



FLORIDA DEPARTMENT OF Environmental Protection

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October 19, 2018

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

RE: Kissimmee Prairie Preserve State Park - Lease No. 4166

Dear Mr. Cutshaw:

On **October 19, 2018**, the Acquisition and Restoration Council (ARC) recommended approval of the **Kissimmee Prairie Preserve 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 **Kissimmee Prairie Preserve State Park** management plan. The next management plan update is due October 19, 2028.

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.

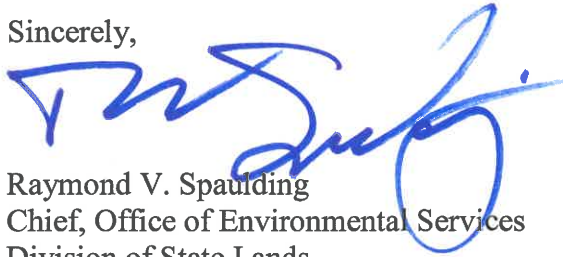
Pursuant to s. 259.036(2), F.S., management areas that exceed 1,000 acres in size, shall be scheduled for a land management review at least every 5 years.

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

Kissimmee Prairie Preserve State Park

Approved Unit Management Plan

**STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**Division of Recreation and Parks
January 2019**



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INTRODUCTION

Kissimmee Prairie Preserve State Park is located in Okeechobee and Osceola counties (see Vicinity Map). Access to the park is from NW 192nd Ave. (Peavine Trail), which is west of CR 724 and US 441, 23 miles north of the City of Okeechobee (see Reference Map). The Vicinity Map also reflects significant land and water resources existing near the park.

Kissimmee Prairie Preserve State Park was initially acquired on March 14, 1997 with funds from the Conservation and Recreation Lands (CARL) and Preservation 2000 (P2000) programs. Since the initial purchase, additional parcels were acquired through the P2000/Additions and Inholdings (A & I) program and through a donation of 20 acres from a private entity. Currently, the park comprises 53,738.31 acres. The Board of Trustees of the Internal Improvement Trust Fund (Trustees), the South Florida Water Management District (SFWMD) and Laura C. Olthafer hold fee simple title to the park. On March 22, 1999, the Trustees leased (Lease Number 4166) an undivided 76.2 percent interest in the property to the Division of Recreation and Parks (DRP) under a 50-year lease. The current lease will expire on March 18, 2049. The SFWMD's undivided 23.8 percent interest in the property is managed under a 50-year lease (Lease Number C-8318), which began on March 12, 1998 and will expire on March 11, 2048. The Division leased a 20-acre property on March 1, 2000 from Laura C. Olthafer to manage as part of the park. This lease renews itself annually, unless the Division notifies Ms. Olthafer in writing that the Division does not wish to extend the lease.

Kissimmee Prairie Preserve 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). A legal description of the park property can be made available upon request to the Department of Environmental Protection.

Purpose and Significance of the Park

The purpose of Kissimmee Prairie Preserve State Park is to protect and preserve Florida's largest tract of high quality, Florida dry prairie, to establish a protected corridor with adjacent conservation lands, and to provide outstanding outdoor recreation and natural resource interpretation for the benefit of the people of Florida.

Park Significance

Given its remoteness, immense scale, and scenic beauty, Kissimmee Prairie Preserve State Park has a grandeur all its own. The park safeguards the largest remaining contiguous tract of Florida dry prairie, a rare natural community endemic to the state. This vast prairie landscape contains remnant populations of iconic species that historically had a wider distribution in south-central Florida, most notably the Florida grasshopper sparrow, the Florida burrowing owl, and crested

caracara. The park also has one of the highest butterfly species diversities in the state, and at least 19 imperiled plant species occur here.

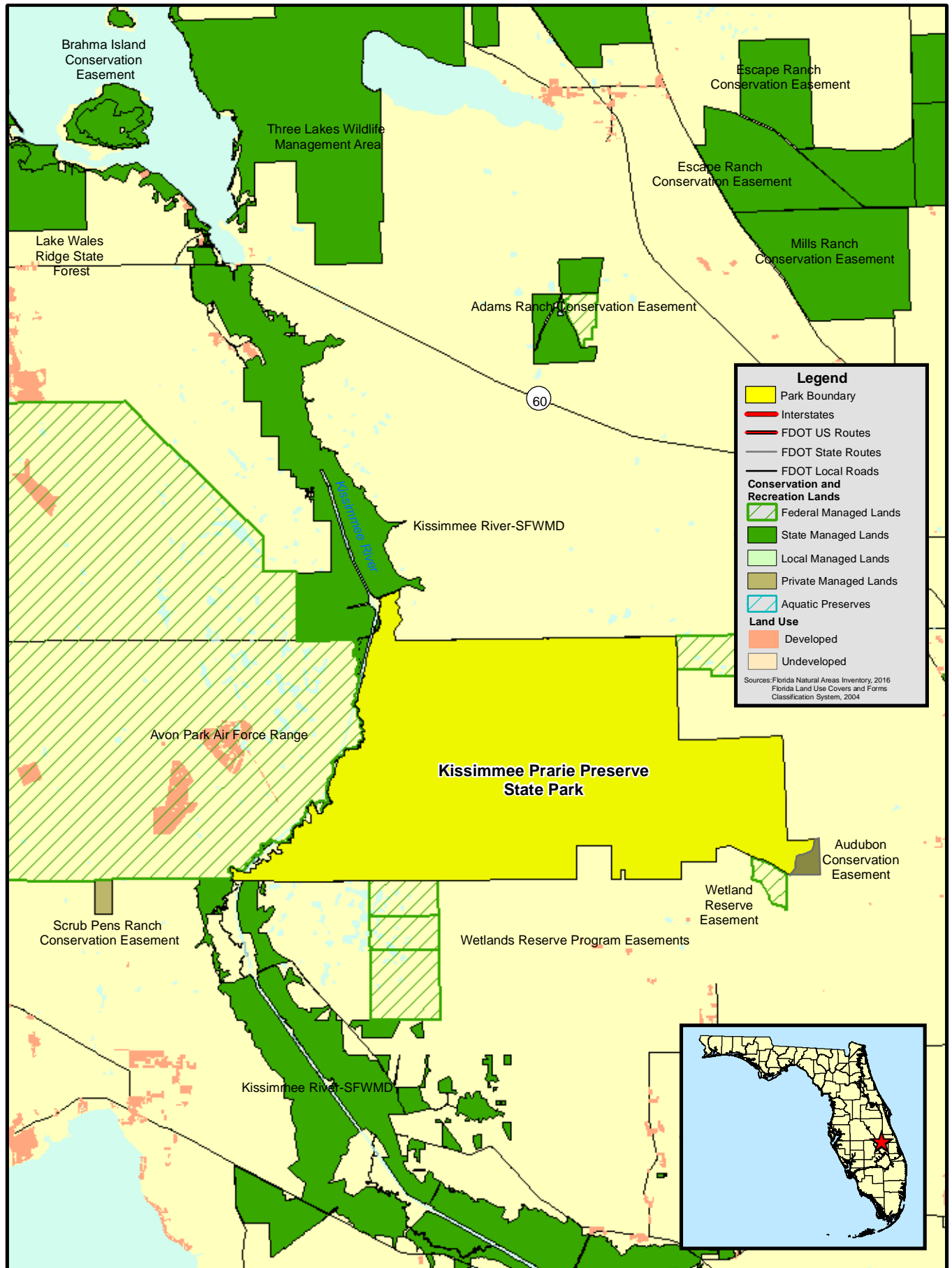
As one of the premier locations in the southeastern United States for avocational astronomers, the park's night sky is a window into the past, one that is virtually free of artificial light pollution. The park is one of only 2 locations in Florida certified as an International Dark Sky Park by the International Dark-Sky Association. In addition, the preserve is one of only a few places in Florida where visitors can see more than 10 miles across the open landscape. Lastly, the park's wilderness-like setting ensures that natural sounds can be heard with limited human interference.

Kissimmee Prairie was once a working cattle ranch, and contains several remnant homesteads; it's part of the storied Florida Cow Hunter tradition chronicled in Patrick Smith's eminent book *A Land Remembered*. Cattle ranching is Okeechobee County's and Florida's oldest commercial industry. The park also contains significant wetland acreage, along with several miles of the restored Kissimmee River on the park's western boundary. The Kissimmee River Restoration Project, the largest of its type attempted to date, benefits the park's flora and fauna and will eventually restore more than 40 square miles of the region's floodplain ecosystem.

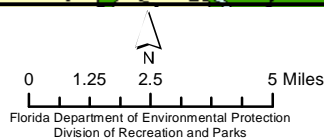
Kissimmee Prairie Preserve State Park is classified as a State Preserve in the DRP's unit classification system. In the management of a preserve, preservation and enhancement of natural conditions is all important. Resource considerations are given priority over user considerations and development is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

Purpose and Scope of the Plan

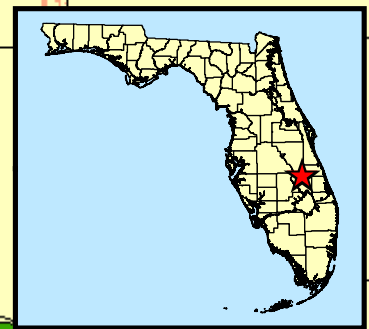
This plan serves as the basic statement of policy and direction for the management of Kissimmee Prairie Preserve State Park as a unit of Florida's state park system. It identifies the goals, objectives, actions, and criteria or standards that guide each aspect of park administration, and sets forth the specific measures that will be implemented to meet management objectives 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 2005 approved plan.



**KISSIMMEE PRAIRIE
PRESERVE STATE PARK**

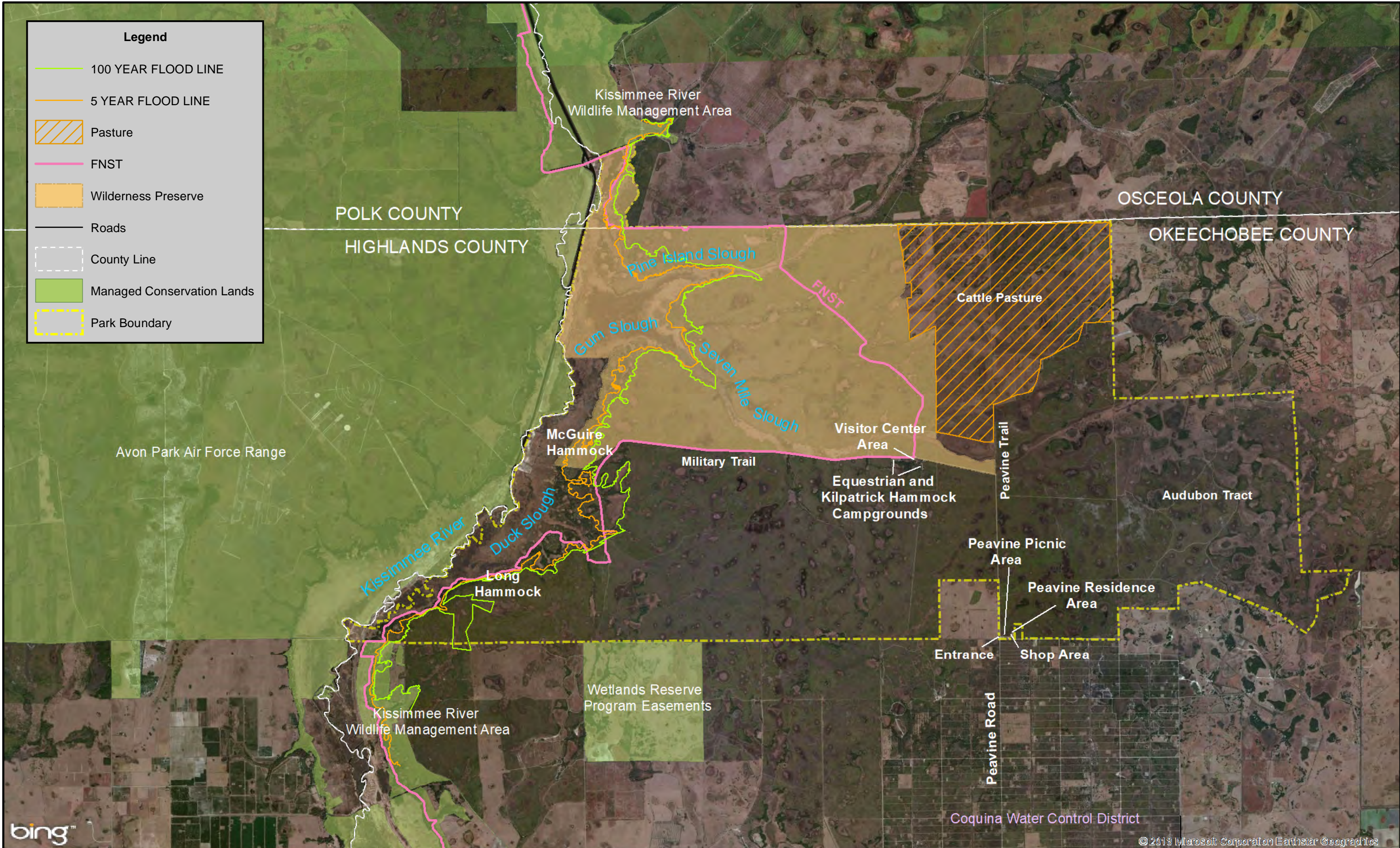


**VICINITY
MAP**



Legend

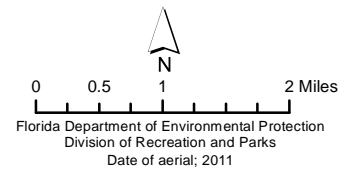
- 100 YEAR FLOOD LINE
- 5 YEAR FLOOD LINE
- Pasture
- FNST
- Wilderness Preserve
- Roads
- County Line
- Managed Conservation Lands
- Park Boundary



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KISSIMMEE PRAIRIE PRESERVE STATE PARK



REFERENCE MAP

The plan consists of 3 interrelated components: the Resource Management Component, the Land Use Component, and the Implementation Component. The Resource Management Component provides a detailed inventory and assessment of the natural and cultural resources of the park. Resource management needs and issues are identified, and measurable management objectives are established for each of the park's management goals and resource types. This component provides guidance on the application of such measures as prescribed burning, exotic species removal, imperiled species management, cultural resource management, and restoration of natural conditions.

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

The Implementation Component consolidates the measurable objectives and actions for each of the park's management goals. An implementation schedule and cost 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 the DRP's statutory responsibilities and the resource needs and values of the park. This analysis considered the park's natural and cultural resources, management needs, aesthetic values, visitation, and visitor experiences. For this park, it was determined that cattle grazing as part of the park's natural community management and restoration activities could be accommodated on improved and semi-improved pasture in a manner that would be compatible and not interfere with the primary purpose of resource-based outdoor recreation and conservation. This compatible secondary management purpose is addressed in the Resource Management Component of the plan.

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 cattle grazing as part of this park's natural community management and restoration activities would be appropriate on improved and semi-improved pasture as additional sources of revenue for land management, since it is compatible with the park's primary purpose of resource-based outdoor recreation and conservation.

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.

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 May 30 and 31, respectively. Meeting notices were published in the Florida Administrative Register, May 23, 2017 [Vol. 43/100], 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

Kissimmee Prairie Preserve State Park is not within an Area of Critical State Concern as defined in Section 380.05, Florida Statutes, and it is not presently under study for such designation. The park is a component of the Florida Greenways and Trails System, administered by the Department's Office of Greenways and Trails. A section of the Florida National Scenic Trail runs north to south through the park.

No 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 classified as Class III waters by the Department. This park is not within or adjacent to an aquatic preserve as designated under the Florida Aquatic Preserve Act of 1975 (Section 258.35, Florida Statutes).

RESOURCE MANAGEMENT COMPONENT

Introduction

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

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

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

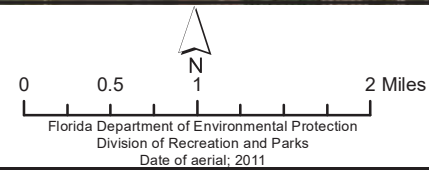
Because park units are often components of larger ecosystems, their proper management can be affected by conditions and events that occur beyond park boundaries. Ecosystem management is implemented through a resource management evaluation program that assesses resource conditions, evaluates management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

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

Table 1: Kissimmee Prairie Preserve State Park Management Zones			
Management Zone	Acreage	Managed with Prescribed Fire	Contains Known Cultural Resources
KP-1	1458.69	Y	Y
KP-2	2003.21	Y	Y
KP-3	3118.18	Y	Y
KP-4	1744.05	Y	Y
KP-5	347.90	Y	Y
KP-6	1797.65	Y	Y
KP-7	993.29	Y	Y
KP-8	723.19	Y	Y
KP-9	606.71	Y	N
KP-10	592.65	Y	Y
KP-11	589.09	Y	Y
KP-12	385.59	Y	Y
KP-13	446.98	Y	Y
KP-14	1909.89	Y	Y
KP-15	2482.81	Y	Y
KP-18	5231.27	Y	Y
KP-23	384.45	Y	N
KP-24	3658.13	Y	Y
KP-25	2294.76	Y	Y
KP-26	1801.67	Y	N
KP-28	891.84	Y	N
KP-29	3174.55	Y	Y
KP-33	511.84	Y	Y
KP-34	1661.86	Y	Y
KP-35	1408.47	Y	Y
KP-36	1397.66	Y	Y
KP-38	2791.39	Y	Y
KP-41	685.33	Y	N
KP-42	1687.87	Y	N
KP-43	671.41	Y	N
KP-44	390.74	Y	N
KP-45	1553.39	Y	N
KP-46	1808.57	Y	N
KP-47	216.47	Y	N
KP-48	286.61	Y	Y
KP-49	1783.67	Y	Y
KP-50	2491.19	Y	N
KP-51	502.68	Y	N



KISSIMMEE PRAIRIE PRESERVE STATE PARK



MANAGEMENT ZONES MAP

RESOURCE DESCRIPTION AND ASSESSMENT

Natural Resources

Topography

Kissimmee Prairie Preserve State Park is located within the Eastern Flatwoods District physiographic division. The landscape originated as a sequence of barrier islands and lagoons during the Plio-Pleistocene and Recent times. More specifically, the preserve lies within the Kissimmee Valley subdistrict, characterized by seasonally flooded lowlands of river swamp and grassland prairies mostly underlain by lagoonal silty sand deposits (Brooks 1981). The land surface is also described as a Quaternary-age marine terrace called the Osceola Plain and is composed of undifferentiated sediments of Pliocene and Holocene age, 5 million years old and younger (Lewis *et al.* 2001).

The preserve's dominant feature is expansive and relatively treeless prairies. The dry prairie landscape in the preserve represents the largest contiguous remnant of this Florida endemic (found nowhere else) natural community in existence. The landscape is a matrix of open prairie embedded with depressional ponds, forested and marshy sloughs, hammocks, and extensive marsh along the river. The preserve contains 4 sloughs (Pine Island, Five Mile, Seven Mile, and Duck) that drain most of the landscape directly into the Kissimmee River floodplain. Elevations within the preserve range from about 70 feet above mean sea level (msl) along the eastern boundary to approximately 40 feet above msl in areas adjacent to the Kissimmee River/C-38 canal.

The preserve's landscape had undergone various alterations prior to state acquisition. Miles of old roads and trails, now being reclaimed by prairie vegetation, are still visible in aerial imagery. Canals, both minor and major, expedited draining of the landscape into the Kissimmee River floodplain. An abandoned railroad bed, Peavine Trail, runs across the preserve from north to south. While the landscape was part of Avon Park Air Force Range during WWII, the military 'improved' an east-west trail ('Military Trail'). Post-WWII changes include the channelizing of the river in the 1960s, channelizing stretches of the interior sloughs, and converting 6,000 acres of native prairie into a semi-improved pasture for cattle grazing. Agricultural fields with impoundments to control water levels were created for vegetable farming. Several deep cattle ponds are scattered throughout the preserve.

Since state acquisition in 1997, the Park Service has constructed campgrounds, offices, residences, and a shop compound. The main drive has been 'improved' from a dirt trail into a culverted shell road. Large culverts were installed to replace the bridge over Seven Mile Slough. As a result of past land management activities, there are many miles of single plow lines. There is an effort in progress to quantify the linear extent of the plow lines on the landscape.

Geology

The preserve's land surface is composed of relatively young undifferentiated sediments of Pliocene to Holocene age, 5 million years old and younger, characterized as clayey sand, coarse to fine-grained sand, silt, clay, marl, and shell beds (Lewis *et al.* 2001). Older geologic features occur below these deposits but since they do not outcrop anywhere in the preserve they are not discussed. The landform that is now the prairie emerged from an estuarine environment related to the ancient Okefenokee (Late Pliocene) or Wicomico (Early Pleistocene) shorelines (Webb 1990).

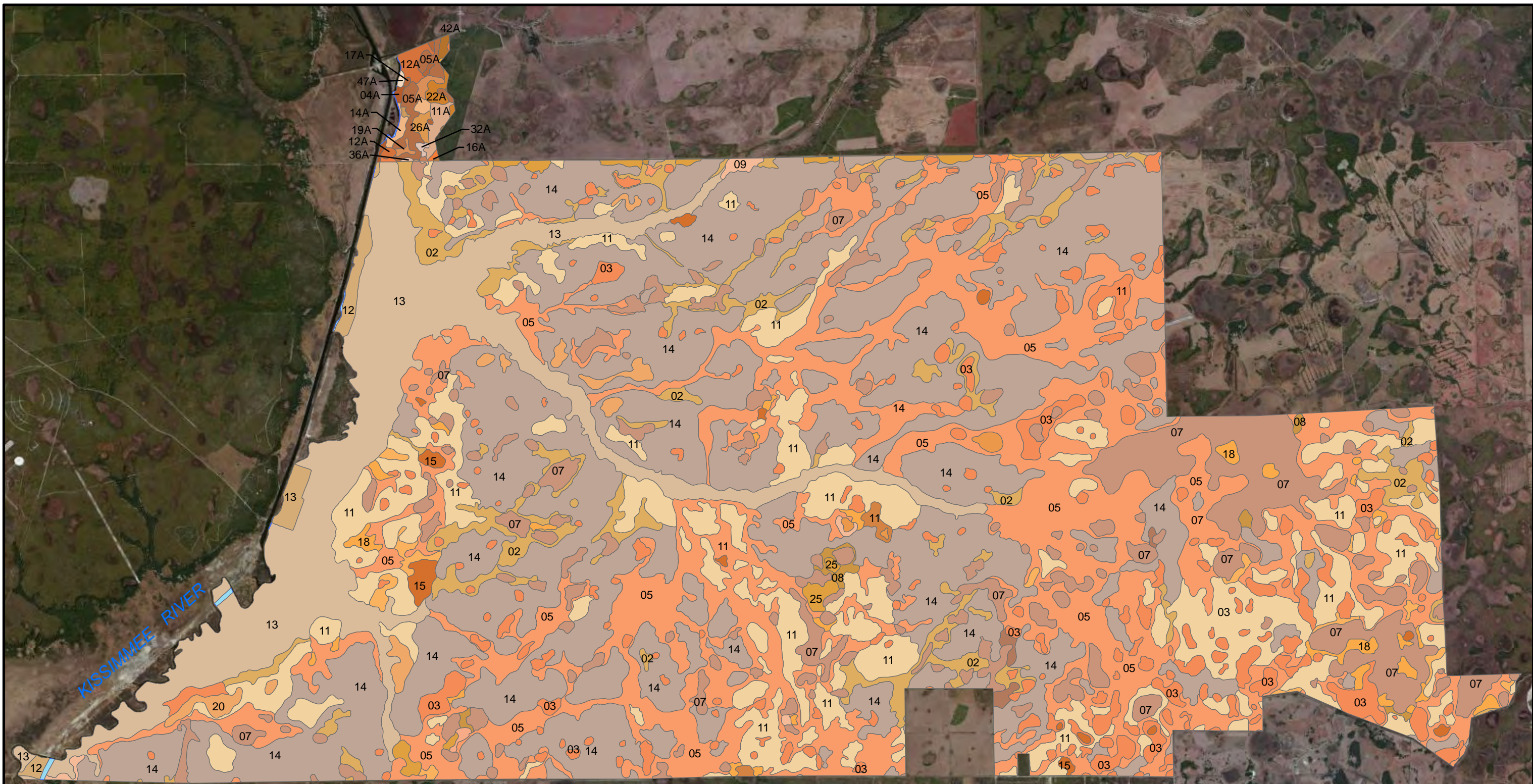
Soils

Kissimmee Prairie Preserve State Park contains 35 of the soil types (combined) recorded for Okeechobee and Osceola Counties by the Natural Resource Conservation Service (Readle *et al.* 1979; Lewis *et al.* 2001; see Soils Map). Most of the soil types found within the preserve are classified as being poorly drained, nearly level, and sandy, and many have a water table near or at the surface or are ponded for a portion of the year. Descriptions of the soil types found within the preserve are contained in Addendum 4.

An assessment of the soil conditions within the preserve has never been conducted. However, most of the prairie landscape is unaltered and covered in native, old-growth saw palmetto (*Serenoa repens*) and dwarf live oak (*Quercus minima*) vegetation. It may be appropriately assumed that the overall soil conditions are excellent.

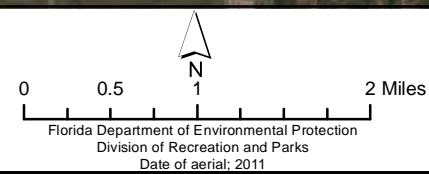
This is not the case in areas that have experienced historic disturbance prior to state acquisition, such as canals, pastures, and old agricultural fields; channelization destroyed the original stratigraphy locally and soil loss due to erosion occurred. Deliberate removal of soil from spoil areas along canals has occurred but should cease in anticipation of future canal backfilling (restoration) efforts, and to reduce loss of this material through further exposure and erosion. In the semi-improved pasture, non-native grasses and fertilization have likely affected the soil chemistry. The preserve's main drive is a semi-improved shell road; shell material is affecting the soil chemistry in soils adjacent to the road through runoff and erosion, and beyond into adjacent prairies through dust plumes created by vehicular traffic and wind. Erosion around firebreaks near streams and sloughs is an additional concern, as some of these firebreaks are now lower in elevation than the surrounding prairie and marshes, causing them to function as drainages.

Historically the preserve had 4 cattle dipping vats. Two of these, "county line" and Gum Slough, were dismantled and buried or filled. The fate of the "Prescott" dipping vat is unknown and shall be investigated; updates will be described in the next planning document. The vat in Kilpatrick Hammock ("cow camp") was found



Legend					
01A-Adamsville sand	07-Floridana, Riviera, and Placid soils, depressional	11A-EauGallie fine sand	17A-Kaliga muck	25-Wabasso fine sand	38A-Riviera fine sand
02-Basinger fine sand	08-Pindea fine sand	12-Udorthents, 2 to 35 percent slopes	18-Parkwood fine sand	25A-Nittaw muck	40A-Samsula muck
03-Basinger and Placid soils, depressional	09-Riviera fine sand	12A-Floridana fine sand, depressional	19A-Malabar fine sand	26-Oldsmar fine sand	42-Smyrna fine sand
04-Bradenton fine sand	10-Delray loamy fine sand, depressional	13-Manatee, Floridana, and Tequesta soils, frequently flooded	20-Pomello fine sand, 0 to 5 percent slopes	26A-Oldsmar fine sand	42A-Smyrna fine sand
04A-Arents, 0 to 5 percent slopes	10-Ft. Drum fine sand	14-Myakka fine sand	22-Myakka fine sand	29-Parkwood loamy fine sand, occasionally flooded	47A-Winder loamy fine sand
05-Valkaria fine sand	10A-Delray loamy fine sand, depressional	14A-Holopaw fine sand	22A-Myakka fine sand	32A-Placid fine sand, depressional	99-Water
05A-Basinger fine sand	11-EauGallie fine sand	15-Okeelanta muck	23-St. Johns fine sand	36-Pompano fine sand	
06-Manatee loamy fine sand, depressional	11-Immokalee fine sand	16A-Immokalee fine sand	24-Terra Ceia muck	36A-Pompano fine sand	

KISSIMMEE PRAIRIE PRESERVE STATE PARK



SOILS MAP

to be highly contaminated, and it along with local soils were removed. The footprint created from this effort was filled with material that was brought in from off site (Dames & Moore Group 1996). However, this site continues to be monitored and additional soil remediation may be required.

Feral hogs (*Sus scrofa*) have disturbed the surface soils over large areas of prairie. While the extent of this disturbance has not yet been quantified, many of these areas are of such large and chronic extent that they are detectable in aerial imagery. Efforts should be made to quantify these disturbed areas, and a plan to restore them back to a natural condition should be developed and implemented.

Management activities should follow generally accepted best management practices to prevent soil erosion and conserve soil and water resources on site.

Minerals

No mineral deposits of commercial value are known to exist within the preserve.

Hydrology

The preserve lies entirely within the 2,940-square-mile Kissimmee River Basin, a component of the Greater Everglades Ecosystem. The basin extends from Orlando southward to Lake Okeechobee, is approximately 105 miles long, and has a maximum width of 35 miles. It is the largest source of surface water to Lake Okeechobee (FDEP 2007). The western boundary of the preserve is composed of the restored section of the Kissimmee River, relic oxbows, and remaining segments of the C-38 canal. Surface waters in the preserve eventually make their way to the Kissimmee River/C-38 canal through several sloughs and sheet flow across prairies during high water events.

The Kissimmee River once meandered for more than 103 miles between Lake Kissimmee and Lake Okeechobee through a 1- to 2-mile wide floodplain marsh. In response to catastrophic flooding in the 1940s, the river was channelized in the 1960s by the U.S. Army Corps of Engineers (USACE) into a 56-mile long flood control canal, the C-38. Unfortunately, as a result of this project, aesthetics, biological diversity, and downstream water quality declined (Hand *et al.* 1996). More than 20,000 acres of wetlands were lost with drastic declines in bird, fish, and other animal populations and subsequent reductions in water quality (Bousquin *et al.* 2005).

Although the floodplain of the Kissimmee River was substantially altered by the construction of the C-38 canal, much of it found within the preserve still supports a broad area of semi-natural marsh with many native species. However, the drawdown associated with the canal and recent fire exclusion facilitated shrub and tree encroachment into the marsh. Large areas of the marsh have become invaded by exotic species such as climbing ferns (*Lygodium* spp.) and Peruvian primrosewillow (*Ludwigia peruviana*). Spoil deposition sites remaining from the

canal construction are covered with exotic plant species such as cogongrass (*Imperata cylindrica*), and paragrass (*Urochloa mutica*).

During years 2008 and 2009, Phase IVB construction of the Kissimmee River Restoration Project (KRRP) took place. The South Florida Water Management District (SFWMD), in cooperation with the USACE, backfilled 4 miles of the C-38 canal (3.3 miles within the preserve's boundary) and recarved approximately 6 miles of river channel (Jones *et al.* 2012). A new water control release schedule (to be announced at a later date), for the outlet of Lake Kissimmee (S-65) will allow a more natural flow to the river and will increase water levels in the floodplain marsh (Colangelo 2013). It is unknown to what extent the Kissimmee River Restoration Project will affect the preserve, especially as restoration activities continue to the north (and south) of the park (estimated project completion date is 2019). Sections of the C-38 canal that are backfilled and restored should benefit the floodplain marsh and the slough systems within the preserve by increasing hydroperiod and limiting further woody encroachment. The ecology of the associated wetlands should also improve. A forthcoming USACE report (expected following completion of restoration activities) will better inform future management goals.

It is interesting to note that several more miles of the C-38 canal north of the Phase IVB area lie between 2 natural areas, the preserve, and Avon Park Air Force Range, providing the possibility to restore more natural conditions to the greater system. Opportunities to restore this segment of the remaining canal should be sought.

The internal portion of the preserve is characterized by several major drainage systems that are aligned generally in an east-west orientation and run collectively for many miles. These features may retain water through the dry season. The largest and most extensive is Seven Mile Slough. Five Mile Slough is a tributary to Seven Mile Slough and merges with it to form Gum Slough, which is not a slough but a floodplain swamp. Gum Slough then empties into the floodplain marsh of the Kissimmee River. Pine Island Slough's headwaters are on the property to the north of the preserve (Latt Maxcy Corp. and Destiny), and the slough flows southwest through the preserve into the river marsh. Duck Slough drains the southwestern area of the preserve into the river marsh. Shin Hammock Marsh, in the extreme southeast corner of the preserve, is the headwater of Fish Slough. The waters from this system are the only waters that don't make their way directly to the river through the preserve. Instead, they flow off the property south to Cypress Slough, then Chandler Slough, finally reaching the river well south of the preserve.

Associated with these larger drainage systems are shallower depression ponds and marshes connected by networks of wet prairie and slough marshes. During the height of the rainy season, surface waters flow through these shallower features to the sloughs in a fashion that could be considered sheet flow. These features typically dry out completely, though some of the deeper depression ponds may hold water through the dry season.

The SFWMD currently owns and maintains several remote water monitoring installations within the preserve. These installations monitor surface and groundwater conditions along the 100-year floodplain, at 3 slough crossings, and in some isolated wetlands. Some of these installations also remotely capture rainfall data. All data collected from these sites is maintained and accessible in the District's DBHydro Database. The Division of Recreation and Parks has issued a Research and Collection Permit to the District to access these structures in order to maintain them. The District also conducted water quality monitoring at a few sites in the preserve during the years 2005-2011.

In addition to District monitoring sites, preserve staff currently record daily rainfall data at 4 locations within the preserve. Three of these locations have been monitored since 2004. The newest location was started in the fall of 2012. Rainfall data collection for the shop goes back to 1998 but it was not kept consistently until 2004. Daily rainfall data allows staff to know current hydrological conditions in the preserve and also to track Keetch-Byram Drought Index (KBDI) values in support of the fire program.

Hydrological disruption related to historic land use occurred on the property prior to state acquisition. There were at least 75 miles of ditches, canals, and agricultural areas throughout the preserve at the time of purchase. Agricultural areas were impounded to control water levels. All of the previously mentioned sloughs were channelized to varying extents. Minor channels were created to connect depression ponds and marshes as well. Although seasonal hydroperiods were likely shortened as a result, the overall impacts are unknown.

In 1998 the National Audubon Society, owners of the Ordway-Whittell Kissimmee Prairie Sanctuary until the state acquired it in 2002, litigated against adjacent property owners under the Endangered Species Act (ESA). Actions taken along East Military Trail ('Military Grade') had prevented water flow out of Shin Marsh to the south and resulted in the inundation of Florida grasshopper sparrow (*Ammodramus savannarum floridanus*) habitat, a violation of section 9 of the ESA. The issue was resolved and a series of permanent culverts were installed to convey appropriate levels of water flow out of Shin Marsh (Consent Decree 1998).

During the period 1999 through 2001, a major restoration project backfilled 71 linear miles of hydrologically-altered areas: approximately 53 miles of agricultural fields (row crop areas) and 18 miles of slough canals were backfilled to restore hydrologic conditions to the preserve as they originally existed. Rows of trees that had grown on the canal spoil banks were removed. These tree rows may have been serving as potential barriers to Florida grasshopper sparrow dispersal throughout the landscape.

Currently the Division's lease agreement allows the Latt Maxcy Corporation to maintain the canal that runs the length of Pine Island Slough (and one tributary) in the preserve. This area is hydrologically altered, and as a result, the ecosystems associated with the slough system are compromised. The Division should look for any opportunity to restore (backfill) this canal. For example, if the Latt Maxcy

property to the north is sold, the Division should, to the extent feasible, look to change the agreement so that restoration can occur.

Overall, the hydrologic conditions of the preserve should be considered excellent. Remaining hydrologic restoration needs within the preserve need to be quantified. When known, a plan that addresses these needs should be developed. Such a plan should include implementing the collection of baseline surface water data prior to any additional hydrological restoration. Old agricultural areas in the former Audubon Sanctuary and remaining canals in the Duck and Pine Island Slough systems are in the greatest need of restoration.

Hydrologic monitoring should be used to forecast and evaluate changes that could result from future restoration projects. A thorough analysis of the impacts these restoration projects could have on the prairie's hydroperiod is needed because flooding has been documented to negatively affect Florida grasshopper sparrow breeding success.

Natural Communities

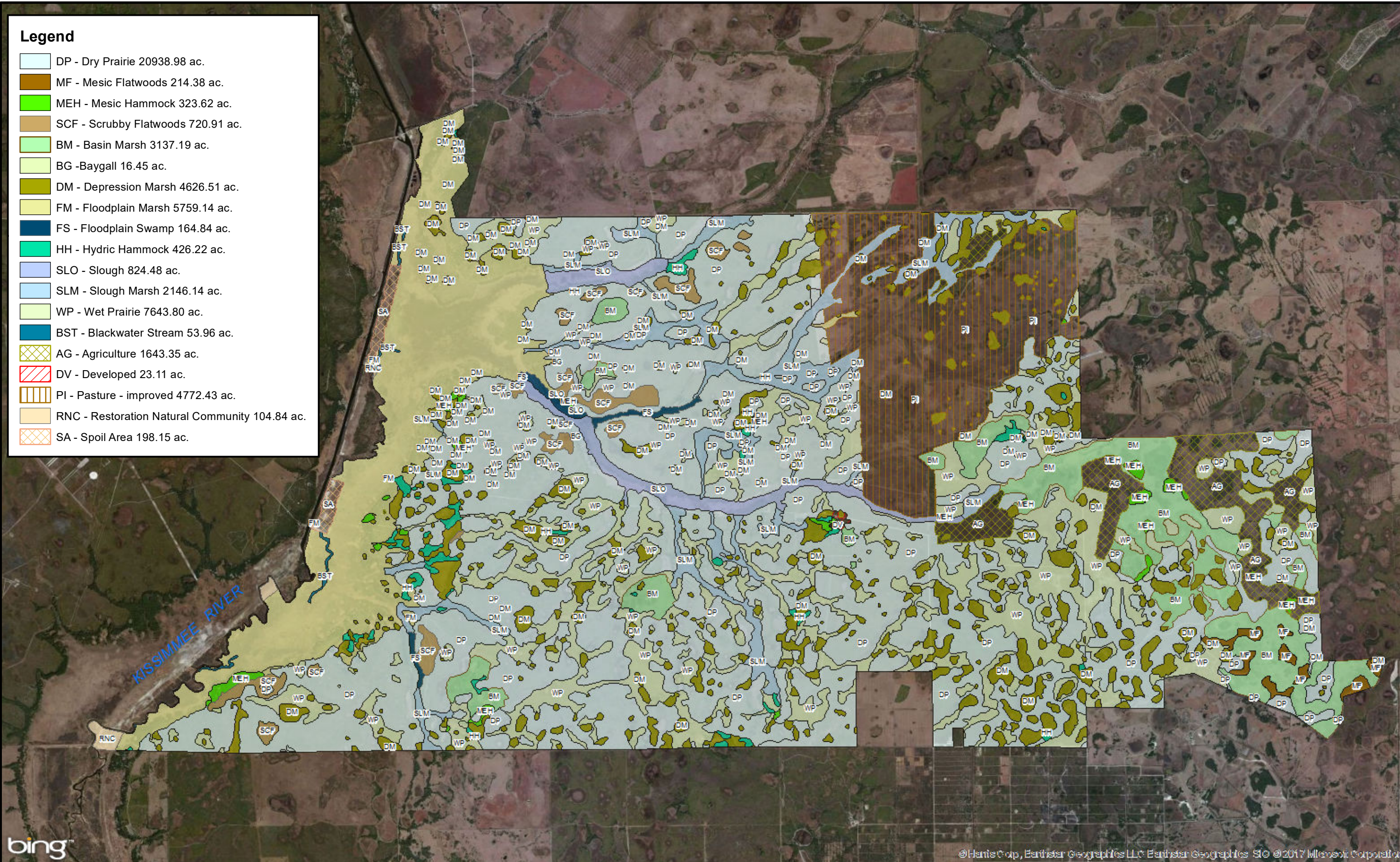
This section of the management plan describes and assesses each of the natural communities found in the preserve. It also describes the desired future condition (DFC) of each natural community and identifies the actions that will be required to bring the community to its desired future condition. Specific management objectives and actions for natural community management, exotic species management, imperiled species management [and population 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 – 2 communities with similar species compositions – generally have quite different climatic environments, and these necessitate different management programs. Some physical influences, such as fire frequency, may vary from FNAI's descriptions for certain natural communities in this plan.

When a natural community within a park reaches the desired future condition, it is considered to be in a "maintenance condition." Required actions for sustaining a community's maintenance condition may include: maintaining optimal fire return intervals (FRIs) 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

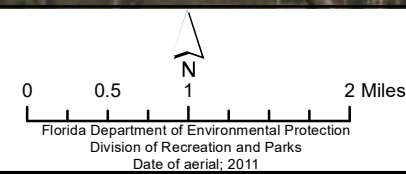
Legend

- DP - Dry Prairie 20938.98 ac.
- MF - Mesic Flatwoods 214.38 ac.
- MEH - Mesic Hammock 323.62 ac.
- SCF - Scrubby Flatwoods 720.91 ac.
- BM - Basin Marsh 3137.19 ac.
- BG - Baygall 16.45 ac.
- DM - Depression Marsh 4626.51 ac.
- FM - Floodplain Marsh 5759.14 ac.
- FS - Floodplain Swamp 164.84 ac.
- HH - Hydric Hammock 426.22 ac.
- SLO - Slough 824.48 ac.
- SLM - Slough Marsh 2146.14 ac.
- WP - Wet Prairie 7643.80 ac.
- BST - Blackwater Stream 53.96 ac.
- AG - Agriculture 1643.35 ac.
- DV - Developed 23.11 ac.
- PI - Pasture - improved 4772.43 ac.
- RNC - Restoration Natural Community 104.84 ac.
- SA - Spoil Area 198.15 ac.



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KISSIMMEE PRAIRIE PRESERVE STATE PARK



NATURAL COMMUNITIES MAP

(including those that are imperiled or endemic), and preserving intact ecotones that link natural communities across the landscape.

The preserve contains 14 distinct natural communities as well as altered landcover types and developed areas (see Natural Communities Map). A list of known plants and animals occurring in the preserve is contained in Addendum 5.

Dry Prairie

Desired Future Condition: Dry prairie is a community of frequently burned, low shrubs, grasses, forbs, and bare ground occupying vast, flat, treeless expanses in south-central Florida. Trees, if present, are only found associated with historic hammocks that are small and isolated on the landscape. Common shrubs include stunted saw palmetto, dwarf live oak, gallberry (*Ilex glabra*), fetterbush (*Lyonia lucida*), and shiny blueberry (*Vaccinium myrsinites*). There will be few, if any, large trunks of saw palmetto along the ground. Herbaceous vegetation is diverse, and is dominated by grasses, namely wiregrass (*Aristida stricta* var. *beyrichiana*). Other dominant grasses include bluestems (*Andropogon* spp.), witchgrasses (*Dicanthelium* spp.), panicgrasses (*Panicum* spp.), and lopsided Indiangrass (*Sorghastrum secundum*). The forb component includes milkweeds (*Asclepias* spp.), milkworts (*Polygala* spp.), legumes (*Chamaecrista*, *Galactia*, *Tephrosia* spp.), and asters (*Carphephorus*, *Coreopsis*, *Liatris* spp.). Florida grasshopper sparrows occupy and breed in core prairie areas. The optimal FRI for this community is 12 to 30 months.

Description and Assessment: The condition of the dry prairie community in the preserve should be considered in good to excellent condition. Much of this community is found in the designated Wilderness Preserve (see pages 80 and 94). Dry prairie is the matrix in which most of the other community types occur as hydrologic conditions and topography vary. Dry prairie is a Florida-endemic natural community, with no similar communities found in adjacent states, and is ranked as G2, globally imperiled, and S2, state imperiled, by FNAI (2010). It appears to be geographically restricted to central and south-central peninsular Florida. One authority considers it to be "one of the most species-rich grasslands in the South and globally" (Noss 2013).

The pre-settlement extent of dry prairie encompassed approximately 1.2 million acres (Bridges 2006). Reduction in dry prairie area is a result of conversion to agriculture and pasture. A survey conducted in the late 1990s estimated that only 19% of the pre-settlement extent of dry prairie remained (Shriver and Vickery 1999), while a more recent survey in 2004 indicated a further 10% reduction in the original dry prairie coverage (Delany *et al.* 2007). Only 9% of the historic distribution remains with 67% of the remainder found on public lands. The preserve contains the largest remaining contiguous area of this community type in Florida.

Dry prairie is characterized as a treeless plain with a diverse ground cover that includes regionally endemic plant taxa. Rare plant species include many-flowered grasspink (*Calopogon multiflorus*) and giant orchid (*Pteroglossaspis ecristata*), Catesby lily (*Lilium catesbeai*), and species of carnivorous plants, including yellow-

flowered butterwort (*Pinguicula lutea*). Along with diverse flowering plants comes a diversity of pollinators, notably butterflies. The preserve is currently one of the best places in Florida to see butterflies, especially skippers (Cooper and Cooper 2003). Rare or interesting species include the Loamm's skipper (*Atrytonopsis loammii*) and the flagship prairie species the palmetto skipper (*Euphes arpa*), which can be locally abundant in the preserve.

Rare animals include bird species that require open habitat such as the Florida grasshopper sparrow, Florida burrowing owl (*Athene cunicularia floridana*), crested caracara (*Caracara cheriway*), white-tailed kite (*Elanus leucurus*) and the Florida sandhill crane (*Antigone canadensis pratensis*). It is important to note that despite the high diversity of species (namely plants) found in the dry prairie, the Florida grasshopper sparrow is the only taxon *endemic to dry prairie* and the preserve protects one of only 3 remaining subpopulations of this federally endangered species on public land.

Unfortunately, the dry prairie has experienced an invasion of the red imported fire ant (*Solenopsis invicta*), and the decline of the preserve's Florida grasshopper sparrow population may be related to ant depredation on nests, thus reducing recruitment of young birds into the population (KPPSP unpublished data). Disturbance to the ground cover by feral hogs and extensive soil turnover in large portions of the dry prairie (and wet prairie) is occurring as well.

General Management Measures: The prairie coverage in the preserve is in good to excellent condition, and associated management zones are on an appropriate burn rotation. Implementing and maintaining a preserve-wide, one- to 2-year growing season FRI is the ideal long-term management strategy. Such a strategy would maintain the habitat in the early successional stage required by prairie specialist species, inhibit future encroachment of trees into the prairies, reduce the density of woody shrubs and saw palmetto, and promote native grass and forb diversity.

Related to past management practices (altered fire history, hydrologic disturbance) trees have encroached onto the prairies and saw palmetto density has increased beyond what it likely was historically. Tree removal efforts to date have noticeably increased the aesthetics in certain areas of the preserve, and more importantly, opened up and re-connected prairies (Kilpatrick and Five Mile) that were fragmented by tree vertical structure (KPPSP unpublished data). Nearly 900 acres were roller-chopped in 2002, and approximately 650 acres were chopped in early 2016. Strategic mowing has occurred on an ongoing, as-needed basis related to fire line preparation and while not precisely documented, constitutes dozens of linear miles along firebreak perimeters. These habitat enhancement efforts should continue.

Canals still exist in Pine Island and Duck Sloughs, and on a smaller scale in several other areas of the preserve. The prairies adjacent to these disturbances likely continue to experience a shorter hydroperiod, resulting in increasing tree abundance and woody vegetation density. Effects from the canals that were backfilled in the years 1999-2001 are still present. Invasive plant densities,

primarily cogongrass, are generally the highest in areas that have experienced increased tree and palmetto density related to altered hydrology and fire exclusion/alteration, both past and present. Consideration towards continuing the backfilling and hydrological restoration effort with subsequent habitat enhancement and exotic species control should occur as resources allow. As stated in the hydrology section, remaining hydrologic restoration needs within the preserve should be quantified. When known, a plan that addresses these needs should be developed.

Preserve-wide habitat assessments and imperiled species surveys (in addition to annual Florida grasshopper sparrow monitoring) should be conducted every 5 years to inform and guide management decisions and to gauge effectiveness of habitat enhancement activities such as fire, tree removal, exotic species control, hydrological restoration, and mechanical reduction of saw palmetto.

Mesic Flatwoods

Desired Future Condition: Mesic flatwoods are characterized by an open canopy of Florida slash pine (*Pinus elliottii*) and a dense, low ground layer of shrubs, grasses, and forbs. Saw palmetto will generally be present but not dominant. Other shrub species may include gallberry, fetterbush, dwarf live oak, shiny blueberry, and dwarf huckleberry (*Gaylussacia dumosa*). The herbaceous layer is primarily grasses, including wiregrass, witchgrasses, and broomsedge. 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 FRI for this community is 2-4 years.

Description and Assessment: Mesic flatwoods comprise a very small component of the preserve's landcover; approximately 200 acres are located in the Shin Hammock Marsh complex in the extreme southeast corner of the preserve. The community occurs as several small patches embedded between wetlands, and it is likely that the relative protection from fire the wetlands may provide have allowed these forested areas to persist. Due to lack of fire and hydrologic disturbance, there is also a successional hardwood component and the understory is overgrown with shrubs. These areas should be investigated further to elucidate whether they are actually mesic flatwoods or a type of mesic hammock instead. It is also possible that the general lack of short rotation growing season fire has allowed these areas to undergo successional change from dry prairie into mesic flatwoods/mesic hammock. The mesic flatwoods in the preserve should be considered in poor condition.

General Management Measures: Until these areas are brought into an appropriate FRI, dormant and growing season fire may be required to reduce fuel loading, shrub and hardwood dominance, and to limit the expansion of these sites into adjacent remnant prairies. If these areas are deemed to be true mesic flatwoods and not mesic hammock or dry prairie, firing techniques should be employed that allow the

protection of the pine canopy. Mechanical reduction of the understory fuels should be considered.

Prairie Mesic Hammock

Desired Future Condition: Prairie mesic hammock is characterized as isolated patches of canopied hammock occurring within a larger matrix of dry prairie. Dominant vegetation will typically be cabbage palm (*Sabal palmetto*), live oak (*Quercus virginiana*) or a mixture of the 2 species. Common species in the relatively open understory will include saw palmetto, wax myrtle (*Myrica cerifera*), marlberry (*Ardisia escallonioides*), and epiphytes. Soils may include a thick leaf layer underlain by mixed sands and organics over a limestone substrate. Prairie mesic hammock should be allowed to burn on the same frequency as the adjacent dry prairie.

Description and Assessment: Prairie hammocks of the preserve are very unusual and sensitive habitats (Bridges 1998). Three distinct subtypes of prairie hammocks are located in the preserve. All 3 have a canopy dominated by live oak and cabbage palm (*Sabal palmetto*), but differ in associated tree species and understory components. Depending upon micro-topography, prairie mesic hammocks may also include a hydric hammock component.

The most unusual of the subtypes can be thought of as prairie hammock with a subtropical understory. The canopy of these areas is composed of mature live oak, cabbage palm, sugarberry (*Celtis laevigata*), American elm (*Ulmus americana*), and laurel oak (*Quercus laurifolia*). What most distinguishes this hammock type is the tall sub-canopy layer of Simpson's stopper (*Myrcianthes fragrans*), and the presence of other subtropical shrubs and vines such as marlberry, wild coffee (*Psychotria nervosa*), smallflower mock buckthorn (*Sageretia minutiflora*), wild lime (*Zanthoxylum fagara*), and leafless swallowwort (*Cynanchum scoparium*). This suite of species, along with upland swampprivet (*Forestiera ligustrina*), also found in these hammocks, indicates a marly soil with likely a higher pH than the surrounding landscape (Bridges 1998).

