Lake Kissimmee State Park

APPROVED
Unit Management Plan

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Division of Recreation and Parks
July 7, 2014

FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION
MARJORY STONEMAN DOUGLAS BUILDING
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SECRETARY

July 7, 2014

Ms. Jennifer Carver
Planning Manager
Office of Park Planning, Division of Recreation and Parks
Department of Environmental Protection
3900 Commonwealth Boulevard, MS 525
Tallahassee, FL 32399-3000

Re: Lake Kissimmee State Park – Lease # 2461

Dear Ms. Carver:

The Division of State Lands, Office of Environmental Services, acting as agent for the Board of Trustees of the Internal Improvement Trust Fund, hereby approves the Lake Kissimmee State Park management plan. The next management plan update is due July 7, 2024.

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,

Marianne S Gengenbach
Office of Environmental Services
Division of State Lands

TABLE OF CONTENTS

RESOURCE MANAGEMENT COMPONENT

LAND USE COMPONENT

IMPLEMENTATION COMPONENT

TABLES

MAPS

LIST OF ADDENDA

INTRODUCTION

Lake Kissimmee State Park is located in Polk County about fifteen miles east of Lake Wales (see Vicinity Map). Access to the park is from Camp Mack Road that is located north of State Road 60 (see Reference Map). The Vicinity Map also reflects significant land and water resources existing near the park.

Lake Kissimmee State Park was acquired to conserve, protect and manage the park for outdoor recreation, park historic and related purposes. Acquisition began in 1970, under the Environmentally Endangered Lands program. Currently, the park contains approximately 5,893 acres.

On January 7, 1970, the Board of Trustees of the Internal Improvement Trust Fund (Trustees) obtained title to the property. The Trustees conveyed the management authority to the Department of Environmental Protection (DEP), Division of Recreation and Parks (DRP), under Lease No. 2461. The lease expires on September 4, 2069.

At the Lake Kissimmee State Park, public outdoor recreation and conservation is the designated single use of the property (see Addendum 1). There are no legislative or executive directives that constrain the use of this property. The primary features of Lake Kissimmee State Park are its authentic living history 19th century cow camp, as well as proximity to some of Floridas's best freshwater fishing lakes. Boating, fishing and access to Lake Kissimmee are the park's most popular recreational pursuits. In addition, the park contains ten distinct natural communities including vast floodplain marshes along the numerous freshwater lakes within its boundaries which provide important habitat to numerous imperiled species.

PURPOSE AND SIGNIFICANCE OF THE PARK

Lake Kissimmee State Park was acquired through the EEL acquisition program, beginning with the original acquisition of the park in 1970. The purposes of the acquisition were to preserve, for all time, representative examples of the natural and cultural history of the State of Florida. The management goal is to protect, develop, operate and maintain the properties for public outdoor recreation, conservation, historic preservation and related purposes and to support the tourism industry of Florida.

Park Significance

- The park provides visitors with a broad range of opportunities to enjoy Lake Kissimmee and the unique Lake Wales region through recreational pursuits such as fishing, boating, canoeing, kayaking, picnicking, nature study, hiking, backcountry camping, family camping, equestrian trail riding, and interpretive programs.

- The park contains a mosaic of ten unique natural communities, ranging from scrubby flatwoods to low floodplains, providing critical habitat to imperiled plant species including the Giant Orchid and Cutthroat grass.

- Lake Kissimmee State Park defines an area that is over 5,800 acres between Lake Kissimmee, Lake Rosalie and Tiger Lake. Cultural sites range from prehistoric burial middens, dating as far back 3,000 years all the way to a 19th century cattle ranch which is currently used as an interpretive living history exhibit.

- The park protects portions of the shorelines of three freshwater lakes in central Florida, including the 35,000 acre Lake Kissimmee. These shorelines provide important habitat to imperiled wading birds including the Roseate Spoonbill, Wood Stork, and Snowy Egret. The uplands of the park provides valuable habitat to the imperiled gopher tortoise, Florida scrub jay, and other imperiled species.

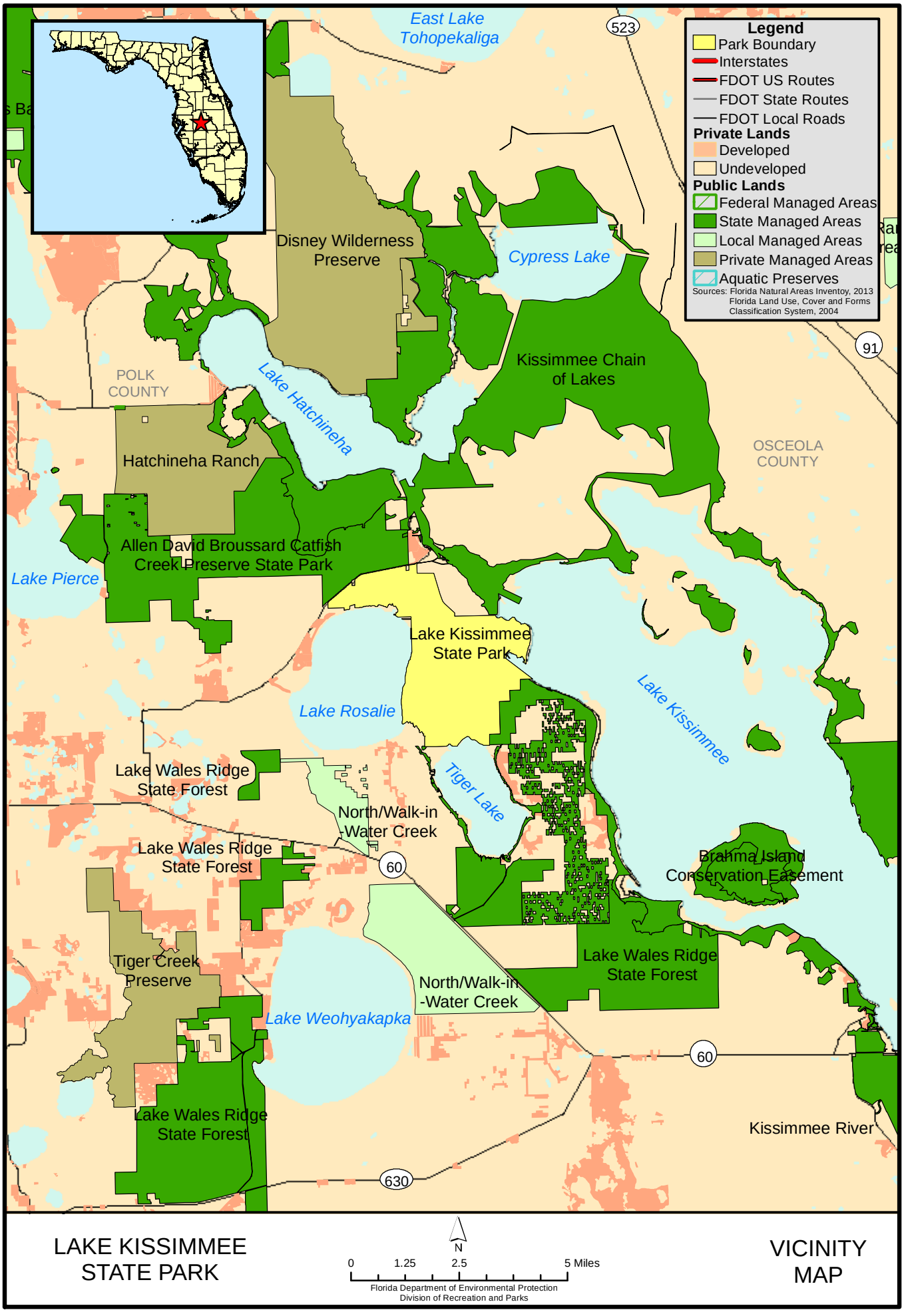
In the management of the Lake Kissimmee State Park, preservation and enhancement of natural conditions is all important. Resource considerations are given priority over user considerations and development is restricted to the minimum necessary for ensuring its protection and maintenance, limited access, 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 the Lake Kissimmee State Park as a unit of Florida's state park system. It identifies the goals, objectives, actions and criteria or standards that guide each aspect of park administration, and sets forth the specific measures that will be implemented to meet management objectives. The plan is intended to meet the requirements of Sections 253.034 and 259.032, Florida Statutes, Chapter 18-2, Florida Administrative Code, and is intended to be consistent with the State Lands Management Plan. With approval, this management plan will replace the 2004 approved plan.

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

The Land Use Component is the recreational resource allocation plan for the park. Based on considerations such as access, population, adjacent land uses, the natural and cultural resources of the park, current public uses and existing development, measurable objectives are set to achieve the desired allocation of the physical


East Lake Tohopekaliga
523
Legend
Park Boundary
Interstates
FDOT US Routes
FDOT State Routes
FDOT Local Roads
Private Lands
Developed
Undeveloped
Public Lands
Federal Managed Areas
State Managed Areas
Local Managed Areas
Private Managed Areas
Aquatic Preserves
Sources: Florida Natural Areas Inventoy, 2013
Florida Land Use, Cover and Forms
Classification System, 2004
Disney Wilderness Preserve
Cypress Lake
91
Kissimmee Chain of Lakes
POLK COUNTY
Lake Hatchineha
OSCEOLA COUNTY
Hatchineha Ranch
Allen David Broussard Catfish Creek Preserve State Park
Lake Pierce
Lake Kissimmee State Park
Lake Kissimmee
Lake Rosalie
Tiger Lake
Lake Wales Ridge State Forest
North/Walk-in -Water Creek
60
Brahma Island Conservation Easement
Tiger Creek Preserve
Lake Weohyakapka
630
Kissimmee River
LAKE KISSIMMEE STATE PARK
N
0
1.25
2.5
5 Miles
Florida Department of Environmental Protection
Division of Recreation and Parks
VICINITY MAP

LAKE KISSIMMEE STATE PARK

REFERENCE MAP

space of the park. These objectives locate use areas and propose the types of facilities and programs and the volume of public use to be provided.

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

All development and resource alteration proposed in this plan is subject to the granting of appropriate permits, easements, licenses, and other required legal instruments. Approval of the management plan does not constitute an exemption from complying with the appropriate local, state or federal agencies

In the development of this plan, the potential of the park to accommodate secondary management purposes ("multiple uses") was analyzed. These secondary purposes were considered within the context of the DRP's statutory responsibilities and an analysis of the resource needs and values of the park. This analysis considered the park natural and cultural resources, management needs, aesthetic values, visitation and visitor experiences. For this park, it was determined that timber management and cattle grazing could be accommodated in a manner that would be compatible and not interfere with the primary purpose of resource-based outdoor recreation and conservation. These compatible secondary management purposes are addressed in the Resource Management Component of the plan. Uses such as water resource development projects, water supply projects, stormwater management projects, linear facilities and sustainable agriculture and forestry (other than those forest management activities specifically identified in this plan) are not consistent with this plan or the management purposes of the park and should be discouraged.

The potential for generating revenue to enhance management was also analyzed. Visitor fees and charges are the principal source of revenue generated by the park. It was determined that timber management and cattle grazing would be appropriate at this park as additional sources of revenue for land management since they are compatible with the park's primary purpose of resource-based outdoor recreation and conservation.

The use of private land managers to facilitate restoration and management of this unit was also analyzed. Decisions regarding this type of management (such as outsourcing, contracting with the private sector, use of volunteers, etc.) will be made on a case-by-case basis as necessity dictates.

MANAGEMENT PROGRAM OVERVIEW

Management Authority and Responsibility

In accordance with Chapter 258, Florida Statutes and Chapter 62D-2, Florida Administrative Code, 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 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 DRP's Operations Manual (OM) that covers such areas as personnel management, uniforms and personal appearance, training, signs, communications, fiscal procedures, interpretation, concessions, public use regulations, resource management, law enforcement, protection, safety and maintenance.

Park Management Goals

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

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

6. Protect, preserve and maintain the cultural resources of the park.
7. Provide public access and recreational opportunities in the park.
8. Develop and maintain the capital facilities and infrastructure necessary to meet the goals and objectives of this management plan.

Management Coordination

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

The Florida Department of Agriculture and Consumer Services (FDACS), 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 (FFWCC), assists staff in the enforcement of state laws pertaining to wildlife, freshwater fish and other aquatic life existing within the park. In addition, the FFWCC aids DRP with wildlife management programs, including imperiled species management and Watchable Wildlife programs. The Florida Department of State (FDOS), Division of Historical Resources (DHR) assists staff to ensure protection of archaeological and historical sites.

Public Participation

DRP will provide 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 January 29 and 30, 2014, respectively. Meeting notices were published in the Florida Administrative Weekly, January 21, 2014 [VOL 40/13], 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

The Lake Kissimmee State Park is not within an Area of Critical State Concern as defined in section 380.05, Florida Statutes. Currently it is not under study for such designation. The park is a component of the Florida Greenways and Trails System.

All waters within the unit have been designated as Outstanding Florida Waters, pursuant to Chapter 62-302 Florida Administrative Code. Administered by DEP, the program was created by Section 403.061, Florida Statutes, to protect lakes, rivers and streams against degradation of existing ambient water quality. Surface waters in this unit are also classified as Class III waters by DEP.

RESOURCE MANAGEMENT COMPONENT

INTRODUCTION

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

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

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

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

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

Table 1: Lake Kissimmee State Park Management Zone Acreage			
Management Zone	**Acreage**	**Managed with Prescribed Fire**	**Contains Cultural Resources**
LK-01	190.68	Y	N
LK-02A	10.12	Y	N
LK-02B	217.92	Y	N
LK-02C	111.28	Y	N
LK-03	35.93	Y	N
LK-04	129.52	Y	N
LK-05A	194.51	Y	N
LK-05B	278.99	Y	N
LK-05C	52.81	Y	N
LK-06	155.37	Y	N
LK-07	321.41	Y	N
LK-08A	213.69	Y	Y
LK-08B	139.40	Y	N
LK-08C	21.59	N	N
LK-08D	34.21	N	N
LK-09	116.58	N	N
LK-10	298.45	Y	N
LK-11A	478.35	Y	N
LK-11B	191.58	Y	N
LK-12A	145.00	Y	N
LK-12B	35.11	Y	N
LK-12C	190.20	N	N
LK-13	282.25	Y	N
LK-14	140.55	Y	N
LK-15	159.71	Y	N
LK-16	333.25	N	Y
LK-17A	521.02	Y	N
LK-17B	8.11	N	N
LK-18	510.73	Y	N
LK-19	347.51	N	N
LK-20	11.66	N	N
LK-21	15.75	N	N

RESOURCE DESCRIPTION AND ASSESSMENT

Natural Resources

Topography

The topography is predominantly flat, and the elevation varies from 50 to 63 feet above sea level. The highest areas occur in the northern sections and gradually slope downward towards Lake Kissimmee to the east and to Rosalie and

LAKE KISSIMMEE STATE PARK

N

0 0.25 0.5 1 Mile

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

MANAGEMENT ZONES MAP

Tiger Creeks in the south. A large area known as Buster Island is found south of the Zipprer canal and is bound by Lake Rosalie, Rosalie Creek, Lake Tiger and Tiger Creek. A low, inland sand berm known as Gobbler Ridge occurs along the edge of Lake Kissimmee. The natural topography has been altered by the construction of Zipprer Canal between Lakes Rosalie and Kissimmee and by the construction of a berm and drainage ditches in the northwestern pasture addition.

Geology

Polk County's major topographic features are several irregular, north-south tending ridges that appear to be remnants of a previously widespread upland. These ridges are separated and bounded by relatively flat lowlands. The park lies in such lowland, east of the Lake Wales Ridge. The park is within the Central Highlands physiographic province and more specifically on the Osceola Plain within the Central Highlands province (USDA 1990). The Osceola Plain is a marine terrace that is bordered by the Lake Wales Ridge to the west and by lower-lying marine scarps to the east. The Kissimmee River passes through the Osceola Plain with the lowest elevations occurring in the Kissimmee River Valley. Generally, local relief is low with elevations typically 60 and 70 feet above NGVD, although it is somewhat lower in the Kissimmee River Chain.

The surface and near surface sediments throughout the county consist of quartz sand, clay, phosphorite, limestone, and dolomite. These sediments range in age from Late Eocene to Holocene (40 million years ago to present). Lake Kissimmee State Park is contained within the Plio-Pleistocene geologic formation (Brooks 1981). This formation consists of preglacial Pleistocene lagoonal and prograded unlithified coastal sand, shelly silty gray to greenish gray sand containing the Pinecrest fauna.

Soils

The unit's soils reflect the topographic features and elevations characteristic of the Kissimmee River Valley (see Soils Map). Soils are generally poorly drained. In the wetland areas (marshes and swamps) Samsula muck and Basinger fine sand soil types are common. The flatwoods generally have Smyrna and Myakka fine sands and Immokalee sand soil types. In the drier areas Duette fine sand, Satellite sand, and Narcoossee sand are found. A detailed description of each soil type is included in Addendum 3.

Soil erosion is not a major concern on this unit at this time. Management activities will follow generally accepted best management practices to prevent soil erosion and conserve soil and water resources on site.

Minerals

The mineral resources of Polk County include phosphate, by-product uranium and fluoride, limestone, and industrial and construction sand. No minerals of commercial quality are known to occur within the park.

Hydrology

Regional hydrology: Surface drainage is poorly developed in Polk County. The county has nearly 500 lakes, with nine of the largest, including Lake Kissimmee and Lake Rosalie, occurring in the eastern lowlands. In the flat areas characteristic of much of the county, there are hundreds of perennial and ephemeral wetlands. In contrast, the three sand ridges found in the county act as aquifer recharge areas with little surface runoff.

The Kissimmee River drainage system has been extensively changed. The Kissimmee Chain of Lakes stretches from Orlando to Lake Okeechobee. Water quality in the chain is rated as fair in the upper portions and good in the lower portions near the park. The system historically involved water moving slowly through numerous small creeks and seeps, with the water being widely dispersed from the river along an extensive floodplain. Numerous flood control projects have resulted in the channelization of the entire Kissimmee River. Combined with the creation of canals between the major lakes, this has resulted in a severely altered hydrology.

The Kissimmee River Restoration project dates back to 1992 when it was authorized by Congress. The project is administered jointly by the U.S Corps of Army Engineers (USACE) and the South Florida Water Management District (SFWMD). When restoration is completed in 2015, more than 40 square miles of river-floodplain ecosystem will be restored (FDEP, 2013). As part of the larger Kissimmee River Restoration project, the Kissimmee River Headwaters Revitalization Project has been designed to provide water storage and discharge characteristics to restore the Kissimmee River, while also providing a wider range of water fluctuation in the Kissimmee Chain of Lakes (Williams et.al., 2006). This project will result in more frequent seasonal flooding and higher water levels within the park's hydric communities. When this project is completed and the water fluctuation changes are implemented, it will contribute to the hydrological restoration of Lake Kissimmee State Park.

Park hydrology: In general, water flows from the higher areas at the north end of the park towards the lower areas at the southern end of the park. Much of the park experiences sheet flow during the rainy season with water slowly moving from wet flatwoods and seasonal ponds to the floodplain marshes, blackwater streams and lakes.

The original drainage pattern within the park was from Lake Rosalie to Lake Kissimmee through the Rosalie Drain on the north side of Buster Island, and via Rosalie Creek, Tiger Lake and Tiger Creek on the south side of Buster Island. The surface of Lake Kissimmee is one foot lower than Tiger Lake and four feet lower than Lake Rosalie. The majority of the flow was through the southern drainage route with the northern route functioning during high water times. Before 1947, Rosalie Drain was a seasonally inundated open floodplain marsh that gradually released water to Lake Kissimmee. In 1947, a canal was dug through Rosalie Drain to connect Lake Rosalie and Lake Kissimmee in order to expedite runoff from the

LAKE KISSIMMEE STATE PARK

N

0 0.25 0.5 1 Mile

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

SOILS MAP

drain to create more grazing area for cattle. This increased drainage has caused the marsh to become drier and has made it susceptible to hardwood and pine invasion. In 1979, a weir was constructed in the park about midway along the Zipprer Canal. This structure allows the park to hold some water back in order to approximate historic water levels in Rosalie Drain. While this has been partially successful in reflooding Rosalie Drain and reducing hardwood invasion, much of the water simply flows out the west end of the Zipprer Canal into Lake Rosalie and does not stay on the drain for the desired length of time. To remedy this situation, a second control structure should be constructed on the west end of the Zipprer Canal so that the park could maintain higher water levels and an extended hydroperiod within the park. Ideally, the Zipprer Canal should be restored to its natural condition.

In the remainder of the park, the original drainage pattern was altered to some extent by facilities construction. Ditches parallel the park drive for the first 3.25 miles, and two spur ditches fitted with percolation culverts lead water from the main ditches into wet flatwoods. The park drive was built at grade level so without these spur ditches, much of the park drive floods for extended periods.

In the acquired pasture area to the west of the park entrance, ditches were built to drain a large marsh area. The same marsh area has a berm around some of its eastern and southern sides that was used to control water levels within the marsh for cattle grazing or other purposes. The ditches in this area should be removed or plugged to restore the marsh. The berm needs more study to determine whether it should be maintained in order to flood the marsh to higher levels than what the altered hydrology of Lake Rosalie will currently support.

