in full compliance with changes made to the statutes noted above by the Florida Legislature in 2008.*

8. **Adjacent Property Concerns, specifically land use concerns associated with adjacent invasive plants, received a below average score. This is an indication that the management plan does not sufficiently address adjacent property concerns.**

**Managing Agency Response:** *Agree. At the time that the last plan was written, some of these problems did not exist or were not known. A plan of action and goals for invasive species located offsite will be addressed in the next UMP for the park. The current plan was reviewed by the relevant agencies and was in full compliance with Chapters 253 and 259, F.S., and Chapter 18-2, F.A.C., when it was approved by ARC. The next update of this plan will be in full compliance with changes made to the statutes noted above by the Florida Legislature in 2008.*

9. **Discussion of potential surplus land determination received a below average score. This is an indication that the management plan does not sufficiently discuss the process by which potential surplus lands are determined.**

**Managing Agency Response:** *Agree. At the time that the last plan was written, a discussion of possible surplus lands was not included but will be included in the next UMP for the park. The current plan was reviewed by the relevant agencies and was in full compliance with Chapters 253 and 259, F.S., and Chapter 18-2, F.A.C., when it was approved by ARC. The next update of this plan will be in full compliance with changes made to the statutes noted above by the Florida Legislature in 2008.*

### 3.2 Management Plan Review Checklist and Scores

Plan Review Item	Reference #	Anonymous Team Members								Average
		1	2	3	4	5	6	7	8	
<b>Natural Communities ( I.A )</b>										
Mesic Flatwoods	I.A.1	3	3	3	2	2				2.60
Sandhill	I.A.2	3	3	3	1	2				2.40
Scrub	I.A.3	3	3	3	1	2				2.40
Scrubby Flatwoods	I.A.4	3	2	3	1	2				2.20
Slope Forest	I.A.6	3	3	3	2	2				2.60
Upland Mixed Forest	I.A.7	3	3	3	1	2				2.40
Xeric Hammock	I.A.8	3	3	3	1	2				2.40
Baygall	I.A.9	3	3	3	2	2				2.60
Depression Marsh	I.A.11	3	3	3	2	2				2.60
Floodplain Forest	I.A.12	3	3	3	2	2				2.60
Floodplain Swamp	I.A.13	3	3	3	2	2				2.60
Seepage Slope	I.A.14	3	2	3	2	2				2.40
Wet Flatwoods	I.A.15	3	3	3	2	2				2.60
Wet Prairie	I.A.16	3	3	3	1	2				2.40
Sandhill Upland Lake	I.A.17	3	3	3	2	2				2.60
Sinkhole Lake	I.A.18	3	3	3	1	2				2.40
Seepage Stream	I.A.19	3	3	3	2	2				2.60
Blackwater Stream	I.A.20	3	4	3	2	2				2.80
<b>Natural Communities Average Score</b>										2.51
<b>Listed species: Protection &amp; Preservation ( I.B )</b>										
Animals	I.B.1	4	5	5	4	2				4.00
Plants	I.B.2	3	5	3	4	2				3.40
<i>Conradina Signaflora</i>	I.B.2.a	2	5	3		2				3.00
<b>Listed Species Average Score</b>										3.47
<b>Natural Resources Survey/Management Resources (I.C)</b>										
Listed species or their habitat monitoring	I.C.2	3	5	4		2				3.50
Other non-game species or their habitat monitoring	I.C.3	2	5			2				3.00
Fire effects monitoring	I.C.4	4	5			2				3.67
Other habitat management effects monitoring	I.C.5	2	5			2				3.00
Invasive species survey / monitoring	I.C.6	3	5	2		2				3.00
<b>Cultural Resources (Archeological &amp; Historic sites) (II.A,II.B )</b>										
Cultural Res. Survey	II.A	5	5	5	4	2				4.20
Protection and preservation	II.B	5	5	5	4	2				4.20
<b>Cultural Resources Average Score</b>										4.20
<b>Resource Management, Prescribed Fire (III.A)</b>										
Area Being Burned (no. acres)	III.A.1	3	5	2	3	2				3.00
Frequency	III.A.2	3	4	2	2	2				2.60
Quality	III.A.3	3	4	2	2	2				2.60

<b>Resource Management, Prescribed Fire Average Score</b>										2.73
<b>Restoration (III.B)</b>										
Scrub	III.B.1	3	2	2	1	3				2.20
Sandhill	III.B.2	3	2	2	1	3				2.20
Seepage Slope	III.B.3	3	2	2	1	3				2.20
<b>Restoration Average Score</b>										2.20
<b>Forest Management (III.C)</b>										
Timber Inventory	III.C.1	3	5	4	5	2				3.80
Timber Harvesting	III.C.2	3	3	4	5	2				3.40
Reforestation/Afforestation	III.C.3	3	2	4	3	2				2.80
Site Preparation	III.C.4	3	3	4	3	2				3.00
<b>Forest Management Average Score</b>										3.25
<b>Non-Native, Invasive &amp; Problem Species (III.D)</b>										
<b>Prevention</b>										
prevention - plants	III.E.1.a	3	5	4	3	2				3.40
prevention - animals	III.E.1.b	3	5	4	3	2				3.40
prevention - pests/pathogens	III.E.1.c	2	1	2	3	2				2.00
<b>Control</b>										
control - plants	III.E.2.a	3	4	4	2	2				3.00
control - animals	III.E.2.b	3	4	4	2	2				3.00
control - pest/pathogens	III.E.2.c	2	2	3	3	2				2.40
<b>Non-Native, Invasive &amp; Problem Species Average Score</b>										2.87
<b>Hydrologic/Geologic function, Hydro-Alteration (III.E.1)</b>										
Roads/culverts	III.F.1.a	3	5	3	1	1				2.60
Ditches	III.F.1.b	3	3	3	1	1				2.20
Hydro-period Alteration	III.F.1.c	3	3	3	2	1				2.40
<b>Hydrologic/Geologic function, Hydro-Alteration Average Score</b>										2.40
<b>Ground Water Monitoring (III.E.2)</b>										
Ground water quality	III.F.2.a	3	5	5	3	3				3.80
Ground water quantity	III.F.2.b	3	5	5	3	3				3.80
<b>Ground Water Monitoring Average Score</b>										3.80
<b>Surface Water Monitoring (III.E.3)</b>										
Surface water quality	III.F.3.a	3	3	5	2	1				2.80
<b>Surface Water Monitoring Average Score</b>										2.80
<b>Resource Protection (III.F)</b>										
Boundary survey	III.G.1	3	5	5	3	2				3.60
Gates & fencing	III.G.2	3	5	5	3	2				3.60
Signage	III.G.3	3	5	5	3	2				3.60
Law enforcement presence	III.G.4	3	5	5	3	2				3.60
<b>Resource Protection Average Score</b>										3.60
<b>Adjacent Property Concerns (III.G)</b>										
<b>Land Use</b>										
Expanding development	III.H.1.a	3	4	3	3	2				3.00