Hammocks with subtropical understory components are very unusual in the interior of central Florida, although they are somewhat more common along the coasts. These areas are very important local biodiversity components, and extremely sensitive to alterations by overuse by animals (cattle, feral hogs) or intensive human use (camping, horseback riding; Bridges 1998).

A second prairie hammock subtype is currently known from only one location in the preserve, the high sandy prairie hammock. This type was found at a high ridge along the edge of the floodplain of the Kissimmee River, just northeast of Prescott Homestead in Long Hammock. Canopy trees here include live oak, cabbage palm, and pignut hickory (*Carya glabra*), and the understory includes such sandy soil indicators as common persimmon (*Diospyros virginiana*), wild olive (*Cartrema americanus*), red bay (*Persea borbonia*), Carolina laurelcherry (*Prunus caroliniana*), coralbean (*Erythrina herbacea*), and Carolina holly (*Ilex ambigua*). This hammock is extremely well-protected from fire by its unusual position between a large area of

scrubby flatwoods and the Kissimmee River floodplain marsh. This seems to be the only high sandy bluff along the river floodplain on the preserve, which is so well-drained and protected from fire as to support this type of hammock. Despite its proximity to an old homestead, natural community quality is high, being compromised primarily by an infestation of the exotic air potato (*Dioscorea bulbifera*) in parts of the hammock (Bridges 1998).

These 2 prairie hammock subtypes also have fairly high diversity in the epiphyte layer. Typically, there are up to 5 or 6 species of airplants (*Tillandsia balbisiana*, *T. fasciculata* var. *densispica*, *T. recurvata*, *T. setacea*, *T. usneoides*, and *T. utriculata*), 3 species of epiphytic ferns (golden polypody, *Phlebodium aureum*; resurrection fern, *Polypodium polypodioides*; and shoestring fern, *Vittaria lineata*), and occasional clumps of the epiphytic butterfly orchid (*Encyclia tampensis*; Bridges 1998).

The third and more common of the prairie hammock subtypes can be classified as low-diversity prairie hammock. These have a canopy of live oak and cabbage palm or just cabbage palms, and patches of saw palmetto groundcover in the higher parts of the hammock. Saw palmetto tends to be arborescent on the edges and in the understory of these hammocks. Groundcover diversity is low, and consists mainly of scattered clumps of the grasses beaked panicum (*Panicum anceps*), thin paspalum (*Paspalum setaceum*), sour paspalum (*P. conjugatum*), woodsgrass (*Oplismenus setarius*), dicantherium (*Dichantherium commutatum* and *D. laxiflorum*). The low diversity hammock subtype should be investigated further to support whether these areas should actually be forested or if they represent areas where trees have encroached due to altered conditions locally. Old aerial imagery should greatly assist that effort. The low biodiversity found in these hammocks could be the result of past damage to the groundcover by cattle and feral hogs, both of which preferentially utilize these sites. Alternatively, some hammocks may have lower diversity due to occasional fires burning through the hammocks' groundcover during dry periods (Bridges 1998).

General Management Measures: Allow fires to burn into hammocks. This will help deter the encroachment of hammock species, specifically trees, into adjacent prairies. The understory diversity of these hammocks may have been reduced somewhat by past grazing and be in the process of recovery. Areas of past disturbance by cattle and feral hogs often have dense cover of the weedy exotic sida (*Sida planicaulus*). Cogongrass and other invasive plants should continue to be surveyed and treated. Since hammocks are all of small area and are limited in total extent, care should be taken when planning trails, primitive camping areas, horseback camping facilities, and other facilities to avoid further damage to the groundcover of the more intact hammocks.

Scrubby Flatwoods

Desired Future Condition: Scrubby flatwoods in the preserve will have no overstory. There will be a diverse shrubby 'understory' often with patches of bare white sand. A scrub-type oak 'canopy' will contain a mosaic of oak age classes/heights. Dominant shrubs will include sand live oak (*Quercus geminata*), myrtle oak (*Q.*

myrtifolia), Chapman's oak (*Q. chapmani*), saw palmetto, rusty staggerbush (*Lyonia ferruginea*), and tarflower (*Bejaria racemosa*). Cover by herbaceous species will often be low to moderately dense. The optimal FRI for this community in the preserve will be 2-5 years due to the surrounding matrix of short rotation (1-2.5 year) dry prairie.

Description and Assessment: Scrubby flatwoods in the preserve may represent a new community variant, "prairie scrub," and should be studied further. The community occurs in scattered, roughly circular to elliptical patches in the western half of the preserve associated with escarpments of the floodplains of Duck Slough, Five Mile Slough, Pine Island Slough, Seven Mile Slough, and the Kissimmee River. The prairie scrub in the preserve should be considered in good to excellent condition.

In addition to scrub-type oak species, typical plants include wiregrass and shiny blueberry. Characteristic species of this community are often restricted to herbaceous openings, and include coastalplain honeycombhead (*Balduina angustifolia*), pennyroyal (*Piloblephis rigida*), pinebarren beaksedge (*Rhynchospora intermedia*), and October flower (*Polygonella polygama*). These herbaceous openings also support populations of such wetland species as dwarf sundew (*Drosera brevifolia*), yellow hatpins (*Syngonanthus flavidulus*), roadgrass (*Eleocharis baldwinii*), bladderwort (*Utricularia subulata*), and yellow-eyed grass (*Xyris brevifolia*). The presence of these herbaceous species is indicative of seasonally saturated soils and serves to easily distinguish scrubby flatwoods from scrub, which has open patches of excessively drained white sandy soil and does not support any wetland herbs. Also in contrast to true scrub, there are fewer sandy openings within the preserve's scrubby flatwoods; openings tend to be quickly vegetated by wiregrass and other grasses. Scrubby flatwoods in the preserve contain fewer scrub endemic plant species than true scrub (Bridges 1998). Invertebrate species endemic to scrub have been documented in the preserve, notably the red widow spider (*Lactrodectus bishopi*) and the bi-colored scrub cone ant (*Dorymex flavopectus*) (Atherton 2012).

Florida scrub-jays (*Aphelocoma coerulescens*) do occasionally breed in the preserve's scrubby flatwoods; however, these small habitat patches likely serve as population sinks and may only be occupied when there are surplus jays dispersing from the Lake Wales/Bombing Range Ridge metapopulation. Color-banded jays from the LWR metapopulation have been documented in the preserve (FNAI and Land Acquisition and Advisory Council 1995).

Scrubby flatwoods patches occur on very slight rises within the dry prairie matrix, no more than a few feet above the surroundings. The patches tend to be more concentrated near the drainage escarpments of the major sloughs and at high points along the Kissimmee River. The best examples are found on Pomello fine sand (Typic Haplohumods), although some are also mapped as Immokalee fine sand (Arenic Haplaquods). Presumably, the proximity of a major drainage feature serves to more quickly lower the water table after rain events, and therefore reduces the duration of soil saturation, even though a spodic layer (hardpan) is

present in these soils at depths from 35 to 42 inches (Bridges 1998).

Scrubby flatwoods patches on the preserve are all subject to occasional fire. The fire frequency is naturally less than in dry prairie, but parts of a given scrubby flatwoods patch may burn in a mosaic fashion when the adjacent prairie burns, while the rest of the same patch may escape fire.

General Management Measures: Scrubby flatwoods should be allowed to burn, in a mosaic fashion, on the same FRI as the dry prairie matrix that it is embedded within. On occasions when components of a scrubby flatwoods patch do not burn, these unburned mosaics should be left until given the opportunity to burn on the next fire rotation. The long-term goal should be to burn these areas such that the desired successional stage is maintained for scrub-dependent species such as the Florida scrub-jay. The scrubby flatwoods should be kept free of invasive exotic plant species.

Basin Marsh

Desired Future Condition: Basin marshes include emergent herbaceous and low shrub species dominating most of the area with an open vista. Trees will be rare, but if present, occur primarily in the deeper portions of the community. There will be little accumulation of dead grassy fuels due to frequent burning; one will be able to see the soil surface through the vegetation when the community is not inundated. Dominant vegetation in basin marshes will include maidencane (*Panicum hemitomon*), southern cutgrass (*Leersia hexandra*), pickerelweed (*Pontederia cordata*), arrowheads (*Sagittaria* spp.), buttonbush (*Cephalanthus occidentalis*), and sandweed (*Hypericum fasciculatum*). The optimal FRI for this community will be 2-5, or more, years depending on conditions when the adjacent dry prairie matrix is burned.

Description and Assessment: Basin marshes in the preserve are distinguished from depression marshes by their larger size, irregular shape, and lack of obvious and distinct vegetation zones. The vegetation in basin marshes is usually represented by species of deeper water and longer hydroperiods, such as maidencane, pickerelweed, and spatterdock. Basin marshes tend to be headwater areas for sloughs and other drainage features on the landscape. For example, Dead Pine Island Marsh is the headwater of Seven Mile Slough.

The overall condition of the basin marshes within the preserve should be considered good to excellent. However, these areas have experienced various degrees of drainage from minor and major canals. Most of the major canals have been backfilled since state acquisition. Basin marshes are experiencing invasion by exotic species, notably Wright's nutrush (*Scleria lacustris*), Peruvian primrosewillow, and torpedograss (*Panicum repens*).

General Management Measures: Basin marshes in the preserve should be allowed to burn along with the dry prairie matrix they are embedded within. The hydrological conditions at the time of the burn will dictate the degree to which the basin marsh will carry fire. Exotic species in the basin marshes should continue to

be surveyed and treated. Remaining hydrological issues in these areas should be quantified and addressed.

Baygall

Desired Future Condition: Baygall consists of a wet densely forested, peat-filled depression typically near the base of a slope. Seepage from adjacent uplands will maintain saturated conditions. Medium to tall trees will mainly consist of sweetbay (*Magnolia virginiana*), loblolly bay (*Gordonia lasianthus*), and/or swamp bay (*Persea palustris*). Occasionally sparse pines (*Pinus* spp.) may also exist. A thick understory consisting of gallberry, fetterbush, dahoon (*Ilex cassine*), and red maple (*Acer rubrum*) will be typical; climbing vines such as greenbrier (*Smilax* spp.) and muscadine grape (*Vitis* spp.) will usually be abundant. The dominant baygall species are fire intolerant indicating an infrequent optimal FRI of 25-100 years. Frequent fires from adjacent communities should be allowed to enter the baygall ecotones.

Description and Assessment: Baygall is the rarest community type found in the dry prairie matrix and is very restricted in extent within the preserve. It is limited to a few locations, each of only a few acres, where small drainages occur between the dry prairie and escarpments of the sloughs and Kissimmee River. This community should be considered good in condition.

Baygalls on the preserve have been penetrated by fire at various times, which kills the dominant sweetbay trees, resulting in an open, scraggly canopy appearance. It is possible that some of these baygall edges, should fire penetrate them often enough, may potentially support some open herbaceous seepage slope species. Only tiny fragments indicating the potential occurrence of this community type are found under the dense shrubs of some baygall edges (Bridges 1998).

General Management Measures: Fire should be allowed to penetrate the baygall edges in the event that rare seepage-dependent herbaceous species may emerge from dormancy if they have persisted in the seed bank.

Depression Marsh

Desired Future Condition: Depression marsh is characterized as containing low emergent herbaceous and shrub species that will be dominant over most of the area and include open vistas. There will be no trees. There will be little accumulation of dead grassy fuels due to frequent burning; the soil surface is exposed when the community is not inundated. Dominant vegetation in depression marsh may include maidencane, pickerelweed, arrowheads (*Sagittaria* spp.), and sandweed (*Hypericum fasciculatum*). The optimal FRI for this community will be 2-5 years depending on conditions when the adjacent dry prairie matrix is burned.

Description and Assessment: The depression marshes in the preserve are generally in excellent condition. Depression marshes, sometimes referred to as ponds, are identified typically by roughly circular shape and distinct concentric vegetation zones with a single deepwater center. Larger depression marshes may be more elliptical in shape and have more than one deepwater center and represent the

coalescence of more than one depression into a single feature. Depression marshes are isolated hydrologically until the height of the hydrologic cycle when they overflow. At this point they are connected to other features on the landscape by shallower wet prairies. For this reason, depression marshes typically have a break in the surrounding palmetto where this wet prairie outlet exists.

Due to the general hydrologic isolation of depression marshes, they tend to be free of predatory fish species. As a result, frogs rely on these areas for breeding. Depression marshes are also the primary habitat for the round-tailed muskrat (*Neofiber alleni*) and are used by Florida sandhill cranes for breeding.

The concentric vegetation zones are related to the length of hydroperiod and depth of the depression; the outer areas of the marsh are shallow and slope downward toward the deepwater center. Plant species respond to these elevations and grow where the conditions they require exist. Typically, zones follow a pattern (inward toward the center): saw palmetto and other dry prairie species surrounding the marsh, sandweed (*Hypericum fasciculatum*), maidencane (*Panicum hemitomom*), then deepwater species such as pickerelweed. Rarely, the deepest depression marshes may have a small stand of buttonbush, sweetbay or Carolina willow.

General Management Measures: Depression marshes in the preserve should be allowed to burn along with the dry prairie matrix they are embedded within. The hydrological conditions at the time of the burn will dictate the degree to which the depression marsh will be treated with fire. Exotic species should continue to be surveyed and treated. Assessment of hydrological disturbance to ponds should be conducted and hydrological restoration should occur where needed.

Floodplain Marsh

Desired Future Condition: Floodplain marsh is characterized as emergent low herbaceous vegetation and/or shrubs with an open vista. Trees will be few and if present will be widely scattered and mostly associated with ecotones adjacent to hydric hammocks. There will be little accumulation of dead grassy fuels due to periodic burning. The soil is frequently exposed when not inundated. Dominant vegetation in floodplain marshes will include sand cordgrass (*Spartina alterniflora*), sawgrass (*Cladium jamaicense*), maidencane, panicgrasses, cutgrass (*Leersia* spp.), pickerelweed (*Pontederia cordata*), arrowheads (*Sagittaria* spp.), buttonbush (*Cephalanthus occidentalis*), sandweed (*Hypericum fasciculatum*), and coastal plain (Carolina) willow (*Salix caroliniana*). The optimal FRI for this community is 2-5 years depending on fire frequency of adjacent communities.

Description and Assessment: Floodplain marsh occurs in the western portion of the preserve and functions as the floodplain for the Kissimmee River and C-38 canal. Most of the surface waters in the preserve eventually make their way to the floodplain marsh, except for the basin drained by Shin Marsh 12-15 miles to the east.

Under natural conditions floodplain plant communities are variable depending upon hydroperiod and depth. Additionally, construction and persistence of the C-38 canal

along with fire exclusion have conspired to alter the community's structure, composition, and function.

Bridges (1998) examined 1943 aerial imagery and 1858 land survey notes in an effort to reconstruct the conditions that existed prior to alteration of the river. He suggested that sawgrass was likely more widespread, Carolina willow and other woody plants are invading and much more common, and while deeper water areas may retain much of their natural condition, their extent has been reduced due to channelization. He also found that the outer, less frequently inundated zones are undergoing invasion by wax myrtle. Further, the ecotone between the dry prairie and the floodplain has experienced growth of live oak and palms (i.e. Long and McGuire Hammocks), larger and more abundant patches of saw palmetto, and a weedy appearing groundcover dominated by broomsedge bluestem (*Andropogon virginicus*), blue maidencane (*Amphicarpum muhlenbergianum*), and/or big carpetgrass (*Axonopus furcatus*). The ground cover is being colonized by patches of the less sensitive dry prairie species, those which can easily invade disturbed ground, such as flat-topped goldenrod (*Euthamia tenuifolia*), bottlebrush threeawn (*Aristida spiciformis*), yellow-eyed grass (*Xyris brevifolia*, *X. elliotii*), and blackroot (*Pterocaulon pycnostachyum*). However, the perennial grasses which characterize dry prairie are rare or absent in this zone.

In addition to, and perhaps related to these effects, the floodplain marsh is experiencing colonization by invasive species such as climbing fern and Peruvian primrosewillow. Complicating management of this community type has been the past prohibition of controlled burning in the river marsh, which has been lifted recently.

With the restoration of the Kissimmee River's channel (see Hydrology section), the potential exists for increased hydroperiod in all of the floodplain marsh zones in the near future. For this reason, it is important to understand the extent of the historical floodplain, since it could be subject to flooding again during major floods after restoration. However, some of this area may never flood often enough to return to a more natural composition. It is possible in the long term (100 years or longer) that some of this historical floodplain may become colonized by more dry prairie species and support a relatively natural dry prairie community rather than its current, ruderal floodplain marsh vegetation (Bridges 1998).

General Management Measures: Despite the seeming long list of issues in the floodplain, the community should be considered in good condition. However, unless active management is implemented in this community, the condition will continue to deteriorate. Additional opportunities to restore remaining sections of the C-38 canal along the preserve's western boundary should be sought. Survey and treatment of exotic species should continue. Park staff should continue to work with SFWMD to secure approval to manage the floodplain marsh with fire, and when appropriate, burn the floodplain on an appropriate interval.

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 canopy will typically be dominated by tupelo species (*Nyssa* spp.) and Carolina ash (*Fraxinus caroliniana*). Tree bases are typically buttressed. Understory and groundcover will typically be sparse.

Description and Assessment: Floodplain swamp is very limited in extent within the preserve, occurring only in the lower reaches of Seven Mile Slough, in part of Duck Slough, in the lower part of Gum Slough, and a small stand along Pine Island Slough. This community should be considered in excellent natural condition. An important historical note is the last Carolina parakeet (*Conuropsis carolinensis*) nests in the wild were removed by an egg collector from the floodplain swamp area of Gum Slough in 1927 (prior to state acquisition).

Several species seem to be restricted to floodplain swamp on the preserve, perhaps occurring in no other natural community on the site. These include groundnut (*Apios americana*), false hop sedge (*Carex lupuliformis*), woolly witchgrass (*Dichanthelium scabrisculum*), and coral greenbrier (*Smilax walteri*). The floodplain swamps have distinctly flowing water during high water periods, which distinguishes them from all other forested communities on the preserve (Bridges 1998).

An old survey map (1800s) indicates "cypress" in sections 14 and 15 of T33S R32 E where the Gum Slough floodplain swamp is. There currently is no cypress in this location. Either there was cypress here and it was logged or the surveyor mistook the tupelo species that are there now for cypress. The area should be investigated for any evidence of cypress such as stumps or knees.

General Management Measures: Restore hydrology as needed. Monitor for and treat exotic species infestations. *Lygodium* spp. infestations have been documented and treated in the Gum Slough floodplain swamp.

Hydric Hammock

Desired Future Condition: Hydric hammock is characterized by a closed canopy of 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, cabbage palm (*Sabal palmetto*), live oak, sweetbay (*Magnolia virginiana*), swamp tupelo (*Nyssa sylvatica biflora*), American elm (*Ulmus americana*), red maple (*Acer rubrum*) and other hydrophytic tree species. Soils will be poorly drained but only occasionally flooded. Hydric hammock ecotones should occasionally burn from fires originating in adjacent upland natural communities, typically prairie.

Description and Assessment: Hydric hammock includes those hammocks that periodically inundate or where the soil surface is saturated to the extent that there is little or no upland area within the hammock. These tend to have a mostly cabbage palm canopy, with little or no live oak, and occasional trees of red maple and laurel oak. A characteristic shrub that distinguishes these from prairie

hammocks is Walter's viburnum (*Viburnum obovatum*). The ground cover is comprised of mostly the same grasses as in the low diversity prairie hammocks. The outer or wetter zones of these hammocks may naturally have a sparse ground cover due to the combined effects of periodic flooding and dense shade, which limits the plant species able to grow in this situation. Most of the hydric hammocks on the property have similar damage as the prairie hammocks due to cattle and feral hogs (Bridges 1998). Also refer to treatment of mesic hammocks (above).

General Management Measures: Allow fires to burn into hammocks. This will help deter the encroachment of trees into adjacent prairies. The understory diversity of these hammocks may have been reduced somewhat by past grazing and be in the process of recovery. Areas of past disturbance by cattle and feral hogs often have extensive coverage of the weedy exotic sida. Cogongrass and other invasive plants should continue to be documented and treated. Since the preserve's hammocks are small and are limited in total extent, care should be taken when planning trails, primitive camping areas, horseback camping facilities, and other facilities to avoid further damage to the groundcover of the more intact hammocks.

Slough

Desired Future Condition: Characterized by broad shallow channels and inundated with slow moving water except during extreme droughts. With a hydroperiod of at least 250 days, sloughs are the deepest drainageways within marsh and swamp systems and can contain open water, herbaceous cover, or be partially forested. Sloughs will occur in irregular linear arrangements within wet prairie and slough marsh communities. The vegetation structure will be quite variable. Forested sloughs will have a canopy of tupelo (*Nyssa* spp.) and Carolina ash. Sloughs dominated by emergent herbs often contain alligator flag (*Thalia geniculata*), arrowhead (*Sagittaria* spp.), pickerelweed, and lizard's tail (*Saururus cernuus*). Deeper sloughs may contain submerged and floating vegetation including American white waterlily (*Nymphaea odorata*), spatterdock (*Nuphar advena*), frog's bit (*Limnobiium spongia*), bladderworts (*Utricularia* spp.), and duckweeds (*Lemna* spp.). The soils are sand and become exposed during extreme drought. Peat may form in deeper locations in the slough system.

Description and Assessment: Sloughs in the preserve are distinguished from slough marsh by their more permanent water and consequent deeper marsh vegetation. The slough's deep marsh vegetation is often dominated by pickerelweed, with substantial amounts of maidencane, sawgrass, arrowhead, alligator flag, and spatterdock. There are scattered clumps of woody plants naturally occurring in sloughs, such as Carolina willow, Carolina ash, and swamp tupelo.

The sloughs in the preserve were all channelized to varying degrees prior to state acquisition. A major backfilling effort in 1999-2001 successfully restored approximately 18 miles of canals. The fact that Seven Mile Slough's associated slough marsh community is an FNAI-designated exemplary site is a testament to the success of this restoration project.

Major canals still exist in Duck and Pine Island Sloughs. Currently the Division's

lease agreement allows the Latt Maxcy Corporation to maintain the canal that runs the length of Pine Island Slough (and one tributary) in the preserve. This area is hydrologically altered and as a result the ecosystems associated with the slough system are compromised. The Division should look for any opportunity to restore (backfill) this canal. For example, if the Latt Maxcy property to the north is sold, the Division should, to the extent feasible, look to change the agreement so that restoration can occur.

The sloughs that have been restored should be considered in excellent condition. The sloughs where canals remain are hydrologically compromised and should be considered in poor condition.

General Management Measures: Sloughs are experiencing colonization by invasive species such as Wright's nutrush, Peruvian primrosewillow, water hyacinth (*Eichhornia crassipes*), and West Indian marsh grass (*Hymenachne amplexicaulis*). Surveying and control efforts should continue to be developed and implemented. Remaining hydrologic restoration needs within the preserve need to be quantified. When known, a plan that addresses these needs should be developed. Pine Island and Duck Sloughs are in the greatest need of restoration. Slough and associated slough marshes should burn on the same frequency as the adjacent dry and wet prairie communities, allowing the fire to extinguish naturally or burn completely through.

Slough Marsh

Desired Future Condition: Slough marsh in the preserve is characterized by a shallow drainage with or without a definite channel and intermittently slow-moving water in flat sandy landscapes. Emergent herbaceous species will be dominant over most of the area, and there will be an open vista. There will be little accumulation of dead grassy fuels due to periodic burning and the soil surface is exposed when the community is not inundated. Dominant vegetation in slough marsh will include sand cordgrass (*Spartina bakeri*), longleaf threeawn (*Aristida palustris*), beaksedges (*Rhynchospora* spp.), yellow-eyed grasses (*Xyris* spp.) and blue maidencane (*Aphicarpum muhlenbergianum*). The optimal FRI for this community is 2-5 years depending on fire frequency of adjacent communities, usually dry and wet prairie.

Description and Assessment: The difference between slough marsh and wet prairie natural communities is more likely related to hydrologic function rather than vegetation. While wet prairie tends to occur in isolated patches in the dry prairie matrix, slough marsh tends to occur as narrow to broad linear drainageways that connect to larger drainages. It is also distinguished from depression and basin marshes by being more of a conduit of surface water than a water storage depression (Bridges 1998). Slough marshes in the preserve drain into, or surround sloughs. FNAI considers Seven Mile Slough to be an exemplary site for the slough marsh community.

Prior to state acquisition, many of the slough marshes were historically channelized as were their slough counterparts. A major backfilling effort in 1999-2001

successfully restored approximately 18 miles of canals. The fact that Seven Mile Slough's associated slough marsh community is designated by FNAI as an exemplary site is a testament to the success of this restoration project.

General Management Measures: Sloughs and slough marshes are experiencing colonization by invasive species such as Wright's nutrush, Peruvian primrosewillow, water hyacinth, and West Indian marsh grass (*Hymenachne amplexicaulis*). Surveying and control efforts should continue to be developed and implemented. Remaining hydrologic restoration needs within the preserve need to be quantified. When known, a plan that addresses these needs should be developed. Pine Island and Duck Slough's associated slough marshes are in the greatest need of restoration. Slough marsh should burn on the same frequency as the adjacent dry and wet prairie communities, allowing the fire to extinguish naturally or burn completely through.

Wet Prairie

Desired Future Condition: Trees and shrubs will be absent. Groundcover will be exceptionally species-rich. Dominant species will be wiregrass in the dryer portions and sedges (*Carex* spp.), nutrushes (*Scleria* spp.) and longleaf threeawn in the wetter portions. Carnivorous plant species are frequent, such as sundews (*Drosera* spp.), butterworts (*Pinguicula* spp.) and bladderworts. Terrestrial orchids can be locally abundant, such as grasspinks (*Calopogon* spp.) and ladiestresses (*Spiranthes* spp.). Wet prairies, in part, formerly supported a viable population of the Florida grasshopper sparrow in the preserve. The optimal FRI for this community is 12 to 30 months.

Description and Assessment: The preserve's wet prairie is considered in excellent condition, and is an FNAI exemplary site for this community type. Wet prairie is a major component of the dry prairie matrix. The boundary between dry prairie and wet prairie is usually not discrete, but rather represents a broad ecotone reflecting strongly increasing hydroperiod over a slight decrease in elevation. There are actually several plant communities or micro-habitat zones which are present across this gradient (Bridges 1997).

Several of the imperiled plant species documented in the preserve are found exclusively in wet prairie. Currently, the list of imperiled plant species found in wet prairie includes many-flowered grasspink, snowy orchid (*Habenaria nivea*), celestial lily (*Nemastylis floridana*), Florida beargrass (*Nolina atopocarpa*), blue-flowered butterwort (*Pinguicula lutea*), hooded pitcherplant (*Sarracenia minor*), and Simpson's zephyrlily (*Zephyranthes simpsonii*).

Wet prairie and the ecotone that it shares with dry prairie are the preferred nesting habitat of the federally endangered Florida grasshopper sparrow. Unfortunately, both wet and dry prairie have experienced an invasion of the RIFA, a predator of sparrow nests.

Wet prairie can be distinguished from dry prairie by a dramatic and often abrupt decrease in cover of saw palmetto, and a usually correlated decrease in cover or

near absence of the following associated shrubs: staggerbush (*Lyonia fruticosa*), fetterbush, St. John's-wort (*Hypericum reductum*), and shiny blueberry. It should be noted that dwarf live oak is found in both wet and dry prairies, although it usually is lower in percent cover in wet prairies, and gallberry may actually have greater cover in some (less frequently burned) wet prairies than in dry prairies. The dominant species of most wet prairies on the preserve is wiregrass, often in association with blue maidencane (*Amphicarpum muhlenbergianum*), shortspike bluestem (*Andropogon brachystachyus*), broomsedge bluestem (*A. virginicus* var. *virginicus*), toothachegrass (*Ctenium aromaticum*), and creeping bluestem (*Schizachyrium stoloniferum*). Several species of *Rhynchospora* also are frequent in wet prairies, with *R. galeana* being the most characteristic of this community. The ground cover is very diverse in herbaceous species, including the carnivorous plants dwarf sundew (*Drosera brevifolia*), pink sundew (*D. capillaris*), yellow butterwort (*Pinguicula lutea*), blue butterwort (*P. caerulea*), small butterwort (*P. pumila*), bladderwort (*Utricularia subulata*), and, in the Latt Maxcy Prairie part of the preserve, hooded pitcher plant. Other characteristic species include yellow colic-root (*Aletris lutea*), vanillaleaf (*Carphephorus carnosus*), daisy fleabane (*Erigeron vernus*), dicantherium (*Dichantherium leucothrix*), myrtle-leaved St. John's wort (*Hypericum myrtifolium*), pale meadow beauty (*Rhexia mariana*), reticulated nutrush (*Scleria reticularis*), and yellow-eyed grass (*Xyris ambigua* and *X. elliotii*). Where wet prairie occurs as a narrow band above deeper wetlands, such as depression marshes, swales, sloughs, or baygalls, the grass bushy bluestem (*Andropogon glomeratus* var. *glaucopsis*) is usually dominant, and often species indicative of slight seepage, such as *Rhynchospora ciliaris* and yellow-eyed grass (*Xyris platylepis*) (Bridges 1998).

The wet prairies of the preserve are mostly in excellent condition due to the frequency (and seasonality) of past burning and lack of significant ditching of these shallow wetland systems. Some of the wet prairies have been invaded by big carpet grass (*Axonopus furcatus*), which has likely reduced the species diversity and compromised the quality of those sites. Carpet grass was widely aerially seeded in central Florida in the past and has impacted many similar communities throughout the region. It is possible that the carpet grass increase in some wet prairies may have been further influenced by rooting of the native groundcover by feral hogs, allowing the more aggressive, rhizomatously spreading carpet grass to dominate these disturbed areas (Bridges 1998). Some wet prairies are being invaded by woody shrub species due to lack of frequent, growing season burning. Feral hogs preferentially root in wet prairies, especially where redroot (*Lachnanthes caroliniana*) patches occur. Some of these chronically rooted areas are very large and show up on aerial imagery.

General Management Measures: Wet prairies have high potential for supporting additional populations of endangered and threatened plant species and should be subject to additional survey work in the summer and fall of the year after prescribed burning of each site. Surveying and treatment of invasive plant species should continue. A plan to quantify and rehabilitate hog rooting should be developed and implemented as resources allow. As with dry prairie, fire ants should be controlled to the extent practicable. Implementing and maintaining a preserve-

wide 1- to 2.5-year growing season fire return interval is the ideal long-term management strategy. Growing season, short-rotation burning will decrease the density of woody shrubs and promote native grass and forb diversity.

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 wetlands, resulting in sandy bottoms overlain by organic matter. Desired conditions include minimizing disturbance and alterations and preserving adjacent natural communities.

Description and Assessment: Blackwater stream in the preserve is confined to small sections of the former Kissimmee River channel. These remnants of the channel are cut off from the historic flow of the river due to the construction of the C-38 canal. Recent river restoration efforts have reconnected some of these isolated oxbows in a new 6-mile recarve of the river (Jones *et al.* 2012).

General Management Measures: Look for opportunities to continue C-38 backfilling to reconnect remaining blackwater oxbows to re-establish natural flow.

Altered Landcover Types

Agriculture (Abandoned Field)

Desired Future Condition: The long-term, desired future condition for abandoned field is to restore the altered landcover type to slough marsh and wet prairie, which were the natural community types present prior to conversion. Please refer to the desired future condition statements above for these natural communities.

Description and Assessment: There are currently 1,643 acres of former agriculture areas where row crops were grown in the preserve. These areas are located primarily in the current cattle grazing area and the former Audubon parcel. One abandoned field lies just south of Seven Mile Slough in management zone KP-3. Most of these areas have undergone hydrological restoration to various degrees, but there remains a need for further effort. The areas have high percentages of native species but exotic species are also present. In some areas, torpedograss was planted.

General Management Measures: Continue to manage with fire and invasive plant treatments. Look for opportunities to continue hydrological restoration.

Abandoned Pasture

Desired Future Condition: The long-term desired future condition for abandoned pasture is to restore the altered landcover type to dry prairie and wet prairie, the original natural communities present. Please refer to the desired future condition statements above for these natural communities.

Description and Assessment: The abandoned pasture is located in management zone KP-13. The area is approximately 105 acres in size, and was transformed to improved pasture prior to state acquisition. Due to incomplete conversion to improved pasture and natural recruitment, the area has a high percentage of native species. Opportunistic woody vegetation, primarily wax myrtle, tends to do well in this area, as do invasives, namely cogongrass. Florida grasshopper sparrows have been documented in this habitat. The area has a high potential for successful restoration.

General Management Measures: Manage as dry prairie. Continue invasive plant surveys and treatments. Continue sparrow monitoring.

Canal/Ditch

Desired Future Condition: The long-term desired future condition for canals and ditches is to restore the altered landcover type to slough and slough marsh, as these canals and ditches are the result of straightening and deepening existing natural waterways. Please refer to the desired future condition statement for these natural communities above.

Description and Assessment: There are currently more than 12 miles of canals in the preserve with an estimated footprint of 144 acres. The canals are likely reducing the hydroperiod of the adjacent natural communities. One example, Pine Island Slough, is channelized for its entire length in the preserve and is dominated by exotic species such as water hyacinth, West Indian marsh grass (*Hymenachne aplexicaulis*) and limpograss (*Hemarthria altissima*). In addition, Duck Slough's channel continues to reduce hydroperiod in the prairies containing a Florida grasshopper sparrow population.

General Management Measures: Implement aquatic invasive plant species survey and treatments. Implement the collection of baseline surface water monitoring data in anticipation of future hydrological restoration in Duck Slough Prairie. Take advantage of opportunities for hydrological restoration.

Developed Areas

Desired Future Condition: The developed areas within the preserve will be managed to minimize any negative effects on adjacent natural areas. Priority invasive plant species (Florida Exotic Pest Plant Council [FLEPPC] Category I and II species) will be removed from all developed areas on an ongoing basis. Other management measures include proper storm water management and development guidelines that are compatible with prescribed fire management in adjacent natural areas.

Description and Assessment: Developed areas in the preserve include the shop compound, ranger residences, visitor use area at the main gate, improved main drive (shell), Seven Mile Slough parking and wildlife viewing area, campgrounds, astronomy pad, and office compound.

General Management Measures: Staff will continue to control invasive exotic plant species in developed areas of the preserve. Defensible space will be maintained

around all structures in areas managed with prescribed fire or at risk of wildfires. The main drive should be improved to reduce negative effects the shell runoff and dust have on adjacent natural areas.

Improved and Semi-Improved Pasture

Desired Future Condition: The long-term desired future condition for improved and semi-improved pasture is to restore the altered landcover type to dry prairie and wet prairie. Please refer to the desired future condition statements above for these natural communities.

Description and Assessment: Improved pasture is located in management zones KP-8 through KP-12, and semi-improved pasture is located in management zones KP-6 and KP-7. The area is approximately 4,772 acres in size and is currently grazed by cattle via an agreement with a private contractor (JOBI 2004). Due to incomplete conversion to improved pasture prior to state acquisition, the semi-improved area has a high percent cover of native species likely due to a viable seed bank and recruitment from adjacent native prairies. The improved pasture area has a low to medium percent cover of native species. Opportunistic woody vegetation, primarily wax myrtle, tends to do well in both pasture types, as do invasive plants, namely cogongrass and torpedograss (*Panicum repens*). Florida grasshopper sparrows have been documented in this habitat. The area has a high potential for successful restoration.

General Management Measures: Manage both pasture types as dry prairie, and continue cattle grazing. Continue invasive plant surveys and treatments. Continue sparrow monitoring.

Spoil Areas

Desired Future Condition: The long-term desired future condition for spoil is to restore the altered landcover type to floodplain marsh. Please refer to the desired future condition statement above for this natural community.

Description and Assessment: When the Kissimmee River was channelized in the 1960s and 1970s, the materials that were removed to form the C-38 canal were deposited on the shore to form large linear, flattened spoil mounds. Two of these occur within the preserve for a total of approximately 198 acres. The spoil areas are covered in exotic invasives such as cogongrass and paragrass.

General Management Measures: Seek opportunities for the spoil to be used in future restoration efforts and to restore the areas to floodplain marsh. Seek opportunities to treat and control invasive plant species.

Imperiled Species

Imperiled species are those that are (1) tracked by FNAI as critically imperiled (G1, S1) or imperiled (G2, S2); or (2) listed by the U.S. Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FWC) or the Florida

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

Table 2 contains a list of all currently documented imperiled species within the preserve 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.

Many imperiled species are documented within the preserve's boundaries. The large prairie landscape, in excellent condition, contains remnant populations of species that historically had a wider distribution in south central Florida, notably the Florida grasshopper sparrow, the Florida burrowing owl, and crested caracara. Many of the imperiled species found in the preserve seem to have healthy, even robust populations. Exceptions include those that need verification or specific monitoring such as the Eastern indigo snake (*Drymarchon corais couperi*) and spreading pinweed (*Lechea divaricata*); species that only occur in a source-sink dynamic (e.g. Florida scrub-jay, wherein a local nesting population is either supplementing or subtracting from the greater population); and the Florida grasshopper sparrow, whose population has severely declined since monitoring began in 1998 for reasons that are not fully understood.

Currently there are 19 imperiled plant species documented in the preserve. The most sensitive of these are found within the dry and wet prairie matrix. The others are associated with the rarer scrubby flatwoods or mesic (subtropical hardwood) hammock communities.

The imperiled plants found in the prairie landscape, such as multi-flowered grasspink, Catesby's lily and the Simpson's zephyrlily seem to respond robustly to the short rotation growing season fire return interval being implemented more frequently and consistently in the preserve. Post-burn surveys in the summer and fall for additional species currently not documented should continue. For example, the first population of the celestial lily wasn't documented in the preserve until a specific survey for it was conducted in 2013. Since the preserve is such an expansive landscape, these surveys should also focus on finding additional populations of currently known imperiled species. Rare plant species that are found post-burn are documented with handheld global positioning system (GPS) units and mapped with a geographic information system (GIS) software (ESRI 2005-2015).

Imperiled plants of the mesic hammock community include Simpson's stopper and epiphytes such as the Giant airplant (*Tillandsia utriculata*) and the Cardinal airplant (*T. fasciculata*). Unfortunately, the larger epiphytic *Tillandsia* species in the preserve were severely impacted by the exotic Mexican bromeliad weevil (*Metamasius callizona*). Opportunities to repopulate these *Tillandsia* species may be required. The butterfly orchid (*Encyclia tampensis*) is currently listed as imperiled due to commercial exploitation. It is the only known epiphytic orchid documented in

the preserve. When specimens of the butterfly orchid are found on the ground in tropical mesic hammocks, they are relocated to trees in Kilpatrick Hammock to re-establish a population there. Additional surveys of mesic hammocks, specifically the highly diverse subtropical type, may result in discovery of additional imperiled species.

The scrubby flatwoods of the preserve currently have only one imperiled plant, spreading pinweed. While this "prairie scrub" community is known to have a lower diversity of plant species than true scrub, it is worth surveying for additional species, especially in the summer and fall after a burn. This community also has 2 imperiled invertebrate species endemic to scrub, the red widow spider (*Lactrodectus bishopi*) and the bi-colored scrub cone ant (*Dorymermex flavopectus*).

Several butterfly species that are tracked by FNAI occur in the prairie such as Loamm's skipper and Berry's skipper (*Euphyes berryi*). There is a record of the Arogos skipper (*Atrytone arogos arogos*) from 2003 but the species has not been verified since (Jue and Jue 2013). Butterfly surveys may document more FNAI-tracked species and should be continued. Populations of butterfly species of tropical affinity seem to vary through time and may be limited by cold winters, however, the populations seem to rebound eventually.

The American alligator (*Alligator mississippiensis*) is one of the preserve's most conspicuous imperiled species. During periods of drought they tend to congregate in the few remaining landscape features that retain water, such as the culvert use area of Seven Mile Slough. During the height of the annual hydroperiod, alligators disperse freely around the landscape and may even occur in high use areas such as the campgrounds and trails. It is possible that such areas may have to be temporarily closed in the future for visitor safety.

The gopher tortoise (*Gopherus polyphemus*) is found frequently in the dry prairie landscape, concentrated in the more xeric subtype. Commensal species likely occur as well; however, this is an area that needs additional research. Active burrows are documented using handheld GPS units and mapped in GIS. FNAI conducted a standardized survey for gopher tortoise at KPPSP in 2017 for the FWC (FNAI 2017). The population in the preserve seems to be stable but should be the topic of more rigorous investigation and monitoring.

The Florida pine snake (*Pituophis melanoleucus mugitus*) population's status in the park is unknown, and is a topic that requires research. It likely relies on gopher tortoise burrows, and potentially uses other burrows such as those of the Florida burrowing owl and the eastern spotted skunk (*Spilogale putorius*). It can also burrow on its own, however. The species is almost exclusively seen on roads, and has been documented to suffer mortality as a result.

An extraordinary assemblage of birds found nowhere else in the entire southeast coastal plain breeds in the preserve. This unique list includes the Florida grasshopper sparrow, Florida scrub-jay, Florida burrowing owl, crested caracara,

swallow-tailed kite (*Elanoides forficatus*), white-tailed kite, and Florida sandhill crane.

Currently the preserve has more than 20 documented imperiled bird species. However, most are transient in nature, either using the preserve as a stopover site during migration, or using the preserve during foraging forays away from local roosting or breeding sites. One species formerly found in the preserve, the Carolina parakeet, is now extinct. It is the subject of a book (Snyder and Russell 2002) and a documentary, both of which feature the preserve (Lost Bird Project 2012). The preserve is the last known nesting site in the wild for the species, the last nests being collected in 1927 from Gum Slough, prior to state acquisition. The nests reside in the Florida Museum of Natural History collection. A 5-foot bronze sculpture that memorializes the parakeet is located outside the preserve's office.

Several of the preserve's imperiled bird species belong to a general group known as waders and include species such as the little blue heron (*Egretta caerulea*) and tricolored heron (*E. tricolor*). These birds tend to breed in communal areas known as rookeries; several are currently known in the preserve. Some of these rookeries have been in existence for a long time, having been monitored since the beginning of the 20th century by early Audubon wardens. Continued monitoring of these rookeries during the breeding season will result in confirmation of which species are actually breeding in the preserve. Waders that aren't confirmed as breeding in the preserve are just using the habitat for foraging.

The Florida scrub-jay has been documented breeding in the preserve, but the population is small and variable. Jay surveys are conducted each year using Project Jay Watch methodologies. Results indicate few to no jays in any given year. Jays found in the preserve are likely individuals that have dispersed from the nearby Lake Wales and Bombing Range Ridges metapopulation, confirmed by observations of banded individuals.

Florida sandhill cranes breed in isolated depression marshes and basin marshes in the preserve. The population size is unknown due to lack of surveys. However, the preserve contains high quality breeding habitat and the population appears stable.

The Florida grasshopper sparrow (FGSP) is the only taxon, plant or animal, that is known to be endemic to Florida dry prairie. It is likely that the sparrow's range was much larger historically, but due to large-scale habitat loss the sparrow is now limited to only 3 known sub-populations on public land and perhaps 2 on adjacent private lands. The sparrow has specific habitat requirements that include frequent burning and absence of trees.

The preserve's FGSP population was once the largest in existence. However, annual surveys conducted since 1998 indicate that the population is critically low. The population on the adjacent Avon Park AFR was declared extirpated in 2012 (although one nest was located that fledged young in 2015 and nesting attempts were observed in 2016-2017), while the population on Three Lakes WMA in 2017 was less than 30 males. The Florida Grasshopper Sparrow Working Group, which

convened in 2002, has struggled to elucidate the causes of this decline across the metapopulation, with no definite results. Current theories include disease, genetic instability, predation, and habitat loss. It is likely that the sub-population in the preserve has been severely impacted by nest depredation due to the invasive red imported fire ant (RIFA). Fire ants are known predators of sparrow nests (Tucker *et al.* 2010; Noss and Korosy 2008). Post-burn surveys at KPPSP in sparrow nesting habitat have indicated a high density of active RIFA mounds. Additional tools and strategies will be developed in conjunction with the working group to combat the RIFA invasion in the preserve. Other potential FGSP nest predators include spotted skunks, snakes, opossums, hogs, and coyotes. Following successful deployment of predator-deflection fencing around FGSP nest sites at Three Lakes WMA, this technique is now being used at KPPSP.

Tier 5 monitoring (see page 52) of the sparrow is due to the need for research into the microhabitat requirements of the sparrow, in order to inform and guide sound resource management decisions and to help in the species' recovery. To augment the population, a captive breeding strategy was developed in 2013 (USFWS 2015) and was implemented in 2015. As of 2018, the captive population contains nearly 50 birds (including adults, hatch-year birds, and nestlings) at two facilities).

Along with the Florida grasshopper sparrow, the Florida burrowing owl is a species that requires treeless and frequently burned prairie. However, unlike the sparrow, the owl is adaptable and can survive in altered landscapes such as urban Cape Coral, Florida, home to the state's largest population. The preserve's burrowing owls likely comprise the largest natural population in the entire Coastal Plain. Many visitors travel to the preserve specifically to observe a burrowing owl in native habitat.

Both kite species that breed in the preserve, the swallow-tailed kite and white-tailed kite, are raptors of open areas but require pine or oak trees for nesting. Both have very low populations in the preserve. While the swallow-tailed kite breeds throughout Florida, the white-tailed kite seems to prefer to breed only in the greater Everglades ecosystem, including the Kissimmee Prairie region. In 2002, 5 active white-tailed kite nests were confirmed in the preserve, likely representing the largest documented breeding aggregation east of the Texas population.

The crested caracara is also a dry prairie habitat specialist. In the preserve, they seem to be uniformly distributed with nesting territories of 1-2 square miles. Based on this observation, the breeding population in the preserve may be between 40 to 80 pairs, though a rigorous population survey has never been conducted. Fortunately for the species, it is adaptable to altered landcover and seems to be doing well on the landscape outside the preserve in the ranch lands that were once dry prairie.

Two additional raptor species whose U.S. populations are found primarily in Florida have been documented in the preserve: the snail kite (*Rostrhamus sociabilis plumbeus*) and the short-tailed hawk (*Buteo brachyurus*). The preserve does not meet the snail kite's specific nesting requirements, and the short-tailed hawk is a

possible but unconfirmed breeder along the Kissimmee River and its associated sloughs. For both species, the preserve lies in their migration pathway between established breeding grounds to the north and winter habitat to the south.

The Florida black bear (*Ursus americanus floridanus*) and the Florida panther (*Puma concolor coryi*) have been documented in the preserve by observations of both tracks and individuals. There is no breeding habitat in the preserve, and these large carnivores likely come through the preserve only on territorial wanderings.

Sherman's fox squirrel (*Sciurus niger shermani*) is very rare in the park. Documented sightings are likely related to foraging activity in years when oak species have an abundant mast. It is unlikely that they are breeding in the park.

Common and Scientific Name	Imperiled Species Status				Management Actions	Monitoring Level
	FWC	USFWS	FDACS	FNAI		
PLANTS						
Many-flowered grass-pink <i>Calopogon multiflorus</i>			LT	G2G3, S2S3	1,6,7,10,13	Tier 2
Butterfly orchid <i>Encyclia tampensis</i>			CE		3,10	Tier 1
Snowy orchid <i>Habenaria nivea</i>			LT		1,4,6,10,13	Tier 2
Spreading pinweed <i>Lechea divaricata</i>			LE	G2,S2	1	Tier 1
Catesby lily <i>Lilium catesbaei</i>			LE		1,6,7,10,13	Tier 2
Florida spiny pod <i>Matelea floridana</i>			LE	G2,S2	1	Tier 1
Simpson's stopper <i>Myrcianthes fragrans</i>			LT		2,13	Tier 1
Celestial lily <i>Nemastylis floridana</i>			LE	G2,S2	1,4,10,13	Tier 3
Florida beargrass <i>Nolina atopocarpa</i>			LT	G3,S3	1,4,6,10,13	Tier 2

Table 2: Imperiled Species Inventory

Common and Scientific Name	Imperiled Species Status				Management Actions	Monitoring Level
	FWC	USFWS	FDACS	FNAI		
Blue-flowered butterwort <i>Pinguicula caerulea</i>			LT		1,6,7,10,13	Tier 2
Yellow-flowered butterwort <i>Pinguicula lutea</i>			LT		1,6,7,10,13	Tier 2
Giant orchid <i>Pteroglossaspis ecristata</i>			LT	G2G3, S2	1,6,7,10,13	Tier 2
Hooded pitcherplant <i>Sarracenia minor</i>			LT		1,4,6,10,13	Tier 2
Lacelip ladiestresses <i>Spiranthes lacinata</i>			LT		1,4,6,10,13	Tier 2
Longlip or giantspiral ladiestresses <i>Spiranthes longilabris</i>			LT		1,4,6,10,13	Tier 2
Northern needleleaf <i>Tillandsia balbisiana</i>			LT			Tier 1
Cardinal airplant <i>Tillandsia fasciculata</i>			LE			Tier 1
Giant airplant <i>Tillandsia utriculata</i>			LE			Tier 1
Simpson's zephyrlily <i>Zephyranthes simpsonii</i>			LT	G2G3, S2S3	1,4,6,10,13	Tier 2

Table 2: Imperiled Species Inventory						
Common and Scientific Name	Imperiled Species Status				Management Actions	Monitoring Level
	FWC	USFWS	FDACS	FNAI		
INVERTEBRATES						
Arogos skipper <i>Atrytone arogos arogos</i>	N			G3T1T2, S1	1	Tier 2
Loamm's skipper <i>Atrytonopsis loammi</i>	N			G1,S1	1	Tier 2
Bi-colored scrub cone ant <i>Dorymex flavopectus</i>	N			G2,S2	1	Tier 2
Berry's skipper <i>Euphyes berryi</i>	N			G2G3, S1S2	1	Tier 2
Red widow spider <i>Latrodectus bishopi</i>	N			G2G3, S2S3	1	Tier 2
Gray ministreak <i>Ministrymon azia</i>	N			G5,S1	1	Tier 2
REPTILES						
American alligator <i>Alligator mississippiensis</i>	FT (S/A)	T (S/A)		G5,S4	4,10,13	Tier 1
Eastern indigo snake <i>Drymarchon corais couperi</i>	FT	LT		G3,S3	1,6,7,10,13	Tier 1
Gopher tortoise <i>Gopherus polyphemus</i>	ST	C		G3,S3	1,6,7,10,13	Tier 2
Florida pine snake <i>Pituophis melanoleucus mugitus</i>	ST			G4,S3	1,6,7,10,13	Tier 2

Table 2: Imperiled Species Inventory

Common and Scientific Name	Imperiled Species Status				Management Actions	Monitoring Level
	FWC	USFWS	FDACS	FNAI		
BIRDS						
Florida grasshopper sparrow <i>Ammodramus savannarum floridanus</i>	FE	LE		G5T1,S1	1,2,3,4,6,7,8,10,13	Tier 5
Florida sandhill crane <i>Antigone canadensis pratensis</i>	ST			G2T2T3,S2S3	1,4,6,7,10,13	Tier 2
Florida scrub-jay <i>Aphelocoma coerulescens</i>	FT	LT		G2,S2	1,6,7,10,13	Tier 3
Great white heron <i>Ardea herodias occidentalis</i>	N			G5T2,S2	1,4	Tier 1
Florida burrowing owl <i>Athene cunicularia floridana</i>	ST			G4T3,S3	1,6,7,10,13	Tier 3
Short-tailed hawk <i>Buteo brachyurus</i>	N			G4G5,S1		Tier 1
Crested caracara <i>Caracara cheriway</i>	FT	LT		G5,S2	1,6,7,10,13	Tier 3
Little blue heron <i>Egretta caerulea</i>	ST			G5,S4	1,4	Tier 2
Tricolored heron <i>Egretta tricolor</i>	ST			G5,S4	1,4	Tier 2
Swallow-tailed kite <i>Elanoides forficatus</i>	N			G5,S2	1,6,7,10,13	Tier 2
White-tailed kite <i>Elanus leucurus</i>	N			G5,S1	1,6,7,10,13	Tier 3

Table 2: Imperiled Species Inventory						
Common and Scientific Name	Imperiled Species Status				Management Actions	Monitoring Level
	FWC	USFWS	FDACS	FNAI		
Merlin <i>Falco columbarius</i>	N			G5,S2	1,6,7	Tier 1
Peregrine falcon <i>Falco peregrinus</i>	N			G4,S2	1,6,7	Tier 1
Whooping crane <i>Grus americana</i>	FXN	LE,XN		G1,SNR	1	Tier 1
Wood stork <i>Mycteria americana</i>	FT	LT		G4,S2	1,4,6,7,10,13	Tier 2
Bachman's Sparrow <i>Peucaea aestivalis</i>	N	N		G3,S3	1,2,4,6	Tier 1
Roseate spoonbill <i>Platalea ajaja</i>	ST			G5,S2	1,4	Tier 1
Snail kite <i>Rostrhamus sociabilis plumbeus</i>	N	LE		G4G5T2, S2	1,4	Tier 1
MAMMALS						
Florida panther <i>Puma concolor coryi</i>	FE	LE		G5T1, S1	1	Tier 1
Sherman's fox squirrel <i>Sciurus niger shermani</i>	SSC			G5T3, S3	1	Tier 1
Florida black bear <i>Ursus americanus floridanus</i>	N			G5T2,S2	1	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

Monitoring Level:

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

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

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

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

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

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

Exotic and Nuisance Species

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

While the open prairies of the preserve are relatively pristine, exotic plant infestations are found scattered throughout the preserve. The current extent of exotic plant species in the preserve is unknown. Due to the expansive size of the preserve and limited resources, complete surveys are logistically challenging to implement. The spatial distribution of known infestations varies; however, there are some general patterns.