Natural Communities

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

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

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

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

MESIC FLATWOODS

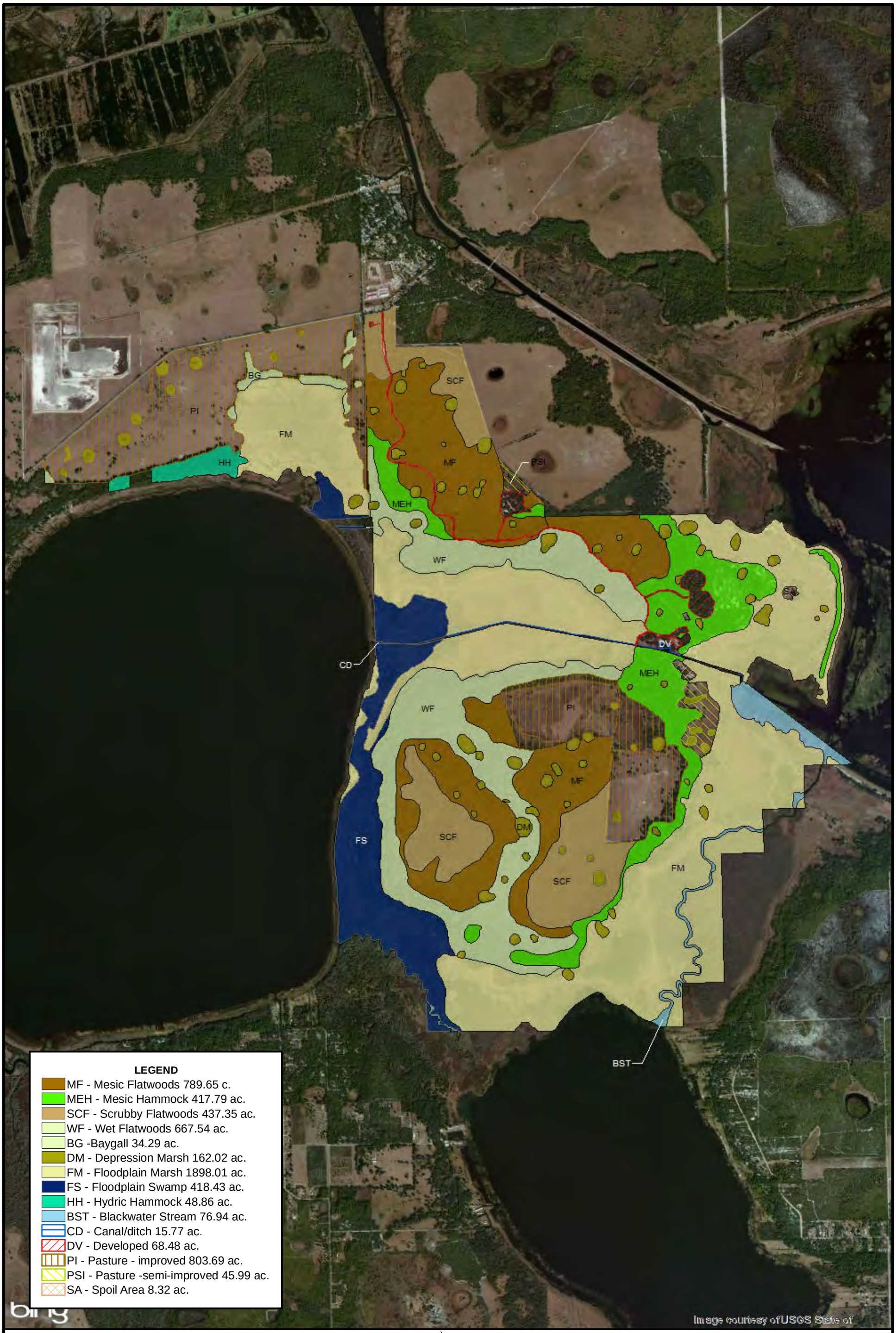
Desired future condition: The dominant pines will be longleaf pine (*Pinus palustris*) and south Florida slash pine (*Pinus elliottii* var*. densa*). Native herbaceous groundcover should be over at least 50 percent of the area and less than 3 feet in height. Saw palmetto (*Serenoa repens*) will comprise no more than 50 percent of total shrub species cover, and are less than 3 feet in height. Shrub species include saw palmetto, gallberry (*Ilex glabra*), fetterbush (*Lyonia lucida*), runner oak (*Quercus elliottii*), dwarf live oak (*Quercus minima*), shiny blueberry (*Vaccinium myrsinites*), and dwarf huckleberry (*Gaylussacia dumosa*). Shrubs are generally knee-high or less, and there are few if any large trunks of saw palmetto along the ground. The Optimal Fire Return Interval for this community is 1-3 years.

Description and assessment: The mesic flatwoods within the park are highly variable in condition. The present conditions are a reflection of past fire and grazing regimes as well as impacts related to timber and turpentine operations and disturbances from feral hogs.

A mosaic of dense wiregrass (*Aristida beyrichiana*) and patches of saw palmetto (*Serenoa repens*) typify much of the mesic flatwoods. Mature longleaf pines (*Pinus palustris*) are frequent, occurring in a clumped distribution. Species present include queen's delight (*Stillingia sylvatica*), *Garberia* sp. and gopher apple (*Licania michauxii*).

In contrast, there are other areas of mesic flatwoods where ground cover species are sparse, with large area being more-or-less bare. Wiregrass is sparse to nonexistent and the most common ground cover species include bottlebrush threeawn (*Aristida spiciformes*), broomsedge (*Andropogon virginicus*), and occasional patches of saw palmetto. Coverage by young water (*Quercus nigra*) and live (*Quercus virginiana*) oaks is common. Slash pine (*Pinus elliottii)* is occasional, but longleaf pine and south Florida slash pine (*Pinus elliottii* var. *densa*) are absent. Areas such as these may have been subjected to heavy grazing.

All the mesic flastwoods areas in the park have received fire management. Most of the areas have been burned on rotation for several cycles (2-4 years). Other areas



LAKE KISSIMMEE STATE PARK

N

0 0.25 0.5 1 Mile

Florida Department of Environment Protection
Division of Recreation and Parks
Date of aerial: 2009

NATURAL COMMUNITIES EXISTING CONDITIONS MAP

(LK-2, LK-11 and LK-10) have now received one burn after being backlogged in the past.

General management measures: The maintenance of this community will require regular application of prescribed fire. Burning should continue on these areas with an emphasis on lightning season burning. Monitoring and treatment of exotics in the mesic flatwoods should be ongoing.

MESIC HAMMOCK

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

Description and assessment: Mesic hammock occurs in several areas in the park. Some of these areas occur between mesic and wet flatwoods. Other areas are between flatwoods areas and floodplain marsh. Before hydrological manipulations, some of these areas may have been hydric hammock. The hammock surrounding the campground (LK-8b) has a number of pines that are present which may be a factor of it once having more of a flatwoods character or that is an ecotone area with characteristics of both habitats. Gobbler Ridge (in LK-8a) which is a berm along Lake Kissimmee has been mapped as mesic hammock in this plan. This berm was formed by the accumulation of wind-deposited sand from dry lake bottoms during drought periods.

Many of the mesic hammocks are dominated by massive live oaks supporting dense epiphytic growth of resurrection fern (*Polypodium polypodioides*), butterfly orchid (*Encyclia tampensis*), and a variety of air plants (*Tillandsia* spp.). They are generally quite open with few sub-canopy species such as cabbage palm (*Sabal palmetto*) or clumps of saw palmetto and sparse ground cover. In general, the mesic hammock community is in good condition; however, it is probably more widespread than previously due to hydrological changes and suppression of fire regimes. Some of these areas may be recovered to pine flatwoods with the park's continued prescribed burning program.

General management measures: Mesic hammock areas are not considered fire dependent communities although fire will be allowed to manage the ecotones

between this community and other communities that are fire dependent. Although exotic plants are fairly widespread in these communities, an attempt should be made to control them and to keep the conditions from getting worse. On organic substrates, fires should be appropriately planned to avoid high severity ground fires resulting in the upper soil level being completely consumed.

SCRUBBY FLATWOODS

Desired Future Condition: Dominant tree species will be longleaf pine (*Pinus palustris*) and/or south Florida slash pine (*Pinus elliottii* var*. densa*). Mature sand pines (*Pinus clausa*) will typically not be present. There will be a diverse shrubby understory often with patches of bare white sand. A scrub-type oak "canopy" will vary in height from 3 – 8 feet and there will be a variety of oak age classes/heights across the landscape. Dominant shrubs include sand live oak (*Quercus geminata*), myrtle oak (*Quercus myrtifolia*), Chapman's oak (*Quercus chapmanii*), saw palmetto (*Serenoa repens*), rusty staggerbush (*Lyonia ferruginea*), and tarflower (*Bejaria racemosa*). Cover by herbaceous species is often well below 40 percent. The Optimal Fire Return Interval for this community is regionally variable. Typically, 3-5 years when aiming to achieve a mosaic of burned and unburned areas.

Description and assessment: Scrubby flatwoods in the park range from fair to excellent condition. The majority, however, is in good condition. Areas in fair condition tend to be on the ecotones where fire has been excluded. These areas typically have heavy fuel loading with dense clumps of tall saw palmetto in open areas. They are dominated by mature scrub oaks, sand live oak (*Quercus geminata*), and live oak with an overstory of occasional south Florida slash pine. Lightered stumps and snags are common.

Areas with good to excellent scrubby flatwoods can be found on higher elevations where scrub oaks, including sand live oak, Chapman's oak (*Quercus chapmanii*), scrub oak (*Quercus inopina*), and myrtle oak (*Quercus myrtifolia*), occur. An overstory of mature South Florida slash pine is present. Other woody species include staggerbush (*Lyonia fruticosa*), gopher apple, shiny blueberry (*Vaccinium myrsinites*), wax myrtle (*Myrica cerifera*), and pawpaw (*Asimina reticulata*). Clumps of wiregrass are occasional. The Florida scrub-jay (*Aphelocoma coerulescens*) uses these scrubby flatwoods areas.

The scrubby flatwoods designation on Buster Island has been debated in the past as the area has characteristics of dry prairie, scrubby flatwoods, and mesic flatwoods. Buster Island does have widely scattered pines while dry prairie typically has none. Earlier aerial photos (mid 1940s - early 1950s) show more pines in the area than are now there; accordingly, the area has been classified as scrubby flatwoods. There are a number of Florida scrub-jays (*Aphelocoma coerulescens*) that use Buster Island as well as bald eagles (*Haliaeetus leucocephalus*) that have nests in the area.

General management measures: Prescribed fire is essential for the management of scrubby flatwoods. They should be burned within a range of every 3 to 5 years. With that said, some areas may need to be left longer than 5 years without fire, in

order to allow habitat for Florida scrub-jays. Careful planning needs to be taken in fire management by either having burns that are of patchy nature or splitting up areas to leave unburned sections. Some areas may need some of the larger oaks removed either by sawing or some other mechanical means. Care though needs to be taken to avoid soil disturbance and the spread of exotic plants. Exotic removal should continue in the scrubby flatwoods as needed.

WET FLATWOODS

Desired Future Condition: Dominant pines will be longleaf pine (*Pinus palustris*), slash pine (*Pinus elliottii*), pond pine (*Pinus serotina*), and/or loblolly pine (*pinus taeda*). Pond cypress (*Taxodium ascendens*) may reach canopy in some locations. The canopy will be open, with pines being widely scattered and of at least three age classes. Native herbaceous cover is at least 80 percent. Pitcherplants (*Sarracenia* spp.) and other plants such as terrestrial orchids may be present and abundant in some areas. Common shrubs will include sweetpepperbush (*Clethra alnifolia*), fetterbush (*Lyonia lucida*), large gallberry (*Ilex coriacea*), titi (*Cyrilla racemiflora*), and wax myrtle (*Myrica cerifera*). The Optimal Fire Return Interval for this community is 2-4 years.

Description and assessment: Wet flatwoods occur as ecotonal areas between the floodplain marsh and mesic-scrubby flatwoods communities. This community is influenced by cyclical periods of flooding and drying periods accompanied by fire. The community has been impacted by the disruption of the park's hydrology related to manipulations of the lake levels and by periodic intense fires. The community is also impacted by feral hogs with frequent rooting in some areas. Overall, the wet flatwoods community is considered in fair condition.

Ground cover is sparse to lacking over extensive areas, and where it does occur it is of low diversity. Slash pine is the typical dominant canopy species but it occurs intermixed with South Florida slash pine that is most likely the original on-site pine. Water oak (*Quercus nigra*) and laurel oak (*Quercus laurifolia*) have invaded large areas. Cabbage palm, live oak and redbay (*Persea borbonia*) occur occasionally. In more open sites, the dominant ground cover is maidencane (*Paspalum hemitomon*). One of these open areas occurs in an area of intense burning, and the ground cover in this area gives an indication of the species diversity that may have formerly occurred in the wet flatwoods community before hydrological alterations. The area is characterized by dense stands of maidencane, meadow beauties (*Rhexia* sp.), white violet, blue-eyed grass (*Sisyrinchium* sp.), yellow-eyed grass (*Xyris caroliniana*), bantam-buttons (*Syngonanthus flavidulus*), fetterbush (*Lyonia lucida*), gallberry (*Ilex glabra*), and wax myrtle.

An area formerly mapped as seepage slope community (in LK-17) is now characterized as wet flatwoods. This area has characterized by cutthroatgrass (*Panicum abscissum*), a species listed as threatened by the Florida Department of Agriculture and Consumer Services. Cutthroatgrass also occurs in flatwoods as smaller patches in burn zone LK-1 and LK-4 and at the edges of some of the depression marshes. These areas range in condition from fair to good depending on the results of fire exclusion and the associated invasion by woody species.

General management measures: Prescribed fire should be applied to this community every 2 to 4 years. The wet flatwoods areas in the park have been burned several times and are currently in rotation. Some of the latest burns have been during the spring/summer seasons and efforts should be made to keep burning during the growing season. All cutthroatgrass areas should be located and included in burn zones. Slash pines have invaded some of the areas due to hydrological changes and changes in fire frequency. If prescribed burning does not remove these pines, mechanical removal should be undertaken. Mechanical removal should be limited to efforts that will not significantly impact this fragile natural community. Exotic plant monitoring and removal should be ongoing in this community.

BAYGALL

Desired future condition: 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 (*Ilex glabra*), fetterbush (*Lyonia lucida*), dahoon (*Ilex cassine*), titi (*Cyrilla racemiflora*), and red maple (*Acer rubrum*) is typical with climbing vines such as greenbriar (*Smilax* spp.) and muscadine grape (*Vitis* spp.) is usually abundant. The Optimal Fire Return Interval for this community is 25-100 years. Frequent fires from adjacent communities should be allowed to enter baygall ecotone.

Description and assessment: Baygall is largely confined to the area south of Camp Mack Rd (LK-18 and LK-19). These baygalls occur as pockets of habitat surrounded by what is now improved pasture and along the edge of the floodplain marsh. They have been affected by the alteration of the former flatwoods habitat to pasture and have most have drainage ditches connecting them or adjacent to them. Before drainage, some of these areas may have been more like floodplain swamp or even floodplain marsh. Due to the past hydrological changes these baygall are judged to be in fair condition.

General management measures: Baygall areas should be allowed to burn on the same frequency as the adjacent fire type community, allowing fires to naturally burn across ecotones. Fires should be appropriately planned to avoid high severity fuel consumption within the baygall and careful attention to muck conditions should be evaluated. The ditches connecting to and in the vicinity of them should be evaluated for potential restoration. Exotic plant species removal will continue.

DEPRESSION MARSH

Desired Future Condition: Emergent herbaceous and low shrub species will be dominant over most of the area with open vistas. Trees are few and if present, will occur primarily in the deeper portions of the community. There is little accumulation of dead grassy fuels due to frequent burning; one can often see the soil surface through the vegetation when the community is not inundated. Dominant vegetation in basin marsh and depression marsh include maidencane (*Panicum hemitomon*),

panic grasses (*Panicum* spp.), cutgrass (*Leersia* sp.), common reed (*Phragmites australis*), pickerelweed (*Pontederia cordata*), arrowheads (*Sagittaria* sp.), buttonbush (*Cephalanthus occidentalis*), St. John's wort (*Hypericum fasciculatum*), and coastalplain willow (*Salix caroliniana*). Floodplain marsh dominants also typically include sand cordgrass (*Spartina alterniflora*) and sawgrass (*Cladium jamaicense*). The Optimal Fire Return Interval for this community is 2-10 years depending on fire frequency of adjacent communities.

Description and assessment: Depression marshes are scattered throughout the park's flatwoods. The conditions of the marshes are highly variable, ranging from poor to excellent. The factors that determine the condition of an individual marsh include the continuity of native ground cover, the level of hardwood encroachment related to fire exclusion, the length of the hydroperiod, and the level of soil disturbance caused by hog rooting. Some marshes are being invaded by young slash pine and other woody species, indicating a need for fire. Rings of broomsedge around marsh perimeters likely indicate past disturbance by hogs. Even the better quality marshes often show signs of rooting around marsh edges. Some marshes are dominated by maidencane (*Panicum hemitomon*) and sawgrass (*Cladium jamaicense*) and have a few buttressed swamp tupelo (*Nyssa biflora*) at their centers and perimeters. Others are dominated by maidencane and sand cordgrass (*Spartina bakeri*), with other species including meadow beauty (*Rhexia* sp.), pink sundew (*Drosera capillaris*), pipewort (*Eriocaulon sp.*), bog-buttons (*Lachnocaulon sp.*), white violet (*Viola affinis*), and a terrestrial bladderwort (*Utricularia* sp.). Many of the depression marshes in LK-18 and19 have ditches associated with them.

General management measures: The depression marshes should not be excluded from prescribed fire when the zone they are in is burned if possible. Duff and muck levels and moisture content within them should be assessed prior to burning. Non ground disturbing mechanical removal of encroaching vegetation should be considered if depression marsh rims are overgrown with vegetation due to altered hydrology or lack of fire. Exotic plant species removal will continue. The ditches connecting the depression marshes should be filled or blocked if feasible to restore the natural hydrology of the marshes.

FLOODPLAIN MARSH

Desired Future Condition: Emergent herbaceous and low shrub species are dominant over most of the area, and there is an open vista. Trees are few and if present, will occur primarily in the deeper portions of the community. There is little accumulation of dead grassy fuels due to frequent burning; one can see often see the soil surface through the vegetation when the community is not inundated. Dominant vegetation in floodplain marsh includes maidencane (*Panicum hemitomon*) , panicgrasses (*Panicum* spp.), cutgrass (*Leersia* sp.), common reed (*Phragmites australis*), pickerelweed (*Pontederia cordata*), arrowheads (*Sagittaria* sp.) , buttonbush (*Cephalanthus occidentalis*), St. John's wort (*Hypericum fasciculatum*), and coastal plain willow (*Salix caroliniana*). Floodplain marsh dominants will also typically include sand cordgrass (*Spartina alterniflora*) and sawgrass (*Cladium jamaicense*). The Optimal Fire Return Interval for this community is 2-10 years depending on fire frequency of adjacent communities.

Description and assessment: The majority of floodplain marshes at the unit are in good condition despite the fact that their hydrology has been severely impacted by water manipulations on the Kissimmee Chain of Lakes. With dewatering and years of fire exclusion, woody species, primarily wax myrtle, invaded the marshes. The woody invasion is primarily the result of the disrupted hydrology but an irregular fire regime has also contributed to the woody invasion.

In past years, restoration efforts have been undertaken to clear the invading woody species from the marsh. Efforts had also been undertaken to burn the marsh on a regular basis, annually over much of the marsh. Maidencane is now dominant and wax myrtle is absent over a good portion of the marsh area. Water levels remain lower than they have historically been, and this is a problem that has not been sufficiently addressed. In 1979, a weir was constructed across the eastern portion of the Zipprer Canal. It allows for higher water levels in Rosalie Drain, a large marsh area in the center of the park. The weir has had the desired effect but levels have still not been allowed to reach their historic highs nor has inundation occurred for a sufficient duration. An additional water control structure may be needed on the west end of the canal. At present, the limits of restoration have been reached using currently available resource management tools. The floodplain marsh in LK-18 has been ditched and bermed and is in need of major restoration.

General management measures: The floodplain marsh should receive regular application of prescribed fire (2-3 yrs). Fires should attempt to control the encroaching myrtles on the marshes by fire. If this can't be achieved, then possible mechanical control should be attempted. Care should be taken to limit ground disturbance during removal of encroaching vegetation. The marsh area north of Lake Rosalie should be looked at and restored if possible (see hydrology section).

FLOODPLAIN SWAMP

Desired Future Condition: Frequently or permanently flooded community in low lying areas along Lake Rosalie and Rosalie Creek. Soils will consist of a mixture of sand, organics and alluvial materials. Closed canopy will typically be dominated by bald cypress (*Taxodium distichum*) but commonly includes tupelo species (*Nyssa* spp.) as well as water hickory (*Carya aquatica*), red maple (*Acer rubrum*) and overcup oak (*Quercus lyrata*). Trees bases are typically buttressed. Understory and groundcover will be typically sparse.

Condition and Assessment: Floodplain swamp covers a band along the shore of Lake Rosalie and Rosalie Creek. This community is in good condition. Dominant trees include laurel oak (*Quercus laurifolia*), occasional live oak, swamp tupelo, and cabbage palm mixed with buttressed slash pine. The coverage of floodplain forest is increasing into new areas due to the disruption of the historic hydrological regime. This community has encroached on the floodplain marsh community because of the stabilization of Lake Rosalie levels and the construction of the Zipprer Canal. Red maples (*Acer rubrum*) are invading a portion of the forest and into the adjacent floodplain marsh. This encroachment could be slowed by the installation of a water control structure on the west end of the Zipprer Canal that could be used to hold water on the forest longer. It would be further slowed by restoring the Zipprer

Canal. The application of prescribed fire will also slow the spread of floodplain forest into floodplain marsh.

General Management Measures: The floodplain swamp will require little direct management. Because this community is primarily maintained by hydrology, hydrologic disturbances affecting the surrounding lakes and creeks such as flow and level changes will affect this community within the park. The Kissimmee Headwater Lakes Revitalization Project should help improve the general hydrology of the park's hydric communities. The result should be more frequent seasonal flooding and higher water levels within the floodplain swamp habitat (see hydrological restoration section). Monitoring and treatment for exotic plant infestations will continue.

HYDRIC HAMMOCK

Desired Future Condition: A closed canopy, evergreen hardwood and/or palm forest with a variable understory dominated by palms, with sparse to moderate ground cover of grasses and ferns. Typical canopy species will include laurel oak (*Quercus laurifolia*), cabbage palm (*Sabal palmetto*), live oak (*Quercus virginiana*), sweetbay (*Magnolia viginiana*), swamp tupelo (*Nyssa sylvatica biflora*), American elm (*Ulmus Americana*), red maple (*Acer rubrum*) and other hydrophytic tree species. Soils are poorly drained, with a normal hydroperiod seldom over 60 days per year. Hydric hammock should occasionally burn by allowing fires to naturally burn across ecotones from fires originating in adjacent upland natural communities.

Description and assessment: Hydric hammock occurs in LK-19 north of the shoreline of Lake Rosalie. Live oaks and cabbage palm are major components. It is in fair to good condition. There are some exotic plants that have invaded this area and the hydrology has been altered by the control of water in the entire Kissimmee basin.

General Management measures: Fire is not an important factor influencing the condition of hydric hammock. It although formerly likely burned into this habitat from the former flatwoods (now pasture) habitat north of this area. Management of exotic plants is needed in order to attempt to control the species that occur here (see exotic plant section).

BLACKWATER STREAM

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

Description and assessment: Both Rosalie and Tiger Creeks are classified as blackwater streams. Both creeks occur on the unit's southern boundary, although they do not completely form the southern boundary of the park. Both creeks are characterized as having good water quality and are Class III waters and Outstanding Florida Waters. Both creek systems drain to Lake Kissimmee, with the flow through Rosalie Creek having been disrupted by the construction of the Zipprer Canal. Both creeks are bordered by extensive floodplain swamp and marsh.

General Management Measures: This community will generally not require much direct management other than protection from visitor impacts. The historical flow of the Kissimmee River has been altered and is currently under restoration (see hydrological restoration section). Once completed, the restoration plan calls for a more natural fluctuation of water levels in the Kissimmee River basin. This should lead to changes in water levels in Tiger and Rosalie Creek and improved hydrology in the surrounding marsh and swamp habitats. Exotic species in this community should be monitored and treated as needed.

CANAL/DITCH

Desired future condition: The long term desired future condition for the canal/ditch is to restore the altered landcover type to floodplain marsh. Please see the desired future condition statements for these natural communities above.

Description and assessment: The Zipprer Canal (LK-21) was installed in 1947 in the Rosalie drain which flows from Lake Rosalie to Lake Kissimmee. A water control structure (G-103) just west of the marina controls water flow into Lake Kissimmee. This structure was put in 1979 in order to help maintain water levels in the floodplain marsh area (LK-5B & LK-7). This structure is maintained and controlled by the SFWMD.

General management measures: Although long term restoration of this canal is desirable, the feasibility of this occurring is likely not possible**.** The canal flow is managed by SFWMD and provides for flood protection of development around Lake Rosalie. Aquatic weed control within the canal is managed by SFWMD & Polk County. The canal is currently used by canoeists and kayakers to access Lake Rosalie. It is also being considered for inclusion as part of a Blueway designating a paddling loop around Buster Island. Motorized boats are not allowed in the canal west of the weir. The park maintains a wire gate at the beginning of the canal at Lake Rosalie.