Adjacent invasive plant	III.H.1.b	3	4	3	1	2				2.60
Inholdings/additions	III.H.2	4	5	4	3	3				3.80
Discussion of Potential Surplus Land Determination	III.H.3	2	1	2	1	1				1.40
Surplus Lands Identified?	III.H.4	2	4	5	3	5				3.80
<b>Public Access &amp; Education (IV.1, IV.2, IV.3, IV.4, IV.5)</b>										
<b>Public Access</b>										
Roads	IV.1.a	5	5	5	3	2				4.00
Parking	IV.1.b	5	5	5	3	2				4.00
Boat Access	IV.1.c	5	5	5	3	2				4.00
<b>Environmental Education &amp; Outreach</b>										
Wildlife	IV.2.a	3	5	5	3	2				3.60
Invasive Species	IV.2.b	3	5	5	3	2				3.60
Habitat Management Activities	IV.2.c	3	5	5	3	2				3.60
Interpretive facilities and signs	IV.3	3	5	5	3	2				3.60
Recreational Opportunities	IV.4	3	5	5	4	2				3.80
Management of Visitor Impacts	IV.5	3	5	5	1	2				3.20
<b>Public Access &amp; Education Average Score</b>										3.71
<b>Managed Area Uses (VI.A, VI.B)</b>										
<b>Existing Uses</b>										
Picnicking	VI.A.1	5	5	5	5	3				4.60
Fishing	VI.A.2	5	5	5	5	3				4.60
Canoeing/Kayaking	VI.A.3	5	5	5	5	3				4.60
Trail Use	VI.A.4	5	5	5	5	3				4.60
Educational Research	VI.A.5	5	5	5	5	3				4.60
Equestrian Use	VI.A.6	5	5	5	4	3				4.40
<b>Proposed Uses</b>										
Camping	VI.B.1	3	5	5	4	3				4.00
Cabins	VI.B.2	3	2	5	3	3				3.20
Bot Docking Facility \ Riverboat Tours	VI.B.3	3	5	5	3	3				3.80
Concession facility	VI.B.4	3	3	5	2	3				3.20
Ranger Station	VI.B.5	3	5	5	5	3				4.20
Boardwalks and Overlooks	VI.B.6	3	3	5	5	3				3.80

Color Code: Excellent Above Average Below Average Poor Missing Vote Insufficient Information See Appendix A for detail

## **Appendix A: Scoring System Detail**

### **Explanation of Consensus Commendations:**

Often, the exceptional condition of some of the property's attributes impress review team members. In those instances, team members are encouraged to offer positive feedback to the managing agency in the form of a commendation. The teams develop commendations generally by standard consensus processes or by majority vote if they cannot obtain a true consensus.

### **Explanation of Consensus Recommendations:**

Subsection 259.036(2), F.S., specifically states that the managing entity shall consider the findings and recommendations of the land management review. We ask team members to provide general recommendations for improving the management or public access and use of the property. The teams discuss these recommendations and develop consensus recommendations as described above. We provide these recommendations to the managing agency to consider when finalizing the required ten-

year management plan update. We encourage the manager to respond directly to these recommendations and include their responses in the final report when received in a timely manner.

**Explanation of Field Review Checklist and Scores, and Management Plan Review Checklist and Scores:**

We provide team members with a checklist to fill out during the evaluation workshop phase of the Land Management Review. The checklist is the uniform tool used to evaluate both the management actions and condition of the managed area, and the sufficiency of the management plan elements. During the evaluation workshop, team members individually provide scores on each issue on the checklist, from their individual perspective. Team members also base their evaluations on information provided by the managing agency staff as well as other team member discussions. Staff averages these scores to evaluate the overall conditions on the ground, and how the management plan addresses the issues. Team members must score each management issue 1 to 5: 1 being the management practices are clearly insufficient, and 5 being that the management practices are excellent. Members may choose to abstain if they have inadequate expertise or information to make a cardinal numeric choice, as indicated by an "X" on the checklist scores, or they may not provide a vote for other unknown reasons, as indicated by a blank. If a majority of members failed to vote on any issue, that issue is determined to be irrelevant to management of that property or it was inadequately reviewed by the team to make an intelligent choice. In either case staff eliminated the issue from the report to the manager.

**Average scores are interpreted as follows:**

Scores 4.0 to 5.0 are *Excellent*

Scores 3.0 to 3.99 are *Above Average*

Scores 2.0 to 2.99 are *Below Average*

Scores 1.0 to 1.99 are considered *Poor*