Aquatic species such as water hyacinth and waterhyme (*Hydrilla verticillata*) are associated with major drainages sloughs, canals, former agricultural areas, and the Kissimmee River/C-38 canal. Wright's nutrush is found primarily in Dead Pine Island Marsh and associated wetlands but has begun to spread along trails in the Audubon parcel. Torpedograss was historically introduced into the agricultural areas, and has since spread and now occurs in a linear fashion along most firebreaks/trails. It also occurs in large infestations in the pasture and sloughs. Punk tree (*Melaleuca quinquenervia*) is limited in the preserve to the eastern section of the Audubon parcel but has begun to spread westward from the Shin Hammock Marsh area.

Upland species, such as cogongrass, tend to associate with disturbance and can be found along roads and trails, pastures, and successional areas where tree and palmetto density has been artificially increased. Hammocks tend to contain most of the larger cogongrass infestations, especially along the river marsh. Cogongrass infestations commonly need to be burned prior to chemical treatment (to remove excess thatch) for effective control, and therefore require an increased management effort. Caesar's weed (*Urena lobata*) is very common in disturbed areas in the same fashion as cogongrass. In fact, the 2 species commonly co-occur in infestations. Air-potato (*Dioscorea bulbifera*) is currently restricted to Prescott Hammock along the river.

Exotic plant control has become an important component of the preserve's resource management effort. During the period since the 2005 Unit Management Plan (UMP), more than 900 acres of exotic plants have been treated either chemically or mechanically, on average about 82 acres per year. Twenty-three species of FLEPPC Category I, and 2 species of Category II have been treated both in-house and contractually. The 2 species that have had the most in-house control effort during this time period are cogongrass (763 acres) and torpedograss (89.2 acres). The preserve has implemented 2 state-funded exotic contracts: in 2007, the 10-acre air-potato infestation in Prescott Hammock was treated, and in 2010, 68 acres of both cogongrass and torpedograss were treated in the pasture. DRP staff are currently working on a multiyear project (which started in FY 2016) through the FWC's Aquatic Habitat Restoration/Enhancement (AHRE) Program to treat the Wright's nutrush (aerially with a helicopter) to control this species.

In spring of 2013 the biocontrol agent for air-potato, the air potato leaf beetle (*Lilioceris cheni*) was released at the Prescott Hammock site by a representative from the University of Florida's Institute of Food and Agricultural Sciences (IFAS). Opportunistic monitoring of the site will establish whether or not the beetle will be an effective control strategy.

Cattail (*Typha* spp.), a native plant species, has become problematic in certain areas where hydrologic disturbance has occurred. Along the preserve's main drive, deep areas were dug when the road was improved with shell. These deeper areas, likely buffered by calcium runoff, have become infested with a monoculture of cattail and represent a management concern. Other areas along trails and canals are also experiencing cattail encroachment but to a lesser degree, minus the calcium input. A cattail management strategy should be developed and implemented in these areas.

Two exotic plant species added to the FLEPPC list in 2017 are also becoming more of a management concern. Although little effort has gone into treating these species previously, monitoring and removal efforts will now increase.

Smutgrass (*Sporobolus indicus*, now a Category I species) is invading developed areas such as parking lots, roads/trails, and building areas. It is also becoming problematic in the pastures. In the landscape outside the preserve, smutgrass

forms large monocultures in pastures and rangelands. This plant should be monitored closely to avoid encroachment into native prairies.

Exotic species of *Sida* (including *Sida planicaulis*, now a Category II species) are found in almost all hammocks in the preserve, likely related to disturbance from feral hog rooting and cattle grazing activity prior to state acquisition. *Sida* forms dense monocultures and shades out the understory, an understory that can be uniquely diverse when not disturbed (refer to Mesic Hammock treatment above).

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.

The preserve's exotic animal list is less extensive than the exotic plant list; however, the preserve does have several terrestrial and aquatic exotic animals that are opportunistically removed by staff. Terrestrial species include the brown anole (*Norops sagrei*) and Cuban treefrog (*Osteopilus septentrionalis*) which, interestingly, have been found in the preserve only since the development and opening of the campgrounds. Indo-pacific gecko (*Hemidactylus garnotii*) is an additional exotic herpetofaunal species removed occasionally by staff. Nine-banded armadillos (*Dasypus novemcinctus*) breed in the prairies and hammocks. Occasionally a feral cat or dog must be captured and taken to animal control officials. Exotic fish species that have been removed include the walking catfish (*Clarias batrachus*) and the Orinoco sailfin catfish (*Pterygoplichthys multiradiatus*).

Coyotes (*Canis latrans*) are native to the western U.S. and are now established in Florida as well as the preserve. With the extirpation of the native red wolf (*Canis lupus rufus*), it is likely that the coyote is filling a part of the wolf's ecological niche. While birds and eggs make up a small portion of the coyote's diet, it preys on species such as raccoons and foxes that are more abundant and prey more frequently on birds. By reducing populations of these smaller predators, coyotes may improve nest success and survival of ground-nesting species such as turkey and Northern bobwhite (McCown and Scheick 2007). While coyotes do not appear to be problematic within the preserve at present, staff may implement control strategies on coyotes if needed.

Feral hogs are a problematic exotic animal in the preserve. Hogs continue to root up large areas in the interior of many of the zones, some of which are detectable on aerial imagery. Hog rooting intensively disrupts the hydrology and plant composition of the prairie, and is particularly worrisome in the wet prairies where sensitive and imperiled plant species are diverse, and where imperiled animal species, notably the Florida grasshopper sparrow, breed. Since 2005, hog contractors have removed nearly 2,900 feral hogs from the preserve. Authorized preserve staff and volunteers removed an additional 98 hogs during the same period. Efforts to control these animals should be continued, and new methods employed as they are developed.

Red imported fire ants (RIFA) represent the most problematic exotic animal species in the preserve. Field investigations (KPPSP unpublished data) indicate that RIFA have invaded into the interior of otherwise pristine prairies, including Florida grasshopper sparrow nesting habitat. RIFA are documented Florida grasshopper sparrow (FGSP) nest predators (Noss and Korosy 2008; Tucker *et al.* 2010), and in fact this may be the best theory explaining the dramatic decline of the FGSP at the preserve. Several methods to mechanically and chemically treat active RIFA mounds in FGSP nesting areas are being utilized (including a hot-water injection technique developed by the University of Central Florida), and additional control methods will continue to be developed in conjunction with the FGSP working group.

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 venomous snakes, 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.

Since the preserve's campgrounds are surrounded by high quality habitat, native species dispersing from these habitats have occasionally been removed for visitor safety. Several eastern diamondback rattlesnakes have been relocated away from the campgrounds, as have raccoons. The snakes likely are just moving through on territorial wanderings. However, raccoons become problematic due to receiving food from visitors, both intentionally and not. Eastern gray squirrels (*Sciurus carolinensis*) have also been problematic for the same reasons, and occasionally are relocated.

There have been a few occasions where visitors have reported what could have been a nuisance alligator. In such cases, the Division's Resource Management Standard has been followed. Alligator threat assessments, to date, have all been minor occurrences where visitors have simply encountered alligators that are moving around the landscape.

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.

Table 3 contains a list of the Florida Exotic Pest Plant Council (FLEPPC) Category I and II invasive, exotic plant species found within the preserve (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 preserve, see Addendum 5.

Table 3: Inventory of FLEPPC Category I and II Exotic Plant Species			
Common and Scientific Name	FLEPPC Category	Distribution	Management Zone (s)
PLANTS			
Air-potato <i>Dioscorea bulbifera</i>	I	2	KP-38
Water hyacinth <i>Eichhornia crassipes</i>	I	2	KP-49, KP-50, KP-51
		6	KP-04, KP-13, KP-18, KP-24, KP-25, KP-28, KP-29, KP-35, KP-36, KP-42, KP-47
West Indian marsh grass <i>Hymenachne amplexicaulis</i>	I	6	KP-03, KP-04, KP-12, KP-13, KP-18, KP-23, KP-24, KP-25, KP-28, KP-35, KP-36, KP-38, KP-48, KP-49
Cogongrass <i>Imperata cylindrica</i>	I	2	KP-01, KP-02, KP-03, KP-04, KP-05, KP-07, KP-08, KP-09, KP-10, KP-11, KP-13, KP-23, KP-24, KP-25, KP-26, KP-28, KP-34, KP-35, KP-36, KP-38, KP-41, KP-42, KP-43, KP-44, KP-45, KP-46, KP-47, KP-48, KP-49, KP-50, KP-51
		3	KP-14, KP-15, KP-18, KP-29, KP-33
Lantana <i>Lantana camara</i>	I	2	KP-15, KP-38, KP-48
Peruvian primrosewillow <i>Ludwigia peruviana</i>	I	2	KP-01, KP-03, KP-05, KP-11, KP-12, KP-13, KP-14, KP-15, KP-29, KP-34, KP-38, KP-41, KP-48, KP-49
		3	KP-18, KP-24, KP-28, KP-33, KP-35, KP-36, KP-42, KP-51
		4	KP-50

Table 3: Inventory of FLEPPC Category I and II Exotic Plant Species			
Common and Scientific Name	FLEPPC Category	Distribution	Management Zone (s)
		6	KP-02, KP-04, KP-07, KP-08, KP-23, KP-25, KP-44, KP-45, KP-46, KP-47
Tropical American water grass <i>Luziola subintegra</i>	I	6	KP-18
Old World climbing fern <i>Lygodium microphyllum</i>	I	2	KP-01, KP-04, KP-07, KP-08, KP-09, KP-10, KP-11, KP-12, KP-13, KP-14, KP-15, KP-18, KP-24, KP-25, KP-25, KP-28, KP-29, KP-34, KP-38, KP-41, KP-43, KP-44, KP-46, KP-47, KP-48, KP-49
		3	KP-03, KP-26, KP-33, KP-35, KP-36, KP-42, KP-45, KP-50, KP-51
Melaleuca (punk tree) <i>Melaleuca quinquenervia</i>	I	1	KP-03, KP-41
		2	KP-46
		3	KP-45
Rose Natalgrass <i>Melinis repens</i>	I	2	KP-48, KP-50, KP-51
		3	KP-01, KP-04
Torpedograss <i>Panicum repens</i>	I	2	KP-04
		3	KP-02, KP-07, KP-08
		4	KP-47
		6	KP-01, KP-03, KP-04, KP-09, KP-10, KP-11, KP-12, KP-13, KP-14, KP-15, KP-18, KP-23, KP-24, KP-25, KP-26, KP-28, KP-29, KP-33, KP-34, KP-35, KP-36, KP-38, KP-41, KP-42, KP-43, KP-44, KP-45, KP-46, KP-48, KP-49, KP-50

Table 3: Inventory of FLEPPC Category I and II Exotic Plant Species			
Common and Scientific Name	FLEPPC Category	Distribution	Management Zone (s)
Guava <i>Psidium guajava</i>	I	1	KP-48, KP-49
Brazilian pepper <i>Schinus terebinthifolius</i>	I	2	KP-18, KP-29, KP-33, KP-34, KP-35, KP-38, KP-46
		4	KP-15
Wright's nutrush <i>Scleria lacustris</i>	I	2	KP-02, KP-10, KP-12, KP-13, KP-14, KP-15, KP-26
		3	KP-01, KP-03, KP-06, KP-07, KP-08, KP-25, KP-44
		4	KP-04, KP-43
		5	KP-06, KP-42, KP-45, KP-46, KP-47
		6	KP-18, KP-23, KP-41
Tropical soda apple <i>Solanum viarum</i>	I	1	KP-48
Smutgrass <i>Sporobolus indicus</i>	I	2	KP-05, KP-06, KP-07, KP-08, KP-09, KP-10, KP-11, KP-12
		6	KP-01, KP-02, KP-03, KP-04, KP-13, KP-14, KP-15, KP-18, KP-23, KP-24, KP-25, KP-29, KP-33, KP-34, KP-36, KP-38, KP-49, KP-50, KP-51
Caesar's weed <i>Urena lobata</i>	I	2	KP-01, KP-02, KP-03, KP-05, KP-06, KP-07, KP-08, KP-09, KP-10, KP-11, KP-12, KP-13, KP-14, KP-15, KP-18, KP-23, KP-24, KP-25, KP-26, KP-29, KP-34, KP-35, KP-38, KP-41, KP-43, KP-44, KP-46, KP-47, KP-48, KP-49, KP-50, KP-51

Table 3: Inventory of FLEPPC Category I and II Exotic Plant Species			
Common and Scientific Name	FLEPPC Category	Distribution	Management Zone (s)
		3	KP-04, KP-33, KP-36, KP-42, KP-45
Paragrass <i>Urochloa mutica</i>	I	2	KP-03, KP-05, KP-13, KP-15, KP-23, KP-24, KP-25, KP-26, KP-34, KP-41, KP-42, KP-45, KP-48
		3	KP-02, KP-14, KP-33, KP-35, KP-38, KP-49, KP-50, KP-51
		6	KP-01, KP-04
Calico flower <i>Aristolochia elegans</i>	II	2	KP-38
Durban crowfootgrass <i>Dactyloctenium aegyptium</i>	II	2	KP-50, KP-51
		6	KP-01, KP-02, KP-03, KP-04, KP-13
Limpograss <i>Hemarthria altissima</i>	II	6	KP-01, KP-02, KP-04, KP-05, KP-08, KP-10, KP-11, KP-13, KP-14, KP-15, KP-18, KP-25, KP-33, KP-34, KP-35, KP-36, KP-38, KP-44, KP-45, KP-46, KP-47, KP-48, KP-49, KP-50, KP-51
Balsampear <i>Momordica charantia</i>	II	2	KP-34
Mata pasto (fanpetals) <i>Sida planicaulis</i>	II	2	KP-07, KP-15, KP-24, KP-26, KP-29, KP-34, KP-35
		3	KP-01, KP-02, KP-03, KP-04, KP-18, KP-33, KP-38, KP-48, KP-49

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.

Special Natural Features

Kissimmee Prairie Preserve is recognized as having the largest remaining contiguous area of Florida dry prairie in existence. Due to the large size of the preserve, it is likely that large-scale landscape processes still occur. While many of the animal and plant species in the preserve may be found elsewhere individually, the assemblage of species that occurs in the preserve is unique. The northwestern and central portion of the park is a designated Wilderness Preserve where human access and alteration are minimized. Recreational amenities in the Wilderness Preserve are few (only trails and primitive campsites are provided/proposed; even the use of trail markers is reduced). The largest natural population in the southeast Coastal Plain of the Florida burrowing owl occurs in the preserve. A locality in the preserve, Gum Slough, is the last known nesting site of the Carolina parakeet in the wild. The preserve is one of only 3 public lands critical to the recovery of the Florida grasshopper sparrow.

Due to the remote location of the preserve, the night sky remains exceptionally dark and relatively free from artificial light pollution, making the preserve a definitive location for avocational astronomers. In 2016, the International Dark-Sky Association awarded the preserve with the state's first International Dark Sky Park designation. Not only does this designation benefit visitors, it also helps protect the preserve's flora and fauna. Research has shown that artificial light pollution can disrupt the growth cycle of plants and alter the foraging, migrating, and breeding behavior of wildlife, not just in urban centers but in rural areas as well (Chepesiuk 2009). As of 2017, only one additional location in Florida (Big Cypress National Preserve) has been certified as an International Dark Sky Park. Maintaining dark skies in and around the preserve therefore has ecological, aesthetic, and recreational benefits.

Cultural Resources

This section addresses the cultural resources present in the preserve 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 3-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 determining the significance of collections or archival material. Usually, significance of a collection is based on what or whom it may represent. For instance, a collection of furniture from a single family and a particular era in connection with a significant historic site would be considered highly significant. In the same way, a high quality collection of artifacts from a significant archaeological site would be of important significance. A large herbarium collected from a specific park over many decades could be valuable to resource management efforts. Archival records are most significant as a research source. Any records depicting critical events in the park's history, including construction and resource management efforts, would all be significant.

The following is a summary of the FMSF inventory. In addition, this inventory contains the evaluation of significance.

Prehistoric and Historic Archaeological Sites

Desired Future Condition: All significant historical and archaeological sites within the preserve that represent Florida's cultural periods or significant historic events or

persons are preserved in good condition in perpetuity, protected from physical threats and interpreted to the public.

Description: Kissimmee Prairie Preserve State Park has 20 cultural sites recorded within the FMSF or in preparation for submission to the FMSF. The sites in the preserve range from the prehistoric through the historic into the 20th Century.

The preserve falls within the Okeechobee Basin Culture Region (Milanich 1995). Archaeologists have not reached a consensus on the cultural history of the region because unlike other areas of the state, little systematic research has been conducted (Newman *et al.* 2002). Some archaeologists have termed it the Belle Glade area (Griffin 1988; Widmer 1988) while others have named it the Lake Okeechobee area (Carr and Beriault 1984). All archaeologists, however, seem to agree that the people living in the Kissimmee River basin and around Lake Okeechobee shared common cultural traits, distinctive from other regions in the state beginning around 500 B.C. (Newman *et al.* 2002). The prehistoric sites (examples include OB247, OB60 and OB237) in the preserve are from this era, however, one site may predate this period (OB241). Prehistoric sites in the preserve are significant because so few are recorded in Okeechobee County.

No evidence of colonial contact with pre-Columbian cultures exists for the preserve. The area was considered "*la rinconada*" ("corner or nook, a place away from major activity") through the colonial period. The area didn't begin to acquire settlers until the 19th century (Newman *et al.* 2002).

After the Belle Glade period, the next evidence of human activity is related to the Seminole Wars of the early-mid nineteenth century. By the end of 1837 many Seminoles had retreated into the south Florida swamps. In November 1837, Colonel Zachary Taylor moved into the Kissimmee River Valley, eventually establishing what is now known as Fort Basinger (Sprague 1964; Mahon 1967). Soldiers pursued Seminoles in the area until the U.S. Government ended the war in 1842 and reservation boundaries were established. Settlers were slowly moving into the area and requested more forts as a means of protection from the remaining Seminoles (Newman *et al.* 2002). By 1849 there were several new forts in the area, including Fort Kissimmee and Fort Drum (Covington 1961; Van Landingham and Hetherington 1978). These 2 forts were constructed by General David E. Twiggs and the road that linked them is known as "Twiggs Trail," a portion of which passes through the preserve (OB242) and is still visible in current aeriels of the landscape (Stevens *et al.* 1997).

Settlers moved into the Kissimmee Valley in the mid- to late-1800s amidst a growing cattle industry (Van Landingham 1976). Cattle trade between Florida and Cuba saved Florida from many of the hardships endured by other southern states during the post-Civil War and Reconstruction period (Akerman 1976). Increasing numbers of settlers helped establish towns, which led to the need for railroads. The South Florida and Gulf Railroad was incorporated in 1914 with the intention of building a railroad from Kenansville to Basinger (MacLeod and Murdock 1994). Construction of the line began in 1916, and was completed as far as Prairie Ridge,

approximately 12 miles north of Basinger. For a short period, the train ran to Prairie Ridge every Saturday, and residents of Basinger went by wagon to meet the steam train (Van Landingham and Hetherington 1978). The railroad bed is the preserve's main drive north from the main gate (OB243).

In 1909 Drayton Kilpatrick came to Kissimmee Prairie to work on a survey crew for the Colonization Land Company that was subdividing the area just south of what is now the preserve. The company maintained a hotel on Pine Island that housed prospective land buyers. In 1915 Drayton married Alice Elizer Lanier who worked as the cook on Pine Island. In 1919 the Colonization Land Company went bankrupt, and Drayton Kilpatrick salvaged the buildings on Pine Island and purchased 240 acres located in what is today the preserve. The Kilpatricks lived in the hammock (OB00227), now referred to as Kilpatrick Hammock, until their youngest child was ready for school, and then the family moved to Basinger. In 1927 a campfire burned the entire Kilpatrick homestead. Drayton later built a camp shack for use when on the property. That building (the 'bunkhouse', OB00225) stood until 2018, when it was deemed beyond repair and documented and removed after consultation with DHR Compliance Review staff.

The cattle industry to this day is an important cultural feature of Okeechobee County. Evidence of the prairie in the preserve being used as open cattle range exist in the form of cattle troughs from the early 1900s (OB249) and cattle dipping vats. Four cattle dipping vats were located at various locations in the preserve, with 2 documented in FMSF (OB59 and OB226). All of the preserve's known vats have either been removed or buried since state acquisition.

There are several sites on the preserve's landscape related to military activity during WWII that are currently being documented with site files. A preserve-wide assessment of ordnance-related material was conducted in 2012-2013. The report from this effort was completed in 2016 (see page 78).

A predictive model was completed for the preserve (Collins *et al.* 2010). The model wasn't successful at finding additional sites due to the lack of topographic relief on the landscape. The model could be improved when LiDAR data for the preserve becomes available.

Condition Assessment: The cultural sites in the preserve are generally in good condition. One exception is an old animal barn located on the Prescott Homestead site (OB57). This structure is unsound and falling apart. Due to the remoteness of the location, it is recommended that the remaining components of the barn be documented and safely removed in consultation with DHR Compliance Review staff. Two sites - cattle dipping vats (OB59 and OB226) - have been removed since being documented in the FMSF.

General Management Measures: Sites in the preserve will be preserved by avoiding resource management effects, removal of exotic species, and protection from

looting. A monitoring program that ensures all sites are visited on a regular basis should be developed and implemented.

Historic Structures

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

Description: Only one historic structure recorded in the FMSF is currently standing, an animal barn at the Prescott Homestead (OB57). The FMSF also lists the Drake Kilpatrick House (OB225), also known as "the bunkhouse" and the Peavine Bridge (OB229). The bunkhouse was a structure that was built by Drake Kilpatrick after his original homestead (OB227) burned in 1927. There are remnant cattle pens made from cypress and pine associated with the site. It was used as a bunkhouse by cowhands until state acquisition in 1997. The bunkhouse stood until 2018, when it was deemed beyond repair and documented and removed after consultation with DHR Compliance Review staff. A former structure, the bridge at Peavine (OB229), was associated with the South Florida and Gulf Railroad Line (OB243) and allowed the train to cross Seven Mile Slough.

Condition Assessment: The animal barn located at the Prescott Homestead site (OB57) is unsafe and in poor condition; removal is recommended. The Drake Kilpatrick House (OB225), also known as "the bunkhouse," was in poor condition and considered beyond repair after a series of severe storms and removed in 2018 with DHR approval. The Peavine Bridge (OB229) was deemed unsafe and removed when the preserve's main road was stabilized and improved.

General Management Measures: The animal barn (OB57) is in poor condition and unsafe. It should be fully documented and removed in consultation with DHR Compliance Review staff. This structure, along with the bunkhouse will be interpreted to park visitors, through photographs, exhibits and stories, as Florida Cracker structures associated with the state's oldest industry.

Collections

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

Description: The preserve's collection contains many diverse objects. These range from old signage and bottles to WWII .50 caliber shell casings. Only one item is representative of prehistoric people, a stone ceremonial axe head. The collection also contains natural history objects that are used for interpretation with visitors. There is a need to continue working on the collection to include objects such as photos, an herbarium that is being developed, archival materials, and other records such as newspaper articles.

The materials in the collection will be stored using various means, depending on the nature of the objects. The bulk of the objects will be in air-tight containers in a climate controlled building. Some objects may be put on display in the preserve's welcome area. Other objects such as archival materials may be stored in appropriate files in the offices of the manager or biologist.

Condition Assessment: The collections are currently in good condition. While the archival component of the collection is still in development, materials associated with the archive are also in good condition. All objects of the collection will be housed in climate controlled buildings.

General Management Measures: The collections management program is still in development. The Scope of Collection Statement, inventory or catalog, housekeeping manual, record keeping system, climate control and monitoring, pest control, and trained staff issues are currently being developed and will be implemented accordingly.

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

Table 4: Cultural Sites Listed in the Florida Master Site File					
Site Name and FMSF #	Culture/Period	Description	Significance	Condition	Treatment
Prescott Homestead OB00057	Early Twentieth Century	Archaeological Site	NE	P	P (R)
Latt Maxcy Camp Prehistoric Midden OB00058	Prehistoric	Archaeological Site	NE	G	P
Cow Camp OB00059	Twentieth Century	Archaeological Site	NE	G	P
Crescent Hammock OB00060	Prehistoric	Archaeological Site	NE	G	P
Drake Kilpatrick House OB00225	1928	Historic Structures; Bunkhouse, pens	NE	F	P (R)

Table 4: Cultural Sites Listed in the Florida Master Site File					
Site Name and FMSF #	Culture/Period	Description	Significance	Condition	Treatment
Latt Maxcy Dipping Vat Site OB000226	Early Twentieth Century	Archaeological Site; removed	NE	NE	N/A
Kilpatrick Homestead OB00227	Early Twentieth Century	Archaeological Site	NE	G	P
Peavine Bridge at Seven Mile Slough OB00229	Early Twentieth Century	Historical Bridge replaced w/culverts	NE	NE	N/A
Lost Archaeologists OB00237	Prehistoric	Archaeological Site	NE	G	P
Mulberry Midden OB00238	Prehistoric	Archaeological Site	NE	G	P
Eucalyptus Homestead OB00239	Early Twentieth Century	Archaeological Site	NE	G	P
McGuire Hammock OB00240	Prehistoric, Nineteenth and Early Twentieth Centuries	Archaeological Site	NE	G	P
Long Hammock North OB00241	Prehistoric	Archaeological Site	NE	G	P
Twiggs Trail OB00242	1840s	Resource Group (Linear Resource)	NR	G	P
South Florida and Gulf Railroad Line OB00243	1916-1919	Resource Group (Linear Resource)	NR	G	P
Gum Slough Ridge OB00245	Prehistoric	Archaeological Site	NE	G	P
Orange Tree OB00246	Prehistoric, Early Twentieth Century	Archaeological Site	NE	G	P
Pine Island Slough OB000247	Prehistoric	Archaeological Site	NE	G	P
Stirrup Cow Camp OB00248	Twentieth Century	Archaeological Site	NE	G	P
Arthur Raulerson Cattle Trough OB00249	Early Twentieth Century	Archaeological Site	NE	G	P

Significance:

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

Condition

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

Recommended Treatment:

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

RESOURCE MANAGEMENT PROGRAM

Management Goals, Objectives, and Actions

Measurable objectives and actions have been identified for each of the DRP's management goals for Kissimmee Prairie Preserve. 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 unit.

While the DRP utilizes the 10-year management plan to serve as the basic statement of policy and future direction for each unit, 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 preserve's natural resources, annual work plans are developed for prescribed fire management, exotic plant management, and imperiled species management. Annual or longer-term work plans are developed for natural community restoration and hydrological restoration. The work plans provide the DRP with crucial flexibility in its efforts to generate and implement adaptive resource management practices in the state park system.

The work plans are reviewed and updated annually. Through this process, the DRP's resource management strategies are systematically evaluated to determine their effectiveness. The process and the information collected is used to refine techniques, methodologies, and strategies, and ensures that each unit'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 preserve. The 10-year management plan is based on conditions that exist at the time the plan is developed. The annual work plans provide the flexibility needed to adapt to future conditions as they change during the 10-year management planning cycle. As the preserve's annual work plans are implemented through the 10-year cycle, it may become necessary to adjust the management plan's priority schedules and cost estimates to reflect these changing conditions.

Natural Resource Management

Hydrological Management

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

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

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

- Action 1 Secure funding for a hydrological assessment, obtain quotes from contractors, and select consultant by 2018.

- Action 2 Obtain assessment of the park's hydrological restoration needs by January 1, 2019.

Prior to state acquisition, the prairie landscape had been hydrologically altered due to ditches and canals that prior land managers had installed. In 1999-2001 a large-scale restoration effort resulted in the backfilling of more than 53 miles of former agriculture fields and more than 18 miles of canals. However, many canals remain and former agricultural sites still require restoration. It is possible that the ground disturbance caused by the hydrological restoration project mentioned above contributed to the spread of fire ants; future hydrological restoration projects should be monitored for increased fire ant activity.

Staff will assess and quantify hydrological restoration needs remaining in the preserve. These needs will be ranked by ecological importance, and will be categorized as either attainable using in-house (DRP) resources or with outside assistance. A plan and implementation schedule will be created for the highest ranked projects. Ground/surface water monitoring stations will be implemented in areas to acquire baseline hydrological data prior to restoration.

Objective: Restore natural hydrological conditions and functions to approximately 1,500 acres of dry prairie, wet prairie, basin marsh, and slough marsh natural communities.

- Action 1 Using recommendations in the assessment, fill first priority

- recommended ditches that will improve hydrology of the most acres within 2 years of receipt of the assessment.
- Action 2 Install the recommended low-water crossings or culverts outlined by the assessment in the previous objective.

Contingent upon funding, three projects will be implemented that should lead to the restoration of adjacent natural communities.

Willow Pond Canal, a 950-meter linear ditch draining the pond into Seven Mile Slough, will be backfilled. This action will restore a more natural hydroperiod to the Willow Pond, a unique landscape feature in the preserve, as well as sheet flow in the dry and wet prairie that the canal currently runs through.

A basin marsh in KP-48 currently has a 150-meter canal that drains it, and a 650-meter extension of that canal in adjacent KP-15 will both be backfilled. This effort will restore a more natural hydrology to the basin marsh and re-establish sheet flow to the adjacent dry and wet prairie natural communities.

Several culverts along Military Trail need maintenance or replacement. These needs will be evaluated and new culverts will be installed where required. Installation of new culverts will restore a more natural hydrology to Seven Mile Slough and the adjacent slough marsh, and will also restore natural sheet flow to associated dry and wet prairies.

In addition, there are several firebreaks near streams and sloughs where erosion is a concern. Potential remedies include moving the affected firebreaks out of the wetland areas, using different equipment (tiller instead of disc harrow) to maintain these firebreaks, and working to minimize the off-trail impacts caused by vehicles and heavy equipment.

Objective: Mitigate for effects of the park's main drive on adjacent habitat.

The preserve's main drive was improved in the year 2000 with an elevated shell bed. Since this improvement, ecological concerns related to shell runoff and wind-born dust have increased. The sides of the road have been chemically buffered, allowing exotic plant species to become established, necessitating control. Milky-white calcareous plumes flow into adjacent wet prairies and marshes after heavy rains during the wet season, as the roadside ditches are not functioning as intended to reduce calcified runoff. During the dry season, vehicular traffic creates large calcareous dust plumes that drift into adjacent prairies, potentially buffering the naturally acidic soils in the dry prairie ecosystem. There are areas where the road may need additional culverts to restore sheet flow in the prairies. Paving or capping the main drive, or using another construction material should also be considered. This may address both the dust and runoff issues, and could have the added benefit of reducing both road and vehicle/equipment maintenance.

- Action 1 Conduct a thorough initial assessment and develop a plan to mitigate for and monitor these ecological concerns.

- Action 2 Implement the recommended actions from the assessment. This can be in-house or through a contractor.
- Action 3 Conduct a follow-up assessment of the results to examine the parameters recommended in the initial assessment.

Objective: Continue to seek opportunities to restore the hydrology of the Kissimmee River and associated floodplain marsh.

Several miles of the C-38 canal were restored in 2009; however, many miles were left intact. In support of the restoration, a large culvert that existed between 2 spoil mounds was removed to build a bridge to support construction vehicles. The culvert was not replaced when the construction phase ended. Opportunities to continue C-38 restoration should be sought. Preserve staff should continue to work with SFWMD to replace the culvert and re-establish flow to that part of the river marsh.

- Action 1 Maintain a presence at interagency meetings related to Kissimmee River hydrology.
- Action 2 Replace the C-38 culvert to restore flow to the affected portion of the river marsh.

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 community 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 and plant species. Many of Florida's imperiled plants and animals are dependent on periodic fire for their continued existence. Fire-dependent natural communities gradually accumulate flammable vegetation; therefore, prescribed fire reduces wildfire hazards by reducing these wild land fuels.

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

Objective: Within 10 years, have 51,600 acres of the park maintained within the optimum fire return interval.

- Action 1 Develop/update annual burn plan, with priority given to dry and wet prairie communities.
- Action 2 Manage fire dependent communities for ecosystem function,

structure, and processes by burning between 16,754 - 33,055 acres annually, as identified by the annual burn plan.

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

The entire preserve is partitioned into management zones. All management zones are considered burn zones (See Management Zones Table and Map). Prescribed fire is planned for each burn zone on the appropriate interval. The preserve’s burn plan is updated annually because fire management is a dynamic process. To provide adaptive responses to changing conditions, fire management requires careful planning based on annual and very specific burn objectives. Each annual burn plan is developed to support and implement the broader objectives and actions outlined in this 10-year management plan.

Table 5: Prescribed Fire Management		
Natural Community	Acres	Optimal Fire Return Interval (Years)
Dry Prairie	20,939	≤30 months
Mesic Flatwoods	214	2-4
Scrubby Flatwoods	721	2-5
Basin Marsh	3,137	2-5
Baygall	16	25-100
Depression Marsh	4,626	2-5
Floodplain Marsh	5,759	2-5
Slough Marsh	2,146	2-5
Wet Prairie	7,643	≤30 months
Altered Landcover Types		
Pasture – Improved and Semi-improved	4,772	1-3
Abandoned Pasture	105	1-3
Agriculture	1,643	2-5
Annual Target Acreage	16,754 – 33,055	

Fire is a dominant disturbance mechanism in Florida dry prairie and associated natural communities. Due to the high frequency of growing season lightning strikes, frequent fire on the landscape historically maintained an early successional stage that many plant and animal species evolved in. The fire program at the preserve strives to mimic these processes for the continued benefit and viability of these species and the ecological system.

In order to accomplish the goal of attaining and maintaining the entire preserve on the appropriate fire return interval, many management actions will continue to be developed.

The fire frequency, scale, and seasonality needed to accomplish this goal cannot occur without the assistance of outside resources. The preserve will develop and maintain a Kissimmee Basin mutual aid agreement with outside agencies (TNC, FWC, and SFWMD, for example) in order to accomplish respective fire management programs.

The preserve will work towards developing a crew of reliable and dependable fire-trained and standby-ready volunteers in the local community. Equipment will be maintained in fire-ready condition while seeking opportunities to upgrade or acquire new equipment as fire operations change. The existing firebreaks will be assessed and additional needs, if any, will be developed.

The preserve will burn between 16,754 - 33,055 acres annually. The amount of acreage burned within the growing season will be increased annually in order to meet the preserve's progressive resource management objectives. Short-interval growing season fire is the critical factor for maintaining Florida grasshopper sparrow habitat, and every effort will be made to burn dry prairie (and other natural communities embedded within this matrix) using the shortest FRI possible (with a goal of 1-2 years, on average). However, fuel loads, weather conditions, season of most recent burn, and other factors may affect prescribed fire goals; a longer FRI (up to 30 months) may sometimes occur for an individual management zone containing dry and/or wet prairie.

Natural Communities Restoration: In some cases, the reintroduction and maintenance of natural processes is not enough to reach the desired future conditions for natural communities in the preserve 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.

Objective: Conduct groundcover restoration on 40 acres of pasture and restore to dry prairie, wet prairie, and slough marsh natural communities.

A plan to restore the groundcover on 40 acres of abandoned pasture in KP-13 will be developed and implemented. This represents an opportunity to experiment with strategies that will be required to eventually restore the groundcover throughout

the current cattle grazing areas. This acreage was formerly improved pasture, but since state acquisition, it has not been grazed and has been managed with fire.

- Action 1 Conduct and document a careful assessment of conditions in FY 2021-22.
- Action 2 Develop a groundcover restoration plan by February 2022, with budget projections included for FY 2023.
- Action 3 Arrange equipment procurement or outsourcing by August 2022.
- Action 4 Begin implementation of groundcover restoration plan by September 2022.

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 preserve.

Objective: Conduct natural community/habitat improvement activities on 5,000 acres of dry prairie, wet prairie, and slough marsh natural communities.

Due to resource management activities since the last UMP (FDEP 2005), many areas of the preserve are in excellent condition and require less intensive efforts to maintain or improve the quality. Hog rooting areas are large and numerous in the preserve, however.

- Action 1 Develop and implement a habitat restoration plan to guide the park's ongoing efforts.
- Action 2 Systematically locate and target for control the largest invasive plant populations, giving priority to areas with high chances of recovery.
- Action 3 Quantify the spatial extent of the hog rooting areas, and create and implement a restoration plan.
- Action 4 Monitor efforts consistently, and follow-up (adjust and adapt techniques as needed) to ensure a high success rate for all restoration efforts.

Imperiled Species Management

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

The DRP strives to maintain and restore viable populations of imperiled plant and animal species primarily by implementing effective management of natural systems. Single species management is appropriate in state parks when the maintenance, recovery, or restoration of a species or population is complicated due to constraints associated with long-term restoration efforts, unnaturally high mortality, or insufficient habitat. Single species management should be compatible

with the maintenance and restoration of natural processes, and should not imperil other native species or seriously compromise park values.

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

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

Objective: Develop/update baseline imperiled species occurrence inventory lists for plants and animals.

Updating of imperiled species occurrence in the preserve is an ongoing process. As new occurrence data is generated, in-house databases are updated and element occurrence data is submitted to FNAI. Additional support in this effort comes in the form of avocational and academic research contributions. Surveys for additional imperiled plant and animal species will continue based on available resources.

- Action 1 Continue to recruit external research partners and foster strong relationships with data-centric partners.
- Action 2 Work with DRP biologists to continue systematically searching the preserve for additional plant and animal occurrences.
- Action 3 Maintain data sets, and use results of status and trend analyses to inform decisions and carry out necessary actions.

Objective: Monitor and document 22 selected imperiled animal species in the park.

Not all imperiled species need to be monitored, and indeed the limited resources available to do so precludes this. However, in-house monitoring of documented imperiled species does occur and can be improved. Preserve staff are trained in the use of hand-held GPS units and regularly collect data on imperiled species

occurrences with direction from the biologist. Simple reporting procedures allow the collection of spatial data even when staff are in the field on unrelated duties. The preserve annually monitors only 2 imperiled species with an established protocol, the Florida grasshopper sparrow and the Florida scrub-jay. The method for the sparrow was established in 2002 by the FGSP working group. The method for the jay is the one established by Jay Watch.

More specific monitoring protocols are being developed and implemented for the species that can provide direction and feedback about prairie management, such as the Florida burrowing owl, swallow-tailed kite, white-tailed kite, and the crested caracara.

- Action 1 Continue to monitor the Florida grasshopper sparrow and Florida scrub-jay using established protocols.
- Action 2 Continue to scrutinize environmental factors against the status and trends detected by this monitoring.
- Action 3 Invite outside researchers to assist with data collection on Florida burrowing owl, swallow-tailed kite, and crested caracara.
- Action 4 Take every opportunity to prioritize and set up monitoring that is appropriate for species in action 3.

Objective: Monitor and document 12 selected imperiled plant species in the park.

Not all imperiled species need to be monitored, and indeed the limited resources available to do so precludes some monitoring. However, in-house monitoring of documented imperiled species does occur and can be improved. Preserve staff have been trained in the use of hand-held GPS units and regularly collect data on imperiled species occurrence with direction from the park biologist. Simple reporting procedures allow the collection of spatial data even when staff are in the field on unrelated duties.

Imperiled plant species, such as the many-flowered grasspink and the Simpson's zephyrlily are found in appropriate habitat only following a spring burn. Monitoring for these species provides data in support of early growing season (transition season) burning. Other fire dependent imperiled plant species that require short-interval burning found in the preserve, such as the pine lily, snowy orchid and Florida beargrass are found in robust numbers in areas that have been managed appropriately with fire. The celestial lily was recently (2013) documented in the preserve after surveying for it began in an area that was burned the previous spring. Plant surveying and monitoring should continue, especially in the summer and fall after spring burns.

- Action 1 Invite outside research to assist with data collection on many-flowered grasspink, Simpson's zephyrlily, Florida beargrass, and celestial lily.
- Action 2 Develop monitoring protocols for many-flowered grasspink, Simpson's zephyrlily, Florida beargrass, celestial lily, and any

other remaining species as opportunity, time, and budgets allow.

Objective: Continue working in partnership with the Florida Grasshopper Sparrow Working Group and the USFWS on FGSP recovery in the park.

Long-term monitoring of the sparrow in the preserve began in the late 1990s with state acquisition. Since monitoring began, sparrow numbers have been variable but in the last decade have shown a dramatic decline. Sparrows have been nearly extirpated from Avon Park AFR, and have also shown a marked decline at Three Lakes WMA. These 3 areas contain the known subpopulations on public lands. While some birds may be found on adjacent private lands, these 3 populations, especially the preserve's and the one at Three Lakes WMA, are crucial for the long-term viability of the species.

DRP staff at the preserve should continue to partner with the FGSP working group that was convened in 2002 to coordinate sparrow monitoring and conservation efforts. The working group meets regularly to coordinate research and discuss habitat management issues, and advises the U.S. Fish and Wildlife Service on the status of the population. Given the dramatic decline of the species' numbers in the last decade, dramatic measures have been implemented to recover the species, including improved survey techniques and monitoring protocols, improved prescribed fire strategies, the use of predator-deflection fencing around nest sites, captive rearing, pathological research, and genetic analysis.

Exotic Species Management

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

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

Objective: Annually treat 300 acres of exotic plant species in the park.

Exotic plant control in the preserve is challenging due to factors such as the large size of the landscape and the limited resources available for surveying and treatment. Preserve staff will continue to implement and update annual survey and treatment, to the extent possible.

Due to the size of the preserve, a complete survey is not possible with available resources. For this reason, a different approach will continue to be implemented, an approach that considers "keeping the best the best." The strategy involves, in part, working out aggressively from pristine core areas while maintaining these core areas. These expanding good quality cores will grow in size, eventually connecting with a neighboring core to create a larger core area. A simple measure of this

strategy will be to annually increase the number of zones that are in maintenance condition.

- Action 1 Staff will accurately monitor populations to get current status information useful for Integrated Pest Management (IPM) funding.
- Action 2 Seek partnerships with FWC's uplands IPM working group projects as well as with FWC's AHRE program managers during FY 2017-19 to get a handle on Wright's nutrush and climbing fern populations in the southeast quadrant of the preserve, and cogongrass and Brazilian pepper throughout.

Objective: Implement control measures on 3 exotic animal species in the park.

Two exotic species, feral hogs and fire ants, will be controlled using a variety of methods to protect imperiled species, natural communities, and visitors to the park. A third species, coyotes, will be monitored and control efforts will be employed, if deemed necessary.

- Action 1 Prioritize the control measures based on current and potential effects on imperiled species, and overall native ecosystem function.
- Action 2 Monitor changes in impacts to vegetation and quantifiable ecosystem parameters. Seek partnerships to allow for adequate resources to accomplish monitoring. Use the monitoring to adjust control as dictated by data.

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 Kissimmee Prairie Preserve.

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

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, and modifications to

the proposed project to avoid or mitigate potential adverse effects. 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: Assess and evaluate 20 of 20 recorded cultural resources in the park.

- Action 1 A plan to prioritize and at least annually visit and assess all of the cultural resources in the preserve will be developed and implemented.
- Action 2 Historic Structure Reports (HSRs) will be completed as required.

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

- Action 1 All currently documented FMSF sites will be revisited and updated accordingly.
- Action 2 Cultural sites that currently aren't documented in the FMSF will be assessed and documented in the FMSF.
- Action 3 Preserve staff will search for undocumented sites as time and resources allow.
- Action 4 Preserve staff will continue to develop a Scope of Collections Statement, conduct oral interviews as appropriate, and compile preserve history.
- Action 5 Research and document the structures associated with the Prescott homestead and determine final treatment options.

Special Management Considerations

Timber Management Analysis

Chapter 253.036, Florida Statutes, requires 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, except in those forest communities specifically managed as early successional.

Timber management is utilized for the purpose of helping restore or improve current habitat conditions and enhancing the overall integrity of the natural community. Revenue generation from timber management is not the goal but rather, a by-product of taking such actions to help restore/improve target conditions of specific natural communities.

During the development of this plan, an analysis was made regarding the feasibility of timber management activities in the park. It was determined that the primary management objectives of the unit could be met without conducting timber management activities for this management plan cycle. A timber assessment for the unit therefore was not conducted, as timber management would conflict with the primary management objectives of the park. Timber management will be re-evaluated during the next revision of the management plan.

Wilderness Preserve

The park contains a designated Wilderness Preserve. A Wilderness Preserve is an area within a state park that retains its primeval character and is managed to preserve and interpret its natural character and values. A designated Wilderness Preserve generally appears to have been shaped by the unaltered forces of nature, with the imprint of human influence substantially unnoticeable. A Wilderness Preserve offers outstanding opportunities for the conditions of solitude and remoteness that are essential for a wilderness experience. The area may contain environmental, archaeological, or other kinds of features of scenic, educational, natural, or historic value. Facilities are often limited to those considered essential for resource management and for the specified public uses.

Arthropod Control Plan

All DRP lands are designated as “environmentally sensitive and biologically highly productive” in accordance with Ch. 388 and Ch. 388.4111 Florida Statutes. If a local mosquito control district proposes a treatment plan, the DRP works with the local mosquito control district to achieve consensus. Treatment methods including larviciding and ground adulticiding (truck spraying in public use areas) are typically allowed. Aerial adulticiding can be allowed through an agreed upon control plan. The DRP does not authorize new physical alterations of marshes through ditching or water control structures. Mosquito control plans temporarily may be set aside under declared threats to public or animal health, or during a Governor’s Emergency Proclamation.

Additional Considerations

Formerly Used Defense Sites (FUDS)

Given the park’s history as a former bombing range for the U.S. military, and due to previous detection of unexploded ordnance left over from these activities, a preserve-wide assessment of ordnance-related material was conducted in 2012-2013 for the U.S. Army Corps of Engineers. According to the FUDS report, “no

explosive hazards or munitions constituents (chemicals related to munitions) were found or expected to be present" within park boundaries. Therefore, "no action is required to be protective of human health and the environment at this time. However, if potentially explosive items are identified in the future, appropriate steps will be completed to address the potential hazard(s). Based on the results of this investigation and previous investigations completed at the Former Avon Park Range, (park) lands do not require evaluation of additional munitions response actions" (Zapata Inc. 2016). Similarly, "risk assessments conducted during the investigation concluded that the potential for adverse risks to human health or ecological receptors from exposure to munitions constituents in soil, sediment, and surface water is negligible" (Zapata Inc. 2016).

Cattle Grazing

Some of the park's lands were formerly part of a working cattle ranch. Today, approximately 6,000 acres of improved and semi-improved pasture within the park are still used for cattle grazing, which serves as an interim step in the restoration process for the park's dry prairie habitat. As required in the cattle grazing agreement with the contractor, an annual grazing plan is developed in conjunction with the park manager. Grazing does not take place elsewhere in the park, and there are no plans to expand grazing beyond the existing pastures.

A long-term goal for the park is to phase out cattle grazing and to restore the natural communities impacted when lands were converted to pasture, but the timeframe is not yet known. Pasture restoration is a priority and will be addressed in the future, but maintaining habitat that is already in maintenance condition and improving habitat that is close to being in maintenance condition are higher priorities at present. Pasture restoration will be a lengthy and costly effort, as the methodologies for success are not established at this time. Therefore, DEP will keep apprised of pasture restoration techniques being developed by other land managers, so that once the science behind the restoration process is better understood, the park may commence with this endeavor. DEP will also encourage other land managers to use KPPSP's pasture as an additional study site. As funding becomes available, the park will pilot test a smaller restoration project and monitor its success to help prepare for the larger effort.

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.

Kissimmee Prairie Preserve State Park was subject to a land management review on January 15 and 16, 2014. 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.

Kissimmee Prairie Preserve State Park is located within unincorporated areas of Okeechobee and Osceola counties, 23 miles north of the City of Okeechobee and 15 miles east of St. Lucie County, in the south-central part of the state. Virtually the entire park lies in the northwestern corner of Okeechobee County. Access to the park is from US 441, CR 724, and Peavine Trail. The western boundary of the park is the Kissimmee River and the Highlands County line; Avon Park Air Force Range is immediately west of the park, across the river. To the north, the park extends across the Osceola-Okeechobee County line for 1.25 miles following the Kissimmee River. Approximately 350,000 people live within 30 miles of the park (U.S. Census Bureau 2010).

The population of Okeechobee County is diverse in terms of demographic characteristics. According to the U.S. Census Bureau (2013), approximately 44.5% of residents in the county identify as black, Hispanic or Latino, or another minority group. Nearly half (49%) of residents can be described as youth or seniors (U.S. Census Bureau 2013). Okeechobee County ranked 52nd statewide in per capita personal income at \$27,423, below the statewide average of \$41,497 (U.S. Bureau of Economic Analysis 2014).

Highlands, Polk, and Osceola county lines border Kissimmee Prairie Preserve State Park. According to the U.S. Census Bureau (2013), approximately one third of residents identify as black, Hispanic or Latino, or another minority group in Highlands and Polk County. In Osceola County, 68% of residents identify as black, Hispanic or Latino, or another minority group. Around half of the population in all 3 counties can be described as youth or seniors (U.S. Census Bureau 2013). Osceola County had the lowest per capita personal income at \$27,019 followed by Highlands County with \$30,962. Polk County had the highest per capita personal income at \$34,393 (all below the statewide average of \$41,497; U.S. Bureau of Economic Analysis 2014).

Virtually the entire park is located in Visit Florida's Central East Vacation Region, which includes Volusia, Brevard, Indian River, St. Lucie, Martin, and Okeechobee counties (Visit Florida 2015). According to the 2015 Florida Visitor Survey, approximately 7% of domestic visitors to Florida visited this region. Roughly 9 out of 10 visitors traveled to the Central East region for leisure purposes. The top activities for domestic visitors were beach/waterfront and visiting friends or relatives. Spring was the most popular travel season, but visitation was generally spread throughout the year. Most visitors traveled by means other than airplane (77%), reporting an average of 4.8 nights and spending an average of \$111 per person per day (Visit Florida 2015).