PASTURE-IMPROVED

Desired future condition: The long term desired future condition for the pasture –improved areas is to restore the altered landcover type to a mix of wet, mesic, and scrubby flatwoods. Please see the desired future condition statements for these natural communities above.

Description and assessment: The pasture – improved areas in the park occupy 804 acres. There are two separate areas of this type at the park. One area (LK 9 & LK16 & a small portion of LK10) is in the central area of the park on Buster Island.

These areas are used to maintain the herds of scrub cattle and cracker ponies that are used in the interpretation of the 1876 cow camp. Approximately a third of this area is used for pasturing the cattle and horses.

Another half of the area is known as the pangola field and is used for haying and supplying the scrub cattle and horses with supplemental feed. This area was converted to improved pasture in the 1950s. It has been planted with pangola grass (*Digitaria decumbens*). A portion of the original pasture was planted with improved slash pine in the past in an effort to restore the natural community. Such restoration efforts should continue, but South Florida slash should be used and ground cover restoration should also be considered.

Currently, the other pasture – improved areas south of Camp Mack Road (LK-18 and 19) are under cattle grazing use agreement as well as pastures that are part of ADB Catfish Creek Preserve State Park north of Camp Mack Road. They are primarily composed bahiagrass (*Paspalum notatum*) and other pasture grasses with little overstory. There are a few areas with scattered cabbage palm, longleaf pine, slash pine and some live oaks as well as other hardwoods. The area has several ditches that help drain the area.

General Management Measures: Control of EPPC Category I and II invasive plant species in these altered landcover areas will be on going. Prescribed fire may be applied for vegetative fuel management. Other management measures include limited restoration efforts designed to minimize the effect of these altered areas on adjacent natural areas.

Current pastures that are used for grazing of scrub cattle and cracker ponies should be maintained for this use. It is much preferable to use these already disturbed areas for livestock grazing versus using the natural areas of the park. No additional natural community should be converted to improved pasture for livestock grazing. Consideration should be given to restoring natural communities in areas of improved pasture that are not needed to maintain the cattle and horses used for historical interpretation.
Other areas of this altered landcover should be considered for restoration. A plan for long-term restoration on the pasture areas (LK-18 and 19) back to flatwoods habitat should be pursued as possible. The interim management activity of grazing will be continued until measures are developed to restore this altered landscape. Cost-effectiveness, return on investment and consideration of other higher priority restoration projects within the park will determine the extent of restoration measures in these altered areas. Currently some of this area is being included in a plan for restoration by the SFWMD. In this plan hydrological restoration in adjacent wetlands and the former flatwoods will occur prior to any upland restoration.

PASTURE –SEMI-IMPROVED

Desired future condition: The long term desired future condition for the pasture - semi–improved areas is to restore the altered landcover type to a mix of wet flatwoods and floodplain marsh. Please see the desired future condition statements for these natural communities above.

Description and assessment: These areas (eastern portion of LK16) consist of pasture grasses and have a few small areas of oaks. Mainly in the northeastern portion is former floodplain marsh. These areas are used to maintain the herds of scrub cattle and cracker ponies that are used in the interpretation of the 1876 cow camp. This area also provides a backdrop for the cow camp site.

General management measures: Control of EPPC Category I and II invasive plant species in these altered landcover areas will be on going. Prescribed fire may be applied for vegetative fuel management. The area should be maintained as grazing area for the ongoing interpretation of the 1876 cow camp.

SPOIL AREAS

Desired future condition: The long term desired future condition for the spoil areas is to restore the altered landcover type to floodplain marsh. Please see the desired future condition statements for this natural community above.

Description and assessment: There are two spoil piles and one reconfigured spoil pile in the park. One is an old spoil area near the cow camp from the dredging of the marina. The other spoil piles in the park are from the drawdown and scraping of Lake Kissimmee. Both of these spoil areas created during the drawdown are the responsibility of the Florida Fish and Wildlife Conservation Commission (FWC). One inland pile is west of Gobbler Ridge and the other pile was located a short distance offshore of Gobbler Ridge and was slated to be left as a wildlife island. In 2002, the park worked with the FWC in relocating the latter spoil pile and reconfiguring it along the upland shoreline of Gobbler Ridge. This relocation project decreased the aesthetic disturbance to the lakeshore landscape. The inland pile remains and needs to be dealt with. All these spoil areas need to be dealt with as they are a disturbance to the landscape and a source of exotic plants.

General management measures: Control of EPPC Category I and II invasive plant species in these altered landcover areas will be on going. Prescribed fire may be applied for vegetative fuel management. The DRP will continue to coordinate with FWC to resolve the issue of the remaining inland spoil area, and pursue assistance for the control of invasive exotic plant species through FWC's Upland Invasive Plant Management Program.

DEVELOPED AREAS

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

Description and assessment: Developed areas of the park include a paved park drive, residences and shop areas, ranger station area, parking lots at the main use area, a boat launch area, a picnic area and a family campground. The picnic area has an overstory of old age live oaks. The campground area is formerly mesic

hammock/mesic flatwoods which still contains a fair amount of intact habitat.

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 managed areas with prescribed fire or at risk of wildfires. Prescribed fire in the campground area is used to help reduce wildfire risk and periodic fires may be employed to this area.

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

Numerous Imperiled species occur at Lake Kissimmee State Park. The floodplain marsh serves as host to numerous wading birds such as the snowy egret (*Egretta thula*), little blue heron (*Egretta caerulea*), tricolored heron (*Egretta tricolor*), limpkin (*Aramus guarauna*), Florida sandhill crane (*Grus canadensis pratensis*), and most recently whooping cranes (*Grus americana*) from the experimental reintroduced flock. Staff at Lake Kissimmee will continue to coordinate with FWC and USFWS regarding whooping crane management, will opportunistically monitor for occurances and nesting activity, and will report occurrances to these agencies. The park has several bald eagle nests scattered throughout flatwoods areas. These nests have been very productive over the years. A year-long monthly bird survey was completed with help from the Audubon Society in 2008 and documented the abundance of several of the imperiled bird species as well as other birdlife.

Everglade Snail Kite *(Rostrhamus sociabilis plumbeus)* are fairly frequently observed out on Lake Kissimmee and the surrounding marshes and waterways. The FWC monitors the activity of the kites that are using Lake Kissimmee and other surrounding areas. Known nesting sites have been documented out in the Tiger Cove area within or just adjacent to the park (LK-8A).

Crested Caracara (*Polyborus plancus audubonii*) are commonly observed along Camp Mack Rd and are utilizing the pasture habitat south of the road (LK-18 and 19). They commonly nest in Cabbage palm trees and are likely nesting in the park.

Gopher tortoises (*Gopherus polyphemus*) are regularly observed at the park mainly utilizing the flatwoods communities. Surveys have been conducted in the past and will continue to be done as much as possible. Management practices include prescribed fire and habitat restoration including hardwood reduction.

While the unit does not have many of the rare Lake Wales Ridge endemics, the scrubby flatwoods at the park are host to characteristic species such as the Florida scrub-jay (*Aphelocoma coerulescens*), Florida gopher frog (*Rana capito aesopus*), Florida mouse (*Podomys floridanus*), and possibly the bluetail mole skink (*Eumeces egregius lividus*). Florida scrub-jays have been monitored for many years at the park using Jay watch methods. The bluetail mole skink was last reported in 1979

and have not been since located. A survey should be done to verify their presence. Previous land managers reported southeastern kestrels *(Falco sparvarius paulus)* nesting in the park. There are no recent records of kestrels nesting in the area. In the past a few kestrel nest boxes were located at the park in the flatwoods community. These boxes were monitored by park staff. Consideration may be given to re-establishing the nest box program. However, habitat restoration may be more the key to the kestrel's use of the area.

Sherman's fox squirrels *(Sciurus niger shermanii)* occur in the flatwoods areas in the park as well as in some of the altered landtypes. Fox squirrels are observed on occasion in the park and the park does not seem to support a large population.

Occasional reports of Florida panther (*Puma[=Felis] concolor coryi*) and Florida black bear (*Ursus americanus floridanus*) occur in and around the park area. Areas of dense cover (escape cover) for panthers as well as black bears are important for these species. The park should attempt to manage some areas accordingly for these species. Staff at Lake Kissimmee should continue to coordinate with FWC and the USFWS regarding Florida panther management, and will report confirmed occurrences to these agencies.

The park also has a limited distribution of cutthroatgrass (*Panicum abscissum*) that is a grass with the bulk of its distribution remaining in Polk and Highland counties. The cutthroatgrass is mainly found out on Buster Island in the wet flatwoods habitat. Past managers report that the population has expanded over the years. The continued use of prescribed fire has likely been responsible for the growth.

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

Table 2: Imperiled Species Inventory

Common and Scientific Name	**Imperiled Species Status**				**Management Actions**	**Monitoring Level**
	FWC	**USFWS**	**FDACS**	**FNAI**		
PLANTS						
Garberia *Garberia heterophylla*			LT		1,10	Tier 1

Pine Lily *Lilium catesbaei*			LT		1,10	Tier 1
Cutthroatgrass *Panicum abscissum*			LE	S2	1,10	Tier 1
Yellow butterwort *Pinguicula lutea*			LT		1,10	Tier 1
Giant orchid *Pteroglossaspis ecristata*		MC	LT	S2	1,10	Tier 1
Toothed lattice-vein fern *Thelypteris serrata*			LE		10	Tier 1
Cardinal airplant *Tillandsia fasciculata*			LE		10	Tier 1
Rainlily *Zephyranthes atamasco*			LT		1,10	Tier 1
AMPHIBIANS						
Gopher frog *Lithobates capito*	SSC			S3	10	Tier 1
REPTILES						
Gopher tortoise *Gopherus polyphemus*	ST			S3	1,6,10	Tier 2
American alligator *Alligator mississippiensis*	FT(S/A)	T(S/A)		S3	10,13	Tier 1
Bluetail mole skink *Eumeces egregius lividus*	FT	LT		S2	10	Tier 1
Eastern indigo snake *Drymarchon corais couperi*	FT	LT		S3	1,10	Tier 1
Southern hognose snake *Heterodon simus*				S2	10	Tier 1
Mississippi green water snake *Nerodia cyclopion*				S1	10	Tier 1
Florida pine snake *Pituophis melanoleucus mugitus*	SSC			S3	1,10	Tier 1
BIRDS						
Brown Pelican *Pelecanus occidentalis*	SSC			S3	10	Tier2
Snowy Egret *Egretta thula*	SSC			S3	10	Tier 2
Little Blue Heron *Egretta caerulea*	SSC			S4	10	Tier 2
Tricolored Heron *Egretta tricolor*	SSC			S4	10	Tier 2
White Ibis *Eudocimus albus*	SSC			S4	10	Tier 2

Roseate Spoonbill *Platalea ajaja*	SSC			S2	10	Tier 2
Wood Stork *Mycteria americana*	FE	LE		S2	10	Tier 2
Swallow-tailed Kite *Elanoides forficatus*				S2	10	Tier 2
Everglade Snail Kite *Rostrhamus sociabilis plumbeus*	FE	LE		S2	10	Tier 3
Short-tailed Hawk *Buteo brachyurus*				S1	10	Tier 2
Audubon's Crested Caracara *Polyborus plancus audubonii*	FT	LT		S2	10	Tier 2
Southeastern American Kestrel *Falco sparverius paulus*	ST			S3	10	Tier 2
Merlin *Falco columbarius*				S2	10	Tier 2
Limpkin *Aramus guarauna*	SSC			S3	10	Tier 2
Florida Sandhill Crane *Grus canadensis pratensis*	ST			S2S3	10	Tier 2
Whooping Crane *Grus Americana*	FXN	XN		SXC	3,10	Tier 4
Florida Scrub-Jay *Aphelocoma coerulescens*	FT	LT		S2	1,6,10,13	Tier 3
Worm-eating Warbler *Helmitheros vermivorus*				S1		Tier 1
MAMMALS						
Rafinesque's big-eared bat *Corynorhinus rafinesquii*				S2		
Sherman's fox squirrel *Sciurus niger shermani*	SSC			S3	1,6,10	Tier 1
Florida mouse *Podomys floridanus*	SSC			S3	1,6,10	Tier 1
Florida black bear *Ursus americanus floridanus*				S2	1,4,10,13	Tier 1
Florida panther *Puma[=Felis] concolor coryi*	FE	LE		S1	10,13	Tier 1,5

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 Species 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.

Plants: The level of exotic plant species invasions at this unit is presently moderate. The following discussion of the known exotic plants is in priority order of their perceived degree of threat; and accordingly, in the order in which removal

should proceed.

Cogongrass (*Imperata cylindrica*) is located in several locations in the park, most notably along the roads, campground area and the pangola field. All known locations have been treated several times and are being monitored for re-sprouts. Because this species poses such a threat to natural communities, any infestations of this species should be eradicated as soon as possible. Nearby private properties also have cogongrass, and the park should contact its neighbors and work towards eradication from the entire local area.

Brazilian pepper (*Schinus terebinthifolius*) has been found in the floodplain swamp along Rosalie Creek. The mature trees have been removed but follow-up treatments will be necessary to remove any sprouts and seedlings. It also occurs on Gobbler Ridge. Because of the threat this species poses, searches for its occurrence should be made in other areas of the floodplain swamp as well.

Hydrilla (*Hydrilla verticillata*) and water hyacinth (*Eichornia crassipes*) occur in Lake Kissimmee and other surrounding lakes. Complete eradication from the marina and Zipprer Canal are likely impossible because of the continual transport from associated lakes. Biocontrol methods will likely be necessary for permanent large-scale control of these species. Control of exotic aquatic plants is primarily handled by the South Florida Water Management District.

Although it is native, Bladderpod or prairie bean (*Sesbania vesicaria*) is a prolific legume growing at the margins of the floodplain marsh and can quickly colonize disturbed areas. It produces tall rank stands and has the ability to seed bank large quantities of seed in the soil. These seeds can germinate over a period of years. This species occurs on a large scale in the park and is the most pervasive pest plant problem. A combination of burning or mowing before seed set and manipulation of water levels is working to reduce the numbers of this species in the park. A sustained concerted effort and cooperation from other agencies is necessary to control this species from the park.

Caesarweed (*Urena lobata*) occurs in the park. It produces copious quantities of seed that can be stimulated to germinate by fire. The park does have a moderate to heavy infestation of Caesarweed in a few areas. In these areas, a considerable amount of effort is needed to manage this species in the park. The pasture parcel north of Lake Rosalie has a large amount of this species. This ruderal/hammock area needs work to remove the exotic especially if any restoration efforts occur there.

Camphor-tree (*Cinnamomum camphora*), mimosa (*Albizia julibrissin*), guava (*Psidium guajava*), and sour orange (*Citrus aurantium*) occur sporadically in hammock areas of the park. When they are found, they should be either manually removed or treated with herbicide.

Lion's-ear (*Leonotis nepetaefolia*) has been seen in at least two locations of the park. This species does not pose a serious threat to the natural areas of the park

but could become a localized nuisance in pastures. It is treated as needed.

Tropical soda apple (*Solanum viarum*) that is typically associated with cattle operations occurs on the cattle pasture west of the Ranger Station (LK-18, 19). This exotic has been treated but continual monitoring for it is needed. Citrus is scattered throughout the hammock in LK-19.

Paragrass (*Urochloa mutica*) is found along the shoreline of Lake Kissimmee mainly along Gobbler Ridge and along Zipprer Canal from the marina out to the lake. It is found on the spoil piles out in the lake and inland from the lake. Paragrass is a widespread plant that is established throughout the shoreline of Lake Kissimmee. The spoil pile out in the lake was treated with herbicide before reconfiguring the mound along the Gobbler Ridge shoreline. Further work needs to be done to find out what course of action can be done within the park. Control methods are not well known for this species, as it has not been worked on by many in the past.

A recent invader to the area that has moved up from the south is Old world climbing fern (*Lygodium microphyllum*). Another invader that has moved down from the north is Japanese climbing fern *(Lygodium japonicum*). A few locations of Japanese climbing fern have been found and treated. Old world climbing fern has not presently been found in the park but has been found in several protected and unprotected lands in Polk County. These exotics are very invasive and an effort should be made to survey the park for this species and control it before it becomes a major problem.

When equipment for general maintenance as well as for ecological restoration projects is used, care must be taken to avoid introducing new exotics as well as spreading existing exotics. Efforts to ensure that the equipment is cleared of any debris and cleaned before use should be taken.

Animals: Feral hogs present the greatest known threat to the natural and cultural resources of the preserve from exotic species. Staff needs to continue and increase hog removal activities.

Other exotic animals known to occur in the park include nine-banded armadillos (*Dasypus novemcinctus*), coyotes (*Canis latrans*), and fire ants (*Solenopsis invicta*). Nine-banded armadillos should be removed whenever possible. Coyotes will be removed only in cases where the species is known to significantly impact natural resources or park operations.

Table 3 contains a list of the Florida Exotic Pest Plant Council (FLEPPC) Category I and II invasive, exotic plant species found within the park (FLEPPC, 2009). The table also identifies relative distribution for each species and the management zones in which they are known to occur. An explanation of the codes is provided following the table. For an inventory of all exotic species found within the park, see Addendum 5.

Table 3: Inventory of FLEPPC Category I and II Exotic Plant Species			
Common and Scientific Name	**FLEPPC Category**	**Distribution**	**Management Zone (s)**
PLANTS			
Alligator weed *Alternanthera philoxeroides*	II	2	LK-12C
Camphor-tree *Cinnamomum camphora*	I	1	LK-04
Water-hyacinth *Eichhornia crassipes*	I	2	LK-18
		3	LK-12C, LK-13
Hydrilla *Hydrilla verticillata*	I	2	LK-12A, 13
Cogongrass *Imperata cylindrica*	I	1	LK-07
		2	LK-03, 05A, 06, 07, 08A, 08B, 08D, 14, 15, 19, 20
		3	LK-04, 08B, 09
Japanese climbing fern *Lygodium japonicum*	I	1	LK-12B
Natal grass *Melinis repens*	I	2	LK-09
		3	LK-08A
Guinea grass *Panicum maximum*	II	3	LK-09
Torpedo grass *Panicum repens*	I	2	LK-12A, 13
		3	LK-12C, 18, 21
		6	LK-08D
Water lettuce *Pistia stratiotes*	I	2	LK-17B, 18, 21
		3	LK-12A, 12C
		6	LK-13
Chinese tallow tree *Sapium sebiferum*	I	2	LK-12A
Brazilian pepper *Schinus terebinthifolius*	I	1	LK-08A, 18
Tropical soda apple *Solanum viarum*	I	2	LK-05C, 17, 18,19
Caesarweed *Urena lobata*	II	2	LK-01, 05B, 06, 07, 08A, 08B, 08D, 14, 15, 19, 20
		3	LK-16
Paragrass *Urochloa mutica*	I	2	LK-08D
		3	LK-05C, 07, 12A, 12B, 13, 17A, 21
		4	LK-06, 08A

Distribution Categories:

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

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

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

Detailed management goals, objectives and actions for management of invasive exotic plants and exotic and nuisance animals are discussed in the Resource Management Program section of this component.

Special Natural Features

Most of Buster Island has been designated as wilderness preserve by the DRP. It is a relatively large area without any development. Also surrounding this area are the lakes and creeks that create this island. This enhances the wilderness preserve section by adding to the isolation of the entire area. This unique character is becoming hard to find as land development continues. This wilderness quality should be maintained for future generations.

Cultural Resources

This section addresses the cultural resources present in the park that may include archaeological sites, historic buildings and structures, cultural landscapes and collections. The Florida Department of State (FDOS) maintains the master inventory

of such resources through the Florida Master Site File (FMSF). State law requires that all state agencies locate, inventory and evaluate cultural resources that appear to be eligible for listing in the National Register of Historic Places. Addendum 7 contains the FDOS, Division of Historical Resources (DHR) management procedures for archaeological and historical sites and properties on state-owned or controlled properties; the criteria used for evaluating eligibility for listing in the National Register of Historic Places, and the Secretary of Interior's definitions for the various preservation treatments (restoration, rehabilitation, stabilization and preservation). For the purposes of this plan, significant archaeological site, significant structure and significant landscape means those cultural resources listed or eligible for listing in the National Register of Historic Places. The terms archaeological site, historic

structure or historic landscape refer to all resources that will become 50 years old during the term of this plan.

Condition Assessment

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

Level of Significance

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

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

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

Pre-Historic and Historic Archaeological Sites

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

Description: The Florida Master Site File (FMSF) lists two sites (8PO05300 and 8PO05301) within the park. Both these sites were recorded by park staff in 1996. The Florida Master Site File also lists another site (8PO07250) that is adjacent to the park. The park has had no formal survey for archeological surveys. A phase I cultural resource survey by New South Associates (2009) was done on a 350-acre site formerly managed by the park (part of Allen David Broussard Catfish Creek Preserve State Park) just north of the park.

The park has no sites that definitively show prehistoric usage but sites near the park show evidence in the area. Just north of the park is the Drasdo Earthworks site which has been attributed to Belle Glade culture around 700 B.C. – A.D. 1700. Since the 1850s, the lands around the Kissimmee River and Lake Kissimmee have been utilized by a number of different industries: cattle ranching, timber, turpentine, farming, and now outdoor recreation and tourism. Several saw mill sites have been located. Catfaced pine trees, some with tin cups and clay pots, are evidence of turpentine activities. An unnamed cemetery lies by the park's hiking trail (Florida Department of Environmental Protection 1998). It has no tombstones and currently has protection by hogwire fencing. The location of Ft. Gardiner occurred a short distance to the east of the park along the Kissimmee River. Due to the vicinity of Ft. Gardiner, the area saw use during the Seminole Wars. A folktale claims that Buster Island served as the home for the Seminole Billy Buster after he was exiled for killing his brother. No middens or mounds are known to occur on the park; however, several artifacts have been found in a few areas in the park (see below).

For the purposes of historical interpretation, the park maintains a living history cow camp that interprets Florida's pioneer cattle industry in the 1870s. For the purpose of this living history interpretation, the park maintains a herd of Early Breed scrub cattle. This same breed wandered Florida's open range. The park also has Cracker ponies that were the small horses used to cow hunt on the range and through the woods.

8PO05300, Gobbler Ridge, is an earthen ridge along the eastern face of a small peninsula jutting into the northwest corner of Lake Kissimmee. The ridge is on the shoreline of the peninsula, and appears to be primarily a natural feature, probably formed by wave action from the lake. Several unidentified prehistoric ceramic shards had been found on the site, and at this time, the site has not been dated (Florida Department of State: 8PO05300). Erosion is a potential threat. The

condition assessment currently is good. The site is not eligible for National Register listing.

8PO05301, Cow Camp, is the site of a late 19th century cattle ranch, and the site is currently used as a living history site, interpreting the 1876 cattle industry and the Florida "cow hunters." Historic pottery shards and a partial projectile point were collected at the site; the point has not been identified (Florida Department of State: 8PO05301). The site is not eligible for National Register listing.

8PO07250, Military Road to Ft. Gardiner was listed by New South Associates (2009). This site along the current route of Camp Mack Road is adjacent to and divides Lake Kissimmee State Park and ADB Catfish Creek Preserve State Park. The road has been paved over in the creation of Camp Mack Road and the current road may not be the original course of the old road due to re-alignment. Colonel Zachary Taylor used the route during the Second Seminole War to lead troops through the area from nearby Fort Gardiner. The condition of this site is unknown.

Condition Assessment: The two artifact sites that were recorded by park staff (8PO05300 & 8PO05301) are in good condition. The Cow Camp site is protected by heavy staff presence as it is in the area of the current living history site. The Gobbler Ridge site being close to the shoreline of Lake Kissimmee may be subject to erosion. Currently no problems have been observed.

The condition of the Military Road to Fort Gardiner site (8PO07250) is unknown. As the location of the old road related to the current Camp Mack Rd in not known, assessment of the condition is difficult.

Level of Significance: Lake Kissimmee State Park management plan addresses the status and expected conditions of resources located in the park. The significance of each of the cultural resources located within Lake Kissimmee State Park is addressed separately in this overview. The sites must be monitored, any stabilization issues addressed, and additional information or data relative to any of the sites submitted to the DHR/FMSF.

FMSF records indicate that Lake Kissimmee State Park-Gobbler Ridge (8PO05300), a prehistoric site with pottery, and Lake Kissimmee St Park-Lake Kissimmee Cow Camp (8PO05301), a prehistoric site lacking pottery, were Not Evaluated by Recorder and Not Evaluated by SHPO. The recorder provided no evaluation for the Military Road to Fort Gardiner (8PO07250) and SHPO cited Insufficient Information for evaluation of this historic linear resource located immediately adjacent to and partially within the park.

Lake Kissimmee State Park has no recorded NR Listed or Eligible resources warranting higher profile monitoring and measures to stabilize and mitigate deterioration and disturbance, but all recorded sites will be located, visited and monitored regularly with necessary steps taken to conserve their integrity. Evidence of previously unrecorded sites will be documented and newly discovered sites will be recorded to DHR/FMSF standards. Boundaries of sites will be redefined as

appropriate. The park has no significant collection of artifacts.

General management measures: The two known sites in the park are in good shape and are not likely to need much effort in protection. These sites should continue to have their conditions monitored and protection from any vandalism should ensue if needed. Attempt should be made during prescribed burning to protect trees that have evidence of past use by the turpentine industry. Additional sites that are found should be recorded and submitted to the DHR/FMSF.

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: One structure in the park will qualify as an historic structure during this management plan period. A pole–shed (BL087004) built in 1974 is located in the current shop area for the park. This structure was the first structure built by the Florida Park Service at Lake Kissimmee State Park. This shed is used to store several park vehicles. The structure is maintained and protected by park staff.

Condition Assessment: The pole-shed is in good condition as of October 2012. As mentioned above, the shed is currently used by park staff to cover several park vehicles. There is no discernable threats to the structure that requires management action at this time.

Level of Significance: This structure represents the early development of the park and park operations during the early stages. The building does not reflect any particular architectural style.

General management measures: The one historic structure should be inspected regularly, to identify potential threats or damage, and necessary maintenance treatments. The DHR should be consulted for guidance with maintenance treatments if needed. The structure will be documented by park staff using procedures recommended by DHR within the next planning period.

Collections

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

Description: The park does not have any formal collections but does have a collection of articles as well as historical photos from the area. The park also has some turpentine pots that are used for interpretive display. There are also boxes of historic park photos and slides.

Condition Assessment: The informal park collection of historic photos, park history photos are kept inside the park administrative office. They are of good to

fair condition.

Level of Significance: The collection of articles and photos documents the parks development and park history. These collections are important in maintaining historical knowledge of the park.

General management measures: This collection is kept in photo albums and notebooks located in the park administrative office buildings. Some of the photos are in need of sorting and cataloging. Periodically this informal collection should be assessed and updated as needed.

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
PO05300 Gobbler Ridge	Pre-historic	Archaeological Site	NS	G	P
PO05301 Cow Camp	Pre-historic	Archaeological Site	NS	G	P
PO07250 Military Road to Ft. Gardiner	Historic/Unspecified	Resource Group	NE	NA	P

Significance:

NRLNational Register listed
NRNational Register eligible
NEnot evaluated
NSnot significant

Condition:

GGood
FFair
PPoor
NANot accessible

NENot evaluated

Recommended Treatment:

RSRestoration
RHRehabilitation
STStabilization
PPreservation
RRemoval
N/ANot 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 Lake Kissimmee State Park. Please refer to the Implementation Schedule and Cost Estimates in the Implementation Component of this plan for a consolidated spreadsheet of the recommended actions, measures of progress, target year for completion and estimated costs to fulfill the management goals and objectives of this park.

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

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

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

Hydrological Management

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

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

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

The hydrology of the unit is largely controlled by the water levels set for the Kissimmee Chain of Lakes. Unfortunately, in combination with on-site drainage by the Zipprer Canal, these levels are too low to maintain the unit's floodplain marsh community. Ideally, the Zipprer Canal should be filled back in and restored to original topographic grade. As this canal helps provide flood control on Lake Rosalie, this likely will not be possible.

The South Florida Water Management District's Kissimmee River Project in concert with the Kissimmee River restoration project would greatly enhance the long-term perpetuation of the wetland systems in the Kissimmee Chain of Lakes. The acquisition portion of the project includes substantial acreage of lake shorelines in the upper Kissimmee Basin. This would allow stages in the lakes to be raised from 52.5 to 54 feet (the amount needed to provide year-long flow to the river restoration). The current projected date for implementation of the new water schedule is 2015.

As funds become available a hydrological study of the park's current surface water features including ditches needs to be conducted. Historical sheet flow of the property needs to be investigated. The feasibility of restoration needs to be determined and the impact of the restoration evaluated. Negative impacts, such as flooding should be assessed and mitigated if possible. A sequential and prioritized hydrological restoration plan should be developed and used as a tool to aid park staff in the restoration of the preserve's hydrology.
The hydrological study and restoration plan should include evaluation of drainage associated with the main park drive. The drive is in need of repairs. The plan will likely call for re-paving the road and will result in a road height higher than the existing surface. Ditches and culverts have been installed in certain spots along the drive. These need to be evaluated to determine if they are effectively managing the water in regards to the natural hydrological functions of the surrounding natural communities. The road and ditches may be unnaturally draining some of the areas

and impeding surface flow in other areas. This evaluation should be performed prior to or in conjunction with any new plans for the main park drive.

Objective: Restore natural hydrological conditions and functions to approximately 250 acres of floodplain marsh natural community.

The floodplain marsh that is located north of Lake Rosalie had been ditched and has a berm that was created surrounding the southern portion of it. Although it has been used in the past and is still currently grazed by cattle, it seems to have maintained a portion of the original habitat makeup. It historically appears to have drained out to the Rosalie Drain (LK-5B, LK-7). It has approximately 18,000 feet of ditches that need to be backfilled or ditch blocked. The berm around the marsh currently acts to impound the water and slowing the water from draining into the Rosalie Drain and Lake Rosalie. Lake Rosalie is currently maintained as with the entire Kissimmee River basin below natural historic lake levels. Thus, the berm seems to be actually helping keep the marsh hydrated. Therefore, it seems that the berm should likely remain and that a water control structure should be installed so that historic water levels can be maintained in the marsh. This idea should be pursued and carried out as funds become available.

Natural Communities Management

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

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

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

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

Objective: Within 10 years, have 3,955 acres of the park maintained within the optimum fire return interval.

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

Table 5: Prescribed Fire Management		
Natural Community	Acres	Optimal Fire Return Interval (Years)
Mesic Flatwoods	789.7	2-4
Scrubby Flatwoods	437.4	3-5
Wet Flatwoods	667.5	2-4
Floodplain Marsh	1,898.0	2-4
Depression Marsh	162.0	2-4
Annual Target Acreage*	967-1904	
*Annual Target Acreage Range is based on the fire return interval assigned to each burn zone. Each burn zone may include multiple natural communities.		

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

The park is divided into zones based on existing firebreaks and roads (see Management Zones Map). Pre-burn preparation is an important consideration when applying fire to areas that have had fire excluded for long periods. Perimeter and internal firebreaks should be maintained and established according to agency policy. They should provide for adequate park protection and safe prescribed fire application. The complexity of the burn unit including the structure and height of the fuel within the zone and the receptiveness of fuels adjacent to the zone should be taken into account when preparing the firebreaks. Fire lines twice as wide as the fuel heights adjacent to the fireline is a general guideline for fire line preparation (10 foot fuel heights adjacent to line = 20 foot wide firebreak). Mechanical treatment of fuels adjacent to the firebreak may be needed to burn the zone safely. Perimeter lines need to be wide enough for defense and to allow a type 6 fire engine to move safely down the line. When widening the firebreaks, the vegetation along the boundary/fence line should be removed first to allow the perimeter break to function as such (the presence of wetlands, large native trees or protected plant species that pose no line defense threat may be an exception). Any additional widening can then be made on the zone side of the firebreak.

Preparation and planning for wildfires or escaped prescribed burns within the park should also be a component of the park's prescribed burn plan. Preferred fire suppression techniques and guidelines should be identified and discussed with the local Florida Forest Service (FFS) staff prior to the need for fire suppression within the park. Sensitive resources such as wetlands, imperiled species and cultural sites should be identified and mapped and that information conveyed to FFS prior to any

suppression activities.

In developing prescribed burn plans for the fire-adapted communities in the park, every effort should be made to mimic natural fire regimes in both timing and technique. In most natural fires, flank fires and head fires probably burned the majority of acres. Care should be taken during prescribed burns to avoid creating the hot spots that occur when two fire lines rapidly converge. To minimize the intensity of the fire convergence, narrow strip-head fires, point source ignition fires or flanking fires are preferred over a single backing fire that converges with a head fire.
Fire season and fire-return interval are both critical components of a fire regime. In most cases after initial fuel reduction burns have been completed during the non-growing season, all burns should then be conducted during the natural lightning season, given staffing and weather constraints. However, non-growing season burns are favorable as a last resort to prevent the zone from going into backlog.

Most of the management zones in the park have received fire management on a regular basis. A few of the zones (LK-2B and LK-10) have just been recently burned after long time without fire. These former backlogged areas need to get back into a regular burn rotation. On other zones, burning needs to continue. More emphasis should be placed on lightning season burning. Although in order to keep zones from becoming backlogged, burning during the winter should be considered when needed.

Since the Florida scrub-jay occurs at this unit, care should be taken when burning. Scrub fires sometimes burn in a mosaic pattern with areas of unburned vegetation. In this case, Florida scrub-jays will use and protect their territory after it burns, and the unburned patches of vegetation will provide cover and forage. However, in many instances scrub will not burn very well or will burn in a more extreme or complete fashion. In the cases where habitat will not be appropriate for jays until approximately 5 years, care should be taken to avoid burning too much jay habitat. Best management practices following the Florida scrub-jay recovery plan (USFWS 1990) should be used as a guide when burning in Florida scrub-jay territories.

It is important that the results of management practices be monitored. Post burn evaluations, that include review of established photo points, should be conducted to determine progress towards restoration goals and if adaptations to management practices are needed.

Based upon the fire return intervals and acreage figures for the natural communities within the park, optimally at least 967 – 1,904 acres should be burned each year to maintain the natural communities within their target fire return intervals. Park staffing, funding and weather conditions will influence the ability of the park to keep natural communities within their optimal fire return intervals. Not all zones may always be burned within the maximum recommended fire return intervals, while others may be burned more frequently. Some fire type acres will be unavailable for burning until conditions within the stand allow.

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

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

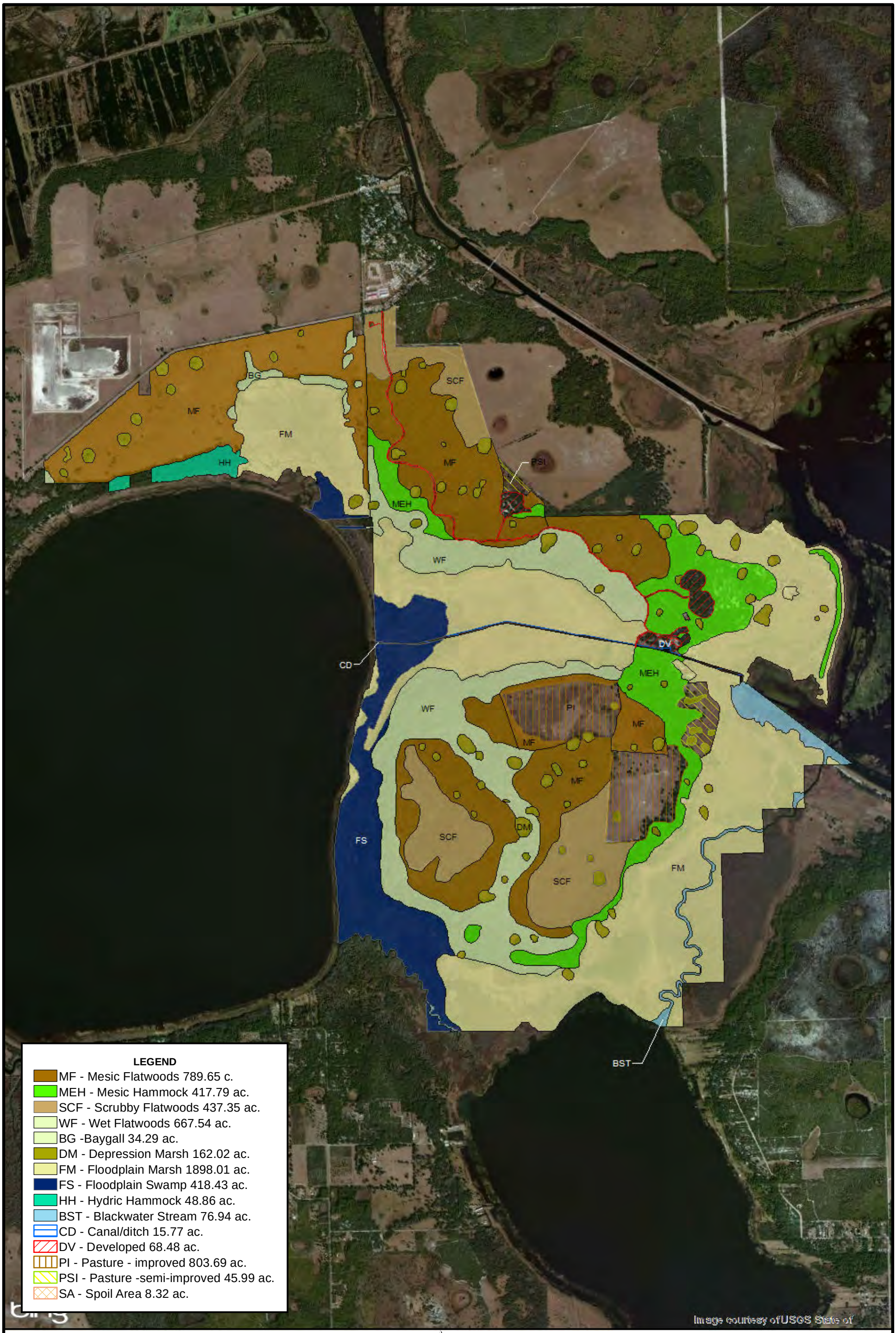
Examples that would qualify as natural communities' restoration, requiring annual restoration plans, include large mitigation projects, large-scale hardwood removal and timbering activities, roller-chopping and other large-scale vegetative modifications. The key concept is that restoration projects will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

Following are the natural community/habitat restoration and maintenance actions recommended to create the desired future conditions in the flatwoods community at Lake Kissimmee State Park (see Desired Future Conditions Map).

Objective: Create a habitat/natural community restoration plan on approximately 476 acres of flatwoods community.

A plan should be created that would cover all of the improved pasture north of Lake Rosalie LK-18 and 19). The plan would evaluate all the areas for possible restoration into scrubby, mesic or wet flatwoods. Currently most of these zones are under a cattle grazing use agreement. The cattle's grazing is only an interim management tool that is being used until a longer term restoration plan for the area is carried out. Some of these areas should be considered for restoration providing funding is available for such a project. As mentioned in the hydrological section above several ditches exist in these areas and hydrological restoration should be initiated prior to natural community restoration.

A likely area to start flatwoods restoration would be adjacent to the already existing area of flatwoods (LK-1). Approximately 30 acres will initially be targeted for restoration. A thorough plan should be developed for this sub-section that would outline the techniques which would include exotic removal, planting/seeding of



LAKE KISSIMMEE STATE PARK

N

0 0.25 0.5 1 Mile

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

NATURAL COMMUNITIES
DESIRED FUTURE CONDITIONS
MAP

native species, documentation, evaluation, and maintenance of the project area. Maintenance of the restored area will require application of prescribed fire within the recommended fire return interval. Long-term monitoring will be accomplished as part of the burn photo point process.

Natural Communities Improvement: Improvements are similar to restoration but on a smaller, less intense scale. This typically includes small-scale vegetative management activities or minor habitat manipulation. Following are the natural community/habitat improvement actions recommended at the park.

Objective: Conduct natural community/habitat improvement activities on 15 acres of scrubby flatwoods community.

Approximately 15 acres of scrubby flatwoods habitat in management zone LK-11B is overgrown with many larger oak trees. The oaks need thinning in order to effectively restore this habitat and effectively apply prescribed burning to it. Prescribed fire alone will likely not carry well through this area unless under extreme conditions. Mechanical measures such as using a combination of chainsawing the larger oaks and tree cutting the smaller oaks should be pursued. Soil disturbance should be minimized and equipment checks for exotic plant material should be conducted prior to equipment entering the site. The mechanical measures should be followed up with prescribed burning this section. Photopoints should be established in the project area to monitor project success over time.

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 park staff periodically to inform management of decisions that may have an impact on imperiled species at the park.

Ongoing inventory and monitoring of imperiled species in the state park system is necessary to meet the DRP's mission. Long-term monitoring is also essential to ensure the effectiveness of resource management programs. Monitoring efforts

must be prioritized so that the data collected provides information that can be used to improve or confirm the effectiveness of management actions on conservation priorities. Monitoring intensity must at least be at a level that provides the minimum data needed to make informed decisions to meet conservation goals. Not all imperiled species require intensive monitoring efforts on a regular interval. Priority must be given to those species that can provide valuable data to guide adaptive management practices. Those species selected for specific management action and those that will provide management guidance through regular monitoring are addressed in the objectives below.

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

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

Park staff and volunteers will continue to survey and monitor the park's population of Florida scrub-jays. Currently the jays are surveyed using guidelines developed by the Jay Watch program. This program tracks population trends. A report that includes the park's jays is documented by Johnson (2003). Transects have been established and have been carried out for several years. Efforts to color band jays at the preserve should occur. Banding would aid in the current monitoring. It would also provide information on the movement of jays within and outside of the park.

Surveys for gopher tortoise should be conducted for the flatwoods areas of the preserve. Park and District staff will survey and monitor the park's gopher tortoise population per the Division's established guidelines. All attempts will be made to survey for gopher tortoises following prescribed burns. Survey transects will be used to sample at least 10 percent of the zone. Protection of the gopher tortoises and their burrows, along with prescribed burning, should suffice to maintain populations of burrow commensals such as Florida mice and gopher frogs.

Gopher frogs and Florida mice have been identified in the park in the past. Additional surveys for Florida mice and gopher frogs should be conducted to determine if Florida mice still inhabit the property and if gopher frogs, previously documented near the park, currently exist. Staff will develop a list of prioritized management zones for initial surveys.

The Division will continue to depend upon the partnerships with other agencies and academic institutions in the monitoring other imperiled species that have been documented at the park.

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

Park staff will continue to document all the listed plant species that occur in the park. Two of these will specifically be targeted for survey and monitoring.

Cutthroatgrass will be monitored in LK-17. Techniques will include photo monitoring and GPS to track the condition of these areas in the park. Other smaller areas of

this species will be located and mapped via GPS.

The Giant orchids will be located and surveyed. A monitoring protocol currently does not exist for these two plant species and needs to be developed. GPS will be used to map the occurrence.

Exotic Species Management

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

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

Objective: Annually treat 50 gross acres of exotic plant species in the park.

An exotic plant removal plan is recommended that maps infested areas by management zone and determines priorities for treatment. The plan will provide guidance for subsequent annual work plans. The number of acres of exotic plants treated per year is likely to vary widely depending on the status of current infestations and any new infestations that might arise during the life of this management plan. Cogongrass will continue to be treated promptly and repeatedly. All infestations of old world and Japanese climbing fern must be located and herbicided. Priority should be given to FLEPPC Category I and II species when treating exotic plant species in the park. Non-invasive exotic plants that occur within the park will be removed whenever possible; however, ornamentals that are known to be non-invasive and occur in landscaping around residences may remain. All other scattered invasive exotic plant species will be treated upon detection and mapped for follow-up treatments. Any cut stumps will be treated with appropriate herbicide to prevent resprouting.

A plan and schedule for scouting and mapping invasive exotics in every zone within the park at least two times within 10 years is recommended. Areas that have sources of particularly aggressive species, such as cogongrass, may need to be scouted more frequently. Finding new populations of invasive exotic plants before they become established will help prevent larger infestations and reduce the cost and effort needed to control them. The focus should be on FLEPPC Category I and II plant species.

Though many of the large cogongrass patches have been reduced by herbicide treatments to smaller more manageable areas, efforts should remain ongoing to retreat known infestations and scout new infestations. All known and newly detected locations of exotic plants should be GPSed and mapped. The park should develop an exotic plant management plan to outline procedures for scouting, marking, treatment scheduling, treatment progress, retreatment, herbicide use procedures, as well as herbicide use and needs. As funds become available, contract herbicide treatments should be considered.

Objective: Practice preventative measures to avoid accidental introduction and spreading of exotics within the park.

Guidelines for clean sod, fill dirt, limerock, mowing, as well as cleaning and inspecting equipment that enters the park are recommended. New infestations of exotics can be prevented by ensuring that contractors such as mowers and loggers clean their equipment before entering the park and do not spread exotics by moving from a contaminated area within the park without cleaning their equipment.

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

Control activities will focus on areas where feral hogs and armadillos are causing the most damage. Park staff actively removes hogs from the property. Contractual services to remove feral hogs should be investigated to increase the number of hogs removed. The park also occasionally has to remove feral or stray cats and dogs from the property. These animals should be turned over to the county animal control facility.

Special Management Considerations

Timber Management Analysis

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

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. Timber management will be re-evaluated during the next revision of the management plan.

Arthropod Control Plan

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

Additional Considerations

The park has a short-term cattle use agreement on a portion of the park. The area that this incorporates was formerly cattle pasture prior to the DEP acquiring it. The cattle grazing are only an interim management tool that is being used until a longer-term restoration plan for the area is carried out. The long-term goal would be to restore the area to the extent possible to the original natural communities. The park is responsible for managing a 400-foot strip of sovereign submerged land along Lake Kissimmee and Lake Rosalie. These portions are managed to maintain the natural character of the shorelines.

Cultural Resource Management

Cultural Resource Management

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

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

The management of cultural resources is often complicated because these resources are irreplaceable and extremely vulnerable to disturbances. The advice of historical and archaeological experts is required in this effort. All activities related to land clearing, ground disturbing activities, major repairs or additions to historic structures listed or eligible for listing in the National Register of Historic Places and collections care must be submitted to the 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, cultural resource assessment survey by a qualified professional archaeologist, modifications to the proposed project to avoid or mitigate potential adverse effect. In addition, any demolition or substantial alteration to any historic structure or resource must be submitted to DHR for consultation and the DRP must demonstrate that there is no feasible alternative to removal and must provide a strategy for documentation or salvage of the resource. Florida law further requires that the DRP consider the reuse of historic buildings in the park in lieu of new construction and must undertake a cost comparison of new development versus rehabilitation of a building before electing to construct a new or replacement building. This comparison must be accomplished with the assistance of DHR.