A small portion of the park lies within Osceola County in Visit Florida's Central Vacation Region (the remainder of the park in Okeechobee County also borders this region), likely drawing visitors from the area. According to the 2015 Florida Visitor Survey, approximately 35% of domestic visitors to Florida visited this region. Roughly 87% of visitors to the region traveled to the Central Region for leisure purposes. The top activities for domestic visitors were theme/amusement/water parks and shopping. Spring was the most popular travel season, but visitation was generally spread throughout the year. More than half of visitors used means other than air travel (60%), reporting an average of 4.5 nights and spending an average of \$184 per person per day (Visit Florida 2015).

As most of the land near the park is undeveloped, there are considerable publicly-owned, resource-based recreation opportunities within 20 miles of the park. Across the Kissimmee River, the Avon Park Air Force Range has approximately 82,000 acres open for public access on a regular basis for hiking, hunting, fishing, camping, and other related activities. To the northwest, Lake Kissimmee State Park and Allen

D. Broussard Catfish Creek Preserve State Park provide amenities for camping, fishing, and hiking, as well as boating, horseback riding, and interpretive programs. The St. Johns River Water Management District manages 2 conservation areas 10 miles to the east of the state park. Blue Cypress Conservation Area offers 54,458 acres for wildlife viewing, fishing, seasonal hunting, bicycling, and hiking along many miles of levees, primitive camping, as well as paddling and boating. Fort Drum Marsh Conservation Area offers an additional 20,862 acres for picnicking, hiking, horseback riding, fishing, biking, primitive camping, wildlife viewing, and canoeing. Fifteen miles to the north of the park, the Florida Fish and Wildlife Conservation Commission (FWC) manages Three Lakes Wildlife Management Area (WMA). This 61,845-acre management area provides wildlife viewing opportunities, primitive camping, hiking, and seasonal hunting.

Numerous lands along the Kissimmee River, totaling approximately 60,000 acres, are also available for public recreation. These properties are managed by the South Florida Water Management District (SFWMD) for public use in conjunction with the FWC. Recreational opportunities include hunting, fishing, hiking, biking, primitive and RV camping, boating, horseback riding, canoeing, and nature study. Lake Wales Ridge State Forest, located 15 miles west of the state park, provides 20,283 acres of wildlife viewing opportunities, picnicking, primitive group camping, fishing, canoeing, horseback riding, hiking, and seasonal hunting. Polk County operates a public, full-facility campground on Lake Arbuckle. Local citizens also enjoy hiking, horseback riding, and hunting on private lands, while fishing and boating are popular along the Kissimmee River. The surrounding lakes also provide award-winning fishing spots. Lake Istokpoga is one of Florida's largest trophy bass fishing lakes and hosts several fish camps, 5 public boat ramps, and 2 public parks. Lake Walk-in-Water (Weohyakapka) to the west and Lake Blue Cypress to the east are also well-recognized fishing lakes.

There are more than 445,000 acres of public hunting land within 50 miles of the state park. In Highlands County, hunting is offered at Hickory Hammock WMA (4,638 acres), and Avon Park Air Force Range (82,000 acres). Straddling the Kissimmee River lie numerous public hunting areas managed by the SFWMD and FWC that are collectively known as the Kissimmee River Public Use Area (30,864 acres). Within Polk County are Arbuckle WMA (13,530 acres), Lake Wales Ridge State Forest Walk-in-Water WMA (6,034 acres), KICCO WMA (7,426 acres), and Lake Marion Creek WMA (8,620 acres). Osceola County is home to Bull Creek WMA (23,646 acres), Three Lakes WMA (63,487 acres), Three Lakes Prairie Lakes Unit (8,859 acres), and Triple N Ranch WMA (16,295 acres). Brevard County offers the Upper St. Johns River Marsh Type II Hunting Area (120,000 acres) and T.M. Goodwin Waterfowl Management Area (3,000 acres). Indian River County contains the Fort Drum Conservation Area (20,862 acres). Martin County's public hunting lands include DuPuis Wildlife and Environmental Area (21,875 acres). Public hunting land also exists in Glades County at Fisheating Creek WMA (18,272 acres).

The Royce Unit, a 2,641-acre parcel of the Lake Wales Ridge Wildlife and Environmental Area, is located approximately 14 miles southwest of the park on the western shore of 28,000-acre Lake Istokpoga, Florida's 5th largest lake. This property is managed by the FWC, and offers hunting, hiking, and wildlife viewing. Lake Istokpoga is designated as a fish management area by the FWC and is well-known for its high-quality fishing opportunities. Two county parks on the shores of Lake Istokpoga - Windy Point Park and Istokpoga Park (located 9 and 19 miles away, respectively) - provide fishing, boating, paddling, picnicking, hiking, wildlife viewing, and nature study.

Taylor Creek Stormwater Treatment Area, a 170-acre parcel owned by the SFWMD and operated by Okeechobee County, lies 17 miles southeast of the park. It offers hiking, bicycling, picnicking, wildlife viewing, and nature study.

Florida's Statewide Comprehensive Outdoor Recreation Plan (SCORP) indicates that participation rates in this region for freshwater boat fishing, freshwater boat-ramp use, wildlife viewing, picnicking, bicycle riding (paved and unpaved trails), tent camping, horseback riding and hunting were higher than the statewide average, with demand for additional facilities increasing through 2020 (FDEP 2013).

Existing Use of Adjacent Lands

Adjacent land uses surrounding the park are primarily agricultural and conservation lands, including the Kissimmee River (the C-38 Canal) and Avon Park Air Force Range to the west. Controlled airspace exists over the entire preserve, with three separate Military Operating Areas (starting at 500' above ground level) and one area of restricted airspace (starting at ground level). Depending on which airspace is being used for various types of training, the areas can be closed to civilian aviation at certain altitude levels. Avon Park Air Force Range is zoned by Highlands County as Public/Quasi-Public Facility and Institutional Lands (P). This designation allows uses in public ownership, in this case, structures for military training and management.

In 2016, Avon Park Air Force Range was awarded a Sentinel Landscape Partnership by the U.S. Departments of Agriculture, Defense, and Interior. This partnership of 26 federal, state, and local agencies and organizations works to "improve military readiness, protect at-risk and endangered species, enhance critical wildlife habitat, and protect/enhance working agricultural and natural lands surrounding the bombing range" (Florida Farm Bureau 2016). The Sentinel Landscape designation helps buffer the military base from development and safeguards training flexibility. In addition, both Avon Park Air Force Range and Kissimmee Prairie Preserve State Park are focal areas within the Everglades Headwaters National Wildlife Refuge and Conservation Area, a refuge complex of protected lands and agricultural working lands that relies heavily on conservation easements and partnerships.

In Polk County, lands diagonally opposite (northwest of) the state park along the Kissimmee River are classified by the county as conservation with allowable pasture

activities. These parcels are owned by the SFWMD and co-managed by the Florida Fish and Wildlife Conservation Commission as part of KICCO WMA; hunting, fishing, camping, boating, canoeing, horseback riding, hiking, biking, nature study and wildlife viewing occur here. Spanning the river (C-38 Canal) and operated by the SFWMD, the S-65A lock/spillway structure is also directly across from the park's northwest corner. Florida National Scenic Trail (FNST) users may access the lock and proceed across the river from KICCO WMA into the park by contacting the SFWMD in advance.

Audubon Florida holds a conservation easement on a tract of land adjacent to the extreme southeast corner of the preserve (former Ordway-Whittell Kissimmee Prairie Sanctuary). It allows grazing and hunting, but no conversion of cover, drainage, structures, or any other changes. The land to the south of the park includes the Coquina Water Control District (WCD); a 20-square mile area composed of 12,000 private and county-owned subdivided lots of 1.25 acres each. The area is classified for agricultural use, yet contains scattered residences with road and drainage improvements. Future development of these lots is expected to be slow.

In an effort to conserve habitat and hydrological connections, 2 Florida Forever Projects were initiated that surround the preserve. Bordering the eastern boundary of the preserve is the Kissimmee-St. Johns River Connector Project. This 36,178-acre project is to be managed by the FWC to create habitat and hydrological connections between Fort Drum Marsh and Kissimmee Prairie Preserve State Park. Two conservation easements totaling 2,852 acres have been secured for this project as of 2016. North of the preserve lies the second project, known as the Pine Island Slough Ecosystem Project. This project area consists of 48,973 acres and is to be managed by the FWC; no acreage from this project has been acquired as of 2016. The land is contiguous to Kissimmee Prairie and would allow limited resource-based activities that protect the integrity of the high-quality ecological habitats.

Planned Use of Adjacent Lands

In terms of population, Okeechobee County is a relatively small county in south central Florida, whereas Osceola County has a much larger population. In 2015, Okeechobee County had a population of 40,052 (BEBR 2015), less than 1% of the state's population (U.S. Census Bureau 2015). Osceola County had a population of 308,327 in 2015 (BEBR 2015). Medium projections for Okeechobee County forecast a population of 44,100 in 2040 (Rayer and Wang 2016). In comparison, Osceola County is expected to grow to 566,300 in 2040. From 2010 to 2014, Okeechobee County experienced negative population growth (U.S. Census Bureau 2015).

Heartland 2060 is a vision for Central Florida, including Okeechobee and its adjacent counties. The effort is led by the Central Florida Regional Planning Council (CFRPC) to plan future land use, guide transportation and establish priorities for conservation. The combined population projections for rural counties in the

Heartland region forecast a population of 350,338 in 2045 and 377,673 in 2055 (CFRPC 2014a). From 2011 to 2060, Okeechobee is expected to have a growth rate of 1.12%. The Heartland plan designed a regional generalized future land use map, with Kissimmee Prairie Preserve State Park, Avon Park Air Force Range, and land along the Kissimmee River designated as conservation. In the Heartland 2060 plan, agriculture makes up the predominant future land area in Okeechobee County (65.6%) followed by conservation with 13.7% (CFRPC 2014a).

According to the future land use element, lands adjacent to the state park are all designated as agriculture, with minimal road access and no sewer or water service. However, to the south, by the park entrance, is a large square area zoned as a Rural Activity Center (RAC), following the perimeter of the Viking Estates Subdivision Development of Regional Impact (DRI), otherwise known as the Coquina Water Control District. Due to the rural nature of this area, Okeechobee County has developed these RACs to reduce the dependence on the one existing urban area of the county for all employment opportunities and goods and services. RACs "allow for existing and future agricultural and residential uses, as well as for recreational, public, neighborhood commercial, and light industrial uses that support or complement agricultural uses or residential and community development and that provide employment or economic opportunities." Aside from Viking Estates, 2 other RACs are designated approximately 11 miles east of the park at Fort Drum and 11.5 miles south at Basinger.

The properties to the north of the park in Osceola County are designated as Rural Enclave (RE) and Rural/Agriculture (RA) on the Future Land Use Map (Osceola County 2010). Rural Enclave is intended to preserve historic rural communities near the river. These include large residential lots on private wells and septic systems. Residential development shall not exceed one dwelling unit per 5 acres in this zone, allowing for single-family detached homes and associated ancillary rural agricultural uses. Rural/Agricultural allows for agricultural production outside of the urban growth boundary and has limited allowable residential subdivision development. To the west, in Highlands County, Avon Park Air Force Range is designated under Conservation/Management Lands (CM). This category includes public lands that have been obtained for environmental research, preservation, conservation, or education purposes (CFRPC 2014b). These parcels are also associated with established or planned trail systems such as the Florida National Scenic Trail, a portion of which runs along the east side of the Kissimmee River. Conservation/Management parcels are allowed a capacity of one unit/80 acres plus facilities necessary for the intended conservation use or activity. Lands to the northwest in Polk County are classified as Recreation and Open Space (ROS) for future land use, and allow uses oriented toward recreational activities for the public. These lands are encumbered with a 100-year floodplain elevation.

The restoration of the Kissimmee River and its floodplain by the U.S. Army Corps of Engineers (USACE) and the SFWMD began in 1992 and is expected to be completed

in 2019. Under the restoration plan, more than 40 square miles of riverine ecosystem, including 44 miles of continuous river channel and 20,000 acres of floodplain marsh will be restored to a more natural hydrological condition. The river restoration project will affect the preserve by raising the elevation of floods to historic levels in the river floodplain. Over time, changes in the vegetation along the river berm should be expected as parts of the flood zone are reclaimed by plant species endemic to the floodplain marsh community. Resource management activities and facilities development at the preserve will be coordinated with the river restoration project. Moreover, the Kissimmee River restoration is a significant interpretive resource for visitors to the park.

A review of proposed comprehensive plan amendments and proposed developments in Okeechobee and Osceola counties showed no substantial development projects impacting the park (Okeechobee County, 2009; Osceola County 2010). It will be important for DRP staff to participate in the review of all comprehensive plan amendments, proposed zoning changes, and development plans that may impact the park in the future. DRP staff should also work with adjacent landowners and encourage them to follow the International Dark-Sky Association's lighting guidelines. This will help protect the preserve's natural resources and will maintain the preserve's appeal as a premier destination for stargazing.

Florida Greenways and Trails System (FGTS)

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

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

The Kissimmee River, flowing along the western boundary of the preserve, has been designated a paddling trail opportunity as part of the FGTS. Kissimmee Prairie Preserve State Park is one of 9 state parks containing a certified segment of the Florida National Scenic Trail (FNST). A federally-designated National Scenic Trail, the Florida Trail is administered by the National Forests in Florida and managed to a set of agreed upon standards in cooperation with land management partners and stakeholders. The FNST was designated in the park in April 2016 as part of an

agreement between Kissimmee Prairie Preserve State Park and National Forests in Florida. As prescribed by the agreement, the Florida Park Service will collaborate with the FNST Administrator coordinate all programs and activities related to the trail.

Property Analysis

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

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

Kissimmee Prairie Preserve State Park contains approximately 35,000 acres of uplands. Numerous natural communities are represented in the park's upland areas, providing diverse wildlife habitat and wide-ranging natural experiences for park visitors. Some areas of the park along the river consist of spoil material placed from dredging operations. Park uplands provide significant areas for many recreational activities, including hiking, biking, horseback riding, nature study, wildlife viewing, and swamp buggy tours, plus picnicking, stargazing, backpacking, and camping (developed and primitive).

Water Area

Kissimmee Prairie Preserve State Park includes more than 1,850 acres of submerged lands. Several natural communities are represented in the park's submerged areas, including slough and blackwater stream. The park provides access to one substantial body of water, the fabled Kissimmee River, subject of the largest river restoration project in the world. The river provides opportunities for outdoor recreation, including fishing, wildlife viewing, and nature study.

Shoreline

The park features approximately 13 miles of Kissimmee River shoreline, providing opportunities for fishing, camping, picnicking, hiking, wildlife viewing, and nature study. Additional amenities and opportunities can be provided once river restoration activities have been completed and the floodplain boundaries are identified.

Natural Scenery

The park provides visitors with an unobstructed view of the horizon over the Kissimmee Prairie; in certain areas, it is possible to see more than 10 miles across the landscape. No other Florida state park contains similar viewsheds. Wildlife viewing opportunities and education should be expanded through the park's programs to heighten visitors' awareness of Florida's important natural areas. The park offers popular family and equestrian camping experiences in a unique, sub-tropical setting.

Significant Habitat

The park's Florida dry prairie, one of the best examples of grasslands in the state, provides an important habitat for rare and endemic plants, butterflies, reptiles, and bird species such as the Florida grasshopper sparrow, Florida burrowing owl, and crested caracara. The park offers great opportunities for nature study and wildlife viewing, particularly for birds and butterflies. The park also contains significant acreage with floodplain marsh, depression marsh, basin marsh, and wet prairie, which also contribute to the park's diverse fauna and excellent wildlife viewing.

Natural Features

The park contains the largest contiguous tract of Florida dry prairie in the world, along with abundant wetlands. These features provide habitat for many listed and rare species of plants and animals, which increases visitor opportunities to observe and enjoy the park's flora and fauna. Campsites are remote, but are accessible by vehicle and by foot, and offer visitors the chance to experience dark skies and vast expanses of prairie. Besides being a designated Dark Sky Park, the preserve also has limited noise pollution from human activities.

Archaeological and Historical Features

There are a number of archaeological and historical features within the park, including one remaining historical structure. The park has considerable opportunities for interpretation of Florida's early cattle industry, military history, and prehistoric cultures. Two linear resources, Military Trail (also known as Twigg's Trail) and the South Florida and Gulf Railroad Line, are eligible for the National Register.

Assessment of Use

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

Past Uses

Prior to acquisition, the property was used extensively for cattle grazing, with some vegetable farming as well. The park contains several historic homesteads from this cattle ranching legacy. The short-lived Peavine Railroad was built in the early 1900s in conjunction with Florida's real estate boom; the rail line led from Kenansville to Prairie Ridge through what is now the eastern portion of the park. The park's dirt

entrance road, called Peavine Trail, is built upon the old railroad bed. Military Trail, a dirt road that runs east-west through the park, follows alongside the path that was constructed in the 1840s to connect 2 Seminole War-era forts, Fort Drum and Fort Kissimmee.

Just prior to World War II, much of the property was leased by the U.S. military for use as a bombing range (part of Avon Park Army Airfield). During the war, the airbase primarily trained crews for B-17 and B-26 bombers. After the war, the portion east of the river was no longer needed by the air force and was returned. The Avon Park Air Force Range remains in use today on the west side of the river.

Future Land Use and Zoning

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

The current future land use designation for the park property is Conservation 1, which protects environmentally sensitive public areas. Conservation 1 permits activities consistent with conservation uses, such as structures for visitor centers, research, primitive camping facilities, and educational facilities. The current zoning designation for the entire park is Agriculture. This designation provides for activities or uses that are educational, institutional, or recreational on public land that is primarily used for agricultural pursuits. 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

Resource-based outdoor recreation in Florida continually increases in popularity. The growth of Florida's resident and tourist populations brings increasing pressure for greater access and for denser levels of public use in the natural areas available to the public. Consequently, one of the greatest challenges for public land management today is the balancing of reasonable levels of public access with the need to preserve and enhance the natural and cultural resources of the protected landscapes.

Wildlife, spectacular scenery, and astronomy are primary draws at Kissimmee Prairie Preserve State Park. Popular recreation activities in the park include hiking, bicycling, camping, horseback riding, birding, butterfly watching, picnicking, and stargazing. Park rangers also lead prairie buggy tours from November to March that allow visitors into remote areas of the park. The park is also a designated site on the FWC's Great Florida Birding and Wildlife Trail.

The park's rural location makes it an ideal spot for stargazing. Its isolation from urban light pollution affords visitors the opportunity to see an abundance of stars and celestial bodies, making the preserve one of the best locations in Florida for viewing the night sky. Taking advantage of these dark skies, the park offers programs on astronomy and solar eclipses.

Kissimmee Prairie Preserve State Park recorded 22,098 visitors in FY 2016/2017. By DRP estimates, these visitors contributed \$2,637,953 in direct economic impact, the equivalent of adding 42 jobs to the local economy (FDEP 2017).

Other Uses

Cattle grazing takes place on approximately 6,000 acres of improved and semi-improved pasture within the park. Grazing serves as an interim step in the restoration process for the park's dry prairie habitat. As the Avon Park Air Force Range is an active military facility adjacent to the park, the U.S. Air Force controls the airspace over the park.

The Latt Maxcy Corporation holds an easement for drainage and access over a portion of Pine Island Slough and existing lesser channels near the preserve's northern boundary. This easement stipulates the Corporation's right to drain, discharge, and overflow surface waters at the historical rate, up to the volume authorized under existing surface water management permits, and allows access to the drainage ditch and water control structures for maintenance. The Latt Maxcy Corporation retains ownership of the County Line Dip Vat 51 at the northern preserve boundary (0.5 acre of the affected area is south of the county line).

While the portion of the restoration project on the C-38 Canal (Kissimmee River) along the park's western boundary is completed, restoration activities continue both north and south of the park (estimated completion date is 2019). As a result, revised floodplain boundaries for the park have yet to be established. Division staff will continue to work with the SFWMD and the Army Corps of Engineers (USACE) to coordinate activities with protection and management efforts in the park.

Protected Zones

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

At Kissimmee Prairie Preserve State Park, all wetlands and floodplain, known imperiled species habitat, and the Wilderness Preserve area have been designated as protected zones. The park's Wilderness Preserve area is delineated on the Conceptual Land Use Plan.

Wilderness Preserve

Under the Division of Recreation and Parks policy, a Wilderness Preserve is an area that retains its primeval character and is protected and managed to preserve its natural appeal and values. A designated Wilderness Preserve generally appears to have been shaped by the unaltered forces of nature, with the imprint of human

influence substantially unnoticeable. A Wilderness Preserve offers outstanding opportunities for the conditions of solitude and remoteness that are essential for a wilderness experience. The area may contain environmental, archaeological, or other kinds of features of scientific, educational, scenic, or historic value. Compatible uses and carrying capacities are specified for each Wilderness Preserve. Facilities are limited to those considered essential for resource management and for the specified public uses.

All management activities in Wilderness Preserves are aimed at keeping the site in natural and pristine condition. Ecological restoration programs are appropriate. Only those existing service roads that are needed management are retained, and unnecessary roads should be abandoned. Motorized equipment and motorized boats are normally permitted for patrol and management purposes only.

The Wilderness Preserve at Kissimmee Prairie Preserve State Park is approximately 15,700 acres in size, or nearly 28 percent of the total land area. It is located north of Military Trail, west of the improved pasture area, and immediately east of the Kissimmee River, with the exception of the river berm located between McGuire Hammock and Marsh Point (see Conceptual Land Use Plan). Hiking, biking, horseback riding, primitive camping, nature study, and wildlife viewing are the primary recreation activities allowed.

Recommended facilities in the Wilderness Zone are hiking, bicycling, and equestrian trails, designated primitive campsites with weather shelters and hitching posts, and boardwalk structures, as needed, for trail crossings of wetland areas.

Existing Facilities

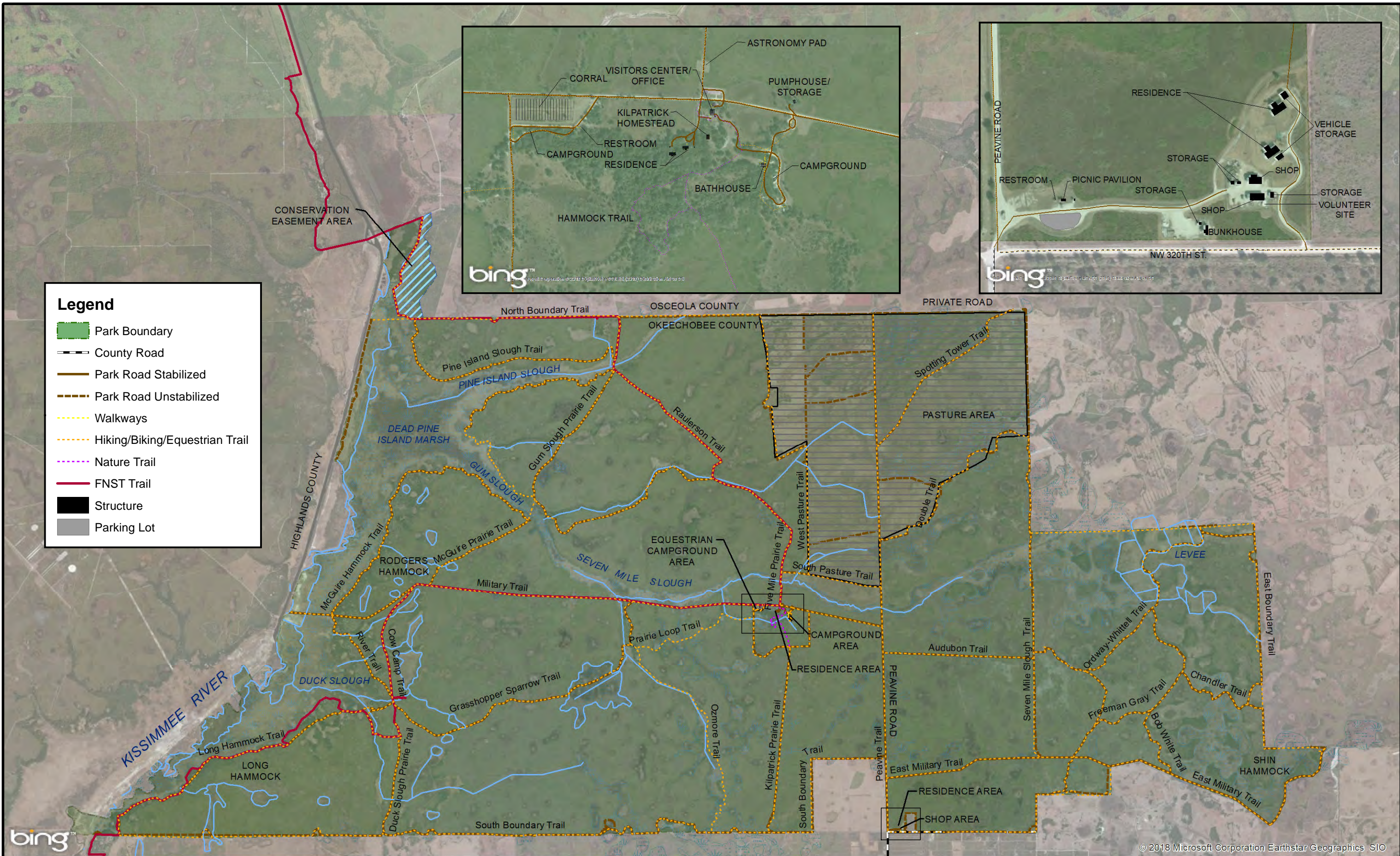
Kissimmee Prairie Preserve State Park provides a unique opportunity for visitors to experience a natural dry prairie ecosystem. The park's limited recreational facilities create a wilderness experience in a remote area of the state (see Base Map). Most visitor use is concentrated in the Visitor Center and Kilpatrick Hammock areas.

Recreation Facilities

The Visitor Center Area, Kilpatrick Hammock, Equestrian Campground, and Astronomy Interpretive Area offer 2 campground loops, horse paddocks, trails, restrooms, a visitor center, picnic tables, astronomy pads, interpretive kiosks, and parking. The Peavine Picnic Area has additional picnic facilities, a restroom, and kiosks. Parkwide, there are 5 primitive campsites and more than 100 miles of trails, as well as a popular swamp buggy tour offered in winter months.

Support Facilities

The park's support facilities are located in 2 main areas. Near the entrance, the Peavine Residence and Shop Areas have ranger and volunteer residences, a shop, and storage buildings which provide for staff presence and maintenance activities/



Legend

- Park Boundary
- County Road
- Park Road Stabilized
- Park Road Unstabilized
- Walkways
- Hiking/Biking/Equestrian Trail
- Nature Trail
- FNST Trail
- Structure
- Parking Lot

equipment. Housing for researchers is also located here. The Kilpatrick Residence and Visitor Center Areas contain office space and residences for park staff, as well as storage buildings.

An inventory of the park's recreational and support facilities is included below:

Entrance/Peavine Picnic Area

Entrance kiosk	Picnic tables (2)
Stabilized parking	Composting toilet
Small picnic shelter	Interpretive kiosk (1)

Peavine Residence Area

Ranger residence (2)	FEMA volunteer trailer
Vehicle storage (2)	

Shop Area

3-bay pole barn/equipment shelter	Storage buildings (2)
3-bay shop	Fuel storage shed

Visitor Center Area

Visitor center/admin. offices	Pumphouse/storage building
Storage building	

Kilpatrick Residence Area

Staff residence (2)	
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Kilpatrick Hammock Campground

Stabilized parking	Bathhouse/laundry station
Campground (20 sites)	Interpretive kiosk (2)
Picnic tables (20)	

Equestrian Camping Area

Equestrian campground (15 sites)	Composting restroom
Horse paddocks (10)	Picnic tables (15)

Primitive Camping Areas

Primitive campgrounds (3)	Small shelter
Primitive campsites (5)	Fire rings

Astronomy Interpretive Area

Astronomy pads (5)	
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Parkwide

Swamp buggy tour	Nature trails (1.15 miles)
Multi-use trails (133 miles)	Boardwalks (0.6 miles)
FL National Scenic Trail (24.5 miles)	

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 in order to limit the need for stormwater management systems, and all facilities are designed and constructed using best management practices to limit and avoid resource impacts. Federal, state, and local permit and regulatory requirements are addressed during facility development. This includes the design of all new park facilities consistent with the universal access requirements of the Americans with Disabilities Act (ADA). After new facilities are constructed, park staff monitors conditions to ensure that impacts remain within acceptable levels.

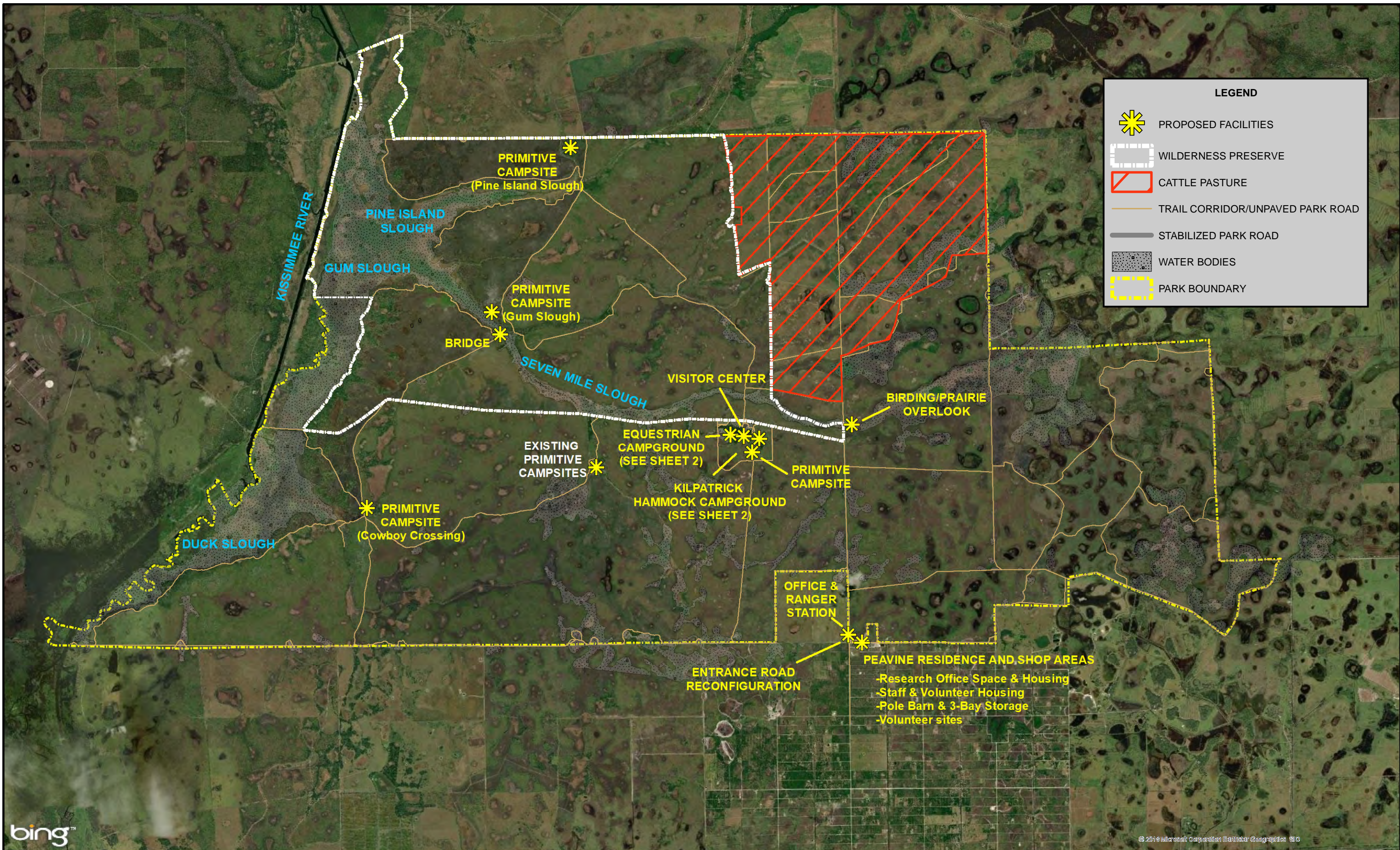
Potential Uses

Public Access and Recreational Opportunities

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

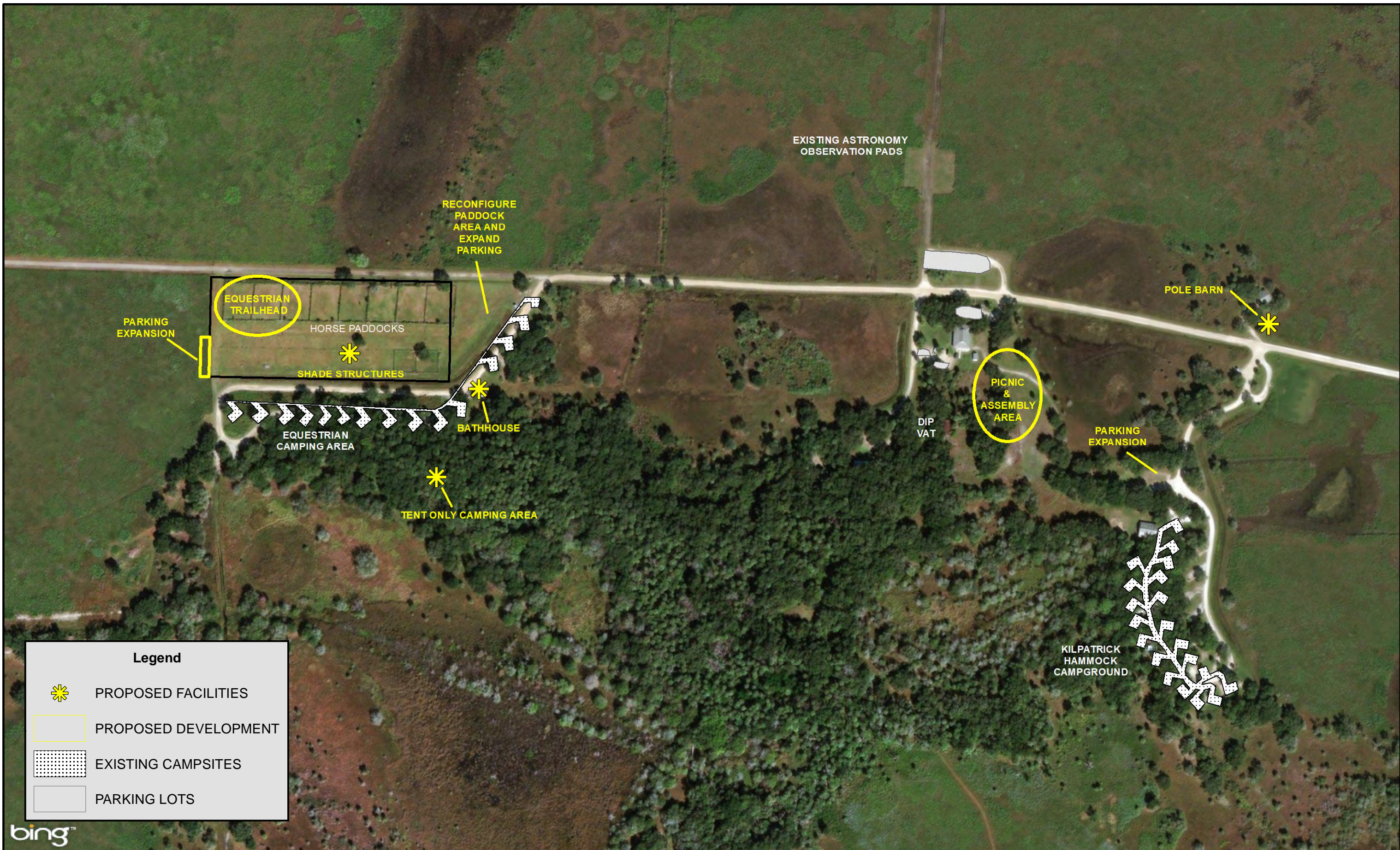
The existing recreational activities and programs of this state park are appropriate to the natural and cultural resources contained in the park and should be continued. New and improved activities and programs are also recommended and discussed below.

Objective: Maintain the park's current recreational carrying capacity of 445 users per day.



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The park will continue to provide the current range of recreational day use opportunities and overnight camping. Buggy tours, plus hiking, bicycling, horseback riding, camping (tent/RV, primitive, and equestrian), picnicking, stargazing, fishing, and wildlife viewing are popular activities for park patrons.

Objective: Expand the park's recreational carrying capacity by 113 users per day.

Several new opportunities at the park will expand the park's carrying capacity. Two new primitive camping areas and a tent-only camping area are proposed, which will provide expanded overnight opportunities in the park. Additional picnic facilities are desired throughout the park, and a new amphitheater will accommodate a greater number of park patrons during daylight hours.

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

One in-person, ranger-led activity is currently offered at the park. During winter months, guided swamp buggy tours take visitors to remote areas of the park and provide exceptional views of the dry prairie. These tours inform visitors about the park's issues and resources. In addition, volunteer-led astronomy programs are given throughout the year. Several interpretive signs and kiosks, as well as videos in the office educate visitors about Florida dry prairie, threatened and endangered species, the history of the area, dark skies, and other issues. Publications available at the park cover an array of topics, including dark skies, imperiled and extinct species, birds, butterflies, trails, and park activities.

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

The park will develop a new program designed to inform visitors about the history of the Avon Park Army Airfield and its role to train American bomber crews from World War II until the 1960s. An interpretive kiosk will be created and installed near the park's visitor center. This kiosk will also provide safety guidelines and educate visitors about the possibilities of unexploded ordinance (UXO) being present on the property.

Installing a series of interpretive panels with an astronomy focus is proposed. The panels would be placed near the visitor center and astronomy pads. Topics would include the history of astronomy, navigating by the stars, light pollution, and seasonal changes of constellation positions. Preserve staff should also reach out to adjacent landowners and encourage them to adopt dark sky lighting guidelines as well.

The addition of concessionaire-led tours (via swamp buggy and/or horseback), at a scale and volume to be compatible with park resources and preserve status, is also proposed to foster visitor access to remote areas of 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 proposed development concept for the park is two-fold. It includes improvements to existing use areas that will enhance the visitor experience and increase access to recreational opportunities. In addition, new facilities are proposed that will add recreational activities that are compatible with those currently offered at the park.

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, renovated, and new facilities needed to implement the conceptual land use plan for Kissimmee Prairie Preserve State Park:

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

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

Objective: Improve and/or repair 10 existing facilities and 20 miles of trail/road.

Major repair projects for park facilities may be accomplished within the 10-year term of this management plan, if funding is made available. These include the modification of existing park facilities to bring them into compliance with the Americans with Disabilities Act (a top priority for all facilities maintained by the DRP). In order to maintain the park's International Dark Sky Park certification, all lighting must now meet certain requirements set forth by the International Dark-Sky Association. The following discussion of other recommended improvements and repairs are organized by use area within the park.

Entrance/Peavine Picnic Area:

The entrance road needs signage and reconfiguration to better accommodate large RVs and vehicles towing trailers, and to prevent visitors from accidentally venturing into the Peavine residence/shop areas.

Peavine Residence Area:

A number of improvements to the support area facilities will greatly enhance safety and operations. Internet service is needed in this portion of the park and can be provided to multiple buildings in the residence area, including the ranger and volunteer residences. It is desirable to connect the bunkhouse (FEMA trailer) and volunteer camping sites to the park's septic system.

Research office space and housing are also needed, including one FTE residence. The FEMA trailer, used by visiting staff and volunteers, has aged considerably and needs to be replaced. The addition of new resident volunteer sites would also be helpful.

Shop Area:

The addition of a large pole barn and 3-bay storage structure is required to house park vehicles and equipment. Connecting the shop to the internet is also desirable.

Visitor Center Area:

The existing visitor center/office should be reconfigured as a stand-alone visitor facility with new interpretive exhibits. One large picnic shelter, a large screened area with barbecue pit, and an assembly area with campfire ring should be added. Six interpretive astronomy panels will be added near the visitor center and the astronomy pads. Next to the pumphouse, a large pole barn is also proposed for storage of park and concessionaire equipment.

Kilpatrick Hammock Campground:

Expanded septic service for the existing campground and new parking near the bathhouse for one of the proposed primitive camping areas are desired.

Equestrian Camping Area:

A bathhouse and paddock shade structures are needed for this camping area. The paddock area will be reconfigured, with additional parking and amenities.

Primitive Camping Areas:

The 3 existing primitive camping areas are used by backpackers, including FNST hikers. To increase the number of camping opportunities, the relocation and improvement of 2 existing campsites servicing the FNST is proposed. Moving the Woods Hammock FNST campsite to the adjacent Cowboy Crossing is a short-distance relocation, and new amenities including a small shelter, picnic table, water well, and hand pump would be added. The existing Pine Island Slough campsite (northernmost FNST campsite), which recently has been relocated 1.2 miles to the northeast to accommodate a rerouting of the trail

along the northern park boundary, will require a small shelter, water well, and hand pump.

Parkwide

The wooden footbridge over Duck Slough needs repairs and improvements, and approximately 20 miles of trails/roads within the park will need repair. The installation of wayfinding signs for park roads and trails is also desired.

Between the McGuire Prairie Trail and Gum Slough Prairie Trail, a 1,000-foot, Bailey-type bridge or floating pontoon bridge across Gum Slough is needed for several reasons. It will permit park visitors to cross the slough without wading during times of high water, and it will allow park staff to cross with ATVs/UTVs to conduct resource management and other park tasks. It will also shorten the FNST route by 8.6 miles, making the route through the park more efficient.

Objective: Construct 8 new facilities.

Entrance/Peavine Picnic Area:

A ranger station needs to be added, and a new park office building should be constructed near the entrance to provide workspace for park staff, as the amount of office space in the current visitor center is not adequate.

Tent Campsite Area

Five tent-only campsites are desired in the wooded area southwest of the Visitor Center, between the existing Kilpatrick Hammock campground and equestrian campground.

Primitive Camping Areas

Two new primitive camping areas are proposed, one each along Kilpatrick Prairie Trail (0.25 miles due south of the main campground bathhouse) and Gum Slough. These camping areas will each have a picnic table and small shelter.

Parkwide

Due to the recent rerouting of the FNST, 2 new legal access points are needed for FNST hikers, with kiosks and signs in the southwest and northwest corners of the park. An observation platform/birding overlook is proposed near the intersection of Peavine Trail and Seven Mile Slough.

Facilities Development

Preliminary cost estimates for these recommended facilities and improvements are provided in the 10-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/Peavine Picnic Area

Ranger station
Office building

Road reconfiguration/signage
Electric gate

Peavine Residence Area

Ranger residence
Research office space/housing
Trailer/bunkhouse

Internet service
Septic system service

Shop Area

Large pole barn

3-bay storage structure

Equestrian Campground Area

Tent only campsites (5)
Equestrian paddock shade structures (15)

Expanded parking
Bathhouse

Visitor Center Area

Reconfigure visitor center
Large picnic shelter
Large screened area
Assembly area w/campfire ring

Barbecue pit
Interpretive astronomy panels (6)
Large pole barn

Kilpatrick Hammock Campground

Expanded septic system service

Expanded parking

Primitive Camping Areas

Primitive campsites (2)
Small shelters with hitching posts (4)

Water well (3)
Hand pump (3)

Parkwide

1,000-foot bridge over Gum Slough
Kiosks/signs at FNST trailheads (2)

Observation platform/birding overlook

Recreational Carrying Capacity

Carrying capacity is an estimate of the number of users a recreation resource or facility can accommodate and still provide a high quality recreational experience and preserve the natural values of the site. The carrying capacity of a unit is determined by identifying the land and water requirements for each recreation activity at the unit, and then applying these requirements to the unit's land and water base. Next, guidelines are applied which estimate the physical capacity of

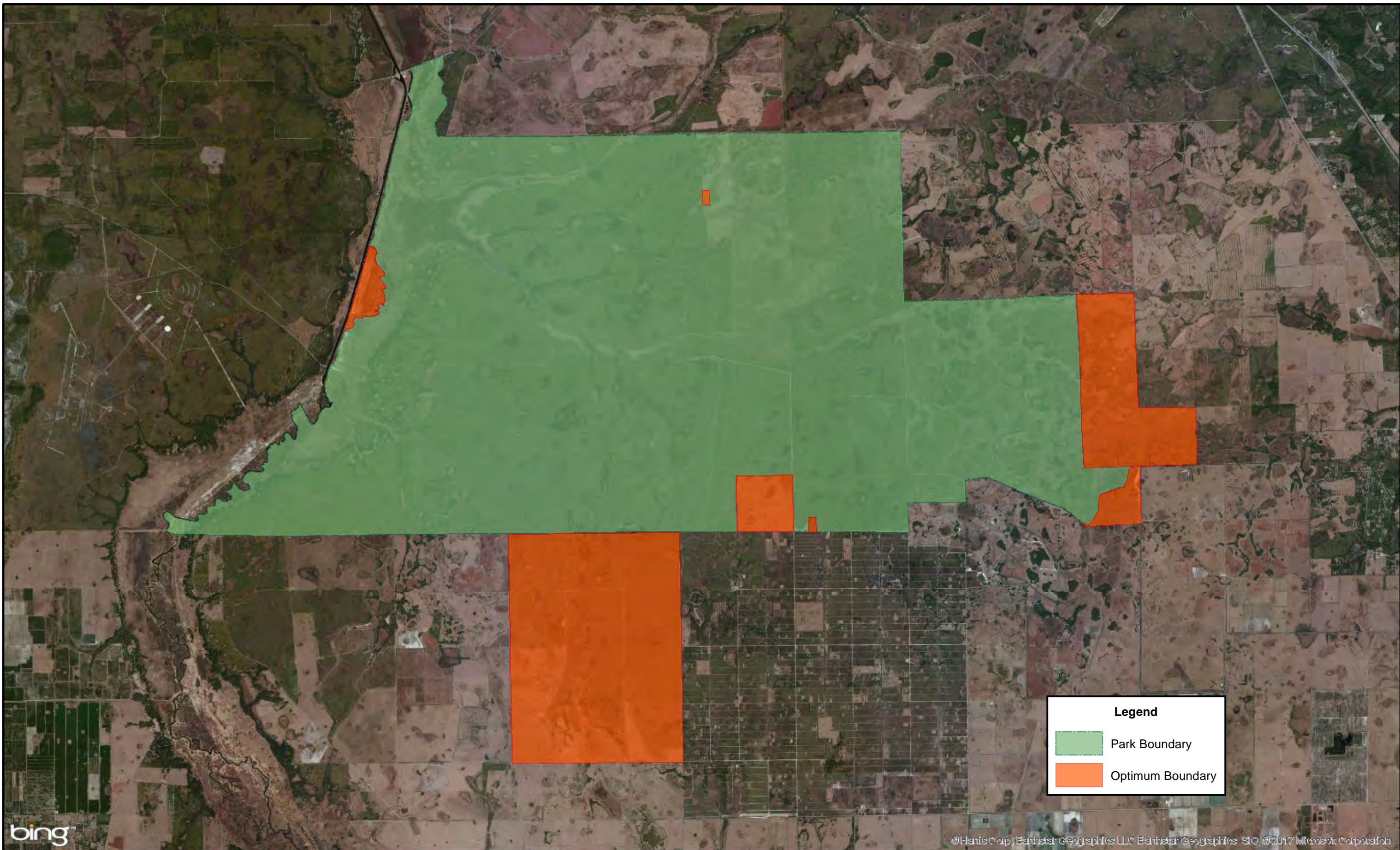
the unit's natural communities to withstand recreational uses without significant degradation. This analysis identifies a range within which the carrying capacity most appropriate to the specific activity, the activity site and the unit's classification is selected (see Table 6).

The recreational carrying capacity for this park is a preliminary estimate of the number of users the unit could accommodate after the current conceptual development program has been implemented. When developed, the proposed new facilities would approximately increase the unit's carrying capacity as shown in Table 6.

Table 6. Recreational Carrying Capacity						
Activity	Existing Capacity*		Proposed Additional Capacity		Future Capacity	
	One Time	Daily	One Time	Daily	One Time	Daily
Picnicking	52	52	32	32	84	84
Trails						
Nature Trails**	12	23			12	23
Shared Use Trails**	30	30			30	30
Camping						
Standard Camping (Tent/RV – 20 sites)	160	160			160	160
Equestrian Camping (15 sites)	120	120			120	120
Primitive Camping (5 sites)	20	20	16	16	36	36
Astronomy Pad Camping (5 sites)	40	40			40	40
Tent Only Camping (5 sites)			40	40	40	40
Concessionaire Tour			25	25	25	25
TOTAL	434	445	113	113	547	558
*Parking is severely limited at this park, and the majority of visitors stay overnight. Existing capacity has been revised from approved plan to better follow DRP carrying capacity guidelines and to accurately reflect the number of visitors accommodated.						
**These figures are in addition to overnight visitors who use the trails.						

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



Legend

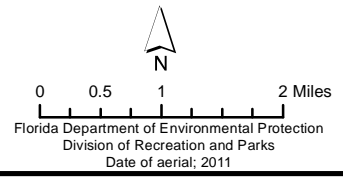
Park Boundary

Optimum Boundary

bing

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KISSIMMEE PRARIE PRESERVE STATE PARK



OPTIMUM BOUNDARY MAP

the park, provide additional natural and cultural resource protection or allow for future expansion of recreational activities. Parklands that are potentially surplus to the management needs of DRP are also identified. As additional needs are identified through park use, development, and research, and as land use changes on adjacent property, modification of the park's optimum boundary may be necessary.

Identification of parcels on the optimum boundary map is intended solely for planning purposes. It is not to be used in connection with any regulatory purposes. Any party or governmental entity should not use a property's identification on the optimum boundary map to reduce or restrict the lawful rights of private landowners. Identification on the map does not empower or suggest that any government entity should impose additional or more restrictive environmental land use or zoning regulations. Identification should not be used as the basis for permit denial or the imposition of permit conditions.

At this time, no lands are considered surplus to park needs. Lands identified for acquisition include 3 inholdings (2 parcels on the southern boundary and one 20-acre parcel within the cattle grazing area), as well as portions of the 7,998-acre Triple Diamond Ranch (an identified Florida Forever acquisition) on the southern boundary. In addition, 3 parcels on the eastern boundary (2 with conservation easements) and one parcel on the preserve's western boundary on the eastern side of the river are desired.

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

MANAGEMENT PROGRESS

Since the approval of the last management plan for Kissimmee Prairie Preserve State Park in 2005, significant work has been accomplished and progress made towards meeting the DRP's management objectives for the park. These accomplishments fall within 3 of the 5 general categories that encompass the mission of the park and the DRP.

Park Administration and Operations

- One position (Administrative Assistant) converted from OPS to FTE.
- Iron ranger installed and entrance fee is now being collected.
- A Citizen Support Organization (CSO) was formed.
- The park received official designation from the International Dark-Sky Association as Florida's first International Dark Sky Park.

Resource Management

Natural Resources

- Exotic plant removal and treatment is ongoing. AmeriCorps IP members were assigned to the preserve from 2008 to 2014 and from 2016 to present.
- The park's prescribed fire program is ongoing.
- Florida Grasshopper Sparrow monitoring is ongoing, as are other T&E species.
- Tree removal and prairie restoration has been ongoing and expanded greatly.
- Exotic animal removal is ongoing.

Cultural Resources

- A project was undertaken to interview former residents of the prairie and record for posterity.

Recreation and Visitor Services

- Buggy tours continue to be offered.
- Five "Astronomy Pads" were installed across from the office.
- Bicycle rentals are now offered.
- Electricity and water has been installed in the Equestrian Campground.
- The CSO has sponsored 3 "plant walks," a "Prairie Days and Nights" visitor event, and produced preserve checklists for birds, butterflies, and plants. A CSO member lead more than 20 tours to the preserve.
- A comprehensive trail map has been printed.
- On and off-site programs continue to be offered.
- The Florida National Scenic Trail has been rerouted through the preserve.

Park Facilities

- The office has been reconfigured to better accommodate workspace and a visitor area.
- Eight volunteer campsites have been added.
- A front entrance kiosk and flagpole have been added.
- The CSO installed a 2-inch water well at a primitive campsite for hikers; the well also serves as an alternative water source for fire management.

MANAGEMENT PLAN IMPLEMENTATION

This management plan is written for a time frame of 10 years, as required by Section 253.034 Florida Statutes. The 10-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 5 standard land management categories: Resource Management, Administration and Support, Capital Improvements, Recreation Visitor Services, and Law Enforcement.

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

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

Table 7
Kissimmee Prairie Preserve State Park Ten-Year Implementation Schedule and Cost Estimates
Sheet 1 of 6

NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.				
Goal I: Provide administrative support for all park functions.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Continue day-to-day administrative support at current levels.	Administrative support ongoing	C	\$160,000
Objective B	Expand administrative support as new lands are acquired, new facilities are developed, or as other needs arise.	Administrative support expanded	C	\$180,000
Goal II: Protect water quality and quantity in the park, restore hydrology to the extent feasible, and maintain the restored condition.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Conduct/obtain an assessment of the park's hydrological restoration needs.	Assessment conducted	ST or LT	\$43,000
Action 1	Secure funding for a hydrological assessment, obtain quotes from contractors, and select consultant by 2018.	Funding and contractor selection	ST	\$3,000
Action 2	Obtain assessment of the park's hydrological restoration needs by January 1, 2019.	Assessment conducted	UFN	\$40,000
Objective B	Restore natural hydrological conditions and functions to approximately 1,500 acres of dry prairie, wet prairie, basin marsh, and slough marsh natural communities.	# Acres restored or w/ restoration underway	UFN	\$520,000
Action 1	Using recommendations in the assessment, fill first priority recommended ditches that will improve hydrology of the most acres within 2 years of receipt of the assessment.	# Miles of ditches filled	UFN	\$500,000
Action 2	Install the recommended low-water crossings or culverts outlined by the assessment in objective A.	# Crossings/culverts installed	UFN	\$20,000
Objective C	Mitigate for effects of the park's main drive on adjacent habitat.	Habitat mitigation	ST, LT	\$144,000
Action 1	Conduct a thorough initial assessment and develop a plan to mitigate for and monitor these ecological concerns.	Mitigation plan developed	ST or LT	\$42,000
Action 2	Implement the assessment's recommended actions (either in-house or via a contractor).	Implementation	ST or LT	\$57,000
Action 3	Conduct a follow-up assessment of the results to examine the parameters recommended in the initial assessment.	Follow-up assessment conducted	LT	\$45,000
Objective D	Continue to seek opportunities to restore the hydrology of the Kissimmee River and associated floodplain marsh.	# Acres restored or with restoration underway	LT	\$13,000
Action 1	Maintain a presence at interagency meetings related to Kissimmee River hydrology.	# Meetings attended	ST or LT	\$3,000
Action 2	Replace the C-38 culvert to restore flow to the affected portion of the river marsh.	Culvert replaced	LT	\$10,000

* 2018 Dollars
ST = actions within 2 years
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C = long term or short term actions that are continuous or cyclical
UFN = currently unfunded need

Table 7
Kissimmee Prairie Preserve State Park Ten-Year Implementation Schedule and Cost Estimates
Sheet 2 of 6

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 III: Restore and maintain the natural communities/habitats of the park.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Within 10 years have 51,600 acres of the park maintained within the optimal fire return interval.	# Acres within fire return interval target	LT	\$8,102,000
Action 1	Develop/update annual burn plan, with priority given to dry and wet prairie communities.	Plan updated	C	\$2,000
Action 2	Manage fire dependent communities for ecosystem function, structure, and processes by burning between 16,754 - 33,055 acres annually, as identified by the annual burn plan.	Average # acres burned annually	C	\$8,100,000
Objective B	Conduct groundcover restoration on 40 acres of abandoned pasture and restore to dry prairie, wet prairie, and slough marsh natural communities.	# Acres restored or with restoration underway	ST or LT	\$77,000
Action 1	Conduct and document a careful assessment of conditions in FY 2021-22.	Assessment of conditions	ST	\$4,000
Action 2	Develop a groundcover restoration plan by February 2022, with budget projections included for FY 2023.	Plan developed/updated	LT	\$10,000
Action 3	Arrange equipment procurement or outsourcing by August 2022.	# Acres with restoration underway	ST	\$63,000
Action 4	Begin implementation of groundcover restoration plan by September 2022.	Implementation begun	ST	\$0
Objective C	Conduct natural community/habitat improvement activities on 5,000 acres of dry prairie, wet prairie, and slough marsh natural communities.	# Acres improved or with improvements underway	ST or LT	\$498,000
Action 1	Develop and implement a habitat restoration plan to guide the park's ongoing efforts.	Plan developed/updated	ST	\$6,000
Action 2	Systematically locate and target for control the largest invasive plant populations, giving priority to areas with high chances of recovery.	Workdays/outsourcing assigned	LT	\$450,000
Action 3	Quantify the spatial extent of the hog rooting areas, and create and implement a restoration plan.	Restoration plan created	LT	\$22,000
Action 4	Monitor efforts consistently, and follow-up (adjust and adapt techniques as needed) to ensure a high success rate for all restoration efforts.	Monitoring and evaluation	LT	\$20,000

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Table 7
Kissimmee Prairie Preserve State Park Ten-Year Implementation Schedule and Cost Estimates
Sheet 3 of 6

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

Goal IV: Maintain, improve, or restore imperiled species populations and habitats in the park.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Develop/update baseline imperiled species occurrence inventory lists for plants and animals.	List updated	C	\$38,000
Action 1	Continue to recruit external research partners and foster strong relationships with data-centric partners.	# Research partners recruited	C	\$9,000
Action 2	Work with DRP biologists to continue systematically searching the preserve for additional plant and animal occurrences.	District Biologist visitations/purposes/outcomes documented	C	\$12,000
Action 3	Maintain data sets, and use results of status and trend analyses to inform decisions and carry out necessary actions.	Status and trend outcomes	C	\$17,000
Objective B	Monitor and document 22 selected imperiled animal species in the park.	Imperiled species monitoring completed	C	\$340,000
Action 1	Continue to monitor the Florida grasshopper sparrow and Florida scrub-jay using established protocols.	FSJ and FGS monitoring completed	ST	\$320,000
Action 2	Continue to scrutinize environmental factors against the status and trends detected by this monitoring.	Data status/trends analysis	C	\$5,500
Action 3	Invite outside researchers to assist with data collection on Florida burrowing owl, swallow-tailed kite, and crested caracara.	# Research partners recruited	ST	\$7,500
Action 4	Take every opportunity to prioritize and set up monitoring that is appropriate for species in action 3.	List of monitoring protocols/partnerships	ST	\$7,000
Objective C	Monitor and document 12 selected imperiled plant species in the park.	# Species monitored	C	\$16,000
Action 1	Invite outside researchers to assist with data collection on many-flowered grasspink, Simpson's zephyrlily, Florida beargrass, and celestial lily.	# Species monitored	ST	\$3,000
Action 2	Develop monitoring protocols for many-flowered grasspink, Simpson's zephyrlily, Florida beargrass, celestial lily, and any other remaining species as opportunity, time, and budgets allow.	# Protocols developed	C	\$13,000
Objective D	Continue working in partnership with the Florida Grasshopper Sparrow Working Group and the USFWS on FGSP recovery in the park.	Continued partnerships	ST, LT, or C	\$28,000

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Table 7
Kissimmee Prairie Preserve State Park Ten-Year Implementation Schedule and Cost Estimates
Sheet 4 of 6

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 V: Remove exotic and invasive plants and animals from the park and conduct needed maintenance control.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Annually treat 300 acres of exotic plant species in the park.	# Acres treated	C	\$255,000
Action 1	Staff will accurately monitor populations to get current status information useful for IPM funding.	Monitoring adequate to assign IPM projects	C	\$225,000
Action 2	Seek partnerships with FWC uplands IPM working group projects as well as FWC AHRE program managers during FY 2017-19 to get a handle on Wright's nutrush and climbing fern populations in the southeast quadrant of the preserve, and cogongrass and Brazilian pepper throughout.	IPM and/or AHRE programs implemented or underway	C	\$30,000
Objective B	Implement control measures on 3 exotic animal species in the park.	# Species for which control measures implemented	C	\$473,000
Action 1	Prioritize the control measures based on current and potential effects on imperiled species, and overall native ecosystem function.	Control measures prioritized	ST	\$461,000
Action 2	Monitor changes in impacts to vegetation and quantifiable ecosystem parameters. Seek partnerships to allow for adequate resources to accomplish monitoring. Use the monitoring to adjust control as dictated by data.	# Changes monitored, partnerships formed, & control measures adjusted	LT	\$12,000
Goal VI: Protect, preserve, and maintain the cultural resources of the preserve.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Assess and evaluate 20 of 20 recorded cultural resources in the park.	Documentation complete	LT	\$34,000
Action 1	A plan to prioritize and at least annually visit and assess all of the cultural resources in the preserve will be developed and implemented.	Assessments complete	LT, ST	\$23,000
Action 2	Historic Structure Reports (HSRs) will be completed as required.	Reports and priority lists completed	LT	\$11,000

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Table 7
Kissimmee Prairie Preserve State Park Ten-Year Implementation Schedule and Cost Estimates
Sheet 5 of 6

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.				
Objective B	Compile reliable documentation for all recorded historic and archaeological sites.	Documentation complete	LT	\$42,000
Action 1	All currently documented FMSF will be revisited and updated accordingly.	# Sites recorded or updated	ST	\$21,000
Action 2	Cultural sites that currently aren't documented in FMSF will be assessed and documented in FMSF.	Probability Map completed	ST	\$2,500
Action 3	Preserve staff will search for undocumented sites as time and resources allow.	Days searched/sites found	ST	\$2,500
Action 4	Preserve staff will continue to develop a Scope of Collections Statement, conduct oral interviews as appropriate, and compile preserve history.	Document completed	LT	\$2,000
Action 5	Research and document the structures associated with the Prescott Homestead and determine final treatment options.	Research completed and conditions documented	LT, ST	\$14,000
Goal VII: Provide public access and recreational opportunities in the park.		Measure	Planning Period	Estimated Manpower and Expense Cost* (10-years)
Objective A	Maintain the park's current recreational carrying capacity of 445 users per day.	# Recreation/visitor opportunities per day	C	\$475,000
Objective B	Expand the park's recreational carrying capacity by 113 users per day.	# Recreation/visitor opportunities per day	ST or LT	\$535,000
Objective C	Continue to provide the current repertoire of 5 interpretive, educational, and recreational programs on a regular basis.	# Interpretive & education programs	C	\$25,000
Objective D	Develop 3 new interpretive, educational, and recreational programs.	# Interpretive & education programs	ST or LT	\$7,000

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Table 7
Kissimmee Prairie Preserve State Park Ten-Year Implementation Schedule and Cost Estimates
Sheet 6 of 6

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	\$1,110,000
Objective B	Continue to implement the park's self-evaluation plan to ensure facilities are accessible in accordance with the American with Disabilities Act of 1990.	Plan implemented	ST or LT	\$50,000
Objective C	Improve and/or repair 10 existing facilities and 20 miles of trail/road as identified in the Land Use Component.	# Facilities/Miles of Trail/Miles of Road	LT	\$1,430,000
Objective D	Construct 8 new facilities as identified in the Land Use Component.	# Facilities	LT	\$2,200,000
Objective E	Expand maintenance activities as existing facilities are improved and new facilities are developed.	Facilities maintained	C	\$1,450,000
Summary of Estimated Costs				
Management Categories				Total Estimated Manpower and Expense Cost* (10-years)
Resource Management				\$10,623,000
Administration and Support				\$340,000
Capital Improvements				\$3,680,000
Recreation Visitor Services				\$3,602,000
Law Enforcement Activities			Note: Law enforcement activities in Florida State Parks are conducted by the FWC Division of Law Enforcement and by local law enforcement agencies.	

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Addendum 1—Acquisition History

Kissimmee Prairie Preserve State Park Acquisition History

Purpose of Acquisition:

The Board of Trustees of the Internal Improvement Fund (Trustees) of the State of Florida purchased the initial area of Kissimmee Prairie Preserve State Park to protect and preserve the large tract of high quality Florida dry prairie east of the Kissimmee River, which also links Avon Park Air Force Range, Audubon's Kissimmee Prairie Sanctuary, and holdings of the South Florida Water Management District on the Kissimmee River floodplain, as well as to provide outdoor recreation and environmental education.

Sequence of Acquisition:

On March 14, 1997, the South Florida Water Management District (SFWMD) purchased the approximately 47,416.27-acre property constituting the initial area of Kissimmee Prairie Preserve State Park. The SFWMD purchased the property from the Latt Maxcy Corporation.

On November 14, 1997, the SFWMD sold an undivided 76.2% interest in the 47,416.27-acre property to the Trustees. The Trustees purchased this undivided 76.2% interest in the property for \$16,892,643.90. The purchase was funded through the Preservation 2000/Conservation and Recreation Lands (P2000/CARL) program.

Since the 1997 initial purchase, the Trustees have purchased parcels funded through the P2000/Additions and Inholdings (A&I) program, including the 7,315-acre Ordway-Whittell Kissimmee Prairie Sanctuary in November 2001, and acquired one parcel through a donation, adding these acquisitions to Kissimmee Prairie Preserve State Park. Over the same period, The State of Florida Department of Environmental Protection, Division of Recreation and Parks (DRP) has also leased the SFWMD'S portions of undivided interests in the Trustees' acquisitions, as well as an approximately 20-acre property from a private entity. These parcels were added to Kissimmee Prairie Preserve State Park to manage as part of the park. Presently the park is 53,738.31 acres.

Title Interest:

The Trustees, the SFWMD, and Laura C. Olthafer hold fee simple title to portions of Kissimmee Prairie Preserve State Park.

Lease Agreement:

At present, DRP manages Kissimmee Prairie Preserve State Park under three different leases: one lease from the Trustees, Lease No. 4166; a lease from SFWMD, Lease No. C-8318; and another lease from a private entity, lease from Laura C. Olthafer. The Division manages the Trustees' undivided 76.2% interest in SFWMD'S initial purchase as well as the Trustees' own subsequent acquisitions under Lease No. 4166. This lease is for a period of fifty (50) years, which will expire on March 18, 2049. The Division manages the SFWMD'S undivided 23.8% interest

Kissimmee Prairie Preserve State Park Acquisition History

in the property under lease No. C-8318. Lease No. C-8318 is also for a period of fifty (50) years, which is scheduled to expire on March 11, 2048. According to these leases, the DRP manages the park for the purpose of public outdoor recreation, conservation and other park-related purposes. On March 1, 2000, DRP leased a 22.26-acre property from Laura C. Olthafer to manage the property as part of Kissimmee Prairie Preserve State Park. This lease renews itself from year to year, unless Ms. Olthafer is notified in writing that the Division does not wish to extend the lease. A legal description of the park property can be made available upon request to the Department of Environmental Protection.

Special Conditions on Use:

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

Outstanding Reservations:

Following is a list of outstanding rights, reservations, and encumbrances that apply to Kissimmee Prairie Preserve State Park.

Instrument: Lease Agreement (lease No. C-8318)
Instrument Holder: South Florida Water Management District
Beginning Date: March 12, 1998
Ending Date: March 11, 2048
Outstanding Rights, Uses, Etc.: See below

According to this lease, the Latt Maxcy Corporation has reserved to itself, its successors, and assigns a perpetual easement for ingress and egress to the portion of Kissimmee River abutting certain tracts which are subjects of this lease, not only to access and use the waters but also to navigate, fish, bathe, and use the waters for domestic household purposes. The corporation has also reserved to itself, successors, and assigns, the right to drain, discharge, and overflow surface waters from the remainder of the property onto certain portions of the property subject to this lease.

Addendum 2—Advisory Group Members and Report

Kissimmee Prairie Preserve State Park Advisory Group Members and Report

Local Government Officials

The Honorable Terry Burroughs, Chair
Commissioner – District 3
Okeechobee County Board of
County Commissioners

The Honorable Brandon Arrington,
Chair
Commissioner – District 3
Osceola County Board of
County Commissioners

Represented by:
Bob Mindick, Public Lands Manager
Osceola County Parks & Recreation

Audrey Kuipers, Program Manager
Okeechobee Soil and Water
Conservation District

Dorothy Miles, Chairwoman
Coquina Water Control District

Agency Representatives

Daniel Willis, Park Manager
Florida Park Service

Michael Edwards, Senior Forester
Florida Forest Service

Valerie Sparling, Biologist
Florida Fish and Wildlife Conservation
Commission, South Region

John Strenth, Lieutenant
Florida Fish and Wildlife Conservation
Commission,
Division of Law Enforcement

Jeffrey McLemore, Senior Scientist
South Florida Water Management
District

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

Brent Bonner, Environmental Flight
Chief
Avon Park Air Force Range

Mary Peterson, Endangered Species
Recovery Biologist
U.S. Fish & Wildlife Service

Tourist Development Council

Sharie Turgeon, Tourism Coordinator
Okeechobee County Tourism
Development Council

Environmental Representatives

Paul Gray, Okeechobee Science
Coordinator
Audubon Florida

Donna Bollenbach, President
Florida Native Plant Society
Suncoast Chapter

Tom Palmer, Representative
North American Butterfly Association

User Groups

Rick Deluga, Section Leader
Florida Trail Association
Tropical Trekkers Chapter

Becky Afonso, President
Florida Bicycle Association

Represented by:
Willem Badenhorst
Florida Bicycle Association

**Kissimmee Prairie Preserve State Park
Advisory Group Members and Report**

User Groups cont.

Dave Brown, President
Treasure Coast Astronomy Club

**Historical Resource
Representative**

Dowling Watford, Treasurer
Okeechobee Historical Society

Adjacent Landowner

David DeLargy
Triple Diamond Ranch

Citizen Support Organization

Christina Evans, President
Friends of Kissimmee Prairie Preserve
State Park

Kissimmee Prairie Preserve State Park Advisory Group Members and Report

The Advisory Group meeting to review the proposed unit management plan (UMP) for Kissimmee Prairie Preserve State Park was held in the Okeechobee County Public Library on Wednesday, May 31, 2017 at 9:30 AM.

Public Lands Manager Robert Mindick represented the Osceola County Board of County Commissioners for BOCC Chairman Brandon Arrington. Willem Badenhorst represented the Florida Bicycle Association for Becky Afonso.

Advisory Group members Terry Burroughs, Donna Bollenbach, Dave Brown, and Mike Wisenbaker were unable to attend. All other Advisory Group members were present. Attending Division of Recreation and Parks (DRP) staff members were Larry Fooks, Sine Murray, Holly Cramer, Daniel Willis, Shayna Jacques, and Mark Kiser. Mike Wisenbaker submitted written comments before the meeting. Donna Bollenbach, Michael Edwards, Paul Gray, and the U.S. Fish and Wildlife Service submitted written comments after the meeting. One member of the public also supplied oral and written comments at the meeting.

Mr. Kiser began the meeting by explaining the purpose of the Advisory Group, reviewing the meeting agenda, and summarizing public comments received during the previous evening's public workshop. Mr. Kiser then asked each member of the Advisory Group to express his or her comments on the draft plan.

Summary of Advisory Group Comments

Rick Deluga (Florida Trail Association) welcomes the proposed signs and kiosks at the new Florida National Scenic Trail (FNST) trailheads in the southwestern and northwestern corners of the park. A water well may need to be drilled and a pitcher pump installed at the proposed Pine Island Slough campsite and perhaps one additional campsite, but these items were not mentioned in the plan. This well would also help with fire suppression given its strategic location. The Florida Trail Association has grant funding and volunteers available to assist with installing the pumps and signs/kiosks. Rick is in favor of the proposed bridge over Gum Slough, as it improves the FNST route through the park and creates a better loop trail.

Willem Badenhorst (Florida Bicycle Association) stated that the bicycle market has been growing quickly, and community networks of cycling trails have been growing even faster. Bicycle use in the park is loosely organized, however. Primitive camping is popular with mountain bikers, so making the park's camping options more bike friendly is important. The 750- to 1500-mile "Florida Divide" bike trail has 4 configurations (2 start and 2 end points); this 19-day ride goes through Three Lakes WMA and ends at SR 60. The route forces riders to use SR 60, which is not safe due to heavy traffic. A safer route would enable riders to go through the park from the NW corner down to the visitor center and out through the park entrance; riders could also camp in the park if desired. He wanted to know if the park's road could be accessed from the lock at KICCO WMA (across from the NW corner).

Kissimmee Prairie Preserve State Park Advisory Group Members and Report

Jeff McLemore (South Florida Water Management District) indicated that KICCO WMA already has bicycle access, but the FTA leaves bike use decisions on the FNST to the individual landowners. A levee trail could be made from SR 60 - there is already camping and potable water there. The draft UMP is good, and is very detailed. He is in favor of the entrance station and likes the proposed facilities, as they are not too extreme. The park has the same land management issues as the SFWMD. He likes that the burn ban was lifted along the river. Restoration activities along the river as a whole are struggling a bit in terms of exotic species removal, and it's good that the park is moving forward on exotic plant issues.

Paul Gray (Audubon Florida) asked if management zone 51 (the portion of the park in Osceola County) was turned over to the SFWMD, would the district be able to manage it? Access to this parcel, which is leased to the park, is hard to access from SR 60. Exotic plants are a problem here, as are native plants, too – both are thick here (more management is needed for this parcel). Overall, the park has made good progress with prescribed burning. Conservation is paramount and should be the main focus of park activities. The park is understaffed, and funds are limited; park staff must burn out of season in order to keep up. Cabins would be too intensive with regard to cleaning and maintenance (not a good idea right now; should not be a priority). Some Native American mounds are also located in the proposed cabin area. The proposed facilities/activities along the river are ambitious, and may be too much to take on right now. Keep in mind that the river floods a lot, 3 to 4 feet of water could cover sections of Military Trail at times. Making Military Trail into a more developed roadway would not be a good idea. More exotic species may be introduced with the influx of activity, and it would be hard to police/monitor what occurs on that side of the park. The river camp and picnic area seem overly ambitious at this time. Kayak trails on the river are not in the plan, but with a platform/dock added in the channel, this might help kayakers access the park (fluctuating water levels can be problematic though). There are currently boat launches at KICCO WMA and Avon Park AFR. It should be an aspirational goal in the plan to help boaters access the river. Consider an observation platform at Seven Mile Slough. In regards to the Dark Sky Park designation, this is the first park in Florida to receive this recognition, and we should add more detail in the plan as to why it's important (how it came about, and the ecological reasons behind it). Include some of the guidelines for dark sky lighting, and mention the importance of promoting dark sky lighting techniques to adjacent landowners. Additional written comments were provided (see attached).

Robert Mindick (Osceola County) has been involved with paddling trail efforts in the region, and also serves on the FNST board. Osceola County is one of the fastest growing counties in the nation, and time is growing short to make new, regionally significant trails and trail connections. He supports the recent rerouting of the FNST through the park and appreciates the support for a paddling trail servicing the park. He believes the river is a good candidate for a designated national paddling trail; he is willing to help in this regard. This would generate ecotourism revenues for the region without changing its character. Paddling is one of the fastest growing recreation trends. The draft UMP has conflicting information – habitat restoration

Kissimmee Prairie Preserve State Park Advisory Group Members and Report

does not receive enough funding for proper management. He would like to see resources go not towards acquisition but to imperiled species management, exotic species removal, restoration of dry prairie, etc. The dry prairie habitat is world-class, but not all of it is being restored. He stated that we should not let the burrowing owl and Florida grasshopper sparrow disappear from the park; these are treasures that should be protected. The burrowing owl population is the largest remaining one on Florida's public lands. Lastly, he commented that the plan has little mention of law enforcement or protecting resources from vandalism.

Audrey Kuipers (Okeechobee Soil and Water Conservation District) stated that she is also in favor of including additional language in the plan regarding dark sky lighting. She mentioned that many park visitors are not willing to rough it, and there are a limited number of willing primitive campers, so the park needs features that facilitate easy access, such as an improved visitor center and new entrance station. She asked if the current water well has enough capacity for the proposed improvements, and if the proposed shade structures for horses were necessary. The park manager, Mr. Willis, indicated that equestrian use is down from years ago, and this improvement would encourage more use. She also asked if the park planned to expand cattle grazing beyond the 6,000 acres allocated. Mr. Willis indicated that no expansion is planned, and that the revenue generated amounts to \$32,000 annually, which goes back into the park's operation fund). Audrey indicated that the plan would benefit from additional clarity regarding the proposed timeframe for cattle grazing. Mr. Willis indicated that the cattle leases have a 5-year timeframe. Ms. Evans stated that if not clarified, people may jump to conclusions whether cattle grazing is to be expanded in the park.

Tom Palmer (North American Butterfly Association) commented that the park's plant surveys need more work, but he recognizes that the park is understaffed. The park has a very good butterfly list, but not a good, overall invertebrate list. He recommended that the park host some events (like bio-blitzes) to get the public to come out and help document invertebrates. The park could also benefit from encouraging visitors to use citizen science applications such as iNaturalist to help collect information on the park's flora and fauna (photos submitted are vetted by experts).

David DeLargy (Triple Diamond Ranch) stated that he has been at this ranch adjacent to the park since 1977, and he used to own property all the way to the Kissimmee River. He feels that the objective of combating exotic plants on only 25 acres is too low a figure; the park needs more staff to maintain the natural resources. He is doing his part to help maintain grasshopper sparrow habitat on the ranch, and he commented that prescribed burns need to be conducted at the right time of year. The proposed funding for restoration of ditches (\$500,000) is not feasible nor a good idea; the money could be better spent on culverts and visitor access projects instead. A recent hydrological project in the park funded by Ducks Unlimited has resulted in too much flooding on his property. He would like to see more visitors come to the park, and commented that people would like the opportunity to drive in their air-conditioned vehicles to the river to explore the west

Kissimmee Prairie Preserve State Park Advisory Group Members and Report

side of the park. He would like to see road improvements made to Military Trail, as it's too far for most hikers, bikers, and horseback riders to get to the river given current road conditions. He mentioned it may be necessary to raise fees to funnel funds back to the park to pay for these improvements. He wants to ensure the park and its rare species are protected for future generations.

John Strenth (Florida Fish and Wildlife Conservation Commission) commented that the park has similar problems compared to other public lands in the region, including poaching, fence cutting, illegal ATV riders cutting, etc. Law enforcement has been good overall in the park. The Dark Sky designation is fairly new and creates some problems for vehicle use within the park – it would not be prudent to prevent use of headlights at night, for example. There will be some “growing pains” as the new lighting guidelines are implemented. The description of the Kilpatrick bunkhouse is not fitting the true criteria of a historic structure – the only original elements of this 1928 structure are the four corner posts. Although its condition is described as “good,” this is not accurate; its condition is poor and deteriorating. He asked if the section of the river known as the “big plug” would likely flow again anytime soon; there are old weirs and culverts impacting the river flow. Hunters are coming across the river from the bombing range, using the “big plug” as a land bridge to enter the park, which complicates law enforcement patrol efforts. Mr. Bonner indicated that hunters were not supposed to have access to the park from the river; he will take steps to ensure this does not happen in the future.

Michael Edwards (Florida Forest Service) commented that there is a lack of prescribed fire in certain portions of the park; the park can contact the FFS for assistance when needed. The FFS has a mitigation program to address fuel reduction, and wildland restoration burn team can assist (has private lands funding). He supports the UMP's Fire Return Interval (FRI) to burn maximum acreage; prescribed fire is the best, most cost-effective management tool. In terms of timber management, there was a cabbage palm sale in 2007; this could prove to be useful once again. He suggested that a timber assessment be conducted, and that a reforestation plan in the park's flatwoods areas (new plantings) could be helpful. For the purpose of invasive/exotic plant species control, he suggested that a GIS database of infected and treated areas be maintained. He also recommended that the park should get involved (if it hasn't already) with the local CISMA (Cooperative Invasive Species Management Area). An organized work day would be beneficial, and would help educate visitors (like the campaigns not to move firewood from one area to another to combat the spread of insect pests/pathogens). Adjacent landowners should be included as well; private landowners could share in the costs of treating cogongrass, for example. The FWC has some funding available to combat invasive species. To better protect the park's cultural resources, he recommends that all staff take the DHR's ARM (Archaeological Resource Management) training, and that the park maintain a GIS database of cultural resources and update it annually. He supports the need for a hydrological restoration assessment to better guard against floods and tree kills. Lastly, he recommends that park facilities should be connected to a sewer when feasible. Additional written comments were provided (see attached).

Kissimmee Prairie Preserve State Park Advisory Group Members and Report

Dowling Watford (Okeechobee Historical Society) asked if the staff are catching up with regard to the park's prescribed fire needs. Mr. Willis indicated yes, that half the park is on a 2-year FRI (on track to meet goals); the recent drought is causing a delay, however. Most of the park has been burned in the last 3 years. Dowling asked if dust from the entrance road was an issue, and Mr. Willis confirmed that yes, the limestone shell material used for the roads generates dust plumes, and that shell dust settles and leaches out into the dry prairie and affects the soil pH. Repeated applications of the shell road base is also expensive. Mr. McLemore recommended using a new road base material - the SFWMD has had good luck with coquina, which needs less maintenance and costs no more than the shell currently being used by the park. A ready source is available in Fort Drum. Mr. Watford wants to see more interpretation of the park's cultural resources (more exhibits/photos displayed). He also reiterated the importance of the park's Dark Sky designation, and would like to see additional efforts (e.g. ordinances) made to curb light pollution in the surrounding communities. Ms. Evans suggested that the county commission be contacted about this issue. Mr. Watford would like to see greater access to the river, and the park opened up to more visitors. Mr. Gray mentioned the possibility (although remote at this point) of creating an access point in the SW corner of the park; private landowners are not likely to be receptive, however, and even if it came to fruition, it creates new issues (park staff would be isolated and cut off from the rest of the park, for example). A dock or landing on the river would provide better access, however. Mr. Watford recommended that shuttle service to the west side of the park should be a priority, and that cabins should be low priority.

Dorothy Miles (Coquina Water Control District) asked if there are plans to open Peavine Trail to SR 60; she has heard complaints about the travel time required and lack of access from the north side of the park. Mr. Gray indicated that the Maxcys own this access, and this would not be a likely option for the park now.

Valerie Sparling (Florida Fish and Wildlife Conservation Commission) suggested that the park continue its efforts to stay on top of exotic species control, as resources allow. She inquired about the park's hog trapping efforts, and Mr. Willis added that a USDA trapper has removed about 700 hogs in the past 2 years. At this level, the effort is mainly to contain the damage. Ms. Sparling also inquired about fire ant control efforts. Mr. Willis indicated that Amdro has been used in the past, but is not particularly effective (the ants move a short distance away). Given the size of the park, staff will try to focus on the pathways the ants use to get established in the prairie. Park staff also plan to test a portable flame-emitting device soon, when drought conditions end this summer.

Brent Bonner (Avon Park Air Force Range) reiterated that protection efforts for the Florida grasshopper sparrow and dark skies are extremely important, and that the Avon Park Air Force Range (APAFR) offers their assistance. The park is located within one-half mile of active military training facilities, and the APAFR is the largest bombing range east of the Mississippi River. The APAFR would prefer to limit

Kissimmee Prairie Preserve State Park Advisory Group Members and Report

visitation down by the river at night in order to protect public safety and to prevent interference with military training activities. Limiting visitation by the river will also better protect the park's wildlife, natural resources, and compliance with Dark Sky Park lighting requirements. The APAFR can assist the park with writing grant proposals pertaining to Dark Sky Park issues, prescribed fire, and mechanical restoration, and can offer limited, direct support at times with prescribed fire efforts. The APAFR is part of the Sentinel Landscapes Partnership, an initiative that increases compatible land uses surrounding military bases; the Department of Defense (DoD) works with other agencies to obtain conservation easements (e.g. DoD Legacy Grants; mutual benefits for both resource protection and military preparedness). Right now, the APAFR indicates there are no problems with the current level of boat use on the river at night, but would prefer the park stay as rural as possible.

Mary Petersen (U.S. Fish and Wildlife Service) asked if a timeframe is known when the park plans to phase out grazing? In the meantime, she recommends the continued restoration of pastures to make them more suitable for the Florida grasshopper sparrow. Any hydrological restoration efforts need to take the Florida grasshopper sparrow into account, and the park needs to coordinate other endangered species habitat restoration efforts. Continue to follow the guidelines set by the Florida Grasshopper Sparrow Working Group to limit disturbance of this species. She asked if any of the new facilities proposed would make prescribed burning more difficult. The main focus of the UMP should be on preserving habitat, and visitor needs must be balanced. She supports growing season burns, but these should not be the only type of burns used. Mr. Bonner stated that Tim Elder with the Florida Forest Service in Okeechobee might be able to assist with fire plans.

Sharie Turgeon (Okeechobee County Tourism Development Council) commented that the Tourism Development Council (TDC) can help bring visitors to the park. The proposed equestrian shade structures are welcome additions. The park needs to balance access needs with conservation, and decide which is more important. The UMP needs additional clarification regarding its priorities. Perhaps a good compromise is to provide structured programs on a periodic basis to better protect resources. Protection of historical resources is vital to cultural preservation efforts; the park has very few historic structures left, and "vacant lot" type tours are not as appealing to visitors. Improvements to the main visitor use area may be sufficient in terms of providing new amenities.

Daniel Willis (Florida Park Service) agreed that it is hard for everyone to agree on what is proposed in the draft UMP. There are many stakeholders, and their intentions have to be balanced somehow. We don't want to love the park to death, but the park needs passionate supporters. There is a fine line with parks classified as a preserve. Kissimmee Prairie Preserve State Park is "where the rare is commonplace." It is a unique park, and we have to be careful with recreation activities in order to assure the park's resources are protected. The proposed residences in the draft UMP are a good idea, as the park is in a very remote location and staff turnover can be a problem. Training and keeping staff long-term is an

Kissimmee Prairie Preserve State Park Advisory Group Members and Report

important issue. Some park staff are commuting every day to and from Sebring. The park is fortunate to have a good volunteer base.

Christina Evans (Friends of Kissimmee Prairie Preserve State Park) stated that she would be thrilled to have the Okeechobee County TDC represented in the Friends organization, and that it would be ideal if the advisory group could meet more often than just once every 10 years. She reminded the group about the park's preserve classification, as mentioned on page 2 of the draft UMP, whereby resources are given priority over visitor use. She would like to see more swamp buggy tours, so that more visitors could have improved access to the Kissimmee River. In this regard, a larger buggy would be ideal. In the past, special birding and native plant tours have sold out almost immediately. The park could use more opportunities to do education/interpretation for the public. The species list in Addendum 5 of the draft UMP does not seem to be complete. She reiterated that there is little support amongst the group for the proposed cabins. For the primitive campsites, she wants to ensure that the proposed locations are the best. On pages 27 and 28 of the draft UMP, it mentions that the hardwood hammocks are sensitive, and the proposed campsites might impact them; it might be better to move the primitive campsites towards the perimeter (to lessen the impacts). Regarding the proposed astronomy panels and trail, she is not in favor of creating a separate trail for them. She would like to see them installed around the campgrounds or visitor center. As the astronomy pads can be reserved as camping spots through the Reserve America concession, this creates issues, and priority use should be given to stargazers, not simply campers. She recognizes that the park is understaffed. In 2005, the park's full-time staff was 4. In 2017, there are only 6 full-time staff, and they are now shared with another state park (not so in 2005). She would like to see information about the 150,000-acre Everglades Headwaters National Wildlife Refuge included in the plan, as the park falls within this larger area and partnerships enhance what the park can accomplish. Lastly, she feels the carrying capacity in the draft UMP is set too high compared to what it was in the previous UMP.

Summary of Written Comments

Mike Wisenbaker (Division of Historical Resources) submitted written comments before the meeting (see attached). He stated that feral hogs damage archaeological resources, and encouraged the park to remove as many as possible. He added that the park needs to work with DHR's Florida Master Site File (FMSF) to reconcile differences in the number of archaeological sites, and that site forms related to WW II-era activities need to be completed and returned to the FMSF. The park's history and prehistory are well documented in the plan. Historic sites need to be monitored annually as per the Land Management Uniform Accounting Council. DHR encourages the park to conduct more interpretation of historic/cultural resources, and can assist with interpretive language for park materials. The University of South Florida predictive model is of limited value in predicting the location of potentially significant archaeological and historical resources. The UMP's goals and objectives pertaining to cultural resources are sufficient.

Kissimmee Prairie Preserve State Park Advisory Group Members and Report

Good afternoon, Mark

First, we wish to thank the Florida Park Service for inviting us to participate as member of the advisory group for the development of the Kissimmee Prairie Preserve State Park Management Plan. Our comments and suggestions on the draft of this plan are as follows:

- 1) On pages 39 and 54, mention is made of the damage that feral hogs do to plants and ecological communities in general. We would like to add that they also do tremendous damage to archaeological sites as well. Therefore, we encourage the park do as much as possible to remove, if not eliminate, these animals from the park.
- 2) It is mentioned that KPPSP has 26 archaeological sites (and also delineated in Table 4) recorded whereas our records are showing only 16 (see attached Excel spreadsheet) archaeological sites (as well as two resource groups, one historic structure and one historic bridge) as being located partially or totally within the boundaries of the state park. We encourage the park to work with DHR's Florida Master Site File to reconcile these differences—some of which may merely result from completed site forms not yet having made their way to the site file.
- 3) The park does a nice job with its narrative discussing the history and prehistory of this region of the state.
- 4) On page 62, the plan states that “there are several sites on the preserve’s landscape related to military activity during WWII that are currently being documented with site forms.” We urge the park service to complete site forms for these resources as soon as possible and to get the forms returned to the Florida Master Site File.
- 5) Although the park notes, later in the plan that they will do this, on page 63 the plan mentions that sites will be monitored regularly. This should be clarified to read that sites will be monitored at least annually to meet the requirements as set forth by the Land Management Uniform Accounting Council.
- 6) We encourage the park to interpret as many of its archaeological and historical resources (as noted on page 88) as possible and should the park need any assistance with the appropriate wording for this interpretation whether it be in brochures, kiosks, signs etc., please do not hesitate to contact us for help.
- 7) DHR has found it to be the case that the predictive model(s) developed by the University of South Florida are of somewhat limited value in predicting the location of potentially significant archaeological and historical resources.
- 8) It appears that the three goals, and associated actions, pertaining to identifying, managing and protecting cultural resources are sufficient to deal with any concerns that DHR might have regarding these resources.

Please let us know if you have any questions or concerns regarding our comments.

Regards,

Mike Wisenbaker

Donna Bollenbach (Florida Native Plant Society) submitted written comments after the meeting (see attached).

Kissimmee Prairie Preserve State Park Advisory Group Members and Report

Kissimmee Prairie Preserve State Park Unit Management Plan|

Comments, Donna Bollenbach

Board Member, Florida Native Plant Society

I agree with the Resource Management Component of the Unit Management Plan as it seems to be thorough in recognizing the importance of protecting and preserving the sensitive habitats within KPPSP and recognizes the need to maintain such habitats to protect the preserves biodiversity of native species, including many that are highly endangered, threatened and endemic plants and animals.

With respect to the protection of said habitats and species, I would like to comment on the Land Use Component and the Conceptual Land Use Plan:

1. **I support additional primitive campsites** within the preserve as long as they are situated outside of highly sensitive environmental areas
2. **I do not support Cabins in the preserve.** Not only would it require a significant increase in staff, but the plan has them situated on an Indian mound and wetlands. I don't feel cabins will add any benefit to the preserve, and may even degrade its protection of extremely endangered habitat for plants and animals. We are also always looking for support from our local community and visitors wishing cabins would be better served in Okeechobee hotels.
3. **I would like to see a Tent only campground:** I am a tent camper, and I often feel boxed in by big RVs when camping in my tent. Tent campers have a smaller footprint. I would like to see an area designated for tent campers only.
4. **I do support expansion of educational resources at the preserve, but I would like to see these education resources centered around the visitor's center** and not scattered in kiosks throughout the park. Too many kiosks situated in natural areas tend to go unmaintained, age and create an eyesore, rather than an educational experience.
5. **I do not support extending Military Trail for public access to the river, or development of the riverside with permanent facilities.** Military Trail traverses seasonally flooded areas and the expense of maintaining a viable road for that stretch would be expensive and potentially harmful to the ecosystem.
6. **I support no additional cattle leasing on the preserve than what is already there.**
7. **I would like to see verbiage added to the management plan to support the Dark Skies designation** and the significance of the astronomy community to the preservation of such Dark skies. Dark skies are much a part of a healthy ecosystem as native plants, natural hydrology and burn cycles.
8. **I would like to see the proposed viewing platform moved from the prairie behind the visitor's center to the Seven Mile Slough.** This is an easy access, popular location for visitors to the prairie and such a platform would enable expansive views of the prairie and the slough.

Overall, Kissimmee Prairie Preserve State Park is a unique habitat in a unique location: It is located adjacent to many cattle farms, a bombing range and agricultural areas. In that respect, its preservation and minimal development also preserves the integrity of the area and the surrounding community. It also allows for frequent burn cycles without the usual concerns of more urban parks,

Kissimmee Prairie Preserve State Park Advisory Group Members and Report

which is a strong component of maintaining the biodiversity of the preserve. The preserve does a great job with respect to prescribed burns, evident by the high diversity of native plants and animals, which makes it a premier location for botanists, butterfly enthusiasts, birders and other naturalists. The goal of the management plan should always be to maintain the unique habitat and rich biodiversity by good land management practices.

Sincerely,

Donna Bollenbach

Kissimmee Prairie Preserve State Park Advisory Group Members and Report

Comments and Suggestions for the Kissimmee Prairie Preserve State Park 2017 Draft Unit Management Plan

By: Michael Edwards, Other Public Lands Forester, Florida Forest Service

Most of my comments and suggestions address the Resource Management Component of the Unit Management Plan. I have broken the comments up into the topics of prescribed fire, timber management, exotic/ invasive species management, cultural resource management, hydrology and climate change adaptation plan. *The black dots are comments I made during the MPAG meeting and diamonds are new details.*

Prescribed fire: I recommend that park managers cooperate with FFS when conducting prescribed burns. Specifically contacting the FFS Region 3 or 4 Wildfire Mitigation Teams for assistance burning in wildland urban interface areas.

- Orlando District-Osceola County- Cliff Frazier, Wildfire Mitigation Specialist:
Clifford.Frazier@FreshFromFlorida.com
- Okeechobee District- Okeechobee County- Melissa Yunas, Wildfire Mitigation Specialist:
Melissa.Yunas@FreshFromFlorida.com
- Additional cooperation and assistance with prescribed burning can be utilized by contacting the north east environmental restoration team (ERT), called: Wildland restoration international (WRI). Their Contact is Evan Hall: evanhall@wildlandrestorationinternational.org
- ❖ Burn scrubby flatwoods and other natural communities on the suggested fire return interval and burn the maximum amount of acres/ year to reach a fire rotation for the park.

Timber management: A timber assessment is required for this park since it is over 1,000 acres. *"...The Legislature intends that each lead management agency, whenever practicable and cost effective, use the services of the Division of Forestry of the Florida Department of Agriculture and Consumer Services or other qualified private sector professional forester in completing such feasibility assessments and implementing timber resource management..."* (Section 1, Section 253.036, Florida Statutes). I think DEP currently has a contract with F-4 Tech to conduct a timber assessment of all properties, if not they can contact FFS;

- ❖ Michael Edwards
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Other Public Lands Regions 3 and 4
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- ❖ Mesic flatwoods reduce basal area (BA) to 50-60 square feet per acre where BA is above this threshold.
- ❖ Mesic flatwoods & scrubby flatwoods artificial reforestation (pine) where BA is lower than 30 square feet per acre.
- ❖ Suggest establishing an annual salvage sale timber contract that would allow park managers to quickly respond to forest health issues (storm damage, insect/disease, wildfire/prescribe fire mortality, drought, and flood).
- ❖ Scrubby flatwoods may need to use a mechanical treatment of the understory in combination with prescribed burning to restore this community. Possible timber sale if overstory pines too tall and thick.

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Exotic/ invasive species management:

- Keep GIS/ GPS database of infected and treated areas.
- Have park staff involved with local CISMA;
 - use involvement to educate park visitors and park neighbors about threats exotic/invasive species have on park and how they can help prevent (don't move firewood).
 - Use CISMA to network, "work days" treat areas that may not be able to treat otherwise.
- Contact FFS Forest Biologist, Jeff Eickwort: Jeffrey.Eickwort@FreshFromFlorida.com for information about landowner cogongrass cost-share program and hold harmless agreement to treat invasive plants on private property.

Cultural resource management:

- I recommend all park staff complete the current ARM Training.
- Have an updated GIS data base of all cultural resources at the park.
- Visit them at least once a year, which is the state standard.

Hydrology:

- when conducting hydrological restoration projects, I recommend considering what the actual effects will have on surrounding vegetation and have a plan in place before and after to deal with results.
- Obtain a hydrological assessment of the park and begin restoration of hydrology based on results of assessment.
- Move as many park facilities from septic to city/county sewage as practical.

Climate Change Adaptation Plan:

- ❖ I recommend that the UMP have paragraph or section addressing how either DEP as an agency is addressing climate change adaptation or how the park staff is addressing climate change adaptation locally at the park.
- ❖ Examples of topics would be drought, sea level rise, effects to infrastructure, increase in temperature, hurricanes, increase in population/shift from coast inland, fresh drinking water scarcity, change increase forest disease.

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KPPSP 2017 DRAFT Unit Management Plan comments and notes|

Paul Gray, Audubon Florida¹

June 14, 2017

To Whom it May Concern:

These are my comments on the DRAFT 2017 Unit Management Plan for the Kissimmee Prairie Preserve State Park. This starts with overarching comments and follows with bulleted comments on different specific parts of the Plan. I also participated in the Advisory Committee and these comments add to that participation. I apologize for the informal nature of the text, typos and poor grammar, I ran out of time and hope these comments still can be useful.

General comments

I have worked with DEP's managers since the inception of the Preserve. I managed the old Audubon tract before the State acquired it so have management experience with this landscape. Throughout this time I have found the people the Park Service have hired to work on the Preserve of very high quality, with unusually high levels of dedication to their work and the Preserve. Their land management philosophies and practices have been excellent.

The UMP is well written and well considered. The ecological parts are very sound and reflect a deep understanding of the Prairie and its habitats. A recurring comment below is about working the Dark Sky Designation into the document. This was a recent event so the omission is understandable but to me the dark skies are an integral part of what makes this Preserve so unique and ecologically special.

I support enhancing and expanding visitor opportunities that are compatible with the Preserve's overarching purpose. One reservation I express below is the extent of structural facilities planned near the Kissimmee River. This remote area of the Preserve is difficult to access and there may not be many people who could use facilities this far from access points. Primitive facilities can and should be maintained, but more developed facilities seem a poor fit. For the coming 10-year period, I recommend that the Park Service focus structural enhancements closer to Kilpatrick Hammock and other more-readily accessible parts of the Preserve. However, I do not support cabins. They are incompatible with the wilderness nature of the Preserve and there are not enough staff to maintain them.

I strongly support the conclusion that the Preserve cannot accommodate secondary purposes without interfering with the primary purpose of the Preserve (page 7 comment below). The present configuration of cattle grazing on improved and semi-improved pastures is acceptable until those areas can be restored to more natural conditions but I do not recommend any expansion of grazing into native habitats, nor the addition of other types of extractive management.

The most important comment I can make is that although Preserve staff are dedicated and know what to do, they are so seriously understaffed they will not be able to execute the 10-year plan to the

¹ I have worked in this region for almost 30 years, managed Audubon's Ordway-Whittell Kissimmee Prairie Sanctuary for 6 years, worked to get the Preserve acquired in 1997, cooperated on restoration and other projects with Preserve staff until the state acquired the Audubon Sanctuary as part of the Preserve, presently serve on the Citizen Support Organization for the Preserve, and help manage Audubon's Ordway-Whittell Trust Fund that funds special projects on the Preserve.

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standards we all wish for the Preserve. A Division of Recreation and Parks Workload Analysis for FY 2013-2014 (see page 18 of 30) concluded that the (ideal) required staff would be 38.9 people working 80,881 hours rather than the present staff of 6 that work 12,480 hours, or 15.4% of the optimal levels. Volunteers help close this gap somewhat. I realize that DRP has significant funding limitations and outside help is enlisted to conduct burns and other activities, but every effort should be made to get additional on-site staff to help manage this globally significant resource.

Bulleted comments from the text of the Plan

Page 3 Vicinity Map. The National Audubon Society holds a conservation easement over the SE corner of Section 4, Township 34 South, Range 34 East, as shown on the following map. It could be added to this map as a private conservation easement



Page 5. The wilderness area is denoted on this map and I support such designation for this special landscape but I did not find an explanation of why it is labeled that way and how that designation guides management. If I missed it please ignore this comment

Page 7. I strongly support the conclusion that the Preserve cannot accommodate secondary purposes without interfering with the primary purpose of the Preserve. The last paragraph states that "cattle grazing as part of this park's natural community management...would be appropriate..." Cattle presently are grazed on an area that was planted to improved pasture and I think grazing this unnatural community is appropriate. However, grazing the true natural communities, such as the dry prairie and wetlands, would conflict with conservation of the prairie plant and animal communities because cattle change plant composition and structure, fire dynamics, facilitate exotic plants and animal (especially fire ants) invasions, and creating cascading ecosystem impacts. I recommend changing the wording to something along the lines of, "Cattle grazing is appropriate on preciously disturbed (replanted) areas of the Preserve but would be detrimental to the natural communities."

Page 10. This should mention the National Scenic Trail that now runs through the Preserve from north to south. I am unsure the officially correct name so please check that.

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Page 15 Resource Description and Assessment section: Overall, this section is well done and informative.

I strongly encourage adding a section on “Dark skies” as a Natural Resource. This could include a description of what dark skies are, their ecological importance, and mention of the Dark Sky Park status. In the Resource Management Program Section, a “Dark Skies Management” section should be added to describe efforts in, and out of the Preserve, to protect the Dark Skies status.

Page 29. I concur with the recommendation to allow fires to burn into the hammocks. Trees were a minimal part of the historic prairie and as alluded to in the text, unless certain hammocks or trees (pines) are deemed historically natural, tree removal should be considered the correct management measure. I am aware that members of the public have sentimental attachment to trees and often question tree removal (sometimes passionately), but it is the correct thing to do for stewardship.

Pages 41, 42. I support the long-term goal of restoring the improved and semi-improved pastures to more natural prairie and encourage staff to continue to look for resources to do that.

Page 45. I think Short-tailed Hawks probably nest in the Preserve either in the Kissimmee River tree line or in some sloughs. I would change this narrative to state they are a possible but unconfirmed nester.

P 63. I concur the bunk house should be protected and restored.

P 66. The Resource Management Program section has appropriate goals but present staffing prevents the Park Service from following through on these actions.

P 75. Although very few remain, the emphasis on the Florida Grasshopper Sparrow is warranted because this species is on the brink of extinction and every single individual in the population is valuable.

P 75. Treating 25 acres of exotic plants seems an arbitrary goal and if achieved would not appreciably improve such a large property. Perhaps replace that goal with “Annually treat as many acres of exotic plant species as possible,” which leaves room for large scale treatments if partnerships or funding become available.