Objective: Assess and evaluate 2 of 2 recorded cultural resources in the park.

The park intends to have two recorded sites (Cow Camp – 8PO05301 & Gobbler Ridge 8PO05300) evaluated and condition assessments updated during the plan period. Park staff will attempt to locate the sites and provide information to include but not limited to any threats to the site's condition such as natural erosion; vehicular damage; horse, bicycle or pedestrian damage; looting; construction including damage from firebreak construction; animal damage; plant or root

damage or other factors that might cause deterioration of the site. Site assessments should be documented on appropriate forms and a copy sent to the Division of Historical Resource to be filed in the Lake Kissimmee State Park master files. A copy of this information should also be maintained at the park and district offices. The park will prioritize preservation projects identified by the assessments/evaluations.

Objective: Compile reliable documentation for all recorded historic and archaeological resources as well as undocumented sites.

The park has not had a comprehensive archaeological survey but has had an archaeological predictive model developed (USF 2010). This model provides for high, medium and low areas or probability for the occurrence of pre-historic sites. The model will provide guidance for future development as well as Phase 1 surveys. Any areas targeted for future park development will be priority areas for future surveys.

A Scope of Collections will need to be developed should the park acquire any collection items. An administrative history is needed for the park that will help interpret the history of the park. Oral histories of local historians and park staff need to be done to help document the park's history.

Any newly discovered or undocumented historic or archaeological sites will be appropriately recorded or updated in the Florida Master Site File. Park staff will document the one park structure that will become historic during this planning period. An undocumented unmarked cemetery area will also be documented appropriately.

The general objective for the management of the cultural resources of Lake Kissimmee State Park is to protect, preserve and interpret the prehistoric and historic resources. As the composition of park staff changes over time, efforts should be made to insure that there is always at least one staff member who is a certified archaeological monitor. Management should ensure that park personnel are adequately trained in cultural resource management and establish a park library to support the training. Unit staff will ensure that any ground disturbing activities shall be conducted in accordance with DHR guidelines and monitored by appropriately trained personnel. Management should try to develop professional relationships with area university archaeologists, Water Management District land managers and area law enforcement officials to discuss cultural resource management issues and opportunities.

Objective: Maintain 2 of 2 recorded cultural resources into good condition.

A cyclical maintenance plan should be developed and implemented to help guide the park with needed preservation of its sites. Park staff should develop and implement a preservation and maintenance plan for all cultural resources. Management measures for cultural resources should include development of a phased plan for managing the currently identified recorded sites in the context of their surroundings. The plan should outline approved methodologies for executing

the plan and training staff and volunteers in managing the cultural resources of the park. Management should arrange for a Level I survey in all areas planned for development and utilize development project funds to accomplish the survey.

Resource Management Schedule

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

Land Management Review

Section 259.036, Florida Statutes, established land management review teams to determine whether conservation, preservation and recreation lands titled in the name of the Board of Trustees are being managed for the purposes for which they were acquired and in accordance with their approved land management plans. The managing agency shall consider the findings and recommendations of the land management review team in finalizing the required update of its management plan (see Addendum 8/9).

Lake Kissimmee State Park was subject to a land management review on August 23, 2006 and March 14, 2012**.** 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, through public workshops, and environmental groups. With this approach, 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 described and located in general terms.

EXTERNAL CONDITIONS

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

Lake Kissimmee State Park is located within Polk County, about 15 miles east of Lake Wales in the central part of the state. The population of Polk County has grown 24 percent and that of adjacent Osceola County by 56 percent since 2000. Polk County is projected to grow by 19 percent and Osceola County by an additional 33 percent by 2020 (BEBR, University of Florida, 2011). As of 2010, 24 percent of residents in these counties were in the 0-17 age group, 21 percent in the 18-34 age group, 27 percent in the 35-54 age group, 12 percent in the 55-64 age group, and 17 percent were aged 65 and over, which reflects the state average for these groupings (BEBR, University of Florida, 2011).

Over 2.5 million people reside within 50 miles of the park, which includes the cities of Orlando, Kissimmee, Melbourne and Lakeland (BEBR, University of Florida, 2011).

Significant resource-based recreation opportunities, including picnicking, boating, fishing, hiking, biking, horseback riding, camping and hunting exist near the park. These can be found on a variety of public and privately managed lands including Allen David Broussard Catfish Creek Preserve State Park, The Kissimmee Chain of Lakes properties, Tiger Creek Preserve, Sumica Lake/Walk-in-the-Water Tract, Lake Wales Ridge State Forest, Three Lakes Wildlife Management Area, Upper Lakes Basin Watershed, Disney Wilderness Preserve, and Avon Park Air Force Range (see Vicinity Map).

Existing Use of Adjacent Lands

Lake Rosalie buffers the western boundary of the park. A portion of the northeastern boundary lies adjacent to Lake Kissimmee and Tiger Lake forms part of the southern boundary. Adjacent lands along the eastern boundary between Lake Kissimmee and Tiger Lake are managed by the South Florida Water Management District and known as the Kissimmee Chain of Lakes. Adjacent land north of Camp Mack Road is managed by the Division as part of Allen David Broussard Catfish Creek Preserve State Park. Remaining uplands in private ownership to the north and south consist of low-density residential development and agricultural land uses, primarily cattle ranching.

Planned Use of Adjacent Lands

Lands adjacent to the park are designated Agriculture/Residential-Rural on the Polk County Future Land Use Map (Polk County, 2012). Development is limited to single family homes (1 DU/5 acres) and structures associated with agricultural operations. Lands adjacent to the park are not anticipated to undergo significant change in the near future. Density and use restrictions of existing land use designations serve to maintain a rural landscape that is compatible with the maintenance of resources and a quality visitor experience at the park. Recent acquisitions to the north and the extensive presence of open water and wetlands along park boundaries provide an important buffering function for the park.

PROPERTY ANALYSIS

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

Recreation Resource Elements

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

Land Area

The park consists of approximately 40 percent uplands and 60 percent wetlands. A broader range of recreational activities can be accommodated north of the main park drive where natural communities such as scrubby flatwoods, mesic flatwoods, and mesic hammock grade into one another forming a continuous band of uplands. To the south of the Zipprer Canal the upland communities occur as islands within a matrix of floodplain marsh and wet flatwoods.

Water Area

The park is bounded by Lake Rosalie to the west, Lake Kissimmee to the east, and Tiger Lake to south. The southwestern boundary of the park follows Rosalie Creek for the most part. Tiger Creek is mostly contained within the park, generally following its southeastern boundary. Fishing, boating, canoeing, and kayaking are popular activities on these water bodies. The Zipprer Canal bisects the park, providing a water connection between Lake Rosalie and Lake Kissimmee. The canal was dredged through a natural drainage area in 1947 to improve cattle grazing. The canal provides canoe and kayak access to Lake Rosalie when water levels are favorable.

Shoreline

Shoreline access to the adjacent lakes is generally restricted by extensive wetlands. Lake Rosalie is bordered by a solid band of floodplain forest while Lake Kissimmee and Tiger Lake are bordered by a wide expanse of floodplain marsh. Hikers can access Gobbler Ridge on the shore of Lake Kissimmee due east of the campground.

Natural Scenery

The expansive marshes and adjacent lakes provide an abundance of scenic vistas allowing visitors to experience an important Florida landscape that has remained relatively unchanged over time.

Significant Habitat

The park has a wonderful variety of fauna, supported by a diversity of habitats that provides ample watchable wildlife opportunities. Bird life thrives in the park, with more than 150 species recorded, many of which have state or federal protection. Bald eagles regularly nest in the park and fish the surrounding lakes, wading birds use the open marshes, Florida scrub-jays reside in the scrubby flatwoods, and sandhill cranes are common in the open grasslands and marshes. Alligator, deer, turkey, quail, squirrels, and bobcat are common here,

as they were in early Florida. Evidence of the rare Florida Panther has been observed in the more remote areas of the park.

Natural Features

Buster Island, located south of the Zipprer Canal, has been designated as a Wilderness Preserve by DRP. This 3,000 acre area, surrounded by three lakes and extensive marshes, provides visitors with unique isolated outdoor experiences. The patchwork of wetlands, flatwoods and hammocks provides an abundance of high quality wildlife viewing opportunities.

Archaeological and Historical Features

The park contains two recorded cultural sites that reveal a former Native American presence on the property and present opportunities for prehistoric interpretation. One of these sites is also the location of the park's Cow Camp--a living history interpretation of a late 19th century cattle ranch.

Assessment of Use

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

Past Uses

The park property has been used for a variety of industries including cattle ranching, timbering, farming, and turpentining. During the late 1800s, the park and surrounding lands were used for Florida's pioneer cattle industry.

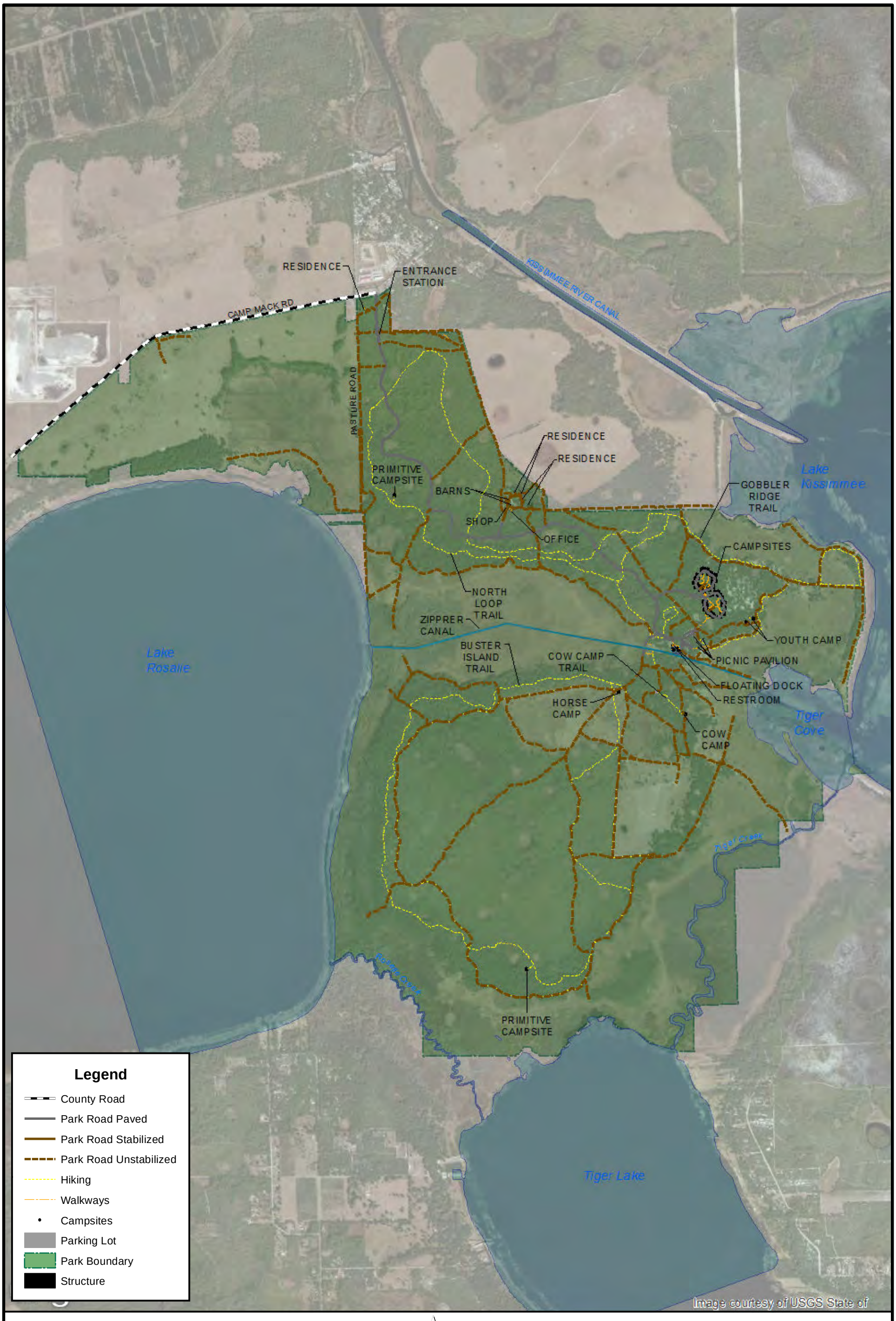
Future Land Use and Zoning

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

The current FLU designations for Lake Kissimmee State Park are Recreation and Open Space (ROS) and Preservation (PRESV). PRESV covers the majority of the property. The ROS designation covers the northern tier of the park where all existing facilities are located. The ROS designation is reserved for lands that are accessible by the general public for recreational purposes. The PRESV designation covers areas that are publicly accessible and managed primarily for long-term resource protection. Both of these designations are consistent with state park uses and facilities.

Current Recreational Use and Visitor Programs

The park offers opportunities for picnicking, boating, canoeing/kayaking, fishing, hiking, horseback riding, developed and primitive camping, and nature study and historic interpretation. The park's "Cow Camp" provides a living history demonstration of the life of early Florida "cow hunters." The park provides one of the few public boating access areas to Lake Kissimmee, one of Florida's favorite largemouth bass fishing destinations. The lake is a very



LAKE KISSIMMEE STATE PARK

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

BASE MAP

popular water body among the tournament bass fishing community with several tournaments held there annually.

Lake Kissimmee State Park recorded 53,059 visitors in FY 2012/2013. By DRP estimates, the FY 2012/2013 visitors contributed $3,550,144 million in direct economic impact and the equivalent of 57 jobs to the local economy (Florida Department of Environmental Protection, 2013).

Protected Zones

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

At Lake Kissimmee State Park the baygall, depression marsh, floodplain forest, floodplain marsh, hydric hammock, floodplain swamp, wet flatwoods, scrubby flatwoods and blackwater stream communities have been designated as protected zones as delineated on the Conceptual Land Use Plan. These communities combine for 68 percent of park lands. The areas around active bald eagle and scrub-jay nests, are also considered protected zones and will be buffered appropriately from park development.

Wilderness Preserves

Approximately 3,070 acres south of the Rosalie Drain have been designated as a Wilderness Preserve at Lake Kissimmee State Park (see Conceptual Land Use Plan). Wilderness Preserve designations are reserved for large, undeveloped areas within a park that have retained their principal character and influence without permanent alteration. They are protected and managed in a manner to preserve the natural appeal and values of a significant portion of the park. The characteristics of a Wilderness Preserve are as follows:

- Generally appears to have been affected primarily by the forces of nature, with human impacts substantially unnoticeable;
- Offers outstanding opportunities for solitude, or a primitive and unconfined type of recreation;
- Is expansive and sufficient in size to make preservation and use in an unimpaired condition practical;
- May also contain ecological, archaeological, or other features of scientific, educational, scenic, or historic value.

Uses are to be limited, passive in nature, and related to the aesthetic, educational and scientific enjoyment of the features and conditions maintained. Other uses may be permitted if fully compatible. Activities which are generally recognized as being compatible within a Preserve are trail use,

canoeing/kayaking, nature study and natural scenery appreciation. Facilities are limited to those considered essential for management and appropriate forms of public use.

Existing Facilities

Recreation Facilities

The majority of park recreation facilities are located near the Lake Kissimmee boat access area (Lake Kissimmee Marina). Other recreation facilities include a picnic area, family camping area, and group camping area. The main trailhead area is located near the parking lot northwest of the marina. This area provides access to 13 miles of hiking on the North Loop, Flatwoods, and Buster Island Loop Trails. The trailhead for the 3-mile Gobbler Ridge Loop Trail is located in the picnic area parking lot. Primitive camping is available at two sites on the hiking trail system. Equestrian parking, located on the south side of the Zipprer Canal, provides riders with access to a 6-mile shared-use trail around Buster Island. The Kissimmee Blueway Trail makes a 10-mile loop from Lake Kissimmee, through the Zipprer Canal into Lake Rosalie, along Rosalie Creek into Tiger Lake, and along Tiger Creek back to Lake Kissimmee. The Cow Camp Interpretive Area, on the south side of the canal, provides a living history demonstration of the life of early Florida “cow hunters.”

Support Facilities

Most support facilities are concentrated midway between the entrance station and main use areas north of the park drive and include four ranger residences, an administrative office, a primary shop building, and various structures used for maintenance and storage. A third residence is located between the entrance station and Camp Mack Road. The entrance station is situated just inside the park boundary a short distance from Camp Mack Road and serves as the primary visitor contact point, and camper registration site.

The following is a complete listing of recreation and support facilities at Lake Kissimmee State Park:

Family Camping Area
Camp sites (60)
Bathhouses (2)

Group Camping Area
Outside showers (2)
Privies (2)
Fire rings
Scattered tables

Boat Access Area - Lake Kissimmee Marina
Dock (6 finger piers)
Boat ramp
Restrooms
Interpretive sign
Interpretive kiosk
Paved parking (59 spaces, 32 oversized)

Picnic Area
Medium picnic shelters (3)
Large picnic shelter w/BBQ pit
Observation tower
Playground equipment
Interpretive sign
Restrooms
Scattered tables and grills
Paved parking (98 spaces)

North Loop Trailhead Area
Hiking trail (6 miles)
Primitive campsite (1)

Gobbler Ridge Trailhead Area
Hiking trail (3 miles)

Buster Island Trailhead Area
Equestrian day-use parking area
Shared-use trail (6 miles)
Hiking trail (7 miles)
Primitive campsite (1)

Charlie Gafford Flatwoods Pond Trailhead Area
Nature trail (0.25 mile)

Kissimmee Blueway Canoe Trailhead Area
Paddling trail (10 miles)

Cow Camp Interpretive Area
Corral and small shelter

Entrance Area
Entrance station

Parkwide
Paved park drive (3.3 miles)

Shop Area
Shop building
Administrative office
Barns and storage buildings
Residences (2)

CONCEPTUAL LAND USE PLAN

The following section presents 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 will be reassessed during the next update of the park management plan. As new information is provided regarding the environment of the park, cultural resources, recreational use, and as new land is acquired, the conceptual land use plan may be amended to address the new conditions as needed. A detailed development plan for the park and a site plan for specific facilities will be developed based on this conceptual land use plan, as funding becomes available.

During the development of the conceptual land use plan, DRP assessed the potential impacts of proposed uses or development on the park resources and applied that analysis to decisions for the future physical plan of the park as well as the scale and character of proposed development. Potential impacts are more thoroughly identified and assessed as part of the site planning process once funding is available for facility development. At that stage, design elements (such as existing topography and vegetation, sewage disposal and stormwater management) and design constraints (such as imperiled species or cultural site locations) are more thoroughly investigated. Municipal sewer connections, advanced wastewater treatment or best available technology systems are applied for on-site sewage disposal. Stormwater management systems are designed to minimize impervious surfaces to the greatest extent feasible, and all facilities are designed and constructed using best management practices to 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, the park staff monitors conditions to ensure that impacts remain within acceptable levels.

Potential Uses

Public Access and Recreational Opportunities

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

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

Proposed improvements focus on providing more boating, camping and trail opportunities and promoting paddling opportunities on the Lake Kissimmee Blueway Trail. If implemented, the potential uses and proposed facilities in this plan will diversify the types of camping, expose more visitors to the unique paddling opportunities on surrounding waterways, and provide additional opportunities to learn about the resources of the park.

Objective: Maintain the park's current recreational carrying capacity of 1,955 users per day.

The park will continue to provide opportunities for camping, hiking, horse-back riding, nature observation, picnicking, fishing, and boating. Interpretation of the life and times of Florida's early cow hunters will continue at the Cow Camp.

Objective: Expand the park's recreational carrying capacity by 369 users per day.

This park provides a remote, old Florida experience within a relatively short drive to the highly populated I-4 corridor and access to Lake Kissimmee, nationally recognized for its trophy bass fishing. Florida's Statewide Comprehensive Outdoor Recreation Plan (SCORP) indicates that resident and tourist participation rates for freshwater boat fishing in this region are higher than the state average with the number of participants steadily increasing through 2020. Tourist participation in RV/trailer camping in this region is nearly four times the state average. A significant number of additional camping sites will be needed in this region over the next ten years to maintain the current level of service.

To address this need, camping opportunities within the park will be expanded with the proposed addition of 30 family camp sites along the Zipprer Canal across from the marina. The addition of docking facilities on the south side of the canal, adjacent to the new camping area, will provide campers interested in boating and fishing with easy access to Lake Kissimmee. Boating opportunities on Lake Kissimmee will also be expanded with the addition of docking facilities in the marina.

ENTRANCE AREA
* Additional Parking

PARK DRIVE
* Resurface and widen park drive
* Add pulloffs

SHOP AREA
* Office Building

BOAT ACCESS AREA

PICNIC AREA

CAMP MACK ROAD

NORTH LOOP TRAIL
* Spur Trail
* Scenic Overlook

KISSIMMEE BLUEWAY TRAIL
* Primitive Campsites

INSET

SOUTHSIDE FAMILY CAMPING AREA

EQUESTRIAN CAMPING AREA

INSET

BOAT ACCESS AREA
* Concession Building Renovation
* Restroom
* Boat Dock Addition
* Bulkhead Replacement

PICNIC AREA
* Restroom

SOUTHSIDE FAMILY CAMPING AREA
* 30 Standard Campsites
* Boat Dock

EQUESTRIAN CAMPING AREA
* Restroom
* Potable Water

Legend
- Park Boundary
- Proposed Development Area
- Proposed Facilities
- Existing Trails
- Proposed Trails
- Protected Zones
- Wilderness Preserve

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

LAKE KISSIMMEE STATE PARK

CONCEPTUAL LAND USE PLAN

Primitive camping will be expanded along the Kissimmee Blueway Trail with the addition of two sites near Tiger Creek and Tiger Lake and one site near the Lake Rosalie/Zipprer Canal area. Equestrian opportunities will be added with the establishment of a equestrian camping area near the existing equestrian day use parking area on Buster Island. Hiking and wildlife viewing opportunities will be enhanced with the proposed addition of a spur trail from the North Loop Trail that will lead to a viewing platform on the large marsh in the northwest portion of the park.

Objective: Continue to provide the current repertoire of 6 interpretive, educational and recreational programs on a regular basis.

Interpretive, educational and recreational programs are offered to park visitors and school groups. An 1876 Cow Camp living history interpretation is provided weekends (October through May) and holidays in the park. The camp features two herds of cracker cattle and one herd of cracker horses. The park also provides off-site cow camp interpretation by request. Animal tracks, recycling and water quality educational programs are offered on and off-site school groups and youth organizations by request. The Charlie Gafford trail, through the oak hammock north of the marina, is interpreted by the ranger-guided and self-guided tours. Recreational/interpretive programs include guided overnight back packing and horse back riding tours, both available upon request. The park host two special events each year – an Easter egg hunt and Earth Day celebration in the spring.

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

Visitors have expressed interest for new interpretive, educational and recreational programs as identified in the park's statement for interpretation. It is recommended that the park develop programs to interpret the historical aspects of Lake Kissimmee. The park also plans to interpret Lake Kissimmee's recreational fishing opportunities including fish species identification and fishing tactics. Adding special events including an 1876 heritage day's festival, would attract more visitors to the park and introduce them to all of the park's recreational opportunities.