P 76. I do not recommend targeting coyotes. As mentioned elsewhere in the text, they may fill part of the former function of red wolves, such as suppressing meso-carnivores that can be detrimental to ground nesting birds and other small species.

P 81. In the **External Conditions** section, there should be a paragraph on the Avon Park Air Force Range’s Sentinel Landscape designation (https://sentinellandscapes.org/media/1213/sl_apafpr_factsheet_23dec16.pdf) and a paragraph on the Everglades Headwaters National Wildlife Refuge (<https://www.fws.gov/evergladesheadwaters/>) both of which essentially use the Preserve/APAFR as the center of their focus. Both these programs offer opportunities for conservation collaboration. (please contact me at PGray@audubon.org if you need more background on these or other regional programs).

P84. Existing Use of Adjacent lands: there should be a paragraph about the need to work with adjacent landowners to maintain dark skies.]

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P 87. Under Land Area, add “fishing” (at least along the Kissimmee River) and perhaps “nature study”

P 88 please mention “dark skies” in **Natural features**

P 91 Astronomy is mentioned as a use and I strongly support that. We have had management issues at the Astronomy Pad. Non-astronomers can camp there and often arrive with bright headlights that ruin long-exposure photography and night vision. They sometimes complain of the all-night activities of the astronomers, or the astronomers can be bothered by their activities, noise and nights. I appreciate we want to allow all campers to camp but if we cannot set better conditions for the astronomy pad it will not function as one, defeating its purpose. This may not seem an issue for a 10-year management plan, but might be if we need to make special conditions to protect the astronomy function of these specialized camping facilities. PS we are trying to handle this at the Preserve but don't have it worked out, so I hope Park Planners can help us with special protocols if needed.

P 94 please mention dark skies in the last paragraph (near the ADA discussion)

P99 I am skeptical the Preserve can handle an additional 278 users per day. First, the 6 cabins are a very bad idea. They would severely tax an already overtaxed staff and budget and they are incompatible with the Preserve's nature. The proposed facilities by the Kissimmee River also seem overly ambitious considering it is a wilderness area that only physically fit and specially equipped people will be able to reach. I recommend amending this goal to “Limit expansion of the park's carrying capacity only to newly constructed features.”

P 99 The publications list can add the newly-created brochures on Florida Grasshopper Sparrows and Carolina Parakeets.

P 100 and 101. I recommend not specifying where the astronomy panels are placed at this point because siting will need to consider not interfering with the function of the pads and where other features may be added, i.e., they may need to be placed some distance from the pads.

P 101 I would consider putting the observation platform at Seven Mile Slough, it is a favorite visitor site, has a good prairie vista view, and having an elevated place to view the waterhole could be attractive to visitors

P 102 River camp area and McGuire Hammock Picnic Area—Both of these sites are in very remote areas that only can be reached by physically fit and specially equipped people, which means not very many people. Building screened shelters, restrooms and other expensive features seems quite excessive and I think such large resource expenditures would be better done in accessible parts of the park. Also, policing, maintaining, and helping visitors if problems arose would be a logistical nightmare. I recommend campgrounds near the River remain simple.

There have been suggestions to make the Military Trail accessible to visitor vehicles. That is not feasible without very large outputs of money. This one-lane road floods as much as 4 feet deep, meaning very large amounts of fill would be needed to widen and elevate it. It also would require extensive culverts or other features to allow massive amounts of water to move under the road, or it will function like a dam and get overtopped or excessively impound water. This would be a massive undertaking. And as mentioned above, trying to maintain advanced features in remote locations would be overtaxing on an

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under-staffed Preserve. Lastly, there is river access just south of the Preserve along Micco Bluff Road and across the River at Fort Kissimmee on the Avon Park Air Force Range and at the Istokpoga Canal.

And as mentioned above, cabins would add way too much work and expense for relatively little benefit to the Preserve. They do not fit the character of the Preserve and should not be added.

104 The proposed additional capacity for picnicking seems overly optimistic. The Preserve is in a very remote area and it is unlikely many people travel to it just to picnic. Similarly, the proposed additional capacity for primitive camp sites and cabins seem inflated to me as well. I recommend the proposed additional capacity be limited to the new visitor center and primitive camp grounds.

107 Optimal boundary map: Please consider adding Section 34 T33S R34E to the optimum boundary (the yellow section in the figure below). This section of land holds a large part of the Shinn Hammock/Wet Rock Basin marsh complex. In fact, acquisition of this section in addition to the 3 sections identified next to it would protect almost all the watershed that drains through the eastern part of the Audubon tracts, and would protect this huge marsh complex from potentially harmful future water management activities upstream of Preserve property. This is one of the largest intact basin marsh systems in the region and its hydrology is protected by the Federal Court order that resolved Audubon's law suit over Grasshopper Sparrows. Sections of land further east than this optimal boundary drain to the St. Johns River WMD (the purplish line is drawn from memory of our hydrological analysis of basin divides during our sparrow/flooding law suit).



P 110 under CSO activities please add: The CSO sponsored a "Prairie Days and Nights" visitor event, CSO member Paul Gray has lead about 20 Audubon Chapter tours to the prairie and helped lead two tours for the Florida Native Plant Society annual meeting. The CSO also has produced checklists for plants, birds and butterflies of the Preserve and purchased field and office items for the Preserve.

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Under Park Facilities: the CSO has installed a 2 inch water well at a primitive campsite for hikers and an alternative source of water for fire management

P 109 It would be good to note the Dark Sky Certification under the **Management** Progress section, perhaps under **Park Admin and Operations**?

Table 7, Goal II Objective C. Mitigate effects of entrance road: I strongly support looking in to this. The road is calcareous and cuts through ecosystems that are mostly acidic (e.g. Kozusko, T., J. A. Osborne, and P. N. Gray. 2006. Limnology of ponds in the Kissimmee Prairie. Pages 182-187 in Proceedings of the Florida Dry Prairie Conference, R. F. Noss and S. Singh, eds. E. O. Painter Printing Co., Deleon Springs, FL.). The changes in pH impact plant and animals communities near the road and downstream of the calcareous plume. Perhaps capping it with asphalt or concrete would help contain—I don't know, but hope the Park Service investigates this. Future roads should avoid using shell rock if at all possible.

Table 7, Goal II, Objective D. The Kissimmee River Restoration planned to make measurements of the filled canal's "backwater effect" to see how close backfilling could come to the S65A structure before impeding its drainage function. Through a series of events, this measurement has not been made yet. The result was the Phase IV backfilling between the Air Force Range and KPPSP had to be conservative on how close it came to the A structure. The agencies still can assess the backwater effect and if it is found more backfilling could be done, this would be very desirable. Indeed, this part of the restored floodplain is between two large conservation holdings making it probably the most valuable place to fully restore the river. I support the KPPSP's interest in participating in the River Restoration process.

Page A1-1. Please add to the acquisition history that the state purchased Audubon's 7,315 acre Ordway-Whittell Kissimmee Prairie Sanctuary in 2001 as an addition to the Preserve.

Thanks!

Paul

Paul N. Gray, Ph.D., Science Coordinator
Everglades Restoration Program
Audubon Florida

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960



June 14, 2017

Mark Kiser
Office of Park Planning
Florida Department of Environmental Protection
3900 Commonwealth Boulevard
Tallahassee, FL 32399-3000

Dear Mr. Kiser;

Thank you for the opportunity to provide comments on the Draft Unit Management Plan for Kissimmee Prairie Preserve State Park (KPPSP), and participate in the plan's advisory group. The U.S. Fish and Wildlife Service (Service) appreciates the Florida Department of Environmental Protection's (DEP) mission to manage KPPSP for all the purposes for which it was established. KPPSP is a unique property that protects the largest remaining tract of Florida dry prairie. The Florida dry prairie is the home of one of the rarest birds in North America, the Florida grasshopper sparrow, which is protected under the Endangered Species Act of 1973, as amended (Act)(87 Stat. 884; 16 U.S.C. 1531 *et seq.*), as well as over 22 other endemic species. Given the rarity of this habitat and the FGSP, the Service recommends that DEP focus their management of KPPSP on maintaining, restoring, and enhancing this rare habitat. KPPSP is an important component of the recovery strategy of the FGSP and a potential release site for the species. The Service's comments are focused on how land management on KPPSP can support the recovery of the FGSP.

In general, the Service recommends coordinating with the South Florida Ecological Services Office (SFESO) during any design and planning stages of any new construction or management changes that may occur at KPPSP to ensure compliance with the Act. Providing more access and/or more structures within the preserve may have unintended effects, such as making prescribed fires more difficult to conduct, or increase visitor contact/impacts to FGSP or FGSP habitat. Preserve staff should be educated on how to identify activities that may unintentionally adversely affect the FGSP, such as of overuse by photographers, birders, hikers, and other visitors, and develop strategies to remedy issues.

Hydrologic restoration – We recommend the DEP uses hydrologic modeling to forecast and evaluate changes that could result from these restoration projects. A thorough analysis of the impacts that these restoration projects could have on the prairie's hydro period is needed because flooding has been documented to negatively affect FGSP breeding success by limiting nesting opportunities and/or drowning nests.

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Mark Kiser

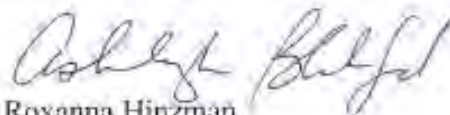
Page 2

Cattle grazing – We recommend that a grazing plan be developed and implemented for the cattle pastures until their use can be phased out and the area can be restored to dry prairie. Grazing can have beneficial as well as negative effects on the FGSP, depending on a suite of additional factors. A grazing plan would help ensure that ranching practices that are beneficial to both cattle and the FGSP are implemented. The Service has identified some of these practices working with private ranchers and would be willing to assist as needed.

Prescribed fire and tree removal – The Service fully supports the goal to attain optimal fire return intervals at KPPSP and to maintain these intervals. We recommend that a less than 3-year fire return interval be a priority for the Florida dry prairie habitat. In addition, where FGSP are present, growing season fires should be avoided. Maintaining these fire regimes is imperative for a healthy dry prairie, and we encourage KPPSP staff to work with Florida Department of Agriculture and Consumer Services, Florida Forest Service, the SFESO, and the FGSP working group if a burn ban is put in place that prevents this management tool. The Service would like to work with these partners to ensure that waivers to the burn ban are considered, when appropriate, to support improved habitat management and FGSP recovery. The Service also supports tree removal projects in areas of historic treeless expanses. We recommend DEP prioritize the areas that have had most recent FGSP presence documented for this activity.

Thank you for your commitment to the recovery of the FGSP and other imperiled species within KPPSP. The Service values this partnership as a valuable component to the recovery of the FGSP and other species across the landscape. The SFESO has a long standing partnership with the KPPSP, and we look forward to continuing to work together to strike a balance between preserving the Florida dry prairie and sharing this unique habitat with visitors. Should you have any questions regarding this letter, please contact Sandra Sneckenberger or Mary Peterson at 772-562-3909.

Sincerely yours,


Roxanna Hinzman
Field Supervisor
South Florida Ecological Services Office

Kissimmee Prairie Preserve State Park Advisory Group Members and Report

Kissimmee Prairie Draft UMP comments
5/31/2017

Kissimmee Prairie is **unique** to the Florida Park Service. It offers a true wilderness experience complete with dark skies. Parts of this plan threaten to ruin those attributes with increased infrastructure, amenities that can already be found in many Florida State Parks. Planners should be reminded that this is a Preserve, not a park, purchased for a specific vision and objectives. Much thought should be put into what will be lost before planning to add roads, buildings, and other features that sacrifice current advantages. There is not enough staff to accomplish current resource management needs, as is evident by loss of grasshopper sparrows, inadequate burn frequency, and expanding cogongrass invasion. The plan should state that increased staffing must be obtained prior to obtaining funding for any infrastructure increases. The Florida unique Dark Skies designation should not be sacrificed for the potential of adding a few additional campers per year.

The Resource management component is excellent, obviously written by someone who understands prairie management. But the Management Goals, Objectives and Actions section needs major improvements. First, It reads as if the person who wrote it failed to read the previous portion of the plan. It should be brought in compliance with the RM component. Then it fails to describe specific objectives with any potential to rescue sparrows from extinction. These objectives read of template quality generalities rather than park specific actions.

What is the problem—lack of fire and invasive plant and animal control. How do we fix that? FNAI has for many years suggested that land managers of prairie communities work with Florida Forest Service to obtain exemptions from burn restrictions. Why isn't that addressed in the plan? Preserve managers need to burn larger acreage per burn, to burn at night, and to burn under drier conditions. The best restoration burns at Myakka occurred under the driest conditions (KBDI > 650). The park manager does not have the connections to achieve these objectives, so district managers or BNCR must take immediate action if the sparrows are to be saved. Mitigation factors can be offered to achieve exemptions; for instance, burn the perimeters of the park or of large zones so that fires can be secured early and allowed to burn overnight. This is a rural area without the concerns of urban parks and should not be held to the same restrictions as parks in heavily populated areas. The sparrow population declines escalate the need for burn exemptions to an urgent status.

Treat the fire ants. Money is currently available for resource management. Use it now to hire contractors to chemically treat fire ant mounds throughout the park. It may not be the

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only threat to the sparrows, but we know it is one problem. Don't just continue to research, add actions that also attack the problem.

To answer the question of what to do about mesic flatwoods, (is it prairie, hammock or flatwoods) check the 1940s aerials and 1840s surveys.

Listed below are a few discrepancies I found in the plan and a few suggestions.

1. Ref: Pg 7, paragraph beginning with "In accordance with 253.034(5) F.S.,"

Add text to clarify that grazing will only be permitted on improved pasture, not on native prairie.

2. Ref: Pg 25, "Rare plant species include many-flowered grasspink *Calopogon multiflorus*) and giant orchid (*Pteroglossaspis ecrista*)."

The species name is spelled incorrectly; change to *ecristata*.

3. Pg 21, The paragraph beginning with "During the period 1999 through 2001, a major restoration project backfilled 71 acres..."

This was called the "One million dollar restoration project." I hiked the park cross-country during the years Barry Burch and Parks Small were park managers. Then when I hiked cross-country when Charley Brown was manager. I was amazed by the increase in invasive fire ant mounds in the prairie. I believed fire ants were causing declines in sparrow populations, we discussed the possibility that the ground disturbance from the million-dollar project contributed to fire ant spread. Suggestion—Future restoration projects should monitor for increased fire ant invasion.

4. Ref: Pg-38. "Wet prairie and the ecotone that it shares with dry prairie...wet prairie has experienced an invasion of the red imported fire ant (*Solenopsis invicta*) and the decline of the sparrow in the preserve may be related to ant depredation on nests, thus reducing recruitment of young birds into the population."

Why isn't the fire ant problem mentioned in the dry prairie section?

5. Ref: Pg-39. "The wet prairies of the preserve are mostly in excellent condition...Some of the wet prairies have been invaded by big carpet grass (*Axonopus furcatus*), which has reduced the species diversity and compromised the quality of those sites. Carpet grass was

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widely aerially seeded in central Florida in the past and has impacted many similar communities throughout the region...(Bridges 1998).

The prairie was acquired the same year this was written. Is this a speculation or was monitoring ongoing prior to the land purchase? If it is a fact, cite a reference, if it is only an opinion, change to "**may** have been invaded which **could** have reduced diversity." This native grass increases and decreases over time in my pasture, sometimes there is very little, sometimes it temporarily dominating other grasses. Has anyone verified that the cover of this native grass still dominates the prairie?

6. Ref: Pg-46. "It is likely that the sub population in the preserve has been severely impacted by nest depredation due to the invasive red imported fire ant...Additional tools and strategies should be developed to combat the fire ant invasion in the preserve. One tool may be introduction of the fire ant decapitating fly (*Pseudacteon curvatus*) as a biocontrol measure. This measure has met with some success in northern Florida (Porter et al. 2013)."

It is too late to sit back and develop strategies. Immediate action is called for. Introduce the biocontrol if it has not already happened (its widespread in Sarasota County) but combine that with immediate large-scale chemical control.

7. Pg-54. "Sida is found in almost all hammocks in the preserve, likely related to disturbance..."

There are several species of native Sida. The plan should specify the genus species of the non-native Sida referred to here.

8. Pg-70. Objective A:

"Within 10 years, have 51,600 acres of the park maintained within the optimum fire return interval. Action 1 Develop/update annual burn plan.

Action 2 Manage fire dependent communities for ecosystem function, structure, and processes by burning between 14,000-44,000 acres annually, as identified by the annual burn plan."

Though this is a ten-year plan it is likely that grasshopper sparrows will be extinct within this time period if immediate actions are not taken. Alter your template for this urgent situation. There is no reason why the park could not be maintained within optimum fire return in 2 years. There is also no way to achieve this goal with a plan to burn 14,000 acres a year. Increase the minimum to 24,000 acres.

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9. Pg-70 Table 5

This table is outrageous and contradicts everything explained within the resource management component about fire in the Florida Dry Prairie Landscape. OPTIMUM for dry prairie and wet prairie is 1-3 years??? Grasshopper sparrows don't nest in 3-year post burn prairies. How can 3 years be OPTIMUM for nearly the last remaining sparrow habitat in the world?

As for the other communities listed that are embedded in the prairie landscape, the burn return MUST be the same as for the prairie. It is impractical to consider anything else. See Pg 27, Mesic flatwoods, "a portion of mesic hammock in the Shin Hammock complex," with the recommendation of "burn on the same frequency as the adjacent dry prairie."

Scrubby Flatwoods, see pg 30, "Scrub should be allowed to burn, in a mosaic fashion, on the same FRI as the dry prairie matrix that it is embedded within. On occasions when components of a scrub patch do not burn, these unburned mosaics should be left until given the opportunity to burn on the next fire rotation."

Basin Marsh, pg 31. "Basin marshes in the preserve should be allowed to burn along with the dry prairie matrix they are embedded within."

Baygall, pg 32, "Fire should be allowed to penetrate the baygall edges in the event that rare seepage-dependent herbaceous species may emerge from dormancy if they have persisted in the seed bank."

Depression Marsh, pg 32, Depression marshes in the preserve should be allowed to burn along with the dry prairie matrix they are embedded within."

Slough Marsh, pg 36, Slough and associated slough marshes should burn on the same frequency as the adjacent dry and wet prairie communities, allowing the fire to extinguish naturally or burn completely through."

10. P-71 "The preserve will burn between 14,000 -44,000 acres annually. The amount of acreage burned within the growing season will be increased annually in order to meet the preserve's progressive resource management objectives."

I think this must be a template oriented statement as Kissimmee Prairie is not one of our parks with a long history of fire suppression so there is no need to slowly increase annual burn objectives. I interviewed the ranch foreman the year the park was purchased and he

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told me that Latt Maxy continued to burn throughout the decades ignoring Forestry laws. Parks Small and Charley Brown continued to burn the prairie on the short burn intervals required and there should be no reason it cannot continue to be burned with the frequency required for sparrows without "easing into a proper burn regime" as may be recommended for parks with long unburned fire dependent acreage.

11. Pg-75 Objective A: Annually treat 25 acres of exotic plant species in the park.

This whole sections sounds like template terminology. This park is invaded with cogongrass. One cannot skip even a year without treating the entire infestation without risking losing large sections of imperiled prairie to cogongrass. Write strong objectives to give park management the tools and documents necessary to demand adequate control of invasive plants in the world's last remaining portions of Florida prairie. I suggest re-writing this objective.

12. Pg-76. Objective B: "Implement control measures on 3 exotic animal species in the park."

This objective considers feral hogs, fire ants and coyotes equally. However on pg 54 the plan seems to imply that coyotes are not considered a threat ("With the extirpation of the native red wolf, *Canis lupus rufus*, it is likely that the coyote is filling a part of the wolf's ecological niche.") So do coyotes impact nesting grasshopper sparrow? If so, state the problem and the remedy. If not, don't list them as an equal to the threat of feral hogs and fire ants. Bring the text into compliance with the RM component.

This objective seems as if the writer could not think of anything to write to address the problem and just filled in the lines with superfluous text. This should be one of the most important paragraphs in the UMP. Grasshopper sparrows are on the way out. The plan says no one knows for sure why the sparrows are declining. But we DO know their need for 1-2 year fire return and that they are preyed upon by fire ants. So take emergency action to address these two problems immediately. Find the funds to hire contractors to chemically treat fire ant mounds. Isn't it worth saving a species? You who write these plans will be partly responsible for the extinction of a species, if you do not do all in your power to provide staff with plans and resources. I will be responsible if I do not do all in my power to inspire you to do so.

Paula Benschhoff

Kissimmee Prairie Preserve State Park Advisory Group Members and Report

Staff Recommendations

Comments received at the Advisory Group meeting resulted in modifications to the draft management plans. The staff recommends approval of the proposed management plans for Kissimmee Prairie Preserve State Park as presented, with the following significant changes:

- Remove cabins from the plan, and replace them with tent-only camping sites instead at Kilpatrick Hammock
- Consolidate proposed camping and picnic areas along the river into one location within McGuire Hammock, retain primitive group camp, and remove remaining River Camp elements from the plan
- Move the observation platform to the viewing area at Seven Mile Slough
- Revise the external conditions section of the LUC to include language regarding the Avon Park Air Force Range Sentinel Landscape Program and the Everglades Headwaters National Wildlife Refuge; revise language regarding military-controlled airspace over KPPSP; clarify language regarding Rural Activity Centers
- Revise the park's visitor carrying capacity and optimum boundary
- Add discussion of concessionaire-led tours
- Include additional language regarding the Dark Sky Park designation, background, ecological significance, and compliance
- Include clarifying language regarding where cattle grazing will occur
- Include clarifying language regarding prescribed fire goals and timber assessment
- Include language in the RMC and LUC referencing the park's Wilderness Preserve area
- Revise language referencing exotic species control efforts
- Revise cultural resource objectives

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

Kissimmee Prairie Preserve State Park Advisory Group Members and Report

Notes on Composition of the Advisory Group

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

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

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

Special issues or conditions that require a broader representation for adequate review of the management plan may require the appointment of additional members. DRP’s intent in making these appointments is to create a group that represents a balanced cross-section of the park’s stakeholders. Decisions on appointments are made on a case-by-case basis by DRP staff.

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Addendum 4—Soil Descriptions

Kissimmee Prairie Preserve State Park
Soils Descriptions

OSCEOLA COUNTY

(1X) Adamsville fine sand is a somewhat poorly drained, nearly level, deep, sandy soil found along the fringes of flatwoods areas that border sloughs and ponds. It is rapidly permeable and available water capacity is low. Fertility and organic matter content are low. It has a seasonal high water table at a depth of 15 to 30 inches for 2 to 6 months during the year. Natural vegetation includes pine trees, saw palmetto, native grasses and shrubs, and a few sabal palms.

(4X) Arents, 0 to 5 percent slopes are somewhat poorly drained, nearly level to gently sloping soils that have been reworked and shaped by earthmoving equipment. These soils have no orderly sequence of layers and consist predominantly of sandy mineral material that contains fragments, lenses, or streaks of former subsoils. Depth of fill ranges from 20 to more than 80 inches. The water table is at a depth of 20 to 60 inches. And available water capacity and permeability are variable.

(5X) Basinger fine sand is a poorly drained, sandy, deep, nearly level soil found in grassy sloughs. The water table is at a depth of zero to 15 inches of the surface for 2 to 6 months in most years and a few inches of water covers the surface during the wet season. Although this soil type is wet for prolonged periods it is rapidly permeable. It has a low available water capacity, and has low fertility and organic content. The natural vegetation usually is comprised of native grasses and small shrubs, wax myrtle, and scattered cypress and pines.

(11X) Eau Gallie fine sand is a poorly drained, nearly level soil in the flatwoods. This soil has a water table within 10 inches of the surface for periods of one to 4 months and within a depth of 40 inches for more than 6 months. Available water capacity is very low in the surface and subsurface layers; low in the upper, sandy subsoil; very low in the sandy layers beneath the upper subsoil; and medium in the lower subsoil. Permeability is rapid in the surface and subsurface; moderate to moderately rapid in the upper subsoil; rapid in the sandy layers beneath the upper subsoil; and moderate to moderately rapid in the lower subsoil. Natural fertility and organic matter content are low. Native vegetation consists of longleaf and slash pines with an understory of saw palmetto, inkberry, fetterbush, and running oak. Grasses on this soil are creeping bluestem, chalky bluestem, lopsided indiagrass, wiregrass, switchgrass, and several panicum species.

(12X) Floridana fine sand is a very poorly drained, nearly level soil. It is found in depressional areas in the flatwoods and at the edges of large lakes that have fluctuating water levels. Water stands above the surface for more than 6 months in most years and is within 10 inches of the surface for 9 months or more in most years. Available water capacity is medium in the surface, low in the subsurface, medium in the subsoil, and low in the substratum. Permeability is rapid in the surface and subsurface, slow to very slow in the subsoil, and rapid in the substratum. Natural fertility and organic matter content are moderate. Native vegetation consists mainly of maidencane, sand cordgrass, pickerelweed, giant

Kissimmee Prairie Preserve State Park Soils Descriptions

cutgrass, wax myrtle, sedges, and rushes. There are scattered cypress, bay, tupelo, and sabal palm trees in many areas.

(14X) Holopaw fine sand is a poorly drained, nearly level soil in broad flat areas and poorly defined drainageways in the flatwoods. The water table is usually within 10 inches for 2 to 6 months in most years and between 10 to 40 inches during the rest of the year, except during dry times when it recedes to a depth of more than 40 inches. Available water capacity is very low in the surface and subsurface, medium in the subsoil, and low in the substratum. Permeability is rapid in the surface and subsurface, moderately rapid in the subsoil, and rapid in the substratum. Natural fertility and organic matter content are low. Native vegetation consists of sabal palms and scattered longleaf and slash pine with a few water oaks, particularly in higher areas. Saw palmetto, wax myrtle, inkberry, and American beautyberry are the main shrubs. Creeping bluestem is the dominant grass in most areas, but in some sand cordgrass is dominant. Other grasses are indiagrass, chalky bluestem, several species of panicums, wiregrass, S. Florida bluestem, and switchgrass.

(16X) Immokalee fine sand is a deep, poorly drained, nearly level, sandy soil in broad areas of flatwoods. The water table is normally at 30 inches but may rise to near the surface during the wet season and drop to 48 inches or more during the during the dry season. This soil is rapidly permeable. Available water capacity, fertility, and organic matter content are all low. The natural vegetation usually includes scattered pines and saw palmetto

(17X) Kaliga muck is a very poorly drained, nearly level, organic soil. It occurs in low flats, fresh water marshes, swamps, and depressions. This soil has a water table above the surface except during extended dry periods. Available water capacity is very high in the organic layers and medium to high in the mineral layers. Permeability is moderate to very rapid in the organic layers, moderate in the upper 11 inches of mineral layers, and slow to very slow in the lower 44 inches. Natural fertility and organic matter content are high. Natural vegetation consists mostly of sawgrass, maidencane, cattails, giant cutgrass, arrowheads, and a variety of sedges. In some places are thick stands of willow, elderberry, and buttonbush, and in other places are mixed stands of cypress, red maple, loblolly, black tupelo, and sweetgum trees with a ground cover of greenbriers and ferns.

(19X) Malabar fine sand is a nearly level, poorly drained soil found in broad sloughs in the flatwoods. The water table is at a depth of 10 inches for 2 to 6 months during most years. Available water capacity is very low or low in the surface layer, subsurface and upper subsoil; medium in the lower subsoil; and low to very low in the substratum. Permeability is rapid in the surface, subsurface, upper subsoil, and layer between the upper and lower subsoils; slow to very slow in the lower subsoil; and rapid in the substratum. Organic matter content and natural fertility are low. Native vegetation usually consists of sabal palms and scattered longleaf and slash pine with a few water oaks, particularly in higher areas. Saw palmetto, wax myrtle, inkberry, and American beautyberry are

Kissimmee Prairie Preserve State Park Soils Descriptions

the main shrubs. Creeping bluestem is the dominant grass in most areas, but in some sand cordgrass is dominant. Other grasses are indiagrass, chalky bluestem, several species of panicums, wiregrass, S. Florida bluestem, and switchgrass.

(22X) Myakka fine sand is a deep, nearly level, poorly drained, sandy soil that occurs in broad flatwoods areas. The water table varies from a depth of zero to 15 inches for one to 2 months during the wet season and to a depth of more than 48 inches during dry seasons. Available water capacity is very low and permeability is rapid. The natural fertility and organic matter content of this soil type are low. Native vegetation usually consists of pine trees with an undergrowth of saw palmetto, runner oak, gallberry, and many native grasses.

(26X) Oldsmar fine sand is a poorly drained, nearly level soil found in flatwoods. The water table is within a depth of 10 inches for one to 3 months and within a depth of 10 to 40 inches for 6 months or more in most years. Available water capacity is very low in the surface and subsurface, and medium in the subsoil. Permeability is rapid in the surface and subsurface layers, moderate to moderately rapid in the sandy part of the subsoil, in the subsoil, and slow to very slow in the loamy part of the subsoil. Natural fertility and organic matter content are low. Native vegetation consists of longleaf and slash pines with an understory of saw palmetto, inkberry, fetterbush, and running oak. Grasses in this soil are creeping bluestem, chalky bluestem, lopsided indiagrass, wiregrass, switchgrass, and several species of panicums.

(32X) Placid fine sand is a nearly level, dark-colored, sandy, very poorly drained soil found in low areas. The water table is at or above the surface most of the year with most areas being ponded for 6 months or more. Placid sand is rapidly permeable throughout. It has moderate available water capacity, high organic content, and low natural fertility. The native vegetation is pickerelweed and maidencane with most areas consisting of shallow ponds or grassy sloughs.

(40X) Samsula muck is a very poorly drained, nearly level organic soil in freshwater marshes and swamps. The water table is at or above the surface except during extended dry periods. Permeability is rapid throughout. Available water capacity is very high in the organic layers and very low below. Natural fertility is moderate to high and organic content is very high. Natural vegetation consists mostly of sawgrass, maidencane, cattails, giant cutgrass, arrowheads, and a variety of sedges. In some places there are thick stands of willow, elderberry, and buttonbush, and in other places there are mixed stands of cypress, red maple, loblolly bay, black tupelo, and sweetgum trees with a ground cover of greenbriers and ferns.

(42X) Smyrna fine sand is a nearly level, poorly drained soil found in broad flat areas in the flatwoods. The water table is at a depth of less than 10 inches for one to 4 months and between depths of 10 and 40 inches for more than 6 months in most years. In rainy seasons the water table rises above the surface briefly. Permeability is rapid in the surface and subsurface, moderate to

Kissimmee Prairie Preserve State Park Soils Descriptions

moderately rapid in the in the upper subsoil, rapid in the next layer, and medium in the lower subsoil. Natural fertility is low, and organic matter content is moderately low or moderate. Native vegetation usually is composed of longleaf and slash pines with an understory of saw palmetto, inkberry, fetterbush, and running oak. Grasses on this soil are creeping bluestem, chalky bluestem, lopsided indiagrass, wiregrass, switchgrass, and several species of panicums.

OKEECHOBEE COUNTY

(2) Basinger fine sand is a poorly drained, sandy, deep, nearly level soil found in grassy sloughs. The water table is at a depth of zero to 15 inches of the surface for 2 to 6 months in most years and a few inches of water covers the surface during the wet season. Although this soil type is wet for prolonged periods it is rapidly permeable. It has a low available water capacity, and has low fertility and organic content. The natural vegetation usually is comprised of native grasses and small shrubs, wax myrtle, scattered cypress, and pines.

(3) Basinger and Placid soils, depressional is a complex of soils found together in low places. It occurs in wide sloughs and in isolated depressions in acid flatwoods areas. Most areas are covered with shallow water throughout the year. The Basinger soils are similar to Basinger fine sand except that water covers the surface most of the time. The Placid soils are similar to Placid fine sand, but normally are ponded for longer periods. Most areas are small and lack natural drainage. The native vegetation is usually maidencane, St. John's wort, and grasses that tolerate wet conditions.

(4) Bradenton fine sand is a poorly drained, nearly level soil found in low flatlands and hammock areas that border sloughs, ponds, and marshes. The water table is at a depth of zero to 15 inches for one to 2 months during the wet season. This soil is moderately to rapidly permeable and the available water capacity is low in the upper sandy layer but more favorable in the loamy subsoil. Fertility is low to moderate, and organic matter content is low. The native vegetation is primarily open pinewoods and an understory of saw-palmettos, native grasses, and shrubs. Individual sabal palms are common and small palm hammocks also occur.

(5) Valkaria fine sand is a deep, poorly drained, nearly level, sandy soil found in low, grassy sloughs. The water table normally is at a depth of about 24 inches. This soil type is rapidly permeable. Available water capacity, fertility, and organic matter content are all low. Most areas of this soil have a cover of native grasses.

(6) Manatee loamy fine sand, depressional is a very poorly drained, nearly level soil in shallow depressions. This soil has a water table is usually above the surface or within 15 inches of the surface. Permeability is rapid in the surface layer and moderate in the subsoil. Available water capacity is high. The organic matter content and the fertility are high. The native vegetation is generally maidencane, sedges, and other plants that tolerate wet conditions. Cypress and other wetland hardwoods grow in some places.

Kissimmee Prairie Preserve State Park Soils Descriptions

(7) Floridana, Riveria, and Placid soils, depressional is an undifferentiated unit consisting of deep, nearly level, sandy soils that are poorly drained. These soils are found in low places in sloughs and in isolated depressions in the flatwoods. Most areas are either Basinger or Pompano soils, but these 2 soils are rarely found together in the same mapped area. Most areas of this soil are small and lack drainage outlets. The native vegetation consists mainly of St. John's wort, water lilies, grasses, pickerel weed, and other plants that tolerate wet conditions.

(8) Pineda fine sand is poorly drained and nearly level. This sandy soil type is found in low flatwoods and grassy sloughs. The water table is normally at a depth of 20 inches, but ranges from near the surface for one to 2 months during the wet season to 30 inches during the dry season. This soil is moderately to rapidly permeable. Available water capacity is low in the sandy surface layer but is high in the loamy subsoil. Fertility is moderately low and organic matter content is low. The native vegetation is usually scattered pines and sabal palms with an understory of saw palmettos and native grasses. Some areas however are treeless, grassy sloughs.

(9) Riveria fine sand is a very poorly drained, nearly level, sandy soil found in depressions and drainageways. The water table is normally between zero to 15 inches, but it rises above the surface for short periods and forms shallow ponds. This soil type is normally wet but it is rapidly permeable in the upper 46 inches and moderately permeable below. Available water capacity and fertility are moderate and organic matter content is high. Most of the areas are either grassy sloughs or intermittent ponds with the native vegetation consisting of wax myrtle, pickerel weed, sedges, reeds, and grasses that tolerate wet conditions. Cypress, sweetbay, and sweetgum trees grow in some places.

(10) Ft. Drum fine sand is a somewhat poorly drained, nearly level soil occurring in flatwoods and hammock areas that border sloughs and depressions. The water table is normally at 30 inches but may rise to near the surface during the wet season and drop to 48 inches or more during the during the dry season. This soil is rapidly permeable in the sandy surface but is moderate to rapid in the loamy marl layer. Available water capacity is very low. Fertility and organic matter content are all low. The native vegetation can consist of an open growth of pine trees and scattered sabal palms with an understory of saw palmetto and native grasses.

(11) Immokalee fine sand is a deep, poorly drained, nearly level, sandy soil in broad areas of flatwoods. The water table is normally at 30 inches but may rise to near the surface during the wet season and drop to 48 inches or more during the during the dry season. This soil is rapidly permeable. Available water capacity, fertility, and organic matter content are all low. The natural vegetation usually includes scattered pines and saw palmetto

Kissimmee Prairie Preserve State Park
Soils Descriptions

(12) Udorthents, 2 to 35 percent sloped is a unit consisting of excessively drained, unconsolidated soil material that has been excavated from canals and redeposited along the side of the canal.

(13) Manatee, Floridana, and Tequesta soils, occasionally flooded is an undifferentiated unit consisting of nearly level soils that are very poorly drained. It occurs on marshy floodplains of the Kissimmee River and Taylor Creek. The soils in this map unit have a relatively thick surface layer and lack a sandy clay loam subsoil. Most of the areas have native marsh vegetation consisting of a dense growth of pickerelweed, iris, smartweed, maidencane, black willow, and other aquatic shrubs and grasses.

(14) Myakka fine sand is a deep, nearly level, poorly drained, sandy soil that occurs in broad flatwoods areas. The water table varies from a depth of zero to 15 inches for one to 2 months during the wet season and to a depth of more than 48 inches during dry seasons. Available water capacity is very low and permeability is rapid. The natural fertility and organic matter content of this soil type are low. Native vegetation usually consists of pine trees with an undergrowth of saw palmetto, runner oak, gallberry, and many native grasses.

(15) Okeelanta muck is a very poorly drained, nearly level, organic soil found in depressions and broad marshes. The water table is near or above the surface at all times. Most areas of this soil remain in native vegetation of sawgrass, lilies, sedges, reeds, a few scattered cypress trees, and other aquatic plants.

(18) Parkwood fine sand is a poorly drained, nearly level soil in palm hammocks along sloughs and depressions. The water table is generally at a depth of 24 inches but can be near the surface for short periods during wet seasons and to a depth of more than 30 inches during dry seasons. Permeability is rapid in the surface layer and moderately rapid in the marl layers. Although the water table is near the surface during wet seasons the soil has a low available water capacity. Organic matter content is low to high and fertility is moderately low.

(19) Floridana, Placid, Okeelanta soils, frequently flooded is a undifferentiated unit consisting of nearly level and poorly drained soils that occur in swamps and along heavily wooded drainageways. Most areas are dominated by Placid fine sand, with other areas being dominated by Pamlico muck or Delray fine sand. Most areas are heavily wooded and occupy the lowest areas in the landscape. The organic matter content is high but the content of most plant nutrients is low. Native plant cover consists mostly of sweetbay, sweetgum, cypress, bracken fern, sawgrass, and other plants that tolerate wet conditions.

(20) Pomello fine sand, 0 to 5 percent slopes is a deep, nearly level, moderately well-drained, sandy soil occurring on low ridges and knolls in flatwoods areas. The water table normally is 48 to 60 inches, but ranges from 30 to 75 inches. This soil has rapid permeability, low available water capacity, very low fertility, and very low organic matter content in the surface and subsurface

Kissimmee Prairie Preserve State Park
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horizons. The native vegetation usually consists of scrub oaks, saw palmettos, scattered pine trees, grasses, and woody shrubs.

(23) St. Johns fine sand is a deep, poorly drained, nearly level soil found on low narrow areas in flatwoods. During most years this soil has a water table 20 inches from the surface with it varying from zero to 15 inches from 2 to 6 months a year to being covered with water for short periods during wet seasons. This soil is rapidly permeable. Available water capacity and fertility are low, and organic matter content is medium. The natural vegetation is mainly saw palmetto with grasses, woody shrubs, and a few scattered pines in some areas.

(24) Terra Ceia muck is a very poorly drained, nearly level, organic soil in depressional and broad marsh areas. The soil is usually flooded or the water table is near the surface for most of the time. Available water capacity and nitrogen content are high. The native vegetation consists of sawgrass and other aquatic plants with a few scattered cypresses in some areas.

(25) Wabasso fine sand is a nearly level and poorly drained soil found in flatwoods. The water table is normally at about a depth of 30 inches. For one to 2 months in the wet season, the water table is between zero to 15 inches of the surface. During very dry periods, the water table may drop below 30 inches. This is a moderately permeable soil, with a medium available water capacity and a low organic matter content. Natural fertility is moderate.

Addendum 5—Plant and Animal List

Kissimmee Prairie Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Red maple	<i>Acer rubrum</i>	
Flaxleaf false foxglove	<i>Agalinis linifolia</i>	
Tenlobe false foxglove	<i>Agalinis obtusifolia</i>	
Hammock snakeroot	<i>Ageratina jucunda</i>	
Yellow colicroot	<i>Aletris lutea</i>	
Alligatorweed*	<i>Alternanthera philoxeroides</i>	
Common ragweed	<i>Ambrosia artemisiifolia</i>	
Pepper vine	<i>Ampelopsis arborea</i>	
Blue maidencane	<i>Amphicarpum muhlenbergianum</i>	
Shortspike bluestem	<i>Andropogon brachystachyus</i>	
Purple bluestem	<i>Andropogon glomeratus</i> var. <i>glaucopsis</i>	
Bushy bluestem	<i>Andropogon glomeratus</i> var. <i>hirsutior</i>	
Bushy bluestem	<i>Andropogon glomeratus</i> var. <i>pumilus</i>	
Elliott's bluestem	<i>Andropogon gyrans</i> var. <i>stenophyllus</i>	
Hairy bluestem	<i>Andropogon longiberbis</i>	
Splitbeard bluestem	<i>Andropogon ternarius</i> var. <i>cabanisii</i>	
Tracy's bluestem	<i>Andropogon tracyi</i>	
Broomsedge bluestem	<i>Andropogon virginicus</i> var. <i>decipiens</i>	
Chalky bluestem	<i>Andropogon virginicus</i> var. <i>glaucus</i>	
Groundnut	<i>Apios americana</i>	
Marlberry	<i>Ardisia escallonioides</i>	
Bluestem pricklypoppy	<i>Argemone albiflora</i>	
Jack-in-the-pulpit	<i>Arisaema triphyllum</i>	
Longleaf threeawn	<i>Aristida palustris</i>	
Tall threeawn	<i>Aristida patula</i>	
Arrowfeather threeawn	<i>Aristida purpurascens</i>	
Hillsboro threeawn	<i>Aristida purpurascens</i> var. <i>tenuispica</i>	
Florida Threeawn	<i>Aristida rhizomophora</i>	
Bottlebrush threeawn	<i>Aristida spiciformis</i>	
Wiregrass	<i>Aristida stricta</i> var. <i>beyrichiana</i>	
Calico flower*	<i>Aristolochia elegans</i>	
Largeflower milkweed	<i>Asclepias connivens</i>	
Florida milkweed	<i>Asclepias feayi</i>	
Marsh milkweed	<i>Asclepias incarnata</i>	
Fewflower milkweed	<i>Asclepias lanceolata</i>	
Longleaf milkweed	<i>Asclepias longifolia</i>	
Savannah milkweed	<i>Asclepias pedicellata</i>	
Swamp milkweed	<i>Asclepias perennis</i>	
Whorled milkweed	<i>Asclepias verticillata</i>	
Showy milkwort	<i>Asemeia violaceae</i>	
Bigflower pawpaw	<i>Asimina obovata</i>	
Netted pawpaw	<i>Asimina reticulata</i>	
Whitetop aster (Pinebarren)	<i>Aster reticulatus</i>	
Whitetop aster (Dixie)	<i>Aster tortifolius</i>	
Fernleaf yellow false foxglove	<i>Aureolaria pectinata</i>	
Common carpetgrass	<i>Axonopus fissifolius</i>	

*Non-native species

Kissimmee Prairie Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Big carpetgrass	<i>Axonopus furcatus</i>	
American waterfern	<i>Azolla filiculoides</i>	
Carolina mosquitofern	<i>Azolla caroliniana</i>	
Silverling	<i>Baccharis glomeruliflora</i>	
Groundsel tree (Sea myrtle)	<i>Baccharis halimifolia</i>	
Lemon bacopa (Blue waterhyssop)	<i>Bacopa caroliniana</i>	
Tropical waterhyssop	<i>Bacopa innominata</i>	
Herb-of-grace	<i>Bacopa monnieri</i>	
Coastalplain honeycombhead	<i>Balduina angustifolia</i>	
White screwstem	<i>Bartonia verna</i>	
Yellow screwstem	<i>Bartonia virginica</i>	
Tarflower	<i>Bejaria racemosa</i>	
Beggarticks (Romerillo)	<i>Bidens alba</i> var. <i>radiata</i>	
Smallfruit beggarticks	<i>Bidens mitis</i>	
Pineland rayless goldenrod	<i>Bigelovia nudata australis</i>	
Toothed midsorus fern	<i>Blechnum serrulatum</i>	
False nettle, Bog hemp	<i>Boehmeria cylindrica</i>	
Smallhead doll's daisy	<i>Boltonia diffusa</i>	
American bluehearts	<i>Buchnera americana</i>	
Capillary hairsedge	<i>Bulbostylis ciliatifolia</i>	
Bluethread	<i>Burmannia biflora</i>	
Southern bluethread	<i>Burmannia capitata</i>	
American beautyberry	<i>Callicarpa americana</i>	
Florida scrub roseling	<i>Callisia ornata</i>	
Bearded grasspink	<i>Calopogon barbatus</i>	
Many-flowered grass pink	<i>Calopogon multiflorus</i>WP, DP	
Pale grasspink	<i>Calopogon pallidus</i>	
Hedge false bindweed	<i>Calystegia sepium</i>	
Florida bellflower	<i>Campanula floridana</i>	
Long strap fern	<i>Campyloneurum phyllitidis</i>	
Bandana-of-the-everglades	<i>Canna flacida</i>	
Long's sedge	<i>Carex longii</i>	
False hop sedge	<i>Carex lupuliformis</i>	
Hop sedge	<i>Carex lupulina</i>	
Warty sedge	<i>Carex verrucosa</i>	
Florida hammock sedge	<i>Carex vexans</i>	
Papaya*	<i>Carica papaya</i>	
Pineland chaffhead	<i>Carphephorus carnosus</i>	
Coastalplain chaffhead	<i>Carphephorus corymbosus</i>	
Vanillaleaf	<i>Carphephorus odoratissimus</i>	
Hairy chaffhead	<i>Carphephorus paniculatus</i>	
Wild olive (American devilwood)	<i>Cartrema (Osmanthus) americanus</i>	
Pignut hickory	<i>Carya glabra</i>	
Love vine (Devil's gut)	<i>Cassytha filiformis</i>	
Sugarberry (Hackberry)	<i>Celtis laevigata</i>	
Southern sandbur	<i>Cenchrus echinatus</i>	

*Non-native species

Kissimmee Prairie Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Spadeleaf	<i>Centella asiatica</i>	
Spurred butterfly pea	<i>Centrosema virginianum</i>	
Common buttonbush	<i>Cephalanthus occidentalis</i>	
Partridge pea	<i>Chaemaecrista fasciculata</i>	
Sensitive pea	<i>Chamaecrista nictitans</i> var. <i>aspera</i>	
Woolly sunbonnets	<i>Chaptalia tomentosa</i>	
Yellow thistle	<i>Cirsium horridulum</i>	
Nuttall's thistle	<i>Cirsium nuttallii</i>	
Calamondin orange*	<i>Citrus</i> spp.	
Sour orange (Grapefruit)*	<i>Citrus x aurantium</i>	
Mandarin lime*	<i>Citrus x jambhiri</i>	
Lemon*	<i>Citrus x limon</i>	
Jamaica swamp sawgrass	<i>Cladium jamaicense</i>	
Pine-hyacinth	<i>Clematis balwinii</i>	
Java glory bean (Pagoda flower)*	<i>Clerodendrum x speciosum</i>	
Browne's Savory	<i>Clinopodium brownei</i>	
Tread-softly (Finger-rot)	<i>Cnidoscolus stimulosus</i>	
Wrinkled jointtailgrass	<i>Coelorachis rugosa</i>	
Common dayflower	<i>Commelina diffusa</i>	
Whitemouth dayflower	<i>Commelina erecta</i>	
Blue mistflower	<i>Conoclinium coelestinum</i>	
Florida tickseed	<i>Coreopsis floridana</i>	
Leavenworth's tickseed	<i>Coreopsis leavenworthii</i>	
Swamp dogwood (Stiff dogwood)	<i>Cornus foemina</i>	
Lanceleaf rattlebox	<i>Crotalaria lanceolata</i>	
Rabbitbells	<i>Crotalaria rotundifolia</i>	
Toothachegrass	<i>Ctenium aromaticum</i>	
Colombian waxweed*	<i>Cuphea carthagenensis</i>	
American dodder	<i>Cuscuta americana</i>	
Gulf coast swallowwort	<i>Cynanchum angustifolium</i>	
Leafless swallowwort	<i>Cynanchum scoparium</i>	
Bermudagrass*	<i>Cynodon dactylon</i>	
Poorland flatsedge	<i>Cyperus compressus</i>	
Baldwin's flatsedge	<i>Cyperus croceus</i>	
Swamp flatsedge	<i>Cyperus distinctus</i>	
Haspan flatsedge	<i>Cyperus haspan</i>	
Fragrant flatsedge	<i>Cyperus odoratus</i>	
Pinebarren flatsedge	<i>Cyperus ovatus</i>	
Manyspike flatsedge	<i>Cyperus polystachyos</i>	
Low flatsedge*	<i>Cyperus pumilus</i>	
Tropical flatsedge	<i>Cyperus surinamensis</i>	
Fourangle flatsedge	<i>Cyperus tetragonus</i>	
Durban crowfootgrass*	<i>Dactyloctenium aegyptium</i>	
Whitetassels	<i>Dalea carnea</i> var. <i>albida</i>	
Zarabacoa comun*	<i>Desmodium incanum</i>	
Needleleaf witchgrass	<i>Dichantherium aciculare</i>	

*Non-native species

Kissimmee Prairie Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Tapered witchgrass	<i>Dichanthelium acuminatum</i>	
Variable witchgrass	<i>Dichanthelium commutatum</i>	
Cypress witchgrass	<i>Dichanthelium dichotomum</i>	
Cypress witchgrass	<i>Dichanthelium ensifolium</i> var. <i>unciphyllum</i>	
Erectleaf witchgrass	<i>Dichanthelium erectifolium</i>	
Openflower witchgrass	<i>Dichanthelium laxiflorum</i>	
Rough witchgrass	<i>Dichanthelium leucothrix</i>	
Hemlock witchgrass	<i>Dichanthelium portoricense</i>	
Woolly witchgrass	<i>Dichanthelium scabriusculum</i>	
Roughhair witchgrass	<i>Dichanthelium strigosum</i>	
Roughhair witchgrass	<i>Dichanthelium strigosum</i> var. <i>glabrescens</i>	
Carolina ponyfoot	<i>Dichondra caroliniensis</i>	
Sixangle foldwing	<i>Dicliptera sexangularis</i>	
Crabgrass	<i>Digitaria</i> spp.	
Virginia buttonweed	<i>Diodia virginiana</i>	
Air-potato*	<i>Dioscorea bulbifera</i>	
Common persimmon	<i>Diospyros virginiana</i>	
Dwarf sundew	<i>Drosera brevifolia</i>	
Pink sundew	<i>Drosera capillaris</i>	
Drymary (West Indian chickweed)*	<i>Drymaria cordata</i>	
Pineland twinflower	<i>Dyschoriste angusta</i>	
Swamp twinflower	<i>Dyschoriste humistrata</i>	
Oblongleaf twinflower (Snakeherb)	<i>Dyschoriste oblongiflora</i>	
Common water-hyacinth*	<i>Eichhornia crassipes</i>	
Purple spikerush	<i>Eleocharis atropurpurea</i>	
Baldwin's spikerush (Roadgrass)	<i>Eleocharis baldwinii</i>	
Gulf Coast spikerush	<i>Eleocharis cellulosa</i>	
Canada spikerush	<i>Eleocharis geniculata</i>	
Viviparous spikerush	<i>Eleocharis vivipara</i>	
Tall elephantsfoot	<i>Elephantopus elatus</i>	
Indian goosegrass*	<i>Eleusine indica</i>	
Pan-American balsamscale	<i>Elionurus tripsacoides</i>	
Florida butterfly orchid	<i>Encyclia tampensis</i>	MEH, HH
Thalia lovegrass*	<i>Eragrostis atrovirens</i>	
Elliott's lovegrass	<i>Eragrostis elliotii</i>	
Coastal lovegrass	<i>Eragrostis virginica</i>	
American burnweed (Fireweed)	<i>Erechtites hieracifolia</i>	
Oakleaf fleabane	<i>Erigeron quercifolius</i>	
Early whitetop fleabane	<i>Erigeron vernus</i>	
Flattened pipewort	<i>Eriocaulon compressum</i>	
Tenangle pipewort	<i>Eriocaulon decangulare</i>	
Ravenel's pipewort	<i>Eriocaulon ravenelii</i>	
Michaux's cupgrass	<i>Eriochloa michauxii</i> var. <i>michauxii</i>	
Dogtongue wild buckwheat	<i>Eriogonum tomentosum</i>	
Fragrant eryngo	<i>Eryngium aromaticum</i>	
Button rattlesnakemaster	<i>Eryngium yuccifolium</i>	