Proposed Facilities

Capital Facilities and Infrastructure

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

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

following is a summary of improved or renovated and/or new facilities needed to implement the conceptual land use plan for Lake Kissimmee State Park:

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

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

Objective: Improve/repair 9 existing facilities, 3 miles of road, and .75 mile of trail.

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

Picnic Area: The observation tower is has recently been repaired and is now open to visitors. An additional restroom is recommended for this area. It should be constructed closer to the main parking area for greater accessibility and convenience on high-use days.

Boating Access Area - Lake Kissimmee Marina: The bulkhead on the east side of the island is recommended for replacement to enhance public safety and to provide docking space for an additional 12 boats. The concession building should be renovated and expanded to better serve visitors. The addition an accessible restroom should be included as part of the renovation to accommodate the large number of visitors on high use days.

Family Camping/Group Camping Areas: The family campground is in good condition. Upgrading the electrical hookups to 50 amps is recommended.

Kissimmee Blueway Trailhead Area:
It is recommended that primitive camping opportunities should be expanded by establishing additional sites for paddlers along the Kissimmee Blueway Trail. Two primitive campsites are recommended for the Tiger Creek/Tiger Lake area and one for the Lake Rosalie/Zipprer Canal area.

North Loop Trailhead Area: An overlook is recommended to enhance wildlife-viewing opportunities at the large marsh in the northwest portion of the park. A boardwalk is recommended to extend into the marsh a short distance, terminating at an elevated overlook designed to enhance views of the area. The boardwalk and overlook would be linked to the existing North Loop hiking trail by a short spur trail. Future expansion of the trail network is proposed in order to connect the trails of Lake Kissimmee with those of Allen David Broussard Catfish Creek Preserve.

Entrance Area: Limited parking at the ranger station causes circulation problems during periods of high volume camper check-in. The current parking area should be expanded to provide sufficient space for registering campers.

Parkwide: The park drive is deteriorating and not wide enough to accommodate modern recreational vehicles. The road is recommended for improvement to meet current park service standards. Visitors often pull off the main park drive to view scenery and wildlife. It is recommended that two pulloffs be installed in previously disturbed areas. Each pulloff should accommodate up to three vehicles.

Shop Area: The ranger station does not contain sufficient administrative space. It is recommended that a new office building be provided in the shop area. Two additional volunteer host RV sites should also be provided in this area.

Objective: Construct 2 new facilities.

Southside Family Camping Area: A family camping area with 30 standard sites is proposed the south side of the Zipprer canal across from the marina. A boat dock with finger piers to accommodate approximately 12 boats is recommended for installation along the canal for use by campers in this area. Access to this area will be improved with the planned replacement of the Cow Camp Bridge over the Zipprer Canal. This FDOT project will replace the existing wooden bridge with a two-lane concrete structure with bike lanes. The project is scheduled for completion in 2014.

Equestrian Camping Area: An equestrian camping area is proposed for an area near the existing equestrian day-use parking area just west of the Cow Camp. A small restroom and potable water source is recommended for this location.

Facilities Development

Preliminary cost estimates for these recommended facilities and improvements are provided in the Ten-Year Implementation Schedule and Cost Estimates (Table 6) 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:

Picnic Area
Repair observation tower
Restroom

Family Camping Area
Upgrade electrical hookups in standard campground (60 sites)

Southside Family Camping Area
Family camping loop near canal (30 standard sites)
Docking facilities for campers (200 ft. dock with 6 finger piers)

Group Camping Area
Replace group camp restrooms (2)

Equestrian Camping Area
Restroom
Potable water

Boating Access Area - Lake Kissimmee Marina
Replace bulkhead on east side of island
Expand docking capacity (6 finger piers -12 boats)
Renovate/expand old concession building
Restroom

North Loop Trailhead Area
Add spur hiking trail (approx. .75 mi.)
Scenic overlook

Kissimmee Blueway Trailhead Area:
Primitive campsites (3)

Entrance Area and Park Drive
Expand parking at entrance station
Improve park drive
Add pulloffs along park drive (2)

Shop Area
Office building

Recreational Carrying Capacity

Carrying capacity is an estimate of the number of users a recreation resource or facility can accommodate and still provide a high quality recreational experience and preserve the natural values of the site. The carrying capacity of a unit is determined by identifying the land and water requirements for each recreation activity at the unit, and then applying these requirements to the unit's land and water base. Next, guidelines are applied which estimate the physical capacity of the unit's natural communities to withstand recreational uses without significant degradation. This analysis identifies a range within which the carrying capacity most appropriate to the specific activity, the activity site and the unit's classification is selected (see Table 6).

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

Table 6--Recreational Carrying Capacity						
	Existing Capacity		Proposed Additional Capacity		Estimated Optimum Capacity	
Activity/Facility	One Time	Daily	One Time	Daily	One Time	Daily
Trails						
Hiking	93	372	8	32	101	404
Camping						
Standard	480	480	240	240	720	720
Group	25	25	25	25	50	50
Primitive	8	8			8	8
Wilderness Preserve						
Primitive Camping	8	8	24	24	32	32
Hiking Trails	14	28			14	28
Shared Use Trails	60	120			60	120
Picnicking	294	588			294	588
Cow Camp	25	100			25	100
Fishing (shoreline)	25	50			25	50
Boating						
Canoeing/kayaking	40	80			40	80
Power	48	96	24	48	72	144
TOTAL	1,120	1,955	321	369	1,441	2,324

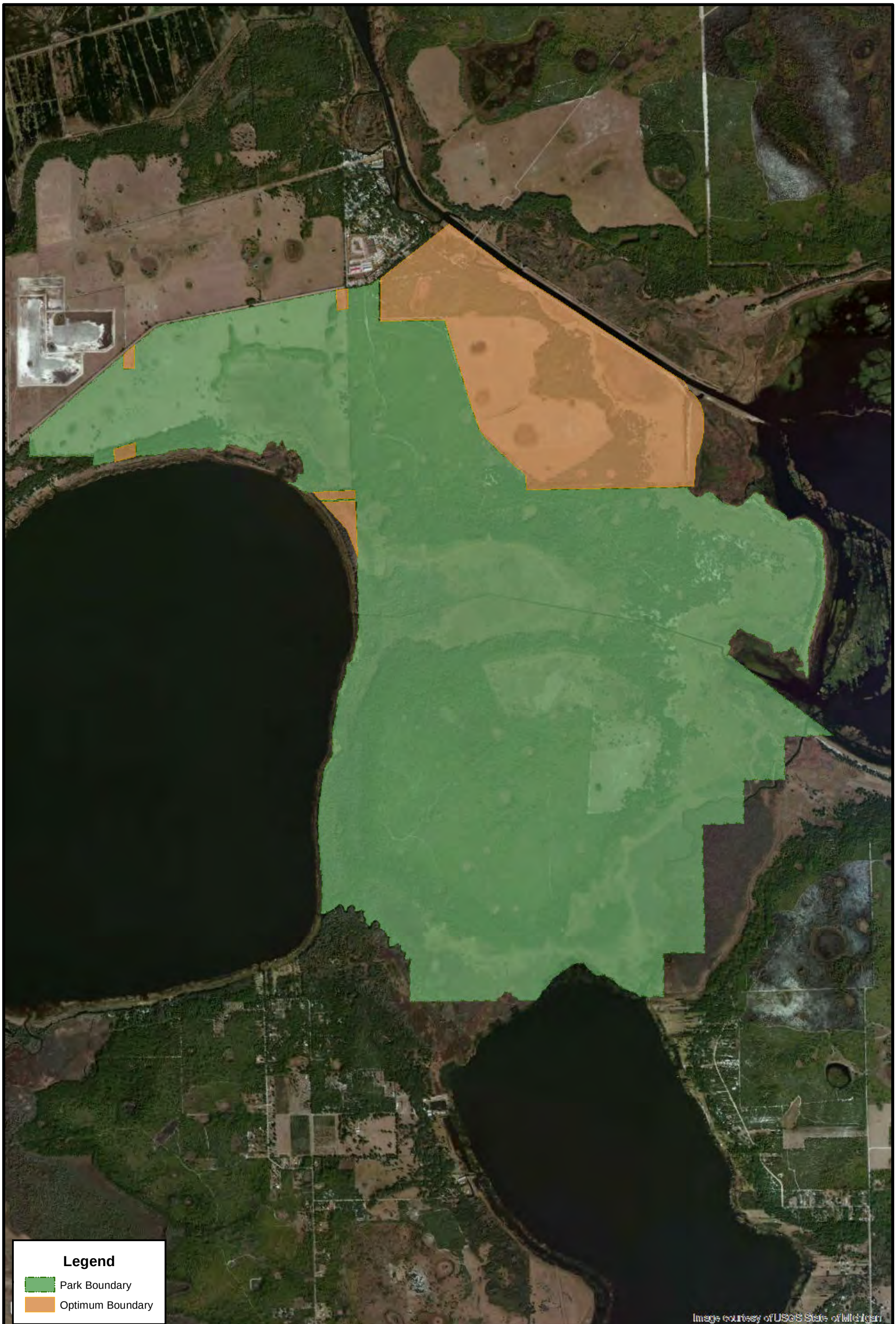
Optimum Boundary

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

Property along the boundary with Lake Rosalie is proposed for acquisition to provide additional shoreline protection. Land between the north boundary and the Kissimmee Canal would provide a buffer from future development, and add desirable natural resources. At this time, no lands are considered surplus to the needs of the park.



LAKE KISSIMMEE STATE PARK

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Division of Recreation and Parks
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OPTIMUM BOUNDARY MAP

IMPLEMENTATION COMPONENT

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

MANAGEMENT PROGRESS

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

Acquisition

- No acquisitions have been made since the previous management plan

Park Administration and Operations

- Laid out structured operational outline for each position and responsibilities associated with positions on daily, weekly, monthly and yearly bases that is site specific for this park.
- Established a new park concessionaire (executed new contract).
- Installed WAN system to Ranger station.
- Established Park Specific operations manual.
- Increased Computer Access and terminal locations for staff.
- Continued to manage Cattle Use Agreement.
- Remodeled two park administration facilities.
- Managed an Americorp position at the park for two years.
- Managed park volunteers with various tasks including campground hosts.

Resource Management

Natural Resources

- Park staff have worked to reduce the occurrence of invasive exotic plants in the park, treating over 442 gross acres since the approval of the last management plan.
- Park staff have worked to reduce the population of exotic animals in the park, significantly reducing their detrimental impacts to the sensitive natural communities in the park.

- Park staff have conducted over 8,448 acres of prescribed fire at the park since the approval of the last management plan, maintaining 99% of the park's pyrogenic communities within optimum fire return interval.
- Conducted annual Florida Scrub-jay surveys and banded a portion of the population of jays at the park.
- Worked with FFWCC in completing Gopher frog surveys at the park.
- Started Gopher tortoise surveys at the park.
- Year long bird survey with FL Audubon conducted at the park.
- Cooperated with a butterfly survey at the park resulting in a new checklist for the park.
- Maintained participation in the Lake Wales Ridge Ecosystem Working Group.
- Worked with the SFWMD in planning restoration on a wetland and associated upland areas in approximately 400 acre area in the park.

Cultural Resources

- An archaeological probability model was completed for the entire parcel.
- Updated master site files for the archeological sites at the park.
- Maintain a herd of cracker cattle and cracker horses for interpretation at the cow camp.

Recreation and Visitor Services

- Park staff provides individualized interpretive programs for schools, 4-H, university extension and other special park visitors.
- Park staff conduct the "Living History Cow Camp" annually which gives visitors a view in the life of a 19th century cattle ranch.
- Installed new trail marking system (numbered intersection) through-out entire park trail and service road system.
- Updated all park brochures, maps and interpretive information.
- Added new park concession with rentals and guided trips.
- Updated all facilities park wide where possible to new ADA standards.
- Added and improved disabled parking locations for better accessibility.
- Interpretive signs and kiosks have all been replaced and updated.
- Interpretive signs added to trails to provide visitors with information on trail.
- Improved all park maps and brochures.
- Added Ranger guided Overnight back packing trips 2 per year or if requested.
- Added Ranger guided horse back rides 2 per year or if requested.
- Added 4 new interpretive programs; Animal Tracks, Know your Exotics, Prescribed Fire, and Recycling can be fun.

Park Facilities

- Rebuilt observation tower in main use area and reopened for visitors.
- Improved equestrian area on Buster Island and added primitive horse camping.
- Clean up, repair, paint and improve park entrance signs and landscaping.
- Complete remodel of inside and outside of Ranger station including new roof and siding.
- Added additional parking and ADA compliance for accessibility where possible.

- Updated all facilities parkwide where possible to new ADA standards.
- Repair and resurface playground in main use area.
- Dock improvements in the marina were completed and include a new universally accessible canoe/kayak launch.
- Repair to main bulkhead at boat ramp.
- Replaced all picnic tables and grills in camp ground.
- Resurfaced 8 camp sites in campground.
- Installed washer /dryers in campground area.
- Installed new main use area well tank.
- Installed new drain field/lift station for main use area.
- Installed new youth camp restroom facilities.
- Replaced approximately 3 miles of boundary fence at the park.

MANAGEMENT PLAN IMPLEMENTATION

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

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

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

may vary from year to year. Consequently, the target schedules and estimated costs identified in Table 7 may need to be adjusted during the ten-year management planning cycle.

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	**$390,000**
Objective B	**Expand administrative support as new lands are acquired, new facilities are developed, or as other needs arise.**	Administrative support expanded	UFN	**$73,000**
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 needs.**	Assessment conducted	LT	**$150,000**
Action 1	Conduct a hydrological study of the park's current surface water features including existing ditches	Study conducted	UFN	$50,000
Action 2	Develop a sequential and prioritized hydrological restoration plan	Plan completed	UFN	$100,000
Objective B	**Restore natural hydrological conditions and function to approximately 250 acres of floodplain marsh natural community.**	# Acres restored or with restoration underway	UFN	**$450,000**
Action 1	Develop detailed plan for restoration	Plan completed	UFN	$140,000
Action 2	Fill approximately 3 miles of drainage ditches.	# Miles of ditches filled	UFN	$125,000
Action 3	Install a water control structure in the berm surrounding the marsh	Water control structure installed	UFN	$185,000
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 3,000 acres of the park maintained within optimal fire return interval.**	# Acres within fire return interval target	LT	**$1,520,000**
Action 1	Update annual burn plan.	Plan updated	C	$16,000
Action 2	Manage fire dependent communities for ecosystem function, structure and processes by burning between 1,211 - 2,131 acres annually, as identified by the annual burn plan.	Average # acres burned annually	C	$1,504,000
Objective B	**Create a habitat/natural community restoration plan on approximately 476 acres of flatwoods community.**	# Acres restored or with restoration underway	LT	**$160,000**
Action 1	Develop site specific restoration plan	Plan developed	LT	$5,000
Action 2	Implement restoration plan on 30 acres	# Acres with restoration underway	UFN	$155,000
Objective C	**Conduct natural community/habitat improvement activities on 15 acres of scrubby flatwoods community.**	# Acres improved or with improvements underway	LT	**$5,000**
Goal IV: Maintain, improve or restore imperiled species populations and habitats in the park.		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10-years)**
Objective A	**Update baseline imperiled species occurrence inventory lists for plants and animals, as needed.**	List updated	C	**$5,000**

* 2013 Dollars
ST = actions within 2 years
LT = actions within 10 years
C = long term or short term actions that are continuous or cyclical
UFN = currently unfunded need

NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.				
Objective B	**Monitor and document 4 selected imperiled animal species in the park.**	# Species monitored	C	**$17,000**
Action 1	Develop monitoring protocols for 2 selected imperiled animal species including gopher frogs and Florida mice.	# Protocols developed	ST	$500
Action 2	Implement monitoring protocols for 4 imperiled animal species including those listed in Action 1 above and Florida scrub jays and gopher tortoise.	# Species monitored	C	$16,500
Objective C	**Monitor and document 2 selected imperiled plant species in the park.**	# Species monitored	C	**$7,000**
Action 1	Develop monitoring protocols for 2 selected imperiled plant species including cutthroat grass and giant orchids.	# Protocols developed	ST	$650
Action 2	Implement monitoring protocols for 2 including those listed in Action 1 above.	# Species monitored	C	$6,350
Goal V: Remove exotic and invasive plants and animals from the park and conduct needed maintenance-control.		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10-years)**
Objective A	**Annually treat 50 gross acres of exotic plant species in the park.**	# Acres treated	C	**$79,000**
Action 1	Develop exotic plant management work plan.	Plan developed	ST	$16,000
Action 2	Implement annual work plan by treating 50 gross acres in park, annually, and continuing maintenance and follow-up treatments, as needed.	Plan implemented	C	$63,000
Objective B	**Practice preventative measures to avoid accidental introduction and spreading of exotics within the park**	Measures developed	ST	**$2,000**
Objective C	**Implement control measures on 2 exotic and nuisance animal species in the park.**	# Species for which control measures implemented	C	**$34,000**
Action 1	Continue to control activities of feral hogs and armadillos	# Removed	C	$33,000
Action 2	Relocate feral cats and stray dogs to County Animal Control Facility as necessary	# Relocated	C	$1,000
Goal VI: Protect, preserve and maintain the cultural resources of the park.		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10-years)**
Objective A	**Assess and evaluate 2 of 2 recorded cultural resources in the park.**	Documentation complete	LT	**$800**
Action 1	Complete 2 assessments/evaluations of archaeological sites. Prioritize preservation and stabilization projects.	Assessments complete	LT	$800
Objective B	**Compile reliable documentation for all recorded historic and archaeological sites.**	Documentation complete	LT	**$16,000**
Action 1	Ensure all known sites are recorded or updated in the Florida Master Site File.	# Sites recorded or updated	ST	$750
Action 2	Conduct Phase 1 archaeological survey for areas planned for development which occur in high and medium sensitivity areas as determined by the predictive model.	Survey completed	UFN	$15,000
Action 3	Develop and adopt a Scope of Collections Statement.	Document completed	ST	$250
Objective C	**Maintain 2 of 2 recorded cultural resources into good condition.**	# Sites in good condition	C	**$1,200**
Action 1	Design and implement regular monitoring programs for 2 cultural sites	# Sites monitored	C	$200
Action 2	Create and implement a cyclical maintenance program for each cultural resource.	Programs implemented	C	$1,000

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UFN = currently unfunded need

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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 1,955 users per day.**	# Recreation/visitor	C	**$972,000**
Objective B	**Expand the park's recreational carrying capacity by 369 users per day.**	# Recreation/visitor	UFN	**$183,000**
Objective C	**Continue to provide the current repertoire of 6 interpretive, educational and recreational programs on a regular basis.**	# Interpretive/education programs	C	**$40,000**
Objective D	**Develop 3 new interpretive, educational and recreational programs.**	# Interpretive/education programs	UFN	**$30,000**
Goal VIII: Develop and maintain the capital facilities and infrastructure necessary to meet the goals and objectives of this management plan.		**Measure**	**Planning Period**	**Estimated Manpower and Expense Cost* (10-years)**
Objective A	**Maintain all public and support facilities in the park.**	Facilities maintained	C	**$1,134,000**
Objective B	**Continue to implement the park's transition plan to ensure facilities are accessible in accordance with the American with Disabilities Act of 1990.**	Plan implemented	LT	**$400,000**
Objective C	**Improve and/or repair 9 existing facilites, .75 miles of trail and 3 miles of road as identified in the Land Use Component.**	# Facilities/Miles of Trail/Miles of Road	UFN	**$3,175,000**
Objective D	**Construct 2 new facilites as identified in the Land Use Component.**	# Facilities/Miles of Trail/Miles of Road	UFN	**$2,176,000**
Objective E	**Expand maintenance activities as existing facilities are improved and new facilities are developed.**	Facilities maintained	UFN	**$400,000**

* 2013 Dollars
ST = actions within 2 years
LT = actions within 10 years
C = long term or short term actions that are continuous or cyclical
UFN = currently unfunded need

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

Summary of Estimated Costs

Management Categories		Total Estimated Manpower and Expense Cost* (10-years)
Resource Management		**$2,447,000**
Administration and Support		**$463,000**
Capital Improvements		**$5,751,000**
Recreation Visitor Services		**$2,759,000**
Law Enforcement Activities[1]		

1Law enforcement activities in Florida State Parks are conducted by the FWC Division of Law Enforcement and by local law enforcement agencies.

* 2013 Dollars
ST = actions within 2 years
LT = actions within 10 years
C = long term or short term actions that are continuous or cyclical
UFN = currently unfunded need

Addendum 1—Acquisition History

Purpose of Acquisition

The Board of Trustees of the Internal Improvement Trust Fund (Trustees) acquired Lake Kissimmee State Park to manage the property in such a way as to protect and restore the natural and cultural values of the property and provide the greatest benefit to the citizens of the state.

Sequence of Acquisition

On January 7, 1970, the Trustees obtained title to a 4,999-acre property that constituted the initial area of Lake Kissimmee State Park. This purchase was funded under EEL program. Since this initial purchase, the Trustees acquired several individual parcels through purchases, mainly under the P2000/Acquisition and Inholdings program and donation. These acquisitions were added to Lake Kissimmee State Park. Presently the park comprises approximately 5,893 acres.

Title Interest

The Trustees hold fee simple title to Lake Kissimmee State Park.

Lease Agreements

On September 4, 1970, the Trustees leased Lake Kissimmee State Park to the Division of Recreation and Parks (DRP) under Lease No. 2461. The lease is for a period of ninety-nine (99) years and will expire on September 4, 2069.

According to Lease No. 2461, the DRP manages Lake Kissimmee State Park for the development, conservation and protection of natural and cultural resources of the property and for resource-based public outdoor recreation that is compatible with the conservation and protection of these resources.

Special Conditions on Use

Lake Kissimmee State Park is designated single-use to provide resource-based public outdoor recreation and other related uses. Uses such as water resource development projects, water supply projects, stormwater management projects, linear facilities and sustainable agriculture and forestry, unless specifically stated otherwise in this management plan, are inconsistent with the management purposes of the park.

Outstanding Reservations

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

Instrument: ..... Warranty Deed
Instrument Holder: ..... Elizabeth Wood Zipprer
Beginning Date: ..... January 7, 1970
Ending Date: ..... Forever
Outstanding Rights, Uses, Etc.: ..... The conveyance is subject to a certain easement to Central and Southern Florida Flood Control District as recorded in Official Record 846, page 159, Polk County and a certain easement for public road purposes reserved by the instrument holder to herself.

Instrument: ..... Easement
Instrument Holder: ..... DRP
Beginning Date: ..... July 11, 1975
Ending Date: ..... When the easement is no longer needed.
Outstanding Rights, Uses, Etc.: ..... The easement allows the Florida Power Corporation to construct, install, operate and maintain a three- phase distribution system for electricity. If the land is not used as stated in the easement, it reverts to the instrument holder.

Addendum 2—Advisory Group Members and Report

Lake Kissimmee State Park
Allen David Broussard Catfish Creek Preserve State Park
Advisory Group Members

Local Government

The Honorable Todd Dantzler, Chair
Polk County Board of County Commissioners
Drawer BC01, Post Office Box 9005
330 W. Church Street
Bartow, Florida 33831-9005

Agency Representatives

Joel (Andy) Noland, Park Manager
Lake Kissimmee State Park
14248 Camp Mack Road
Lake Wales, Florida 33853

Ken Ford, Chair
Polk Soil and Water
Conservation District
3890 State Road 60 East
Bartow, Florida 33830

Shane Belson
Florida Fish and Wildlife Conservation Commission
3900 Drane Field Rd.
Lakeland, Florida 33811

David Speake, Supervisory Forester
Florida Forest Service
3125 Conner Boulevard
Tallahassee, Florida 32399-1650

Mike Wisenbaker, Archaeology Supervisor
Bureau of Archaeological Research
Florida Division of Historical Resources
1001 DeSoto Park Drive
Tallahassee, Florida 32301

Charles Walter, Director
Orlando Service Center
South Florida Water Management District
1707 Orlando Central Parkway
Suite 200
Orlando, Florida 32809

Tourism/Economic Development Representative

Al Snow
Central Florida Visitors & Convention Bureau
2701 Lake Myrtle Park Road
Auburndale, Florida 33823

Environmental and Conservation Representatives

Greg Thomas, President
Florida Native Plant Society,
Heartland Chapter
5116 Woodgreen Lane
Lakeland, Florida 33811

Sandy Madden, President
Ridge Audubon Society
200 North Crooked Lake
P.O. Box 148
Babson Park, Florida 33827

Zach Prusak
The Nature Conservancy
Florida Chapter Office
222 S. Westmonte Drive, Suite 300
Altamonte Springs, Florida 32714

Recreational User Representatives

David Waldrop, Chair
Florida Trail Association
Heartland Chapter
702 Osceola Avenue
Lake Wales, Florida 33853

Michael Charron, President
Florida Sport Horse Club
2077 West Lake Hamilton Drive
Winter Haven, Florida 33881

Bill Richards, Executive Director
Paddle Florida
P.O. Box 5953
Gainesville, Florida 32627

Adjacent Landowners

Bill Drasdo
209 La Casa
Lake Wales, Florida 33898

Gary Bartley
Future Farmers of America Foundation
5000 Firetower Road
Haines City, Florida 33844

Other Interested Parties

Dr. William Broussard
502 East New Haven Avenue
Melbourne, Florida 32901

Lake Kissimmee State Park

Allen David Broussard Catfish Creek Preserve State Park

Advisory Group Report

The Advisory Group meeting for Lake Kissimmee and Allen David Broussard Catfish Creek Preserve State Parks was held at the Lake Wales Public Library on January 30, 2014. Gaye Sharpe represented Todd Dantzler; Dave Butcher and Jennifer Navarra represented David Speake; Susan Elfers represented Charles Walter; Jack Madden represented Sandy Madden. David Waldrop, Bill Richards, and William Broussard were not able to attend. Mike Wisenbaker did not attend but sent in written comments. Greg Thomas did not attend but written comments were submitted on his behalf by Anne Cox. All other Advisory Group members were in attendance. Attending staff were Larry Fooks, Robert Yero, Andy Noland, Joshua Herman, Erik Egensteiner and David Copps.

Mr. Copps began the meeting by explaining the purpose of the Advisory Group, reviewing the meeting agenda, and summarizing the comments from public workshop that was held the previous evening at Lake Wales High School. Mr. Copps then asked each member of the Advisory Group to express his or her comments on the draft plan.

Summary of Advisory Group Comments

Al Snow (Visit Central Florida) stated that he approves of the updated plans and said that the recreational facilities proposed in the plans are assets for promoting tourism in the region. He offered Visit Florida's assistance in promoting the parks and providing wayfinding services to guide visitors to the parks.

Jennifer Navarra (Florida Forest Service (FFS)) asked why the fire return interval for the sandhill and scrub communities on Catfish Creek deviated from Florida Natural Areas Inventory (FNAI) recommendations. She warned not to burn too frequently for the well-being of some imperiled plants. Erik Egensteiner said that FNAI recommendations are generally followed but some adjustments are made due to site specific conditions. Andy Noland said that the goal is to get all fire-dependent communities in rotation. Ms. Navarra asked the park to be careful when maintaining and constructing facilities. She recommended a master planning process to carefully site all facilities to protect resources to the greatest degree possible.

Dave Butcher (Florida Forest Service (FFS)) noted a mistake on page 30 of the Lake Kissimmee plan. He recommended that the term "pasture-improved areas" in the Desired Future Condition description for Canal/Ditch be changed to "canal/ditch." In regards to hardwood chain-sawing described on page 52, he recommended that stumps be treated with herbicide to reduce sprouting. Mr. Butcher recommended that a desired number of trees per acre should be provided in the Desired Future Conditions for flatwoods communities to serve as a baseline. He stated that that the term "conserve" on page one, paragraph two in the Catfish Creek plan conflicts with the "preserve" classification.

Shane Belson (Florida Fish and Wildlife Conservation Commission (FWC)) noted that the control of coyotes is mentioned in the Catfish Creek plan but not in the Lake Kissimmee plan. Mr. Belson recommended that coyotes should be considered a native animal as stated in a 2007 Fish and Wildlife Research Institute study. Andy Noland said that coyotes are removed only when they get too close to the cows. Mr. Belson agreed that it is acceptable to remove them if they are a nuisance but reiterated that they should be considered a native species. Mr. Belson asked if the park is conducting Tier 3 monitoring of the Florida Panther as indicated in Table 4. Erik Egensteiner said that Tier 3 includes monitoring by other agencies such as FWC. Mr. Belson stated the importance of dense cover for bears and panthers and asked if there were such areas in the parks that could be considered special management zones for these two species. Andy Noland and Erik Egensteiner identified areas in both parks that could be managed for the benefit of bears and panthers. Mr. Belson asked about the status of two FWC spoil islands in Lake Kissimmee. Erik Egensteiner said one has been leveled and spread while the other is still there with a dense growth of exotic plants. Mr. Belson recommended that the park contact the regional FWC fisheries biologist to see if grant money is available for treating the exotic plants and spreading the spoil. Mr. Belson recommended that the word “control” should be used instead of “eradicate” in regards to cogon grass management. Mr. Belson recommended partnering with FWC to install kestrel nesting boxes at the parks. Mr. Belson mentioned that there are some good groundcover restoration plans that have been implemented by other agencies and that the park should borrow from these so as not to reinvent the wheel. He asked for clarification on the term “Wilderness Preserve,” as described in the Land Use Component. David Copps explained that the designation is used to protect a wilderness experience in large, undeveloped areas. Mr. Belson recommended that the FWC statewide protocol be used for gopher tortoise monitoring. Mr. Belson asked why partnerships with South Florida Water Management District (SFWMD) are proposed to document and record cultural resources as stated in the Cultural Resources management objectives. Andy Noland said that SFWMD sponsored a recent study of cultural resources in the area and that they are co-owners of ADB Catfish Creek Preserve State Park. Mr. Belson asked if “single species management” as stated on page 11 in the last sentence of paragraph two (both plans) refers to imperiled species. If so, he recommended that it be stated as such as in the previous sentence. Mr. Belson said that the Lake Kissimmee cost estimates under the hydrologic restoration goals seem low and recommended doubling those figures. Mr. Belson recommended that the spoil storage agreement with SFWMD on Catfish Creek be clarified in the plan. Mr. Belson recommended that cut hardwood stumps in the Catfish Creek sandhill area be treated with herbicide. He said that the proposed 10 acres of sandhill restoration over 10 years is too low. Erik Egensteiner said the 10 acre figure refers to a total area of hardwoods not just one 10 acre block. Mr. Belson asked for clarification on the term “Protected Zone” on page 77 of the Catfish Creek plan regarding scrub jay nesting areas. David Copps said that protected zones designation serves to limit recreational use and facilities in sensitive areas. Mr. Belson said to replace the term “Florida Game and Freshwater

Fish Commission" with "Florida Fish and Wildlife Conservation Commission" in Addendum 6-1. He asked if the SFWMD was part of the land management review team for Lake Kissimmee State Park. Andy Noland answered yes. Mr. Belson asked who monitors Snodgrass Island and if there is a problem with looting. Erik Egensteiner said that the park monitors the property although it is difficult to get out there on a regular basis. He said that looting hasn't been a problem lately. Andy Noland said there are small Florida Park Service boundary signs on the perimeter but no fencing as that may actually attract attention. Mr. Belson asked if the park manages the small inholdings at Catfish Creek. Erik Egensteiner said they are treated just like the rest of the park. Mr. Belson asked if the park tries to contact the landowners about upcoming management activities such as burning. Eric Egensteiner said that the park has assembled a contact list of landowners but has not yet contacted any of them. Zack Prusak explained that The Nature Conservancy (TNC) handles the inholding issue by sending out letters to the owners stating that burning is planned for their property. The letter asks the landowners to contact TNC if they have any objections. If there are no objections, TNC goes ahead and burns. Very seldom do they receive an objection.

Bill Drasdo (Adjacent landowner) asked if funding is available to construct the planned facilities. Andy Noland said not at this time. Larry Fooks explained that the funding needs for Lake Kissimmee and Catfish Creek are lumped in with the needs of all state parks each year. Spending is prioritized based on the yearly legislative allocation. Andy Noland said that facilities usually have to be phased in over time based on the limited budget.

Susan Elfers (South Florida Water Management District (SFWMD)) said she was not aware that SFWMD assists in managing the Zipprer Canal in Lake Kissimmee State Park as mentioned in the plan. Joshua Herman said that Polk County does the majority of management but SFWMD does some limited work such as vegetation management around the weir. Ms. Elfers said that the park should contact the District's Orlando Service Center to help pave the way for marina improvements. Andy Noland said that marina improvements will help attract more visitors.

Mike Charron (Florida Sport Horse Club) said that water bodies are favorite destinations for visitors and recommended that trail access to water bodies in both parks be improved. He recommended that the parking area at the Catfish Creek Fire Tower Road trailhead be configured and expanded to better accommodate horse rigs. Andy Noland explained that the sensitivity of the scrub habitat at that location may limit parking expansion. He said that additional access and facilities are planned for equestrians on the Rolling Meadows Tract. Mr. Charron said that riders don't like trail disking for firebreaks. Mr. Noland said that the park tries to use the Meri-Crusher when possible since it creates a much shallower disturbance than the disk. Mr. Charron said that rocks used to stabilize trails are hard on horse hooves. He recommended using mulch or shell as an alternative. Mr. Charron said that equestrians would like trail access to the Rolling Meadows Tract and asked why

it is not currently accessible. Andy Noland explained that the cattle lease agreement on Rolling Meadows restricts general access but the park will work with equestrians to provide access for special events. Larry Fooks said that the park will start to look at the potential for providing access for hiking and horseback riding on the Rolling Meadows Tract. Mr. Charron expressed support for establishing a tram system to provide more access to the parks as explained by Jack Madden.

Gary Bartley (Future Farmers of America Foundation (FFAF)) said that his only issues are trespassing onto The FFAF property from Catfish Creek and hog control. Erik Egensteiner said that the park would look at the possibility of installing better trail and boundary signs to keep park visitors from straying onto the FFAF property. Andy Noland asked if the public could use the FFAF boat ramp on Lake Pierce. Mr. Bartley said that for a $5 fee the public can use the launch from 5:30am to 7pm. Mr. Bartley stated that the FFAF partners with the park to provide hayride events to give kids a chance to experience Catfish Creek Preserve.

Gaye Sharpe (Polk County) supports hydrologic restoration projects for both parks including ditch blocks to recreate wetlands. She recommended putting water back into the old bed of Catfish Creek if possible. Ms. Sharpe recommended not burning the Catfish Creek sandhill too much for the health of certain imperiled plant species. Jennifer Navarra said it is important to vary the fire return interval. Ms. Sharpe asked if the park conducts photo-monitoring for invasive plants and fire plots to determine if management objectives are being met. Erik Egensteiner said that some burn zones are photo-monitored but the intent is to do so in every zone. He said that the there is no photo-monitoring for invasive plants but a new data base tracking system has recently been implemented. Ms. Sharpe encouraged the park to use more photo-monitoring as a way to establish a visual history of management and determine long-term trends. She said that a lot of this information resides in the minds of park staff and is lost when those folks retire. Ms. Sharpe asked if the park has water quality education programs. Joshua Herman described two such programs (power point presentation to educate boaters on the spread of exotic plants and a table top watershed/stormwater pollution display). Ms. Sharpe expressed the importance of such programs and encouraged the park to keep it up. Ms. Sharpe stated that the Land Management Review responses for both parks do a good job of explaining why some of the recommendations can't be implemented.

Jack Madden (Ridge Audubon Society) stated his approval of the plans' scientific approach. He recommended that the park provide access to Catfish Creek Preserve by way of a tram system (as done at St. Marks Wildlife Refuge). Andy Noland agreed that tram access is desirable and offered to partner with Ridge Audubon to determine how best to implement such a program.

Zach Prusak (The Nature Conservancy (TNC)) stated that the reality of fire management dictates that burning needs to be done whenever possible – not just during the growing season. He said that it's important for the public to see smoke

continually during the year so that they become accustomed to it. Mr. Prusak asked what density of wiregrass the park wants for the Catfish Creek sandhill. Erik Egensteiner said that the sandhills on the Lake Wales Ridge typically did not have that much wiregrass and that the density will be less than Wekiwa Springs State Park sandhills. Mr. Prusak recommended that the park establish a small area of wiregrass to serve as a seed source – the seed harvested there could be spread on other areas. Mr. Prusak asked what the impediments are to achieving the 10 year burn goals. Andy Noland said that getting the right weather is the biggest obstacle. Mr. Pruzak asked what the impacts would be to the park if resources from the TNC and the FFS, or if OPS staff, were no longer available. Andy Noland said that loss of these resources would be detrimental to the burn program at the parks. Mr. Prusak said that TNC is trying to anticipate the effect on regional burn programs that may result from reduced staffing levels in the future. He described the concept of Memorandums of Understanding (MOUs) as a way to formalize and strengthen local burning partnerships between various agencies. He said that he will be working to establish Burning MOUs in this region in the near future. Mr. Prusak said that overall the unit management plans do a good job of balancing public access with resource protection.

Summary of Written Comments

Mike Wisenbaker (Florida Division of Historical Resources (DHR)) was not able to attend the meeting. He provided comments by email. Copies of the comments are attached. Concerning Lake Kissimmee State Park, Mr. Wisenbaker stated that site 8PO7250 (the military road) should be classified as a resource group rather than an archaeological site. He stated that all historical and archaeological artifacts and features that have been found in the park should be formally recorded in the Florida Master Site File. For Catfish Creek, he stated that sites 8PO7277 and 8PO7278 should be classified as historic bridges rather than historic structures. He recommended that staff should get accurate GPS coordinates of all sites so they can be relocated for monitoring. For both parks, Mr. Wisenbaker suggested that the archaeological predictive model should be viewed as only one of many tools to determine potential locations for historical and archaeological sites. He reminded the park that any proposed land altering or ground disturbing activities still need to be approved by the Compliance Review Section in the Bureau of Historic Preservation.

Anne Cox (Florida Native Plant Society) submitted written comments on behalf of Greg Thomas. She made the following recommendations in regards to Lake Kissimmee State Park: Fill in the Zipprer canal to restore natural hydrology. Restore native groundcover in mesic flatwoods before planting longleaf pines. Allow fire to creep into mesic hammock edges. Apply fire as needed on Buster Island and follow scrub-jay requirements. Increase fire frequency in wet flatwoods and baygall. Continue frequent fire in the floodplain marsh. Eradicate feral hogs and continue to remove exotic plants throughout the park. Don't remove cattle from pasture areas

until the park is ready to prepare the land for restoration. Eradicate bahiagrass from pasture areas before planting native groundcover. Continue to limit use in the protected zones and wilderness area and purchase land in the optimum boundary when possible.

Summary of Public Comments

Tom Palmer stated that the park should be careful about delaying the opening of the Rolling Meadows Tract to public access. He recommended establishing some basic level of access so as to prevent complaints from the public. Mr. Palmer mentioned the plan to construct cabins in the last UMP for Lake Kissimmee and asked about the status of that project. Andy Noland said that a family camping area is planned in lieu of cabins in the UMP update. Mr. Palmer said that the park should consider recruiting volunteers to conduct wildlife inventories on the two properties.

Staff Recommendations

The staff recommends approval of the proposed management plans for Lake Kissimmee and Allen David Broussard Catfish Creek Preserve State Parks as presented, with the following significant changes.

- Amend the discussion of exotic animals in the Lake Kissimmee plan to match that in the Catfish Creek plan. The DRP will continue to classify coyotes as exotic species but text will be added to both plans stating that “coyotes should be removed only in cases where the species is known to significantly impact natural resources or park operations.”

- Increase the cost estimates for hydrological restoration objectives in the Lake Kissimmee plan.

- Provide language in the “Potential Uses” section in the Land Use Component that the park will explore the feasibility of offering tram tours (or similar access) to Catfish Creek Preserve.

- Provide language stating that the current use patterns at the Fire Tower Road trailhead will be evaluated to determine the need for parking lot expansion vs. the impact to the natural communities.

- Provide language stating that efforts will be made to open the Rolling Meadows Tract for recreational access.

- Change the site classifications for the sites listed in the DHR written comments.

- Add a statement under the second objective in the Cultural Resource Management section in the Catfish Creek plan stating that “all known sites are recorded or updated in the Florida Master Site File.”

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

Notes on Composition of the Advisory Group

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

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

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

Addendum 3—References Cited

Brooks, H. K. 1981. Physiographic Regions. Fla. Coop. Ext. Serv., Inst. Food Agric. Sci., Univ. of Florida, Gainesville.

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Florida Department of Environmental Protection. 1998. Lake Kissimmee State Park Unit Plan. Tallahassee, Florida.

Florida Department of Environmental Protection. 2004. Lake Kissimmee State Park Unit Plan. Tallahassee, Florida.

Florida Department of Environmental Protection. 2013. Florida State Park System Economic Impact Assessment for Fiscal Year 2012/2013. Tallahassee, Florida.

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Addendum 4—Soil Descriptions

(13) Samsula muck is a very poorly drained organic soil found in swamps and marshes. Slopes are smooth and less than two percent. This Samsula soil has a seasonal high water table at or above the surface except during extended dry periods. The natural vegetation is mostly loblolly bay, cypress, red maple, blackgum, and other water-tolerant trees.

(17) Smyrna and Myakka fine sands consist of poorly drained soils in broad areas on flatwoods. The Smyrna and Myakka soils have a seasonal high water table within 12 inches of the surface for one to four months in most years. The natural vegetation is mostly longleaf pine, slash pine, South Florida slash pine, saw palmetto, runner oak, gallberry, wax myrtle, wiregrass, and lyonia.

(19) Floridana muck fine sand, depressional is a very poorly drained soil that is found in depressional areas mostly on flatwoods with a slope of 0 to 2 percent. The soil has a surface layer that is 15 inches thick. The upper is black mucky fine sand and the lower is black fine sand. Permeability is very slow or slow and the available water capacity is moderate. The natural vegetation is mostly cypress, blackgum, bay, red maple, myrtle, pickerelweed, sedges, and water tolerant grasses.

(21) Immokalee sand is a poorly drained soil in broad areas of flatwoods. This soil has a seasonal high water table within 12 inches of the surface for one to four months in most years. The natural vegetation includes longleaf pine, South Florida slash pine, saw palmetto, gallberry, wax myrtle, oak, lyonia, and wiregrass.

(23) Ona fine sand is a poorly drained soil in broad areas on flatwoods. Slopes are smooth to concave and are 0 to 2 percent. This soil has a seasonal high water table within 12 inches of the surface for 1 to 4 months in most years. The natural vegetation is mostly longleaf pine, slash pine, South Florida slash pine, longleaf pine, saw palmetto, runner oak, gallberry, wax myrtle, wiregrass, and lyonia.

(25) Placid and Myakka fine sands, depressional consist of very poorly drained soils in depressions in flatwoods. This Placid soil is ponded for at least six months during most years. The Myakka soil has a seasonal high water table that is above the surface for about six months during most years. Most areas of the Placid and Myakka soils are vegetated by bay trees, scattered cypress, blackgum, St. Johnswort, maidencane, and other water-tolerant plants.

(31) Adamsville fine sand is a somewhat poorly drained soil found on low ridges in flatwoods and in low area on uplands. It has a seasonal high water table at a depth of 20 to 40 inches for two to six months during the year. Natural vegetation includes longleaf pine, slash pine, laurel oak, water oak and an understory of saw palmetto, wiregrass, bluestem and panicums.

(34) Anclote mucky fine sand, depressional is a very poorly drained soil that is found in depressions mostly bordering lakes throughout the county with a slope that is 0 to 2 percent. The soil has a surface layer that is black mucky fine sand to a depth of about 8 inches. Permeability is rapid and the available water capacity is

very low. The natural vegetation is cypress, bay, Carolina ash, scattered cabbage palm, maple, and rushes.

(35) Hontoon muck is a very poorly drained soil in swamps and marshes. It has a seasonal high water table that is at or above the surface except during extended dry periods. The natural vegetation is bay trees, red maple, blackgum, and cypress with a ground cover of sawgrass, lilies, reeds, ferns, greenbrier, and other aquatic plants.

(36) Basinger mucky fine sand, depressional is as very poorly drained soil found in wet depressions on flatwoods. This soil is ponded for more than six months during most years. The vegetation includes broomsedge bluestem, chalky bluestem, maidencane, cutgrass, St. Johnswort, wiregrass, cypress, and other water-tolerant trees.

(70) Duette fine sand is a moderately well drained soil on low ridges in flatwoods. It has a seasonal high water table at a depth of four to six feet for one to four months during most years. The natural vegetation is mostly myrtle oak, Chapman's oak, sand live oak, turkey oak, sand pine, and slash pine. The understory includes saw palmetto, runner oak, and wiregrass.

(74) Narcoossee sand is somewhat poorly drained soil on low hammocks and ridges on flatwoods. The seasonal high water table is at 24 to 40 inches for four to six months during most years. The natural vegetation is mostly water oak, live oak, laurel oak, cabbage palm, scattered pines, greenbrier, saw palmetto, wiregrass, creeping bluestem, and panicums.

(77) Satellite sand is a somewhat poorly drained soil on low knolls and ridges in flatwoods. Satellite soil has a seasonal high water table within a depth of 12 to 40 inches for two to six months in most years. The natural vegetation is mostly slash pine, saw palmetto, sand live oak, and wiregrass.

(87) Basinger fine sand is a poorly drained soil found in sloughs or poorly defined drainageways in flatwoods. It has a seasonal high water table within 12 inches of the surface for two to four months in most years. The natural vegetation is mostly wax myrtle, St. Johnswort, wiregrass, and scattered cypress and pines.