*Non-native species

Kissimmee Prairie Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Coralbean (Cherokee bean)	<i>Erythrina herbacea</i>	
Swampmahogany*	<i>Eucalyptus robusta</i>	
Wild coco	<i>Eulophia alta</i>	
Dogfennel	<i>Eupatorium capillifolium</i>	
Mohr's thoroughwort	<i>Eupatorium mohrii</i>	
Roundleaf thoroughwort	<i>Eupatorium rotundifolium</i>	
Saltmarsh fingergrass	<i>Eustachys glauca</i>	
Pinewoods fingergrass	<i>Eustachys petraea</i>	
Slender flattop goldenrod	<i>Euthamia caroliniana</i>	
Silver dwarf morning-glory	<i>Evolvulus sericeus</i>	
Slender fimbry	<i>Fimbristylis autumnalis</i>	
Carolina fimbry	<i>Fimbristylis caroliniana</i>	
Hurricanegrass	<i>Fimbristylis cymosa</i>	
Forked fimbry	<i>Fimbristylis dichotoma</i>	
Hairy fimbry	<i>Fimbristylis puberula</i>	
Ditch fimbry*	<i>Fimbristylis schoenoides</i>	
Marsh fimbry	<i>Fimbristylis spadicea</i>	
Narrowleaf yellowtops	<i>Flaveria linearis</i>	
Upland swampprivet	<i>Forestiera ligustrina</i>	
Florida swampprivet	<i>Forestiera segregata</i>	
Carolina ash (Water ash, Pop ash)	<i>Fraxinus carolinianus</i>	
Saltmarsh umbrellasedge	<i>Fuirena breviseta</i>	
Southern umbrellasedge	<i>Fuirena scirpoidea</i>	
Elliott's milkpea	<i>Galactia elliotii</i>	
Eastern milkpea	<i>Galactia regularis</i>	
Coastal bedstraw	<i>Galium hispidulum</i>	
Stiff marsh bedstraw	<i>Galium tinctorium</i>	
Gardenia*	<i>Gardenia jasminoides</i>	
Dwarf huckleberry	<i>Gaylussacia dumosa</i>	
Blue huckleberry	<i>Gaylussacia frondosa</i> var. <i>tomentosa</i>	
Carolina jessamine	<i>Gelsemium sempervirens</i>	
Loblolly bay	<i>Gordonia lasianthus</i>	
Rough hedgehyssop	<i>Gratiola hispida</i>	
Shaggy hedgehyssop	<i>Gratiola pilosa</i>	
Branched hedgehyssop	<i>Gratiola ramosa</i>	
Shortleaf skeletongrass	<i>Gymnopogon brevifolius</i>	
Chapman's skeletongrass	<i>Gymnopogon chapmanianus</i>	
Toothpetal false reinorchid	<i>Habenaria floribunda</i>	
Snowy orchid	<i>Habenaria nivea</i> WP	
Longhorn False Reinorchid	<i>Habenaria quinqueata</i>	
Waterspider False Reinorchid	<i>Habenaria repens</i>	
Southeastern sneezeweed	<i>Helenium pinnatifidum</i>	
Pinebarren frostweed	<i>Helianthemum corymbosum</i>	
Narrowleaf (Swamp) sunflower	<i>Helianthus angustifolius</i>	
Stiff sunflower	<i>Helianthus radula</i>	
Pineland heliotrpe	<i>Heliotropium pollyphyllum</i>	

*Non-native species

Kissimmee Prairie Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Limpograss*	<i>Hemarthria altissima</i>	
Camphorweed	<i>Heterotheca subaxillaris</i>	
African rosemallow*	<i>Hibiscus acetosella</i>	
Swamp rosemallow	<i>Hibiscus grandiflorus</i>	
Coastalplain hawkweed	<i>Hieracium megacephalon</i>	
Innocence (Roundleaf bluet)	<i>Houstonia procumbens</i>	
Waterthyme*	<i>Hydrilla verticillata</i>	
Floating marshpennywort	<i>Hydrocotyle ranunculoides</i>	
Manyflower marshpennywort	<i>Hydrocotyle umbellata</i>	
Whorled marshpennywort	<i>Hydrocotyle verticillata</i>	
Sky flower	<i>Hydrolea corymbosa</i>	
Trompetilla*	<i>Hymenachne amplexicaulis</i>	
Alligatorlily	<i>Hymenocallis palmeri</i>	
Coastalplain St. John's-wort	<i>Hypericum brachyphyllum</i>	
Roundpod St. John's-wort	<i>Hypericum cistifolium</i>	
Peelbark St. John's-wort	<i>Hypericum fasciculatum</i>	
St. Andrew's-cross	<i>Hypericum hypericoides</i>	
Myrtleleaf St. John's-wort	<i>Hypericum myrtifolium</i>	
Atlantic St. John's-wort	<i>Hypericum tenuifolium</i>	
Fourpetal St. John's-wort	<i>Hypericum tetrapetalum</i>	
Fringed yellow stargrass	<i>Hypoxis juncea</i>	
Clustered bushmint (Musky mint)	<i>Hyptis alata</i>	
Carolina holly (Sand holly)	<i>Ilex ambigua</i>	
Dahoon	<i>Ilex cassine</i>	
Inkberry (Gallberry)	<i>Ilex glabra</i>	
Brazilian satintail	<i>Imperata brasiliensis</i>	
Cogongrass*	<i>Imperata cylindrica</i>	
Hairy indigo*	<i>Indigofera hirsuta</i>	
Tropical white morningglory	<i>Ipomoea alba</i>	
Cypressvine*	<i>Ipomoea quamoclit</i>	
Juba's bush	<i>Iresine diffusa</i>	
Dixie iris (Prairie iris)	<i>Iris hexagona</i>	
Virginia willow (Va. sweetspire)	<i>Itea virginica</i>	
Piedmont marshelder	<i>Iva microcephala</i>	
Soft rush	<i>Juncus effusus solutus</i>	
Shore rush (Grassleaf rush)	<i>Juncus marginatus</i>	
Bighead rush	<i>Juncus megacephalus</i>	
Lesser creeping rush	<i>Juncus repens</i>	
Needlepod rush	<i>Juncus scirpoides</i>	
Pineland waterwillow	<i>Justicia angusta</i>	
Looseflower waterwillow	<i>Justicia ovata</i>	
Virginia saltmarsh mallow	<i>Kosteletzkya pentacarpos</i>	
Shortleaf spikesedge*	<i>Kyllinga brevifolia</i>	
Carolina redroot	<i>Lachnanthes caroliniana</i>	
Whitehead bogbutton	<i>Lachnocaulon anceps</i>	
Small's bogbutton	<i>Lachnocaulon minus</i>	

*Non-native species

Kissimmee Prairie Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Lantana (Shrubverbena)*	<i>Lantana camara</i>	
Buttonsage	<i>Lantana involucrata</i>	
Dickert's pinweed	<i>Lechea deckertii</i>	
Spreading pinweed	<i>Lechea divaricata</i>	SC
Piedmont pinweed	<i>Lechea torreyi</i>	
Southern cutgrass	<i>Leersia hexandra</i>	
Garber's gayfeather	<i>Liatris garberi</i>	
Slender gayfeather	<i>Liatris gracilis</i>	
Dense gayfeather	<i>Liatris spicata</i>	
Shortleaf gayfeather	<i>Liatris tenuifolia</i>	
Shortleaf gayfeather	<i>Liatris tenuifolia</i> var. <i>quadriflora</i>	
Gopher apple	<i>Licania michauxii</i>	
Catesby's lily (Pine lily)	<i>Lilium catesbaei</i>	DP
Malaysian false pimpernel*	<i>Lindernia crustacea</i>	
Yellowseed False pimpernel	<i>Lindernia dubia</i> var. <i>anagallidea</i>	
Savannah false pimpernel	<i>Lindernia grandiflora</i>	
Stiff yellow flax	<i>Linum medium</i> var. <i>texanum</i>	
Smallflower halfchaff sedge	<i>Lipocarpa micrantha</i>	
Bay lobelia	<i>Lobelia feayana</i>	
Glade lobelia	<i>Lobelia glandulosa</i>	
White lobelia	<i>Lobelia paludosa</i>	
Curtiss' primrosewillow	<i>Ludwigia curtissii</i>	
Yerba de jicotea	<i>Ludwigia erecta</i>	
Angelstem primrosewillow	<i>Ludwigia leptocarpa</i>	
Narrowleaf primrosewillow	<i>Ludwigia linearis</i>	
Southeastern primrosewillow	<i>Ludwigia linifolia</i>	
Seaside primrosewillow	<i>Ludwigia maritima</i>	
Smallfruit primrosewillow	<i>Ludwigia microcarpa</i>	
Mexican primrosewillow	<i>Ludwigia octovalvis</i>	
Marsh seedbox	<i>Ludwigia palustris</i>	
Peruvian primrosewillow*	<i>Ludwigia peruviana</i>	
Creeping primrosewillow	<i>Ludwigia repens</i>	
Shrubby primrosewillow	<i>Ludwigia suffruticosa</i>	
Skyblue lupine	<i>Lupinus diffusus</i>	
Southern watergrass	<i>Luziola fluitans</i>	
Tropical American watergrass*	<i>Luziola subintegra</i>	
Foxtail club-moss	<i>Lycopodiella alopecuroides</i>	
Southern club-moss	<i>Lycopodiella appressa</i>	
Slender club-moss	<i>Lycopodiella caroliniana</i>	
Nodding club-moss	<i>Lycopodiella cernua</i>	
Rose-rush	<i>Lygodesmia aphylla</i>	
Small-leaf climbing fern*	<i>Lygodium microphyllum</i>	
Rusty staggerbush	<i>Lyonia ferruginea</i>	
Coastalplain staggerbush	<i>Lyonia fruticosa</i>	
Maleberry	<i>Lyonia ligustrina</i> var. <i>foliosiflora</i>	
Fetterbush	<i>Lyonia lucida</i>	

*Non-native species

Kissimmee Prairie Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Winged loosestrife	<i>Lythrum alatum</i> var. <i>lanceolatum</i>	
Sweetbay	<i>Magnolia virginiana</i>	
Grassleaf Barbara's buttons	<i>Marshallia graminifolia</i>	
Florida milkvine	<i>Matelea floridana</i>	MEH
Axilflower	<i>Mecardonia acuminata</i>	
Axilflower	<i>Mecardonia acuminata peninsularis</i>	
Punk tree*	<i>Melaleuca quinquenervia</i>	
Snow squarestem	<i>Melanthera nivea</i>	
Chinaberry*	<i>Melia azedarach</i>	
Rose natalgrass*	<i>Melinis repens</i>	
Creeping cucumber	<i>Melothria pendula</i>	
Shade mudflower	<i>Micranthemum umbrosum</i>	
Florida Keys hempvine	<i>Mikania cordifolia</i>	
Climbing hempvine	<i>Mikania scandens</i>	
Lax hornpod	<i>Mitreola petiolata</i>	
Swamp hornpod	<i>Mitreola sessilifolia</i>	
Balsampear*	<i>Momordica charantia</i>	
Latex plant*	<i>Morrenia odorata</i>	
Red mulberry	<i>Morus rubra</i>	
Hairawn muhly	<i>Muhlenbergia capillaris</i> var. <i>filipes</i>	
Nimblewill muhly	<i>Muhlenbergia schreberi</i>	
Nakedstem dewflower*	<i>Murdannia nudiflora</i>	
Twinberry (Simpson's stopper)	<i>Myrcianthes fragrans</i>	MEH
Evergreen bayberry	<i>Myrica caroliniensis</i>	
Southern bayberry (Wax myrtle)	<i>Myrica cerifera</i>	
Myrsine (Colicwood)	<i>Myrsine cubana</i>	
Celstial lily (Fallflowering ixia)	<i>Nemastylis floridana</i>	WP
Sword fern (Wild Boston fern)	<i>Nephrolepis exaltata</i>	
Florida beargrass	<i>Nolina atopocarpa</i>	WP
Spatterdock (Yellow pondlily)	<i>Nuphar advena</i>	
American white waterlily	<i>Nymphaea odorata</i>	
Big floatingheart	<i>Nymphoides aquatica</i>	
Swamp tupelo	<i>Nyssa sylvatica</i> var. <i>biflora</i>	
Whitetop aster (Pinebarren aster)	<i>Oclemena reticulata</i>	
Clustered mille graine	<i>Oldenlandia uniflora</i>	
Woodsgrass (Basketgrass)	<i>Oplismenus hirtellus</i>	
Pricklypear	<i>Opuntia humifusa</i>	
Goldenclub (Neverwet)	<i>Orontium aquaticum</i>	
Cinnamon fern	<i>Osmunda cinnamomea</i>	
Royal fern	<i>Osmunda regalis</i> var. <i>spectabilis</i>	
Common yellow woodsorrel	<i>Oxalis stricta</i>	
Creeping woodsorrel	<i>Oxalis corniculata</i>	
Cuban bulrush*	<i>Oxycaryum cubensis</i>	
Water cowbane	<i>Oxypolis filiformis</i>	
Coastalplain palafox	<i>Palafoxia integrifolia</i>	
Beaked panicum	<i>Panicum anceps</i>	

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Kissimmee Prairie Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Maidencane	<i>Panicum hemitomom</i>	
Gaping panicum	<i>Panicum hians</i>	
Tall thin panicum	<i>Panicum longifolium</i>	
Torpedograss*	<i>Panicum repens</i>	
Redtop panicum	<i>Panicum rigidulum</i>	
Bluejoint panicum	<i>Panicum tenerum</i>	
Warty panicgrass	<i>Panicum verrucosum</i>	
Switchgrass	<i>Panicum virgatum</i>	
Virginia creeper (Woodbine)	<i>Parthenocissus quinquefolia</i>	
Egyptian paspalidium	<i>Paspalidium geminatum</i>	
Sour paspalum (Hilograss)	<i>Paspalum conjugatum</i>	
Dallisgrass*	<i>Paspalum dilatatum</i>	
Bahiagrass*	<i>Paspalum notatum</i>	
Bahiagrass*	<i>Paspalum notatum</i> var. <i>saurae</i>	
Early paspalum	<i>Paspalum praecox</i>	
Thin paspalum	<i>Paspalum setaceum</i>	
Vaseygrass*	<i>Paspalum urvillei</i>	
Corkystem passionflower	<i>Passiflora suberosa</i>	
Green arrow arum	<i>Peltandra virginica</i>	
Manyflower beardtongue	<i>Penstemon multiflorus</i>	
Redbay	<i>Persea borbonia</i>	
Swamp bay	<i>Persea palustris</i>	
Golden polypody	<i>Phlebodium aureum</i>	
Florida false sunflower	<i>Phoebanthus grandiflorus</i>	
Oak mistletoe	<i>Phoradendron leucarpum</i>	
Turkey tangle fogfruit (Capeweed)	<i>Phyla nodiflora</i>	
Cypresshead groundcherry	<i>Physalis arenicola</i>	
Eastern false dragonhead	<i>Physostegia purpurea</i>	
American pokeweed	<i>Phytolacca americana</i>	
Wild pennyroyal	<i>Piloblephis rigida</i>	
Blueflower butterwort	<i>Pinguicula caerulea</i>	DP, WP
Yellow butterwort	<i>Pinguicula lutea</i>	DP, WP
Small butterwort	<i>Pinguicula pumila</i>	
Slash pine	<i>Pinus ellioti</i>	
South Florida slash pine	<i>Pinus elliotii</i> var. <i>densa</i>	
Longleaf pine	<i>Pinus palustris</i>	
Florida needlegrass	<i>Piptochaetium avenacioides</i>	
Pitted stripeseed	<i>Piriqueta cistoides caroliniana</i>	
Narrowleaf silkgrass	<i>Pityopsis graminifolia</i>	
Resurrection fern	<i>Pleopeltis polypodioides</i> var. <i>michauxiana</i>	
Rosy camphorweed	<i>Pluchea baccharis</i>	
Stinking camphorweed	<i>Pluchea foetida</i>	
Longleaf camphorweed	<i>Pluchea longifolia</i>	
Sweetscent	<i>Pluchea odorata</i>	
Rosy camphorweed	<i>Pluchea rosea</i>	
Low pinebarren milkwort	<i>Polygaga ramosa</i>	

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Kissimmee Prairie Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Baldwin's milkwort	<i>Polygala baldwinii</i>	
Drumheads	<i>Polygala cruciata</i>	
Tall pinebarren milkwort	<i>Polygala cymosa</i>	
Procession flower	<i>Polygala incarnata</i>	
Orange milkwort	<i>Polygala lutea</i>	
Candyroot	<i>Polygala nana</i>	
Yellow milkwort	<i>Polygala rugelii</i>	
Coastalplain milkwort	<i>Polygala setacea</i>	
October flower	<i>Polygonella polygama</i> var. <i>brachystachya</i>	
Swamp smartweed	<i>Polygonum hydropiperoides</i>	
Dotted smartweed	<i>Polygonum punctatum</i>	
Rustweed (Juniperleaf)	<i>Polypremum procumbens</i>	
Pickernelweed	<i>Pontederia cordata</i>	
Hairy shadow witch	<i>Ponthieva racemosa</i>	
Pink purslane (Kiss-me-quick)	<i>Portulaca pilosa</i>	
Marsh mermaidweed	<i>Proserpinaca palustris</i>	
Combleaf mermaidweed	<i>Proserpinaca pectinata</i>	
Carolina laurelcherry	<i>Prunus caroliniana</i>	
Guava*	<i>Psidium guajava</i>	
Wild coffee	<i>Psychotria nervosa</i>	
Bracken fern	<i>Pteridium aquilinum</i>	
Eastern bracken	<i>Pteridium aquilinum</i> var. <i>latiusculum</i>	
Chinese ladder brake*	<i>Pteris vittata</i>	
Blackroot	<i>Pterocaulon pycnostachyum</i>	
Giant orchid	<i>Pteroglossaspis ecristata</i>DP	
Mock bishopsweed (Herbwilliam)	<i>Ptilimnium capillaceum</i>	
Carolina desertchicory	<i>Pyrrhopappus carolinianus</i>	
Chapman's oak	<i>Quercus chapmanii</i>	
Running oak	<i>Quercus elliotii</i>	
Sand live oak	<i>Quercus geminata</i>	
Laurel oak (Diamond oak)	<i>Quercus laurifolia</i>	
Dwarf live oak	<i>Quercus minima</i>	
Myrtle oak	<i>Quercus myrtifolia</i>	
Water oak	<i>Quercus nigra</i>	
Running oak	<i>Quercus pumila</i>	
Live oak	<i>Quercus virginiana</i>	
West Indian meadowbeauty	<i>Rhexia cubensis</i>	
Pale (Maryland) meadowbeauty	<i>Rhexia mariana</i>	
Maid marian	<i>Rhexia nashii</i>	
Nuttall's meadowbeauty	<i>Rhexia nuttallii</i>	
Fringed meadowbeauty	<i>Rhexia petiolata</i>	
Winged sumac	<i>Rhus copallinum</i>	
Baldwin's beaksedge	<i>Rhynchospora baldwinii</i>	
Shortbristle beaksedge	<i>Rhynchospora breviseta</i>	
Anglestem beaksedge	<i>Rhynchospora caduca</i>	
Bunched beaksedge	<i>Rhynchospora cephalantha</i>	

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Kissimmee Prairie Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
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Loosehead beaksedge	<i>Rhynchospora chalarocephala</i>	
Chapman's beaksedge	<i>Rhynchospora chapmanii</i>	
Fringed beaksedge	<i>Rhynchospora ciliaris</i>	
Starrush whitetop	<i>Rhynchospora colorata</i>	
Spreading beaksedge	<i>Rhynchospora divergens</i>	
Fascicled beaksedge	<i>Rhynchospora fascicularis</i>	
Fernald's beaksedge	<i>Rhynchospora fernaldii</i>	
Threadleaf beaksedge	<i>Rhynchospora filifolia</i>	
Globe beaksedge	<i>Rhynchospora globularis</i>	
Gray's beaksedge	<i>Rhynchospora grayi</i>	
Pinebarren beaksedge	<i>Rhynchospora intermedia</i>	
Narrowfruit horned beaksedge	<i>Rhynchospora inundata</i>	
Giant (Sandswamp) whitetop	<i>Rhynchospora latifolia</i>	
Sandyfield beaksedge	<i>Rhynchospora megalocarpa</i>	
Southern beaksedge	<i>Rhynchospora microcarpa</i>	
Bunched beaksedge	<i>Rhynchospora microcephala</i>	
Millet beaksedge	<i>Rhynchospora miliacea</i>	
Shortbeak beaksedge (Baldrush)	<i>Rhynchospora nitens</i>	
Plumed beaksedge	<i>Rhynchospora plumosa</i>	
Fairy beaksedge	<i>Rhynchospora pusilla</i>	
Fewflower beaksedge	<i>Rhynchospora rariflora</i>	
Tracy's beaksedge	<i>Rhynchospora tracyi</i>	
Rougeplant	<i>Rivina humilis</i>	
Lowland rotala (Toothcup)	<i>Rotala ramosior</i>	
Sawtooth blackberry	<i>Rubus argutus</i>	
Pennsylvania blackberry	<i>Rubus pensilvanicus</i>	
Southern dewberry	<i>Rubus trivialis</i>	
Blackeyed susan	<i>Rudbeckia hirta</i>	
Dwarf palmetto	<i>Sabal minor</i>	
Cabbage palm	<i>Sabal palmetto</i>	
Shortleaf rosegentian	<i>Sabatia brevifolia</i>	
Bartram's rosegentian	<i>Sabatia decandra</i>	
Lanceleaf rosegentian	<i>Sabatia difformis</i>	
Marsh rosegentian	<i>Sabatia dodecandra</i>	
Largeflower rosegentian	<i>Sabatia grandiflora</i>	
Sugarcane plumegrass	<i>Saccharum giganteum</i>	
India cupscale*	<i>Sacciolepis indica</i>	
Leafless beaked orchid	<i>Sacoila lanceolata</i>	
Smallflower mock buckthorn	<i>Sageretia minutiflora</i>	
Grassy arrowhead	<i>Sagittaria graminea</i>	
Chapman's arrowhead	<i>Sagittaria graminea</i> var. <i>chapmanii</i>	
Quillwort arrowhead	<i>Sagittaria isoetiformis</i>	
Bulltongue arrowhead	<i>Sagittaria lancifolia</i>	
Carolina (Coastalplain) willow	<i>Salix caroliniana</i>	
Lyreleaf sage	<i>Salvia lyrata</i>	
Water spangles*	<i>Salvinia minima</i>	

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Kissimmee Prairie Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
American elder (Elderberry)	<i>Sambucus nigra canadensis</i>	
Pineland pimpernel	<i>Samolus valerandi parviflorus</i>	
White twinevine	<i>Sarcostemma clausum</i>	
Hooded pitcherplant	<i>Sarracenia minor</i>	WP
Lizard's tail	<i>Saururus cernuus</i>	
Brazilian pepper*	<i>Schinus terebinthifolia</i>	
Little bluestem	<i>Schizachyrium scoparium</i>	
White sunnybell	<i>Schoenolirion albiflorum</i>	
Threesquare bulrush	<i>Schoenoplectus pungens</i>	
Softstem bulrush	<i>Schoenoplectus (Scirpus) tabernaemontani</i>	
Cuban bulrush*	<i>Scirpus cubensis</i>	
Threesquare bulrush	<i>Scirpus pungens</i>	
Baldwin's nutrush	<i>Scleria baldwinii</i>	
Fringed nutrush	<i>Scleria ciliate</i>	
Few flowered nutrush	<i>Scleria ciliate</i> var. <i>pauciflora</i>	
Slenderfruit nutrush	<i>Scleria georgiana</i>	
Wright's nutrush*	<i>Scleria lacustris</i>	
Netted nutrush	<i>Scleria reticularis</i>	
Tall nutgrass (Whip nutrush)	<i>Scleria triglomerata</i>	
Low nutrush	<i>Scleria verticillata</i>	
Sweetbroom (Licoriceweed)	<i>Scoparia dulcis</i>	
Helmet skullcap	<i>Scutellaria integrifolia</i>	
Privet wild sensitive plant	<i>Senna ligustrina</i>	
Coffeeweed (Sicklepod)*	<i>Senna obtusifolia</i>	
Saw palmetto	<i>Serenoa repens</i>	
Whitetop aster (Dixie aster)	<i>Sericocarpus tortifolius</i>	
Bladderpod (Bagpod)	<i>Sesbania vesicaria</i>	
Yellow bristlegrass	<i>Setaria parviflora</i>	
Piedmont blacksenna	<i>Seymeria pectinate</i>	
Common wireweed	<i>Sida acuta</i>	
Llima*	<i>Sida cordifolia</i>	
Elliot's fanpetals	<i>Sida elliotii</i>	
Mata pasto (Fanpetals)*	<i>Sida planicaulis</i>	
Florida bully	<i>Sideroxylon reclinatum</i>	
Narrowleaf blue-eyed grass	<i>Sisyrinchium angustifolium</i>	
Earleaf greenbrier	<i>Smilax auriculata</i>	
Saw greenbrier	<i>Smilax bona-nox</i>	
Laurel greenbrier (Bamboo vine)	<i>Smilax laurifolia</i>	
Bristly greenbrier (Hogbrier)	<i>Smilax tamnoides</i>	
Coral greenbrier	<i>Smilax walteri</i>	
American black nightshade	<i>Solanum americanum</i>	
Tropical soda apple*	<i>Solanum viarum</i>	
Pinebarren goldenrod	<i>Solidago fistulosa</i>	
Chapman's goldenrod	<i>Solidago odora</i> var. <i>chapmanii</i>	
Wand goldenrod	<i>Solidago stricta</i>	
Lopsided indiagrass	<i>Sorghastrum secundum</i>	

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Kissimmee Prairie Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Sand cordgrass	<i>Spartina bakeri</i>	
Woodland false buttonweed	<i>Spermacoce remota</i>	
Sphagnum moss	<i>Sphagnum</i> spp.	
Lacelip ladiestresses	<i>Spiranthes lacinata</i>	DP, WP
Longlip (Giantsprial) ladiestresses	<i>Spiranthes longilabris</i>	DP, WP
Fragrant ladiestresses	<i>Spiranthes odorata</i>	
Greenvein ladiestresses	<i>Spiranthes praecox</i>	
Spring ladiestresses	<i>Spiranthes vernalis</i>	
Smutgrass*	<i>Sporobolus indicus</i>	
Pineywoods dropseed	<i>Sporobolus junceus</i>	
Sweet shaggytuft	<i>Stenandrium dulce</i>	
Crowpoison (Osceola's plume)	<i>Stenanthium densum</i>	
Water toothleaf (Corkwood)	<i>Stillingia aquatica</i>	
Queensdelight	<i>Stillingia sylvatica</i>	
Pineland scalypink	<i>Stipulicida setacea</i>	
Scaleaf aster	<i>Symphyotrichum adnatum</i>	
Bahama aster	<i>Symphyotrichum bahamense</i>	
Climbing aster	<i>Symphyotrichum carolinianum</i>	
Eastern silver aster	<i>Symphyotrichum concolor</i>	
Rice Button aster	<i>Symphyotrichum dumosum</i>	
Simmond's aster	<i>Symphyotrichum simmondsii</i>	
Annual saltmarsh aster	<i>Symphyotrichum subulatum</i>	
Yellow hatpins	<i>Syngonanthus flavidulus</i>	
Sprawling hoarypea	<i>Tephrosia hispidula</i>	
Rugel's hoarypea	<i>Tephrosia rugellii</i>	
Spiked hoarypea	<i>Tephrosia spicata</i>	
Wood sage (Canadian germander)	<i>Teucrium canadense</i>	
Alligatorflag (Fireflag)	<i>Thalia geniculata</i>	
Downy maiden fern (Shield fern)*	<i>Thelypteris dentata</i>	
Hairy maiden fern	<i>Thelypteris hispidula</i> var. <i>versicolor</i>	
Hottentot fern (Willdenow's fern)	<i>Thelypteris interrupta</i>	
Southern shield fern	<i>Thelypteris kunthii</i>	
Marsh fern	<i>Thelypteris palustris</i> var. <i>pubescens</i>	
Northern needleleaf	<i>Tillandsia balbisiana</i>	MEH, HH
Cardinal airplant (Wild pine)	<i>Tillandsia fasciculata</i>	MEH, HH
Ballmoss	<i>Tillandsia recurvata</i>	
Southern needleleaf	<i>Tillandsia setacea</i>	
Spanish moss	<i>Tillandsia usneoides</i>	
Giant airplant (Giant wild pine)	<i>Tillandsia utriculata</i>	MEH, HH
Eastern poison ivy	<i>Toxicodendron radicans</i>	
Longleaf spiderwort	<i>Tradescantia roseolens</i>	
Confederate jasmine	<i>Trachelospermum jasminoides</i>	
Virginia marsh St. John's-wort	<i>Triadenum virginicum</i>	
Forked bluecurls	<i>Trichostema dichotomum</i>	
Eastern gammagrass	<i>Tripsacum dactyloides</i>	
Southern cattail	<i>Typha domingensis</i>	

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Kissimmee Prairie Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
American elm (Florida elm)	<i>Ulmus americana</i>	
Caesarweed*	<i>Urena lobata</i>	
Paragrass*	<i>Urochloa mutica</i>	
Broadleaf signalgrass	<i>Urochloa platyphylla</i>	
Browntop millet (Dixie signalgrass)	<i>Urochloa ramosa</i>	
Heartleaf nettle	<i>Urtica chamaedryoides</i>	
Horned bladderwort	<i>Utricularia cornuta</i>	
Humped bladderwort	<i>Utricularia gibba</i>	
Floating bladderwort	<i>Utricularia inflata</i>	
Southern bladderwort	<i>Utricularia juncea</i>	
Eastern purple bladderwort	<i>Utricularia purpurea</i>	
Lavender bladderwort	<i>Utricularia resupinata</i>	
Zigzag bladderwort	<i>Utricularia subulata</i>	
Highbush blueberry	<i>Vaccinium corymbosum</i>	
Darrow's blueberry	<i>Vaccinium darrowii</i>	
Shiny blueberry	<i>Vaccinium myrsinites</i>	
Deerberry	<i>Vaccinium stamineum</i>	
Brazilian vervain*	<i>Verbena brasiliensis</i>	
Sandpaper vervain	<i>Verbena scabra</i>	
White crownbeard (Frostweed)	<i>Verbesina virginica</i>	
Walter's (Small-leaf) viburnum	<i>Viburnum obovatum</i>	
Bog white violet	<i>Viola lanceolata</i>	
Early blue violet	<i>Viola palmata</i>	
Primroseleaf violet	<i>Viola primulifolia</i>	
Common Blue violet	<i>Viola sororia</i>	
Summer grape	<i>Vitis aestivalis</i>	
Muscadine	<i>Vitis rotundifolia</i>	
Shoestring fern	<i>Vittaria lineata</i>	
Netted chain fern	<i>Woodwardia areolata</i>	
Virginia chain fern	<i>Woodwardia virginica</i>	
Tallow wood (Hog plum)	<i>Ximenia americana</i>	
Coastalplain yelloweyed grass	<i>Xyris ambigua</i>	
Shortleaf yelloweyed grass	<i>Xyris brevifolia</i>	
Limestone yelloweyed grass	<i>Xyris calcicola</i>	
Carolina yelloweyed grass	<i>Xyris caroliniana</i>	
Florida yelloweyed grass	<i>Xyris difformis</i> var. <i>floridana</i>	
Elliott's yelloweyed grass	<i>Xyris elliotii</i>	
Fringed yelloweyed grass	<i>Xyris fimbriata</i>	
Savannah yelloweyed grass	<i>Xyris flabelliformis</i>	
Richard's yelloweyed grass	<i>Xyris jupicai</i>	
Tall yelloweyed grass	<i>Xyris platylepis</i>	
Small's yelloweyed grass	<i>Xyris smalliana</i>	
Spanish bayonet (Aloe yucca)	<i>Yucca aloifolia</i>	
Wild lime (Lime pricklyash)	<i>Zanthoxylum fagara</i>	
Treat's zephyrlily	<i>Zephyranthes atamasca</i> var. <i>treatiae</i>	WP
Redmargin (Simpson's) zephyrlily	<i>Zephyranthes simpsonii</i>	WP

*Non-native species

Kissimmee Prairie Preserve State Park Plants

Common Name	<i>Scientific Name</i>	Primary Habitat Codes (for imperiled species)
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Soldier's orchid (Lawn orchid)	<i>Zeuxine strateumatica</i>	
Crowpoison	<i>Zigadenus densus</i>	

Kissimmee Prairie Preserve State Park Animals

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

Spiders

Orb weaver spider	<i>Acacesia hamate</i>	
Grass spider	<i>Aglenopsis</i> spp.	
Twinflagged jumping spider	<i>Anasaltis canosa</i>	
Black-and-yellow argiope	<i>Argiope aurantia</i>	
Black-footed yellow sac spider	<i>Cheiracanthium inclusum</i>	
Tropical orb-weaver spider	<i>Eriophora ravilla</i>	
Jumping spider	<i>Eris flava</i>	
Humpbacked orbweaver	<i>Eustala anastera</i>	
Small orb-weaver	<i>Eustala cepina</i>	
Spiny-backed orbweaver	<i>Gasteracantha cancriformis</i>	
Orb-weaver spider	<i>Gea heptagon</i>	
Jumping spider	<i>Habronattus brunneus</i>	
Black and white jumper	<i>Habronattus trimaculatus</i>	
Long jawed jumping spider	<i>Hentzia grenada</i>	
Jumping spider	<i>Hentzia mitrata</i>	
Spotted orb-weaver spider	<i>Larinia directa</i>	
Magnolia green jumper	<i>Lyssomanes viridis</i>	
Maevia jumper	<i>Maevia michelsoni</i>	
Lined orbweaver	<i>Mangora gibberosa</i>	
Tuftlegged orbweaver	<i>Mangora placida</i>	
Lilypad stalker	<i>Marpissa bina</i>	
Pike slender jumper	<i>Marpissa pikei</i>	
Basilica orbweaver	<i>Mecynogea lemniscata</i>	
Gray wall jumper	<i>Menemerus bivittatus</i>	
Jumping spider	<i>Metacyrba floridana</i>	
Furrow orb-weaver spider	<i>Metazygia wittfeldae</i>	
Arrow-shaped micrathena	<i>Micrathena sagittata</i>	
Swift crab spider	<i>Misumenops celer</i>	
Tiny jumper	<i>Naphrys xerophila</i>	
Arabesque orbweaver	<i>Neoscona arabesca</i>	
Spotted orb-weaver spider	<i>Neoscona crucifera</i>	
Ant-like jumping spider	<i>Peckhamia americana</i>	
Jumping spider	<i>Pelegrina galathea</i>	
Cardinal jumper	<i>Phidippus cardinalis</i>	
Jumping spider	<i>Phidippus clarus</i>	
Jumping spider	<i>Phidippus otiosus</i>	
Jumping spider	<i>Phidippus regius</i>	
Tan jumping spider	<i>Platycryptus undatus</i>	
Jumping spider*	<i>Plexippus paykulli</i>	
Jumping spider	<i>Sarinda hentzi</i>	
Orb-weaver spider	<i>Scoloderus nigriceps</i>	
Jumping spider	<i>Synagalese noxiosa</i>	
Ant-mimic spider	<i>Synemosyna formica</i>	

*Non-native species

Kissimmee Prairie Preserve State Park Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Jumping spider	<i>Synemosyna petrunkevitchi</i>	
Jumping spider	<i>Thiodina puerperal</i>	
Jumping spider	<i>Thiodina sylvana</i>	
Arrowhead spider	<i>Verrucosa arenata</i>	
Hammerjawed jumper	<i>Zygoballus rufipes</i>	
Crustaceans		
Eastern grass shrimp	<i>Palaemonetes paludosus</i>	
Slough crayfish	<i>Procambarus fallax</i>	
Dragonflies		
Common green darner	<i>Anax junius</i>	
Four-spotted pennant	<i>Brachymesia gravida</i>	
Blue-faced darner	<i>Coryphaeschna adnexa</i>	
Regal darner	<i>Coryphaeschna ingens</i>	
Atlantic bluet	<i>Enallagma doubledayi</i>	
Swamp darner	<i>Epiaeschna heros</i>	
Common baskettail	<i>Epitheca cynosure</i>	
Great pondhawk	<i>Erythemis vesiculosa</i>	
Little blue dragonlet	<i>Erythrodiplax minuscula</i>	
Band-winged dragonlet	<i>Erythrodiplax umbrata</i>	
Twilight darner	<i>Gynacantha nervosa</i>	
Citrine forktail	<i>Ischnura hastate</i>	
Rambur's forktail	<i>Ischnura ramburii</i>	
Golden-winged skimmer	<i>Libellula auripennis</i>	
Bar-winged skimmer	<i>Libellula axilena</i>	
Slaty skimmer	<i>Libellula incesta</i>	
Great blue skimmer	<i>Libellula vibrans</i>	
Hyacinth glider	<i>Miathyria marcella</i>	
Roseate skimmer	<i>Orthemis ferruginea</i>	
Carolina saddlebags	<i>Tamea carolina</i>	
Red saddlebags	<i>Tamea onusta</i>	
Grasshoppers		
Long-headed toothpick grasshopper	<i>Achurum carinatum</i>	
Linear-winged grasshopper	<i>Aptenopedes sphenarioides</i>	
Southern green-striped grasshopper	<i>Chortophaga australior</i>	
Short-winged green grasshopper	<i>Dichromorpha viridis</i>	
Little wingless grasshopper	<i>Gymnoscirtetes pusillus</i>	
Keeler's spur-throat grasshopper	<i>Melanoplus keeleri</i>	
Spotted-winged grasshopper	<i>Orphulella pelidna</i>	
Olive-green swamp grasshopper	<i>Paroxya clavuliger</i>	
Grasshopper	<i>Schistocerca americana</i>	
Grasshopper	<i>Schistocerca damnifica</i>	

Kissimmee Prairie Preserve State Park Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
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True Bugs

Aquatic bug	<i>Trichocorixa louisianae</i>	
Water measurer	<i>Hydrometra australis</i>	
Water measurer	<i>Hydrometra martini</i>	
Aquatic bug	<i>Microvelia</i> spp.	
Water boatman*	<i>Synaptonecta issa</i>	

Beetles

Predacious diving beetle	<i>Anodocheilus exiguous</i>	
S-banded tiger beetle	<i>Cicindela trifasciata ascendens</i>	
Predaceous diving beetle	<i>Copelatus</i> spp.	
Predaceous diving beetle	<i>Cybister</i> spp.	
Burrowing water beetle	<i>Hydrocanthus oblongus</i>	
Water scavenger beetle	<i>Hydrochus simplex</i>	
Mexican bromeliad weevil*	<i>Metamasius callizona</i>	
Predaceous diving beetle	<i>Neobidessus pullus</i>	
Water scavenger	<i>Paracymus</i> spp.	
Beetle	<i>Peltodytes floridensis</i>	
Beetle	<i>Rishihydroius callosus</i>	
Burrowing water beetle	<i>Suphisellus gibbulus</i>	
Diving beetle	<i>Thermonectus basillaris</i>	
Water scavenger beetle	<i>Tropisternus blatchleyi</i>	
Water scavenger beetle	<i>Tropisternus collaris</i>	
Water scavenger beetle	<i>Tropisternus lateralis nimbatus</i>	

Butterflies and Moths

Gulf fritillary	<i>Agraulis vanillae nigrior</i>	
White peacock	<i>Anartia jatrophae guantanamo</i>	
Delaware skipper	<i>Anatrytone logan</i>	
Least skipper	<i>Ancyloxypha numitor</i>	
Monk skipper	<i>Asbolis capucinus</i>	
Great southern white	<i>Ascia monuste</i>	
Hackberry emperor	<i>Asterocampa celtis alicia</i>	
Tawny emperor	<i>Asterocampa clyton</i>	
Sachem	<i>Atalopedes campestris</i>	
Great purple hairstreak	<i>Atlides halesus</i>	
Arogos skipper	<i>Atrytone arogos</i>	
Florida dusted skipper	<i>Atrytonopsis hianna loammi</i>	
Pipevine swallowtail	<i>Battus philenor</i>	
Polydamas swallowtail	<i>Battus polydamas lucayas</i>	
Little metalmark	<i>Calephelis virginensis</i>	
Brazilian skipper	<i>Calpodus ethlius</i>	
Red-banded hairstreak	<i>Calycopis cecrops</i>	
Southern dogface butterfly	<i>Colias cesonia</i>	
Orange sulphur	<i>Colias eurytheme</i>	
Southern skipperling	<i>Copaeodes minimus</i>	

*Non-native species

Kissimmee Prairie Preserve State Park Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Three-spotted skipper	<i>Cymaenes tripunctus</i>	
Soldier	<i>Danaus eresimus</i>	
Queen butterfly	<i>Danaus gilippus berenice</i>	
Monarch	<i>Danaus plexippus</i>	
Imperial moth	<i>Eacles imperialis</i>	
Silver-spotted skipper	<i>Epargyreus clarus</i>	
Horace's duskywing	<i>Erynnis horatius</i>	
Juvenal's duskywing	<i>Erynnis juvenalis</i>	
Zaracco duskywing	<i>Erynnis zarucco</i>	
Palmetto skipper	<i>Euphyes arpa</i>	
Berry's skipper	<i>Euphyes berryi</i>	
Palatka skipper	<i>Euphyes pilatka</i>	
Dun skipper	<i>Euphyes vestris</i>	
Variegated fritillary	<i>Euptoieta claudia</i>	
Barred yellow (sulphur)	<i>Eurema daira</i>	
Little yellow butterfly	<i>Eurema lisa</i>	
Sleepy orange	<i>Eurema nicippe</i>	
Zebra swallowtail	<i>Eurytides marcellus floridensis</i>	
Zebra heliconian	<i>Heliconius charithonia</i>	
Julia heliconian	<i>Heliconius julia</i>	
Ceraunus blue	<i>Hemiargus ceraunus antibubastus</i>	
Carolina satyr	<i>Hermeuptychia sosybius</i>	
Meske's skipper	<i>Hesperia meskei</i>	
Fiery skipper	<i>Hylephila phyleus</i>	
Common buckeye	<i>Junonia coenia</i>	
Clouded skipper	<i>Lerema accius</i>	
Eufala skipper	<i>Lerodea eufala</i>	
American snout	<i>Libytheana carinenta</i>	
Viceroy	<i>Limenitis archippus</i>	
Gray ministreak	<i>Ministymon azia</i>	
Cassius blue	<i>Leptotes cassius</i>	
Swarthy skipper	<i>Nastra lherminier</i>	
Neamathla skipper	<i>Nastra neamathla</i>	
Dainty sulphur	<i>Nathalis iole</i>	
Georgia satyr	<i>Neonympha areolata</i>	
Twin-spot skipper	<i>Oligoria maculate</i>	
Ocola skipper	<i>Panoquina ocola</i>	
Giant swallowtail	<i>Papilio cresphontes</i>	
Eastern tiger swallowtail	<i>Papilio glaucus australis</i>	
Palamedes swallowtail	<i>Papilio palamedes</i>	
Black swallowtail	<i>Papilio polyxenes asterius</i>	
Spice-bush swallowtail	<i>Papilio troilus ilioneus</i>	
White M hairstreak	<i>Parrhasius m-album</i>	
Large orange sulfur	<i>Phoebis agarithe</i>	
Orange-barred sulfur	<i>Phoebis philea</i>	
Cloudless sulphur butterfly	<i>Phoebis sennae eubule</i>	

*Non-native species

Kissimmee Prairie Preserve State Park Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
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Cuban crescent	<i>Phyciodes frisia</i>	
Phaon crescent butterfly	<i>Phyciodes phaon</i>	
Pearl crescent	<i>Phyciodes tharos</i>	
European cabbage butterfly	<i>Pieris rapae</i>	
Aaron's skipper	<i>Poanes aaroni</i>	
Baracoa skipper	<i>Polites baracoa</i>	
Tawny-edged skipper	<i>Polites themistocles</i>	
Whirlabout	<i>Polites vibex</i>	
Question mark butterfly	<i>Polygonia interrogationis</i>	
Checkered white butterfly	<i>Pontia protodice</i>	
Buckeye butterfly	<i>Precis coenia</i>	
Byssus skipper	<i>Problema byssus</i>	
Common checkered-skipper	<i>Pyrgus communis/albescens</i>	
Tropical checkered-skipper	<i>Pyrgus oileus</i>	
Southern oak hairstreak	<i>Satyrium favonius</i>	
Oak hairstreak	<i>Satyrium liparops</i>	
Hayhurst's scallopwing	<i>Staphylus hayhurstii</i>	
Gray hairstreak	<i>Strymon melinus melinus</i>	
Southern cloudywing	<i>Thorybes bathyllus</i>	
Confused cloudywing	<i>Thorybes confusis</i>	
Northern cloudywing	<i>Thorybes pylades</i>	
Dorantes longtail	<i>Urbanus dorantes</i>	
Long-tailed skipper	<i>Urbanus proteus</i>	
Red admiral butterfly	<i>Vanessa atalanta rubria</i>	
Painted lady	<i>Vanessa cardui</i>	
American lady	<i>Vanessa virginiensis</i>	
Southern broken-dash	<i>Wallengrenia otho</i>	
Northern broken-dash	<i>Wallengrenia egeremet</i>	
Tersa moth	<i>Xylophanes tersa</i>	

Flies

Midge	<i>Culicoides insignis</i>	
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Bees and Ants

Leaf-cutting bee	<i>Megachile brevis</i>	
Green metallic bee	<i>Agapostemon splendens</i>	
Spine-waisted ant	<i>Aphaenogaster lamellidens</i>	
Sweat bee	<i>Augochlorella aurata</i>	
Sweat bee	<i>Augochloropsis metallica</i>	
Ant	<i>Brachymyrmex depilis</i>	
Ant	<i>Brachymyrmex minutus</i>	
Ant	<i>Brachymyrmex obscurior</i>	
Rover ant*	<i>Brachymyrmex patagonicus</i>	
Carpenter ant	<i>Camponotus castaneus</i>	
Carpenter ant	<i>Camponotus decipiens</i>	
Carpenter ant	<i>Camponotus floridanus</i>	

*Non-native species

Kissimmee Prairie Preserve State Park Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Carpenter ant	<i>Camponotus impressus</i>	
Carpenter ant	<i>Camponotus insequelis (tortuganis)</i>	
Carpenter ant	<i>Camponotus snellingi</i>	
Carpenter ant	<i>Camponotus socius</i>	
Florida carpenter ant	<i>Camponotus tortuganus</i>	
African snt*	<i>Cardiocondyla emeryi</i>	
Tramp ant	<i>Cardiocondyla obscurior</i>	
Acrobat ant	<i>Crematogaster ashmeadi</i>	
Acrobat ant	<i>Crematogaster atkinsoni</i>	
Acrobat ant	<i>Crematogaster floridanus</i>	
Acrobat ant	<i>Crematogaster pilosa</i>	
Ant	<i>Cyphomyrmex rimosus</i>	
Pyramid ant	<i>Dorymyrmex bossutus</i>	
Pyramid ant	<i>Dorymyrmex bureni</i>	
Sweat bee	<i>Evylaeus pectoralis</i>	
Carpenter ant	<i>Forelius pruinosis</i>	
Ant	<i>Formica archboldi</i>	
Ant	<i>Formica pallidefulva</i>	
Sweat bee	<i>Halictus poeyi</i>	
Ant	<i>Hypoponera opaciceps</i>	
Ant	<i>Hypoponera opacior</i>	
Sweat bee	<i>Lasioglossum coreopsis</i>	
sweat bee	<i>Lasioglossum reticulatus</i>	
sweat bee	<i>Lasioglossum tegularis</i>	
Ant	<i>Leptogenys manni</i>	
Bicolored trailing ant*	<i>Monomorium floricola</i>	
Ant	<i>Odontomachus brunneus</i>	
Ant	<i>Odontomachus ruginodis</i>	
Ant	<i>Nylanderia arenivaga</i>	
Crazy ant	<i>Nylanderia longicornis</i>	
Big-headed ant	<i>Pheidole dentate</i>	
Ant	<i>Pheidole dentigula</i>	
Ant	<i>Pheidole flavens</i>	
Ant	<i>Pheidole floridana</i>	
Ant	<i>Pheidole littoralis</i>	
Ant	<i>Pheidole moerens</i>	
Florida harvester ant	<i>Pogonomyrmex badius</i>	
Ant	<i>Pseudomyrmex cubaensis</i>	
Ant	<i>Pseudomyrmex ejectus</i>	
Ant	<i>Pseudomyrmex elongates</i>	
Elongate twig ant	<i>Pseudomyrmex gracilis</i>	
Ant	<i>Pseudomyrmex pallidus</i>	
Ant	<i>Pseudomyrmex seminole</i>	
Ant	<i>Pseudomyrmex simplex</i>	
Fire ant*	<i>Solenopsis invicta</i>	
Ant	<i>Solenopsis picta</i>	

*Non-native species

Kissimmee Prairie Preserve State Park Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Ant	<i>Tapinoma litorale</i>	
Odorous house ant	<i>Tapinoma sessile</i>	
White-footed ant*	<i>Technomyrmex defecilis</i>	
Ant	<i>Trachymyrmex septentrionalis</i>	

VERTEBRATES

AMPHIBIANS

Amphiumas and Sirens

Two-toed amphiuma	<i>Amphiuma means</i>	
Everglades dwarf siren	<i>Pseudobranchius axanthus belli</i>	

Frogs and Toads

Florida cricket frog	<i>Acris gryllus dorsalis</i>	
Oak toad	<i>Anaxyrus quercicus</i>	
Southern toad	<i>Anaxyrus terrestris</i>	
Greenhouse frog*	<i>Eleutherodactylus planirostris</i>	
Eastern narrowmouth toad	<i>Gastrophryne carolinensis</i>	
Green treefrog	<i>Hyla cinerea</i>	
Pine woods treefrog	<i>Hyla femoralis</i>	
Barking treefrog	<i>Hyla gratiosa</i>	
Squirrel treefrog	<i>Hyla squirella</i>	
Gopher frog	<i>Lithobates capito</i>	DP, WP
Pig frog	<i>Lithobates grylio</i>	
Southern leopard frog	<i>Lithobates sphenoccephalus</i>	
Cuban treefrog*	<i>Osteopilus septentrionalis</i>	
Southern chorus frog	<i>Pseudacris nigrita</i>	
Florida chorus frog	<i>Pseudacris nigrita verrucosa</i>	

REPTILES

Crocodylians

American alligator	<i>Alligator mississippiensis</i>	BM, DM, FM, FS, HH, SLO, BST
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Turtles

Florida softshell	<i>Apalone ferox</i>	
Florida snapping turtle	<i>Chelydra serpentina osceola</i>	
Chicken turtle	<i>Deirochelys reticulata chrysea</i>	
Gopher tortoise	<i>Gopherus polyphemus</i>	DP, SC
Striped mud turtle	<i>Kinosternon bauri</i>	
Eastern mud turtle	<i>Kinosternon subrubrum</i>	
Florida cooter	<i>Pseudemys floridana</i>	
Florida redbelly turtle	<i>Pseudemys nelson</i>	
Common musk turtle (Stinkpot)	<i>Sternotherus odoratus</i>	

Kissimmee Prairie Preserve State Park Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Florida box turtle	<i>Terrapene carolina bauri</i>	
Eastern box turtle	<i>Terrapene carolina carolina</i>	
Lizards		
African redhead agama*	<i>Agama agama</i>	
Green anole	<i>Anolis carolinensis</i>	
Six-lined racerunner	<i>Aspidoscelis sexlineatus</i>	
Five-lined skink	<i>Eumeces fasciatus</i>	
Southeastern five-lined skink	<i>Eumeces inexpectatus</i>	
Indo-Pacific house gecko*	<i>Hemidactylus garnotii</i>	
Northern curlytail lizard*	<i>Leiocephalus carinatus armouri</i>	
Brown anole*	<i>Norops sagrei</i>	
Island glass lizard	<i>Ophisaurus compressus</i>	
Eastern glass lizard	<i>Ophisaurus ventralis</i>	
Blue-tailed mole skink	<i>Plestiodon egregius onocrepis</i>	
Southeastern five-lined skink	<i>Plestiodon inexpectatus</i>	
Eastern fence lizard	<i>Sceloporus undulatus</i>	
Ground skink	<i>Scincella lateralis</i>	
Snakes		
Florida cottonmouth (Moccasin)	<i>Agkistrodon piscivorus conanti</i>	
Southern black racer	<i>Coluber constrictor priapus</i>	
Eastern diamondback rattlesnake	<i>Crotalus adamanteus</i>	
Ringneck snake	<i>Diadophis punctatus punctatus</i>	
Eastern indigo snake	<i>Drymarchon couperi</i>	DP, MEH
Corn snake	<i>Elaphe guttata guttata</i>	
Eastern mud snake	<i>Farancia abacura</i>	
Southern mole kingsnake	<i>Lampropeltis calligaster occipitolineata</i>	
Scarlet kingsnake	<i>Lampropeltis elapsoides</i>	
Common (Florida) kingsnake	<i>Lampropeltis getula floridana</i>	
Eastern coral snake	<i>Micrurus fulvius</i>	
Florida water snake	<i>Nerodia fasciata pictiventris</i>	
Florida green water snake	<i>Nerodia floridana</i>	
Brown water snake	<i>Nerodia taxispilota</i>	
Rough green snake	<i>Opheodrys aestivus carinatus</i>	
Rat snake	<i>Pantherophis alleghaniensis</i>	
Corn (Red rat) snake	<i>Pantherophis guttatus</i>	
Florida pine snake	<i>Pituophis melanoleucus mugitus</i>	DP
Reticulated python	<i>Python reticulatus</i>	
Striped crayfish snake	<i>Regina alleni</i>	
Brahminy blind snake*	<i>Rhamphotyphlops brahmini</i>	
Southern Florida swamp snake	<i>Seminatrix pygaea cyclas</i>	
Dusky pigmy rattlesnake	<i>Sistrurus miliarius barbouri</i>	
Florida brownsnake	<i>Storeria victa</i>	
Peninsula ribbon snake	<i>Thamnophis sauritus sackeni</i>	
Eastern garter snake	<i>Thamnophis sirtalis sirtalis</i>	

*Non-native species

Kissimmee Prairie Preserve State Park Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
BIRDS		
Ducks and Geese		
Wood duck	<i>Aix sponsa</i>	
American wigeon	<i>Anas americana</i>	
Blue-winged teal	<i>Anas discors</i>	
Mottled duck	<i>Anas fulvigula</i>	
Black-bellied whistling-duck	<i>Dendrocygna autumnalis</i>	
Fulvous whistling-duck	<i>Dendrocygna bicolor</i>	
Hooded merganser	<i>Lophodytes cucullatus</i>	
Grebes		
Pied-billed grebe	<i>Podilymbus podiceps</i>	
Turkey and Quail		
Northern bobwhite	<i>Colinus virginianus</i>	
Wild turkey	<i>Meleagris gallopavo</i>	
Storks		
Wood stork	<i>Mycteria americana</i>BM,DM,FM,SLM,OF
Cormorants		
Double-crested cormorant	<i>Phalacrocorax auritus</i>	
Anhingas		
Anhinga	<i>Anhinga anhinga</i>	
Pelicans		
American white pelican	<i>Pelecanus erythrorhynchos</i>	
Bitterns, Herons, and Egrets		
Great egret	<i>Ardea alba</i>	
Great blue heron	<i>Ardea herodias</i>	
American bittern	<i>Botaurus lentiginosus</i>	
Cattle egret	<i>Bubulcus ibis</i>	
Green heron	<i>Butorides virescens</i>	
Little blue heron	<i>Egretta caerulea</i>BM,DM,FM,FS,SLO,SLM,BST
Snowy egret	<i>Egretta thula</i>	
Tricolored heron	<i>Egretta tricolor</i>BM,DM,FM,FS,SLO,SLM,BST
Least bittern	<i>Ixobrychus exilis</i>	
Yellow-crowned night-heron	<i>Nyctanassa violacea</i>	
Black-crowned night-heron	<i>Nycticorax nycticorax</i>	
Ibises		
White ibis	<i>Eudocimus albus</i>	
Roseate spoonbill	<i>Platalea ajaja</i>BM,OF

*Non-native species

Kissimmee Prairie Preserve State Park Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Glossy ibis	<i>Plegadis falcinellus</i>	
Vultures		
Turkey vulture	<i>Cathartes aura</i>	
Black vulture	<i>Coragyps atratus</i>	
Ospreys		
Osprey	<i>Pandion haliaetus</i>	
Hawks, Kites, and Eagles		
Cooper's hawk	<i>Accipiter cooperii</i>	
Sharp-shinned hawk	<i>Accipiter striatus</i>	
Short-tailed hawk	<i>Buteo brachyurus</i>	DP,WF
Red-tailed hawk	<i>Buteo jamaicensis</i>	
Red-shouldered hawk	<i>Buteo lineatus</i>	
Broad-winged hawk	<i>Buteo platypterus</i>	
Northern harrier	<i>Circus cyaneus</i>	
Swallow-tailed kite	<i>Elanoides forficatus</i>	MTC,OF
White-tailed kite	<i>Elanus leucurus</i>	DP,MF,OF
Bald eagle	<i>Haliaeetus leucocephalus</i>	MTC,OF
Snail kite	<i>Rostrhamus sociabilis</i>	FM
Rails		
Yellow rail	<i>Coturnicops noveboracensis</i>	
American coot	<i>Fulica americana</i>	
Common gallinule	<i>Gallinula chloropus</i>	
Purple gallinule	<i>Porphyryula martinica</i>	
Sora	<i>Porzana carolina</i>	
King rail	<i>Rallus elegans</i>	
Virginia rail	<i>Rallus limicola</i>	
Limpkins		
Limpkin	<i>Aramus guarauna</i>	
Cranes		
Florida sandhill crane	<i>Antigone canadensis pratensis</i>	BM,DM,FM,WP,OF
Whooping crane	<i>Grus americana</i>	BM,DM,FM,WP,OF
Plovers		
Semipalmated plover	<i>Charadrius semipalmatus</i>	
Killdeer	<i>Charadrius vociferous</i>	
American golden-plover	<i>Pluvialis dominica</i>	
Sandpipers		
Spotted sandpiper	<i>Actitis macularius</i>	

Kissimmee Prairie Preserve State Park Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Upland sandpiper	<i>Bartramia longicauda</i>	
Stilt sandpiper	<i>Calidris himantopus</i>	
Pectoral sandpiper	<i>Calidris melanotos</i>	
Least sandpiper	<i>Calidris minutilla</i>	
Semipalmated sandpiper	<i>Calidris pusilla</i>	
Wilson's snipe	<i>Gallinago delicata</i>	
Black-necked stilt	<i>Himantopus mexicanus</i>	
Long-billed dowitcher	<i>Limnodromus scolopaceus</i>	
Lesser yellowlegs	<i>Tringa flavipes</i>	
Greater yellowlegs	<i>Tringa melanoleuca</i>	
Solitary sandpiper	<i>Tringa solitaria</i>	
Gulls and Terns		
Laughing gull	<i>Leucophaeus atricilla</i>	
Forster's tern	<i>Sterna forsteri</i>	
Sooty tern	<i>Sterna fuscata</i>OF (accidental)	
Least tern	<i>Sternula antillarum</i>	
Doves and Pigeons		
Rock pigeon*	<i>Columba livia</i>	
Common ground-dove	<i>Columbina passerina</i>	
Eurasian collared-dove*	<i>Streptopelia decaocto</i>	
White-winged dove	<i>Zenaida asiatica</i>	
Mourning dove	<i>Zenaida macroura</i>	
Parrots		
Monk parakeet	<i>Myiopsitta monachus</i>	
Cuckoos		
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	
Barn Owls		
Barn owl	<i>Tyto alba</i>	
Owls		
Short-eared owl	<i>Asio flammeus</i>	
Burrowing owl	<i>Athene cunicularia floridana</i>DP,PI	
Great horned owl	<i>Bubo virginianus</i>	
Eastern screech-owl	<i>Megascops asio</i>	
Barred owl	<i>Strix varia</i>	
Nightjars		
Chuck-will's-widow	<i>Caprimulgus carolinensis</i>	
Whip-poor-will	<i>Caprimulgus vociferus</i>	
Common nighthawk	<i>Chordeiles minor</i>	

*Non-native species

Kissimmee Prairie Preserve State Park Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Swifts		
Chimney swift	<i>Chaetura pelagica</i>	
Hummingbirds		
Ruby-throated hummingbird	<i>Archilochus colubris</i>	
Kingfishers		
Belted kingfisher	<i>Ceryle alcyon</i>	
Woodpeckers		
Northern flicker	<i>Colaptes auratus</i>	
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>	
Falcons		
Crested caracara	<i>Caracara cheriway</i>	DP,PI
Merlin	<i>Falco columbarius</i>	DP,OF
Peregrine falcon	<i>Falco peregrinus</i>	DP,OF
American kestrel	<i>Falco sparverius</i>	
Tyrant flycatchers		
Eastern wood-pewee	<i>Contopus virens</i>	
Yellow-bellied flycatcher	<i>Empidonax flaviventris</i>	
Willow flycatcher	<i>Empidonax traillii</i>	
Acadian flycatcher	<i>Empidonax vireescens</i>	
Great crested flycatcher	<i>Myiarchus crinitus</i>	
Eastern phoebe	<i>Sayornis phoebe</i>	
Scissor-tailed flycatcher	<i>Tyrannus forficatus</i>	
Eastern kingbird	<i>Tyrannus tyrannus</i>	
Western kingbird	<i>Tyrannus verticalis</i>	
Shrikes		
Loggerhead shrike	<i>Lanius ludovicianus</i>	
Vireos		
Yellow-throated vireo	<i>Vireo flavifrons</i>	
White-eyed vireo	<i>Vireo griseus</i>	
Red-eyed vireo	<i>Vireo olivaceus</i>	
Blue-headed vireo	<i>Vireo solitarius</i>	
Jays and Crows		
Florida scrub-jay	<i>Aphelocoma coerulescens</i>	SCF
American crow	<i>Corvus brachyrhynchos</i>	

Kissimmee Prairie Preserve State Park Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Fish crow	<i>Corvus ossifragus</i>	
Blue jay	<i>Cyanocitta cristata</i>	
Swallows		
Barn swallow	<i>Hirundo rustica</i>	
Cliff swallow	<i>Petrochelidon pyrrhonota</i>	
Purple martin	<i>Progne subis</i>	
Bank swallow	<i>Riparia riparia</i>	
Northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>	
Tree swallow	<i>Tachycineta bicolor</i>	
Titmice and Chickadees		
Tufted titmouse	<i>Baeolophus bicolor</i>	
Wrens		
Marsh wren	<i>Cistothorus palustris</i>	
Sedge wren	<i>Cistothorus platensis</i>	
Carolina wren	<i>Thryothorus ludovicianus</i>	
House wren	<i>Troglodytes aedon</i>	
Gnatcatchers		
Blue-gray gnatcatcher	<i>Polioptila caerulea</i>	
Old world flycatchers		
Ruby-crowned kinglet	<i>Regulus calendula</i>	
Thrushes		
Veery	<i>Catharus fuscescens</i>	
Hermit thrush	<i>Catharus guttatus</i>	
Gray-cheeked thrush	<i>Catharus minimus</i>	
Swainson's thrush	<i>Catharus ustulatus</i>	
Eastern bluebird	<i>Sialia sialis</i>	
American robin	<i>Turdus migratorius</i>	
Mimic thrushes		
Gray catbird	<i>Dumetella carolinensis</i>	
Northern mockingbird	<i>Mimus polyglottos</i>	
Brown thrasher	<i>Toxostoma rufum</i>	
Starlings		
European starling*	<i>Sturnus vulgaris</i>	
Pipits		
American pipit	<i>Anthus rubescens</i>	

*Non-native species

Kissimmee Prairie Preserve State Park Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Waxwings		
Cedar waxwing	<i>Bombycilla cedrorum</i>	
Wood-warblers		
Kentucky warbler	<i>Geothlypis formosus</i>	
Common yellowthroat	<i>Geothlypis trichas</i>	
Worm-eating warbler	<i>Helmitheros vermivorum</i>	
Yellow-breasted chat	<i>Icteria virens</i>	
Swainson's warbler	<i>Limnothlypis swainsonii</i>	
Black-and-white warbler	<i>Mniotilta varia</i>	
Orange-crowned warbler	<i>Oreothlypis celata</i>	
Northern waterthrush	<i>Parkesia noveboracensis</i>	
Prothonotary warbler	<i>Protonotaria citrea</i>	
Ovenbird	<i>Seiurus aurocapilla</i>	
Northern parula	<i>Setophaga americana</i>	
Black-throated blue warbler	<i>Setophaga caerulescens</i>	
Bay-breasted warbler	<i>Setophaga castanea</i>	
Hooded warbler	<i>Setophaga citrina</i>	
Yellow-rumped warbler	<i>Setophaga coronata</i>	
Prairie warbler	<i>Setophaga discolor</i>	
Yellow-throated warbler	<i>Setophaga dominica</i>	
Blackburnian warbler	<i>Setophaga fusca</i>	
Magnolia warbler	<i>Setophaga magnolia</i>	
Palm warbler	<i>Setophaga palmarum</i>	
Chestnut-sided warbler	<i>Setophaga pensylvanica</i>	
Yellow warbler	<i>Setophaga petechial</i>	
Pine warbler	<i>Setophaga pinus</i>	
American redstart	<i>Setophaga ruticilla</i>	
Blackpoll warbler	<i>Setophaga striata</i>	
Cape May warbler	<i>Setophaga tigrina</i>	
Black-throated green warbler	<i>Setophaga virens</i>	
Blue-winged warbler	<i>Vermivora cyanoptera</i>	
Towhees and Sparrows		
Henslow's sparrow	<i>Ammodramus henslowii</i>	
LeConte's sparrow	<i>Ammodramus leconteii</i>	
Florida grasshopper sparrow	<i>Ammodramus savannarum floridanus</i>	
DP,WP	
Eastern grasshopper sparrow	<i>Ammodramus savannarum pratensis</i>	
Lark sparrow	<i>Chondestes grammacus</i>	
Swamp sparrow	<i>Melospiza georgiana</i>	
Lincoln's sparrow	<i>Melospiza lincolni</i>	
Savannah sparrow	<i>Passerculus sandwichensis</i>	
Bachman's sparrow	<i>Peucaea aestivalis</i>	
Eastern towhee	<i>Pipilo erythrophthalmus</i>	
Vesper sparrow	<i>Poocetes gramineus</i>	

*Non-native species

Kissimmee Prairie Preserve State Park Animals

Common Name	<i>Scientific Name</i>	Primary Habitat Codes (for imperiled species)
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Chipping sparrow	<i>Spizella passerina</i>	
Field sparrow	<i>Spizella pusilla</i>	
White-crowned sparrow	<i>Zonotrichia leucophrys</i>	

Cardinals, Tanagers, and Buntings

Northern cardinal	<i>Cardinalis cardinalis</i>	
Blue grosbeak	<i>Passerina caerulea</i>	
Painted bunting	<i>Passerina ciris</i>	
Indigo bunting	<i>Passerina cyanea</i>	
Rose-breasted grosbeak	<i>Pheucticus ludovicianus</i>	
Summer tanager	<i>Piranga rubra</i>	

Blackbirds and Orioles

Red-winged blackbird	<i>Agelaius phoeniceus</i>	
Bobolink	<i>Dolichonyx oryzivorus</i>	
Orchard oriole	<i>Icterus spurius</i>	
Brown-headed cowbird	<i>Molothrus ater</i>	
Shiny cowbird	<i>Molothrus bonariensis</i>	
Boat-tailed grackle	<i>Quiscalus major</i>	
Common grackle	<i>Quiscalus quiscula</i>	
Eastern meadowlark	<i>Sturnella magna</i>	

Finches

American goldfinch	<i>Carduelis tristis</i>	
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Old world sparrows

House sparrow	<i>Passer domesticus</i>	
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MAMMALS

Marsupials

Virginia opossum	<i>Didelphis virginiana</i>	
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Armadillos

Nine-banded armadillo*	<i>Dasypus novemcinctus</i>	
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Rabbits

Eastern cottontail	<i>Sylvilagus floridanus</i>	
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Rodents

Round-tailed muskrat	<i>Neofiber alleni</i>	
Marsh rice rat	<i>Oryzomys palustris</i>	
Cotton mouse	<i>Peromyscus gossypinus</i>	
Black rat*	<i>Rattus rattus</i>	
Eastern gray squirrel	<i>Sciurus carolinensis</i>	

*Non-native species

Kissimmee Prairie Preserve State Park Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Sherman's fox squirrel	<i>Sciurus niger shermani</i>	MEH
Hispid cotton rat	<i>Sigmodon hispidus</i>	
Carnivores		
Coyote*	<i>Canis latrans</i>	
Domestic dog	<i>Canis lupus familiaris</i>	
Domestic cat	<i>Felis catus</i>	
River otter	<i>Lontra canadensis</i>	
Bobcat	<i>Lynx rufus</i>	
Raccoon	<i>Procyon lotor</i>	
Florida panther	<i>Puma concolor coryi</i>	DP,MEH
Eastern spotted skunk	<i>Spilogale putorius</i>	
Black bear	<i>Ursus americanus</i>	DP,MEH
Gray fox	<i>Urocyon cinereoargenteus</i>	
Ungulates		
Domestic cattle	<i>Bos spp.</i>	
White-tailed deer	<i>Odocoileus virginianus</i>	
Wild (Domestic) pig*	<i>Sus scrofa</i>	

*Non-native species

Primary Habitat Codes

TERRESTRIAL

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

PALUSTRINE

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

Primary Habitat Codes

Wet Prairie	WP
LACUSTRINE	
Clastic Upland Lake	CULK
Coastal Dune Lake	CDLK
Coastal Rockland Lake	CRLK
Flatwoods/Prairie	FPLK
Marsh Lake	MLK
River Floodplain Lake	RFLK
Sandhill Upland Lake	SULK
Sinkhole Lake	SKLK
Swamp Lake	SWLK
RIVERINE	
Alluvial Stream	AST
Blackwater Stream	BST
Seepage Stream	SST
Spring-run Stream	SRST
SUBTERRANEAN	
Aquatic Cave	ACV
Terrestrial Cave	TCV
ESTUARINE	
Algal Bed	EAB
Composite Substrate	ECPS
Consolidated Substrate	ECNS
Coral Reef	ECR
Mollusk Reef	EMR
Octocoral Bed	EOB
Seagrass Bed	ESGB
Sponge Bed	ESPB
Unconsolidated Substrate	EUS
Worm Reef	EWR
MARINE	
Algal Bed	MAB
Composite Substrate	MCPS
Consolidated Substrate	MCNS
Coral Reef	MCR
Mollusk Reef	MMR
Octocoral Bed	MOB
Seagrass Bed	MSGB
Sponge Bed	MSPB
Unconsolidated Substrate	MUS
Worm Reef	MWR

Primary Habitat Codes

ALTERED LANDCOVER TYPES

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

MISCELLANEOUS

Many Types of Communities	MTC
Overflying	OF

Addendum 6—Imperiled Species Ranking Definitions

Imperiled Species Ranking Definitions

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

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

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

FNAL GLOBAL RANK DEFINITIONS

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

Imperiled Species Ranking Definitions

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

LEGAL STATUS

FEDERAL

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

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

Imperiled Species Ranking Definitions

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

STATE

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

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

Imperiled Species Ranking Definitions

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

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

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

Addendum 7—Cultural Information

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

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

A. General Discussion

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

B. Agency Responsibilities

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

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

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

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

C. Statutory Authority

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

D. Management Implementation

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

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

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

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

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

E. Minimum Review Documentation Requirements

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

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

* * *

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

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

Phone: (850) 245-6425
Toll Free: (800) 847-7278
Fax: (850) 245-6435

Eligibility Criteria for National Register of Historic Places

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

- 1) Districts, sites, buildings, structures, and objects may be considered to have significance in American history, architecture, archaeology, engineering, and/or culture if they possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
 - a) are associated with events that have made a significant contribution to the broad patterns of our history; and/or
 - b) are associated with the lives of persons significant in our past; and/or
 - c) embody the distinctive characteristics of type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; and/or
 - d) have yielded, or may be likely to yield, information important in prehistory or history.

- 2) Ordinarily cemeteries, birthplaces, or graves of historical figures; properties owned by religious institutions or used for religious purposes; structures that have been moved from their original locations; reconstructed historic buildings; properties primarily commemorative in nature; and properties that have achieved significance within the past 50 years shall not be considered eligible for the *National Register*. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories:
 - a) a religious property deriving its primary significance from architectural or artistic distinction or historical importance; or
 - b) a building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or
 - c) a birthplace or grave of an historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life; or
 - d) a cemetery which derives its primary significance from graves of persons of transcendent importance, from age, distinctive design features, or association with historic events; or
 - e) a reconstructed building, when it is accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and no other building or structure with the same association has survived; or a property primarily commemorative in intent, if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or
 - f) a property achieving significance within the past 50 years, if it is of exceptional importance.

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

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

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

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

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

Addendum 8—Land Management Review

**FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION**

MEMORANDUM

TO: Keith Singleton, Program Consultant
Division of State Lands

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

Steve Cutshaw, Chief, Office of Park Planning
Division of Recreation and Parks

SUBJECT: Response to Draft Land Management Review (LMR)

The Land Management Review draft report provided to Division of Recreation and Parks (DRP) determined that management of _____ 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

2018 Land Management Review Team Report for Kissimmee Prairie Preserve 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 cases 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 or jurisdictional water management 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: Kissimmee Prairie Preserve State Park

Managed by: Department of Environmental Protection, Florida Park Service

Acres: 53,738

County: Okeechobee

Purpose(s) for Acquisition: to protect and restore the natural and cultural values of the property and provide the greatest benefit to the citizens of the state.

Acquisition Program(s): P2000

Original Acquisition Date: 3/14/97

Area Reviewed: Entire Property

Last Management Plan Approval Date: 4/22/05

Review Date: 9/20/18

Agency Manager and Key Staff Present:

- Jennifer Benson-Hughes, Park Biologist

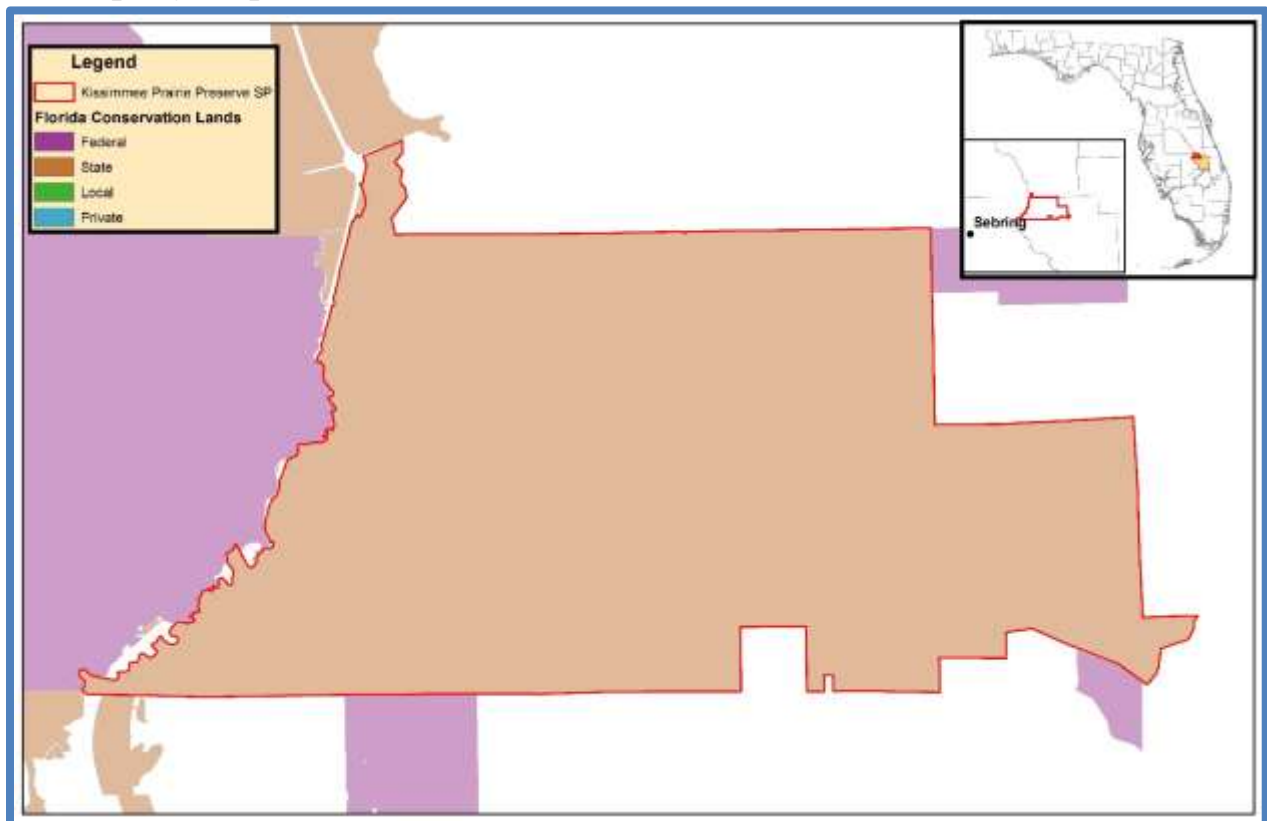
Review Team Members Present (voting)

- Jason DePue, DRP District
- Local Gov't., None
- Steve Glass, FWC
- DEP District, None
- Michael Edwards, FFS
- Justin Nolte, SFWMD
- Greg Braun, Cons. Organization
- Paul Gray, Private Land Manager

Other Non-Team Members Present (attending)

- Keith Singleton, DEP/DSL
- Andrew Lawrence, FWC/IPMS

1.2 Property Map



1.3. Overview of Land Management Review Results

Is the property managed for purposes that are compatible with conservation, preservation, or recreation?

Yes = 6, No = 0

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

Yes = 6, 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	3.40	4.24
Prescribed Fire / Habitat Restoration	4.40	4.75
Hydrology	3.36	3.91
Imperiled Species	4.83	4.54
Exotic / Invasive Species	3.63	4.17
Cultural Resources	3.75	4.50
Public Access / Education / Law Enforcement	4.36	4.18
Infrastructure / Equipment / Staffing	3.06	N/A

Color Code (See Appendix A for detail)

Excellent	Above Average	Below Average	Poor
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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 Florida Park Service (FPS) for energetic, knowledgeable and dedicated staff trying to do the best with the resources available. (6+, 0-)
2. The team commends the FPS and staff at Kissimmee Prairie Preserve for their outstanding prescribed burn program and their efforts to manage on a short fire return interval and in maintenance condition. (6+, 0-)
3. The team commends the FPS for securing outside funding and volunteer partnerships striving toward meeting their management objectives. (6+, 0-)
4. The team commends the FPS for their aggressive habitat assessment monitoring program. (6+, 0-)
5. The team commends the FPS for working closely with the Florida grasshopper sparrow working group and captive breeding program to better conserve Florida grasshopper sparrows at Kissimmee Prairie Preserve State Park and adjoining properties. (6+, 0-)
6. The team commends the FPS for receiving the first Dark Sky designation in Florida, and the ongoing work to maintain it. (6+, 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 the FPS evaluate working with the Trust for Public Lands, or simplifying the state process, to be able to timely acquire inholdings when they become available. (6+, 0-)

Managing Agency Response: *The timely acquisition of inholdings is indeed important so we do not lose the opportunity to incorporate these areas into the park boundary. FPS will address the need to expedite the acquisition process, and methods to do so, with our fellow DEP associates in State Lands.*

2. The team recommends that the FPS continue to pursue funding to treat invasive plant species with priority given to wet and dry prairies. (6+, 0-)

Managing Agency Response: *The park will continue to pursue funding from a variety of partners, including FWC, to accomplish the invasive species removal goals set forth by the Division.*

3. The team recommends that the FPS coordinate with South Florida Water Management District on updating the lighting of the S65-A structure in accordance with the Dark Sky designation. (6+, 0-)

Managing Agency Response: *Agree.*

4. The team recommends that the FPS add acoustic surveys for bonneted bat into listed species surveys and monitoring. (6+, 0-)

Managing Agency Response: *Agree. The Division works with the FWC in several other state parks monitoring for bats which should be able to be incorporated into Kissimmee Prairie.*

5. The team recommends that the FPS obtain a timber assessment. (5+, 0-, 1 abstain)

Managing Agency Response: *During the development of the now approved 2018 unit management plan, an analysis was made regarding the feasibility of timber management activities in the preserve. It was determined that the primary management objectives of the unit would be met without conducting timber management activities since implementing and maintaining a preserve-wide, one- to 2-year growing season fire return interval is the ideal long-term management strategy to restore and maintain the habitat in the early successional stage required by prairie specialist species, inhibit future encroachment of trees into the prairies, reduce the density of woody shrubs and saw palmetto, and promote native grass and forb diversity. This strategy supports efforts to protect rare habitat and animals, particularly the Florida grasshopper sparrow where one of only 3 remaining subpopulations of this federally endangered species is protected on public land.*

6. The team recommends that the FPS develop a clear timeline for restoring the altered dry prairie habitat to phase out the cattle leases. (6+, 0-)

Managing Agency Response: *A clear timeline for the restoration of altered dry prairie is included with the new 2018 approved unit management plan but not for the current cattle lease areas. It has been determined that for this 10yr plan cycle that the current boundaries of the cattle lease should remain unchanged.*

7. The team recommends that the FPS request assistance from appropriate agencies to evaluate options of a biocontrol for exotic *Scleria lacustris*. (6+, 0-)

Managing Agency Response: Agree. The Division is awaiting direction from the FWC Invasive Species Management section which is currently looking for options that would allow for more effective control of this species.

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 dry prairie, mesic flatwoods, mesic hammock, scrubby flatwoods (xeric prairie), baygall, depression marsh, floodplain swamp, hydric hammock, wet prairie, and blackwater stream.**
- 2. Listed species, plants and animals in general, and specifically Florida grasshopper sparrow, scrub jay and crested caracara.**
- 3. Natural resource survey/monitoring resources, specifically listed species or their habitat monitoring, other non-game species or their habitat monitoring, fire effects monitoring, invasive species survey and monitoring, and Dark Sky survey.**
- 4. Cultural resources, specifically protection and preservation.**
- 5. Resource management (prescribed fire), specifically area being burned, frequency, and quality.**
- 6. Restoration, specifically plowline rehab/restoration.**
- 7. Hydrologic/Geologic function, specifically water level alteration**
- 8. Ground water monitoring, specifically quantity.**
- 9. Resource protection, specifically boundary survey, gates & fencing, signage, and law enforcement presence.**
- 10. Public access, specifically roads and parking.**
- 11. Environmental education and outreach, specifically wildlife, invasive species, habitat management activities, interpretive facilities and signs, recreational opportunities, and management of visitor impacts.**
- 12. Management resources, specifically waste disposal, and sanitary facilities.**

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. *Forest Management, specifically timber inventory, received a below average score. The review team is asked to evaluate, based on information provided by the managing agency, whether forest management is sufficient.***

Managing Agency Response: Refer to above Section 1.3.2. response 5 with regard to inventory.

2. *Surface Water Monitoring, specifically quality and quantity, received below average scores. The review team is asked to evaluate, based on information provided by the managing agency, whether surface water monitoring is sufficient.*

Managing Agency Response: There are several gauges installed throughout the park that are regularly monitored by park staff. The Division will work with the SFWMD to see if it is possible to add water quality monitoring stations at the park.

3. *Adjacent Property Concerns, specifically intensification of agricultural use, and inholdings/additions, received below average scores. The review team is asked to evaluate, based on information provided by the managing agency, whether adjacent property concerns are sufficiently addressed.*

Managing Agency Response: Disagree. The Division works with our adjacent land owners to protect the valuable and sensitive resources of the park without infringing on private property rights. If there is adjacent land use change or development nearby, the Division will make recommendations to permitting agencies where proposed changes will adversely effect park resources.

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

Managing Agency Response: Agree. If it is determined that additional staff and funding are needed at the time of the next unit management plan revision, it will be included in the plan. However, no new staff can be assigned to this or any other park unit unless they are appropriated by the Legislature or reassigned from other units.

2.3. Field Review Checklist and Scores

Field Review Item	Reference #	Anonymous Team Members								Average
		1	2	3	4	5	6	7	8	
Natural Communities (I.A)										
Dry Prairie	I.A.1	5	5	5	5	5	5			5.00
Mesic Flatwoods	I.A.2	5	5	5	5	x	5			5.00
Mesic Hammock	I.A.3	4	5	5	5	5	5			4.83
Scrubby Flatwoods (Xeric Prairie)	I.A.4	5	5	5	5	5	5			5.00
Basin Marsh	I.A.5	2	5	3	3	2	3			3.00
Baygall	I.A.6	4	5	5	5	5	5			4.83
Depression Marsh	I.A.7	4	5	4	5	5	4			4.50
Floodplain Marsh	I.A.8	4	3	4	4	4	3			3.67
Floodplain Swamp	I.A.9		5	4	5	x	4			4.50
Hydric Hammock	I.A.10	3	5	5	5	5	5			4.67

Slough/Slough Marsh	I.A.11	4	5	4	4	4	2			3.83
Wet Prairie	I.A.12	5	5	4	5	5	5			4.83
Blackwater Stream	I.A.13	4	5	5	4	5	4			4.50
Natural Communities Average Score										4.47
Listed species:Protection & Preservation (I.B)										
Animals	I.B.1	5		5	5	5	4			4.80
Florida Grasshopper Sparrow	I.B.1.a	5	5	5	5	5	5			5.00
Scrub Jay	I.B.1.b	5	5	5	5	5	5			5.00
Crested Caracara	I.B.1.c	5	5	5	5	5	5			5.00
Plants	I.B.2	3	4	5	5	5	4			4.33
Listed Species Average Score										4.83

Natural Resources Survey/Monitoring Resources (I.C)										
Listed species or their habitat monitoring	I.C.2	5		5	5	5	5			5.00
Other non-game species or their habitat monitoring	I.C.3	4	3	4	5	5	5			4.33
Fire effects monitoring	I.C.4	5	3	4	5	3	5			4.17
Other habitat management effects monitoring	I.C.5	4	3	3	5	3	4			3.67
Invasive species survey / monitoring	I.C.6	4	3	4	5	5	5			4.33
Dark Sky Survey	I.C.7	5		5	5	5	5			5.00
Cultural Resources (Archeological & Historic sites) (II.A, II.B)										
Cultural Res. Survey	II.A	4	3	4	4	2	4			3.50
Protection and preservation	II.B	3	3	5	4	5	4			4.00
Cultural Resources Average Score										3.75
Resource Management, Prescribed Fire (III.A)										
Area Being Burned (no. acres)	III.A1	5	5	5	5	5	5			5.00
Frequency	III.A.2	5	5	5	5	5	5			5.00
Quality	III.A.3	5	5	5	5	5	5			5.00
Resource Management, Prescribed Fire Average Score										5.00
Restoration (III.B)										
Canal Restoration to Sloughs	III.B.1	4	4	4	4	3	3			3.67
Tomato Fields to Marsh	III.B.2	4	4	4	4	3	4			3.83
Floodplain Marsh	III.B.3	3	5	4	4	3	3			3.67
Plowline Rehab/Restoration	III.B.4	4	4	4	4	3	5			4.00
Restoration Average Score										3.79
Forest Management (III.C)										
Timber Inventory	III.C.1	2	3	2	4	1	2			2.33
Forest Management Average Score										2.33
Non-Native, Invasive & Problem Species (III.D)										
Prevention										
prevention - plants	III.D.1.a	2	4	4	4	4	5			3.83
prevention - animals	III.D.1.b	3	4	4	4	4	4			3.83
Control										
control - plants	III.D.2.a	2	3	3	4	4	3			3.17
control - animals	III.D.2.b	3	3	4	4	4	4			3.67
Non-Native, Invasive & Problem Species Average Score										3.63
Hydrologic/Geologic function Hydro-Alteration (III.E.1)										
Roads/culverts	III.E.1.a	4	3	4	4	4	4			3.83
Ditches	III.E.1.b	4	3	4	4	3	3			3.50
Hydro-period Alteration	III.E.1.c	4	4	4	4	4	3			3.83
Water Level Alteration	III.E.1.d	4	4	4	4	x				4.00
Soil Erosion	III.E.1.f	4		4		3				3.67
Hydrologic/Geologic function, Hydro-Alteration Average Score										3.77
Ground Water Monitoring (III.E.2)										

Ground water quality	III.E.2.a	2	4	4	5	2	x			3.40
Ground water quantity	III.E.2.b	2	4	4	5	4	5			4.00
Ground Water Monitoring Average Score										3.70
Surface Water Monitoring (III.E.3)										
Surface water quality	III.E.3.a	2	2	3	3	2	x			2.40
Surface water quantity	III.F.3.b	2	2	3	3	4	x			2.80
Surface Water Monitoring Average Score										2.60
Resource Protection (III.F)										
Boundary survey	III.F.1	3	5	4	3	4	5			4.00
Gates & fencing	III.F.2	3	5	3	4	4	5			4.00
Signage	III.F.3	4	5	4	4	5	5			4.50
Law enforcement presence	III.F.4	4	4	4	3	5	4			4.00
Resource Protection Average Score										4.13
Adjacent Property Concerns (III.G)										
Land Use										
Expanding development	III.G.1.a	3	4	4	5	3	3			3.67
Intensification of Ag. Use	III.G.1.b	2	2	3		2	3			2.40
Inholdings/additions	III.G.2	2	1	4	5	1	3			2.67
Public Access & Education (IV.1, IV.2, IV.3, IV.4, IV.5)										
Public Access										
Roads	IV.1.a	4	5	4	4	4	5			4.33
Parking	IV.1.b	4	5	5	4	4	5			4.50
Environmental Education & Outreach										
Wildlife	IV.2.a	4	4	5	5	5	5			4.67
Invasive Species	IV.2.b	4	4	4	5	5	5			4.50
Habitat Management Activities	IV.2.c	4	4	5	5	5	5			4.67
Interpretive facilities and signs	IV.3	4	4	5	5	5	5			4.67
Recreational Opportunities	IV.4	4	5	5	5	5	4			4.67
Management of Visitor Impacts	IV.5	4	5	5	5	5	5			4.83
Public Access & Education Average Score										4.60
Management Resources (V.1, V.2, V.3, V.4)										
Maintenance										
Waste disposal	V.1.a	4	5	4	4	5	4			4.33
Sanitary facilities	V.1.b	4	5	4	4	4	5			4.33
Infrastructure										
Buildings	V.2.a	3	2	4	4	2	3			3.00
Equipment	V.2.b	3	2	4		2	4			3.00
Staff	V.3	1	1	3	2	2	2			1.83
Funding	V.4	2	1	2	2	2	2			1.83
Management Resources Average Score										3.06

Color Code:

Excellent

Above
Average

Below
Average

Poor

Missing
VoteInsufficient
InformationSee
Appendix A
for detail

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. Adjacent Property Concerns, specifically intensification of agricultural use, and discussion of potential surplus land determination, received below average scores. This is an indication that the management plan does not sufficiently address adjacent property.*

Managing Agency Response: Agree. The Division has included adjacent property concerns and the determination of surplus lands in the 2018 unit management plan.

- 2. Managed Area Uses, specifically proposed cabins and river camp, received below average scores. This is an indication that the management plan does not sufficiently address proposed uses.*

Managing Agency Response: Agree. The 2018 unit management plan does not include plans for a river camp or cabins.

3.2 Management Plan Review Checklist and Scores

Plan Review Item	Reference #	Anonymous Team Members								Average
		1	2	3	4	5	6	7	8	
Natural Communities (I.A)										
Dry Prairie	I.A.1	5	5	5	4	5	5			4.83
Mesic Flatwoods	I.A.2	5	5	5	4	3	5			4.50
Mesic Hammock	I.A.3	5	5	5	4	4	5			4.67
Scrubby Flatwoods (Xeric Prairie)	I.A.4	5	5	5	4	4	5			4.67
Basin Marsh	I.A.5	5	5	5	4	4	5			4.67
Baygall	I.A.6	5	5	5	4	3	5			4.50
Depression Marsh	I.A.7	5	5	5	4	5	5			4.83
Floodplain Marsh	I.A.8	5	5	5	4	5	5			4.83
Floodplain Swamp	I.A.9	5	5	5	4	5	5			4.83
Hydric Hammock	I.A.10	5	5	5	4	2	5			4.33
Slough/Slough Marsh	I.A.11	5	5	5	4	2	5			4.33
Wet Prairie	I.A.12	5	5	5	4	5	5			4.83

Blackwater Stream	I.A.13	5	5	5	4	4	5			4.67
Natural Communities Average Score										4.65
Listed species: Protection & Preservation (I.B)										
Animals	I.B.1		4	5	4	4	4			4.20
Florida Grasshopper Sparrow	I.B.1.a	5	5	5	4	5	5			4.83
Scrub Jay	I.B.1.b	5	5	5	4	4	5			4.67
Crested Caracara	I.B.1.c	5	5	5	4	4	5			4.67
Plants	I.B.2	4	5	5	4	4	4			4.33
Listed Species Average Score										4.54
Natural Resources Survey/Monitoring Resources (I.C)										
Listed species or their habitat monitoring	I.C.2	5	5	5	4	5	5			4.83
Other non-game species or their habitat monitoring	I.C.3	4	5	5	4	2	4			4.00
Fire effects monitoring	I.C.4	5	5	4	4	3	3			4.00
Other habitat management effects monitoring	I.C.5	4	5	3	4	3	3			3.67
Invasive species survey / monitoring	I.C.6	5	5	3	4	4	4			4.17
Dark Sky Survey	I.C.7	5	5	5	4	5	5			4.83
Cultural Resources (Archeological & Historic sites) (II.A,II.B)										
Cultural Res. Survey	II.A	5	5	5	4	3	5			4.50
Protection and preservation	II.B	5	5	5	4	3	5			4.50
Cultural Resources Average Score										4.50
Resource Management, Prescribed Fire (III.A)										
Area Being Burned (no. acres)	III.A.1	5	5	5	4	5	5			4.83
Frequency	III.A.2	5	5	5	4	5	5			4.83
Quality	III.A.3	5	5	5	4	5	5			4.83
Resource Management, Prescribed Fire Average Score										4.83
Restoration (III.B)										
Canal Restoration to Sloughs	III.B.1	5	5	5	4	4	5			4.67
Tomato Fields to Marsh	III.B.2	5	5	5	4	4	5			4.67
Floodplain Marsh	III.B.3	5	5	5	4	4	5			4.67
Plowline Rehab/Restoration	III.B.4	5	5	5	4	4	5			4.67
Restoration Average Score										4.67
Forest Management (III.C)										
Timber Inventory	III.C.1	5	5	3	4	2	4			3.83
Forest Management Average Score										3.83
Non-Native, Invasive & Problem Species (III.D)										
Prevention										
prevention - plants	III.E.1.a	5	3	3	4	4	5			4.00
prevention - animals	III.E.1.b	4	3	3	4	4	3			3.50
Control										
control - plants	III.E.2.a	5	5	5	4	4	5			4.67

control - animals	III.E.2.b	4	5	5	4	4	5			4.50
Non-Native, Invasive & Problem Species Average Score										4.17
Hydrologic/Geologic function, Hydro-Alteration (III.E.1)										
Roads/culverts	III.F.1.a	4	5	5	4	4	5			4.50
Ditches	III.F.1.b	4	5	5	4	4	5			4.50
Hydro-period Alteration	III.F.1.c	4	4	5	4	4	5			4.33
Water Level Alteration	III.F.1.d	4		3	4	4	5			4.00
Soil Erosion	III.F.1.f	4		5		3	3			3.75
Hydrologic/Geologic function, Hydro-Alteration Average Score										4.22
Ground Water Monitoring (III.E.2)										
Ground water quality	III.F.2.a	3	3	4	4	4	5			3.83
Ground water quantity	III.F.2.b	3	3	4	4	4	5			3.83
Ground Water Monitoring Average Score										3.83
Surface Water Monitoring (III.E.3)										
Surface water quality	III.F.3.a	3	3	3	4	4	5			3.67
Surface water quantity	III.F.3.b	3	3	3	4	4	5			3.67
Surface Water Monitoring Average Score										3.67
Resource Protection (III.F)										
Boundary survey	III.G.1	4	5	4	4	3	3			3.83
Gates & fencing	III.G.2	5	5	4	4	4	3			4.17
Signage	III.G.3	5	5	4	4	3	3			4.00
Law enforcement presence	III.G.4	5	4	4	4	3	3			3.83
Resource Protection Average Score										3.96
Adjacent Property Concerns (III.G)										
Land Use										
Expanding development	III.H.1.a	4	4	4		4	3			3.80
Intensification of Ag. Use	III.H.1.b	2	3	3		1	3			2.40
Inholdings/additions	III.H.2	3	4	5	4	4	5			4.17
Discussion of Potential Surplus Land Determination	III.H.3	3	3	2		1	5			2.80
Surplus Lands Identified?	III.H.4	3	4	4		5	5			4.20
Public Access & Education (IV.1, IV.2, IV.3, IV.4, IV.5)										
Public Access										
Roads	IV.1.a	5	5	4	4	4	5			4.50
Parking	IV.1.b	4	5	4	4	4	5			4.33
Environmental Education & Outreach										
Wildlife	IV.2.a	5	4	4	4	4	5			4.33
Invasive Species	IV.2.b	5	4	4	4	4	5			4.33
Habitat Management Activities	IV.2.c	5	4	4	4	4	5			4.33
Interpretive facilities and signs	IV.3	5	4	4	4	4	5			4.33
Recreational Opportunities	IV.4	5	5	4	4	4	4			4.33
Management of Visitor Impacts	IV.5	5	5	4	4	5	5			4.67

Public Access & Education Average Score										4.40
Managed Area Uses (VI.A, VI.B)										
Existing Uses										
Camping	VI.A.1	4	5	5	5	5	5			4.83
Shared Use Trails	VI.A.2	4	5	5	5	5	5			4.83
Nature Observation	VI.A.3	4	5	5	5	5	5			4.83
Equestrian Use	VI.A.4	4	3	5	5	5	3			4.17
Astronomy	VI.A.5	5	2	5	5	5	4			4.33
Swamp Buggy Tour	VI.A.6	5	5	5	4	5	3			4.50
Research	VI.A.7	4	3	5	5	5	3			4.17
Proposed Uses										
Visitor Center	VI.B.1	4	4	5	5	5	5			4.67
Cabins	VI.B.2	4	1	5	1		3			2.80
River Camp	VI.B.3	4	2	2	1		3			2.40

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*

Addendum 9—Local Government Comprehensive Plan Compliance

Okeechobee County Board of County Commissioners
Community Development Department

1700 NW 9th Avenue, Suite A • Okeechobee, Florida 34972
Telephone: 863-763-5548 • Facsimile: 863-763-5276
email: planning@co.okeechobee.fl.us



October 31, 2018

Mark Kiser
Office of Park Planning
Division of Recreation and Parks
Florida Department of Environmental Protection
3800 Commonwealth Blvd., MS #525
Tallahassee, FL 32399

Re.: Kissimmee Prairie Preserve State Park
Acquisition and Restoration Council Unit Management Plan
Determination of Consistency with the Okeechobee County Comprehensive Plan

Dear Mr. Kiser:

The Florida Department of Environmental Protection, Division of Recreation and Parks, has submitted to the Okeechobee County Community Development Department a July 2018 Acquisition and Restoration Council Unit Management Plan for the Kissimmee Prairie Preserve State Park. The plan was submitted for a determination of consistency with the adopted Okeechobee County Comprehensive plan.

The Kissimmee Prairie Preserve State Park is in northwestern Okeechobee County. The property is owned by the State of Florida. The property is zoned Agriculture (A). The future land use designation for the property is Conservation 1.

Staff has reviewed the July 2018 draft of the Unit Management Plan. Staff finds that the July 2018 Unit Management Plan as submitted is consistent with and in compliance with the adopted Okeechobee County Comprehensive Plan.

Please let me know if I may be of any further assistance on this matter.

Sincerely,

A handwritten signature in blue ink, appearing to read "William D. Royce", is written over a horizontal line. The signature is stylized and somewhat cursive.

William D. Royce
Community Development Director

David Hazellief
District 1

Bryant H. Culpepper
District 2

Bradley G. Goodbread
District 3

Terry W. Burroughs
District 4

Kelly Owens
District 5

Land Management Review



July 10, 2018

Sent via email: mark.kiser@floridadep.gov

Mark Kiser, Planning Consultant
Florida Department of Environmental Protection
Division of Recreation and Parks, Office of Park Planning
3900 Commonwealth Blvd., MS 525
Tallahassee, FL 32399

DEPARTMENT OF COMMUNITY DEVELOPMENT

Dave Tomek
Administrator

Joe Johnston
Deputy Administrator

Susan E. Caswell, AICP
Assistant Administrator

Bill Grimes
Building Official

Ken Brown
Customer Care Director

Mahmoud Najda P.E.
Development Review
Director

Kerry Godwin, AICP
Planning & Design
Director

Kelly Haddock
Current Planning Director

Osceola County

1 Courthouse Square
Suite 1100
Kissimmee, FL 34741
PH: (407) 742-0200
Fas: (407) 742-0206
www.osceola.org

RE: Osceola County – Park Planning Unit Management Plan and Compliance with Local Comprehensive Plan

Dear Mr. Kiser,

This letter is in response to your request on July 6th, 2018, to have the Kissimmee Prairie Preserve State Park unit management plan reviewed to check for compliance with Osceola County's comprehensive plan.

After review of the Kissimmee Prairie Preserve State Park Unit Management Plan, we have found that the plan is in compliance with Osceola County's comprehensive plan. Specifically, the plan is in compliance with Policy 1.4.7 of the Parks and Recreation Element and Policy 1.9.12 of the Conservation Element.

If we can be of further assistance, please contact, Josh Larsen at (407) 742-0324 or at Joshua.Larsen@osceola.org.

Respectfully,

A handwritten signature in black ink, appearing to read "Cori Carpenter".

Cori Carpenter, LEED GA
Principal Planner

CC/jl

Cc: Kerry Godwin, AICP, Kerry.Godwin@osceola.org
Kelly Haddock, Kelly.Haddock@osceola.org
Phoenie Burnett, Phoenie.Burnett@osceola.org

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