Addendum 5—Plant And Animal List

Lake Kissimmee State Park Plants

Common Name	*Scientific Name*	Primary Habitat (for designated species)

LICHENS

Deermoss	*Cladonia sp.*
Old-man's-beard	*Usnea sp.*

PTERIDOPHYTES

Giant leather fern	*Acrostichum danaeifolium*	
Carolina mosquito fern	*Azolla caroliniana*	
Toothed midsorus fern; Swamp fern	*Blechnum serrulatum*	
Southern club-moss	*Lycopodiella appressa*	
Sword fern; Wild Boston fern	*Nephrolepis exaltata*	
Cinnamon fern	*Osmunda cinnamomea*	BG,MEH
Royal fern	*Osmunda regalis*	FS,HH
Golden polypody	*Phlebodium aureum*	
Resurrection fern	*Pleopeltis polypodioides var. michauxiana*	
Bracken fern	*Pteridium aquilinum*	
Water spangles	*Salvinia minima*	
Toothed lattice-vein fern	*Thelypteris serrata*	FS,HH
Shoestring fern	*Vittaria lineate*	
Netted chain fern	*Woodwardia areolata*	
Virginia chain fern	*Woodwardia virginica*	

GYMNOSPERMS

South Florida slash pine	*Pinus elliottii var. densa*
Longleaf pine	*Pinus palustris*
Pond-cypress	*Taxodium ascendens*

ANGIOSPERMS

MONOCOTS

Yellow colicroot	*Aletris lutea*
Chalky bluestem	*Andropogon virginicus var. glaucus*
Bottlebrush threeawn	*Aristida spiciformis*
Wiregrass	*Aristida stricta var. beyrichiana*
Bluethread	*Burmannia biflora*
Bandana-of-the-everglades	*Canna flaccida*
Jamaica swamp sawgrass	*Cladium jamaicense*
Dayflower	*Commelina diffusa*
Whitemouth dayflower	*Commelina erecta*
Seven-sisters; String-lily	*Crinum americanum*
Pangolagrass	*Digitaria pentzii**
Common water-hyacinth	*Eichhornia crassipes**
Knotted spikerush	*Eleocharis interstincta*

* Non-Native Species

Lake Kissimmee State Park Plants

Common Name	*Scientific Name*	Primary Habitat (for designated species)
Florida butterfly orchid	*Encyclia tampensis*	HH,MEH
Southern umbrellasedge	*Fuirena scirpoidea*	
Toothpetal false reinorchid; Mignonette orchid	*Habenaria floribunda*	
Waterspider false reinorchid	*Habenaria repens*	
Waterthyme; Hydrilla	*Hydrilla verticillata**	
Fringed yellow stargrass	*Hypoxis juncea*	
Cogongrass	*Imperata cylindrica**	
Soft rush	*Juncus effusus*	
Carolina redroot	*Lachnanthes caroliniana*	
Lesser duckweed	*Lemna aequinoctialis*	
Catesby's lily; Pine lily	*Lilium catesbaei*	MF,WF
Southern watergrass	*Luziola fluitans*	
Cutthroatgrass	*Panicum abscissum*	DM,WF
Maidencane	*Panicum hemitomon*	
Torpedograss	*Panicum repens**	
Warty panicgrass	*Panicum verrucosum*	
Water-lettuce	*Pistia stratiotes**	
Pickerelweed	*Pontederia cordata*	
Giant orchid	*Pteroglossaspis ecristata*	MF,WF
Starrush whitetop	*Rhynchospora colorata*	
Dwarf palmetto; Bluestem palm	*Sabal minor*	
Cabbage palm	*Sabal palmetto*	
Sugarcane plumegrass	*Saccharum giganteum*	
American cupscale	*Sacciolepis striata*	
Grassy arrowhead	*Sagittaria graminea*	
Bulltongue arrowhead	*Sagittaria lancifolia*	
Broadleaf arrowhead; Common arrowhead; Duck potato	*Sagittaria latifolia*	
Cuban bulrush	*Scirpus cubensis**	
Softstem bulrush	*Scirpus tabernaemontani*	
Saw palmetto	*Serenoa repens*	
Giant bristlegrass	*Setaria magna*	
Yellow bristlegrass; Yellow foxtail	*Setaria parviflora*	
Narrowleaf blueeyed grass	*Sisyrinchium angustifolium*	
Nash's blueeyed grass	*Sisyrinchium nashii*	
Earleaf greenbrier	*Smilax auriculata*	
Saw greenbrier	*Smilax bona-nox*	
Laurel greenbrier	*Smilax laurifolia*	
Lopsided Indiangrass	*Sorghastrum secundum*	
Sand cordgrass	*Spartina bakeri*	
Greenvein ladiestresses	*Spiranthes praecox*	
Yellow hatpins	*Syngonanthus flavidulus*	

* Non-Native Species

Common Name	*Scientific Name*	Primary Habitat (for designated species)
Alligatorflag; Fireflag	*Thalia geniculata*	
Cardinal airplant	*Tillandsia fasciculata*	FS,HH
Ballmoss	*Tillandsia recurvata*	
Southern needleleaf	*Tillandsia setacea*	
Spanish moss	*Tillandsia usneoides*	
Southern cattail	*Typha domingensis*	
Broadleaf cattail	*Typha latifolia*	
Paragrass	*Urochloa mutica**	
Shortleaf yelloweyed grass	*Xyris brevifolia*	
Carolina yelloweyed grass	*Xyris caroliniana*	
Bog yelloweyed grass	*Xyris difformis*	
Elliott's yelloweyed grass	*Xyris elliottii*	
Fringed yelloweyed grass	*Xyris fimbriata*	
Savannah yelloweyed grass	*Xyris flabelliformis*	
Adam's needle	*Yucca filamentosa*	
Atamasco lily; Rainlily	*Zephyranthes atamasco*	

DICOTS

Red maple	*Acer rubrum*	
Beach false foxglove	*Agalinis fasciculata*	
Flaxleaf false foxglove	*Agalinis linifolia*	
Silktree; Mimosa	*Albizia julibrissin**	
Alligatorweed	*Alternanthera philoxeroides**	
Slim amaranth; Pigweed	*Amaranthus hybridus**	
Spiny amaranth*	*Amaranthus spinosus**	
Common ragweed	*Ambrosia artemisiifolia*	
Peppervine	*Ampelopsis arborea*	
Chaffweed	*Anagallis minima*	
Groundnut	*Apios americana*	
Florida milkweed	*Asclepias feayi*	
Swamp milkweed	*Asclepias incarnata*	
Savannah milkweed	*Asclepias pedicellata*	
Butterflyweed; Butterfly milkweed	*Asclepias tuberosa*	
Bigflower pawpaw	*Asimina obovata*	
Netted pawpaw	*Asimina reticulata*	
Whitetop aster; Dixie aster	*Aster tortifolius*	
Fernleaf yellow false foxglove	*Aureolaria pedicularia var. pectinata*	
Groundsel tree; Sea myrtle	*Baccharis halimifolia*	
Lemon bacopa; Blue waterhyssop	*Bacopa caroliniana*	
Coastalplain honeycombhead	*Balduina angustifolia*	
Tarflower	*Bejaria racemosa*	
Beggarticks; Romerillo	*Bidens alba*	
Burrmarigold; Smooth beggarticks	*Bidens laevis*	

* Non-Native Species

Common Name	*Scientific Name*	Primary Habitat (for designated species)
Smallfruit beggarticks	*Bidens mitis*	
Pineland rayless goldenrod	*Bigelowia nudata ssp. nudata*	
False nettle, Bog hemp	*Boehmeria cylindrica*	
Florida lady's nightcap; American bluehearts	*Buchnera americana*	
American beautyberry	*Callicarpa americana*	
Matted waterstarwort	*Callitriche peploides*	
Coastalplain chaffhead; Florida paintbrush	*Carphephorus corymbosus*	
Vanillaleaf; Deer's Tongue	*Carphephorus odoratissimus var. odoratissimus*	
Hairy chaffhead	*Carphephorus paniculatus*	
Love vine; Devil's gut	*Cassytha filiformis*	
Sugarberry; Hackberry	*Celtis laevigata*	
Spadeleaf	*Centella asiatica*	
Common buttonbush	*Cephalanthus occidentalis*	
Coontail	*Ceratophyllum demersum*	
Sensitive pea	*Chamaecrista nictitans var. nictitans*	
Hyssopleaf sandmat	*Chamaesyce hyssopifolia*	
Alicia	*Chapmannia floridana*	
Lamb's-quarters	*Chenopodium album**	
Mexican tea	*Chenopodium ambrosioides**	
Coastalplain goldenaster	*Chrysopsis scabrella*	
Scrubland goldenaster	*Chrysopsis subulata*	
Spotted water hemlock	*Cicuta maculata*	
Camphortree	*Cinnamomum camphora**	
Yellow thistle	*Cirsium horridulum*	
Nuttall's thistle	*Cirsium nuttallii*	
Sour orange; Sweet orange	*Citrus x aurantium**	
Dwarf Canadian horseweed	*Conyza canadensis var. pusilla*	
Swamp dogwood; Stiff dogwood	*Cornus foemina*	
Pursh's rattlebox	*Crotalaria purshii*	
Vente conmigo	*Croton glandulosus var. glandulosus*	
Pineland croton; Grannybush	*Croton linearis*	
Colombian waxweed	*Cuphea carthagenensis**	
Compact dodder	*Cuscuta compacta*	
Gulf coast swallowwort	*Cynanchum angustifolium*	
Summer farewell	*Dalea pinnata var. pinnata*	
Willow-herb; Swamp loosestrife	*Decodon verticillatus*	
Ticktrefoil; Zarzabacoa comun	*Desmodium incanum**	
Dixie ticktrefoil	*Desmodium tortuosum**	
Panicledleaf ticktrefoil	*Desmodium paniculatum*	
Poor joe; Rough buttonweed	*Diodia teres*	
Virginia buttonweed	*Diodia virginiana*	

* Non-Native Species

Common Name	*Scientific Name*	Primary Habitat (for designated species)
Common persimmon	*Diospyros virginiana*	
Pink sundew	*Drosera capillaris*	
False daisy	*Eclipta purpurea*	
Tall elephantsfoot	*Elephantopus elatus*	
Lilac tasselflower	*Emilia sonchifolia**	
American burnweed; Fireweed	*Erechtites hieracifolia*	
Oakleaf fleabane	*Erigeron quercifolius*	
Early whitetop fleabane	*Erigeron vernus*	
Flattened pipewort	*Eriocaulon compressum*	
Tenangle pipewort	*Eriocaulon decangulare*	
Baldwin's eryngo	*Eryngium baldwinii*	
Button rattlesnakemaster; Button eryngo	*Eryngium yuccifolium*	
Roundleaf thoroughwort; Dogfennel	*Eupatorium capillifolium*	
Falsefennel	*Eupatorium leptophyllum*	
Mohr's thoroughwort	*Eupatorium mohrii*	
Lateflowering thoroughwort	*Eupatorium serotinum*	
Lesser Florida spurge	*Euphorbia polyphylla*	
Slender goldenrod	*Euthamia caroliniana*	
Cottonweed; Strangler fig; Golden fig	*Ficus aurea*	
Carolina ash; Water ash; Pop ash	*Fraxinus caroliniana*	
Plains snakecotton	*Froelichia floridana*	
Elliott's milkpea	*Galactia elliottii*	
Downy milkpea	*Galactia volubilis*	
Stiff marsh bedstraw	*Galium tinctorium*	
Garberia	*Garberia heterophylla*	SCF
Dwarf huckleberry	*Gaylussacia dumosa*	
Yellow jessamine; Carolina Jessamine	*Gelsemium sempervirens*	
Rough hedgehyssop	*Gratiola hispida*	
Shaggy hedgehyssop	*Gratiola pilosa*	
Branched hedgehyssop	*Gratiola ramosa*	
Florida scrub frostweed	*Helianthemum nashii*	
Pinebarren frostweed	*Helianthemum corymbosum*	
Muck sunflower	*Helianthus simulans**	
Scarlet rosemallow	*Hibiscus coccineus*	
Swamp rosemallow	*Hibiscus grandiflorus*	
Queen-devil	*Hieracium gronovii*	
Innocence; Roundleaf bluet	*Houstonia procumbens*	
Manyflower marshpennywort	*Hydrocotyle umbellata*	
Skyflower	*Hydrolea corymbosa*	
Roundpod St. John's-wort	*Hypericum cistifolium*	

* Non-Native Species

Common Name	*Scientific Name*	Primary Habitat (for designated species)
Sandweed;		
Peelbark St. John's-wort	*Hypericum fasciculatum*	
Pineweeds; Orangegrass	*Hypericum gentianoides*	
St. Andrew's-cross	*Hypericum hypericoides*	
Dwarf St. John's-wort	*Hypericum mutilum*	
Atlantic St. John's-wort	*Hypericum reductum*	
Fourpetal St. John's-wort	*Hypericum tetrapetalum*	
Clustered bushmint;		
Musky mint	*Hyptis alata*	
Dahoon holly	*Ilex cassine var. cassine*	
Inkberry; Gallberry	*Ilex glabra*	
Hairy indigo	*Indigofera hirsuta**	
Moonflowers;		
Tropical white morning-glory	*Ipomoea alba*	
Saltmarsh morning-glory	*Ipomoea sagittata*	
Virginia willow;		
Virginia sweetspire	*Itea virginica*	
Seacoast marshelder	*Iva imbricata*	
Piedmont marshelder	*Iva microcephala*	
Pineland waterwillow	*Justicia angusta*	
Virginia saltmarsh mallow	*Kosteletzkya virginica*	
Virginia dwarfdandelion	*Krigia virginica*	
Piedmont pinweed	*Lechea torreyi*	
Lion's-ear;		
Christmas candlestick	*Leonotis nepetifolia**	
Virginia pepperweed	*Lepidium virginicum*	
Shortleaf gayfeather	*Liatris tenuifolia*	
Gopher apple	*Licania michauxii*	
Canada toadflax	*Linaria canadensis*	
Apalachicola toadflax	*Linaria floridana*	
Savannah false pimpernel	*Lindernia grandiflora*	
Sweetgum	*Liquidambar styraciflua*	
Glade lobelia	*Lobelia glandulosa*	
Piedmont primrosewillow	*Ludwigia arcuata*	
Yerba de jicotea	*Ludwigia erecta*	
Anglestem primrosewillow	*Ludwigia leptocarpa*	
Southeastern primrosewillow	*Ludwigia linifolia*	
Seaside primrosewillow	*Ludwigia maritima*	
Mexican primrosewillow	*Ludwigia octovalvis*	
Marsh seedbox	*Ludwigia palustris*	
Peruvian primrosewillow	*Ludwigia peruviana**	
Hairy primrosewillow	*Ludwigia pilosa*	
Creeping primrosewillow	*Ludwigia repens*	
Shrubby primrosewillow	*Ludwigia suffruticosa*	
Skyblue lupine	*Lupinus diffusus*	
Taperleaf waterhorehound	*Lycopus rubellus*	

* Non-Native Species

Common Name	*Scientific Name*	Primary Habitat (for designated species)
Rose-rush	*Lygodesmia aphylla*	
Rusty staggerbush	*Lyonia ferruginea*	
Coastalplain staggerbush	*Lyonia fruticosa*	
Fetterbush	*Lyonia lucida*	
Loosestrife	*Lythrum alatum var. lanceolatum*	
Sweetbay	*Magnolia virginiana*	
Creeping cucumber	*Melothria pendula*	
Florida keys hempvine	*Mikania cordifolia*	
Florida sensitive brier	*Mimosa quadrivalvis var. floridana*	
Southern balsampear	*Momordica balsamina**	
Indianpipe	*Monotropa uniflora*	
Wax myrtle	*Myrica cerifera*	
Big floatingheart	*Nymphoides aquatica*	
Swamp tupelo	*Nyssa sylvatica var. biflora*	
Clustered mille graine	*Oldenlandia uniflora*	
Pricklypear	*Opuntia humifusa*	
Common yellow woodsorrel; Creeping woodsorrel	*Oxalis corniculata*	
Pink woodsorrel	*Oxalis debilis var. corymbosa**	
Water cowbane	*Oxypolis filiformis subsp. filiformis*	
Butterweed	*Packera glabella*	
Coastalplain palafox	*Palafoxia integrifolia*	
Feay's palafox	*Palafoxia feayi*	
Paper nailwort; Virginia creeper	*Parthenocissus quinquefolia*	
Purple passionflower	*Passiflora incarnata*	
Red bay	*Persea borbonia var. borbonia*	
Florida false sunflower	*Phoebanthus grandiflorus*	
Turkey tangle fogfruit; Capeweed	*Phyla nodiflora*	
Cutleaf groundcherry	*Physalis angulata*	
Cypresshead groundcherry	*Physalis arenicola*	
Husk tomato	*Physalis pubescens*	
American pokeweed	*Phytolacca americana*	
Wild pennyroyal	*Piloblephis rigida*	
Yellow butterwort	*Pinguicula lutea*	MF,WF
Small butterwort	*Pinguicula pumila*	
Pitted stripeseed	*Piriqueta cistoides subsp. caroliniana*	
Narrowleaf silkgrass	*Pityopsis graminifolia*	
Stinking camphorweed	*Pluchea foetida*	
Sweetscent	*Pluchea odorata*	
Paintedleaf	*Poinsettia cyathophora*	
Tall pinebarren milkwort	*Polygala cymosa*	
Procession flower	*Polygala incarnata*	
Orange milkwort	*Polygala lutea*	
Candyroot	*Polygala nana*	

* Non-Native Species

Common Name	*Scientific Name*	Primary Habitat (for designated species)
Yellow milkwort	*Polygala rugelii*	
Coastalplain milkwort	*Polygala setacea*	
Small's jointweed; October flower	*Polygonella polygama var. polygama*	
Largeflower jointflower; Hairy smartweed	*Polygonum hirsutum*	
Mild waterpepper; Swamp smartweed	*Polygonum hydropiperoides*	
Dotted smartweed	*Polygonum punctatum*	
Rustweed	*Polypremum procumbens*	
Pink purslane; Kiss-me-quick	*Portulaca pilosa*	
Marsh mermaidweed	*Proserpinaca palustris*	
Combleaf mermaidweed	*Proserpinaca pectinata*	
Sweet everlasting; Rabbit tobacco	*Pseudognaphalium obtusifolium*	
Guava	*Psidium guajava**	
Shortleaf wild coffee	*Psychotria sulzneri*	
Blackroot	*Pterocaulon pycnostachyum*	
Mock bishopsweed; Herbwilliam	*Ptilimnium capillaceum*	
Chapman's oak	*Quercus chapmanii*	
Running oak	*Quercus elliottii*	
Sand live oak	*Quercus geminata*	
Scrub oak	*Quercus inopina*	
Turkey oak	*Quercus laevis*	
Laurel oak; Diamond oak	*Quercus laurifolia*	
Dwarf live oak	*Quercus minima*	
Myrtle oak	*Quercus myrtifolia*	
Water oak	*Quercus nigra*	
Live oak	*Quercus virginiana*	
Pale meadowbeauty; Maryland meadowbeauty	*Rhexia mariana*	
Nuttall's meadowbeauty	*Rhexia nuttallii*	
Winged sumac	*Rhus copallinum*	
Sawtooth blackberry	*Rubus argutus*	
Heartwing dock; Hastateleaf dock	*Rumex hastatulus*	
Shortleaf rosegentian	*Sabatia brevifolia*	
Lanceleaf rosegentian	*Sabatia difformis*	
Marsh rosegentian	*Sabatia dodecandra*	
Largeflower rosegentian	*Sabatia grandiflora*	
Carolina willow; Coastalplain willow	*Salix caroliniana*	
American elder; Elderberry	*Sambucus nigra subsp. canadensis*	
White twinevine	*Sarcostemma clausum*	
Lizard's tail	*Saururus cernuus*	

* Non-Native Species

Lake Kissimmee State Park Plants

Common Name	*Scientific Name*	Primary Habitat (for designated species)
Brazilian pepper	*Schinus terebinthifolius**	
Sweetbroom; Licoriceweed	*Scoparia dulcis*	
Helmet skullcap	*Scutellaria integrifolia*	
Coffeeweed; Sicklepod	*Senna obtusifolia**	
Septicweed	*Senna occidentalis**	
Danglepod	*Sesbania herbacea*	
Bladderpod; Bagpod	*Sesbania vesicaria*	
Yaupon blacksenna	*Seymeria cassioides*	
Piedmont blacksenna	*Seymeria pectinata*	
Common wireweed	*Sida acuta*	
American black nightshade	*Solanum americanum*	
Soda apple; Cockroachberry	*Solanum capsicoides*	
Black nightshade	*Solanum chenopodioides*	
Pinebarren goldenrod	*Solidago fistulosa*	
Wand goldenrod	*Solidago stricta*	
Climbing aster	*Symphyotrichum carolinianum*	
Rice button aster	*Symphyotrichum dumosum*	
Annual saltmarsh aster	*Symphyotrichum subulatum*	
Scurf hoarypea	*Tephrosia chrysophylla*	
Wood sage; Canadian germander	*Teucrium canadense*	
Poison ivy	*Toxicodendron radicans*	
Forked bluecurls	*Trichostema dichotomum*	
American elm	*Ulmus americana*	
Caesarweed	*Urena lobata**	
Horned bladderwort	*Utricularia cornuta*	
Leafy bladderwort	*Utricularia foliosa*	
Zigzag bladderwort	*Utricularia subulata*	
Highbush blueberry	*Vaccinium corymbosum*	
Darrow's blueberry	*Vaccinium darrowii*	
Shiny blueberry	*Vaccinium myrsinites*	
Deerberry	*Vaccinium stamineum*	
Bog white violet	*Viola lanceolata*	
Common blue violet	*Viola sororia*	
Muscadine grape	*Vitis rotundifolia*	
Hog-plum; tallowwood	*Ximenia americana*	

* Non-Native Species

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

GRASSHOPPERS, CRICKETS AND KATYDIDS

False katydid	*Amblycorypha sp.*	MTC
Eastern lubber grasshopper	*Romalea microptera*	MTC

STICK INSECTS

Two-striped walkingstick	*Anisomorpha buprestoides*	MTC

BEETLES

Metallic wood-boring beetle	*Chrysobothris femorata*	MTC
Click beetle	*Pyrophorus sp.*	MTC

FLIES

Ghost crane fly	Brachypremna despellens	MTC

BUTTERFLIES AND MOTHS

Butterflies and skippers

Gulf fritillary	*Agraulis vanillae nigrior*	MTC
White peacock	*Anartia jatrophae guantanamo*	MTC
Delaware skipper	*Anatrytone logan*	MTC
Least Skipper	*Ancyloxypha numitor*	MTC
Monk Skipper	*Asbolis capucinus*	MTC
Great southern white	*Ascia monuste*	MTC
Hackberry emperor	*Asterocampa celtis alicia*	MTC
Tawny emperor	*Asterocampa clyton*	MTC
Sachem	*Atalopedes campestris*	MTC
Little metalmark	*Calephelis virginiensis*	MTC
Brazilian skipper	*Calpodes ethlius*	MTC
Red-banded hairstreak	*Calycopis cecrops*	MTC
Southern dogface butterfly	*Colias cesonia*	MTC
Southern Skipperling	*Copaeodes minimus*	MTC
Three-spotted Skipper	*Cymaenes tripunctus*	MTC
Soldier	*Danaus eresimus*	MTC
Queen butterfly	*Danaus gillippus berenice*	MTC
Monarch or milkweed butterfly	*Danaus plexippus*	MTC
Silver-spotted skipper	*Epargyreus clarus*	MTC
Horace's Duskywing	*Erynnis horatius*	MTC
Juvenal's Duskywing	*Erynnis juvenalis*	MTC
Zarucco Duskywing	*Erynnis zarucco*	MTC
Banded sphinx moth	*Eumorpha fasciatus*	MTC
Palmetto skipper	*Euphyes arpa*	MTC
Palatka skipper	*Euphyes pilatka*	MTC

* Non-Native Species

Common Name	*Scientific Name*	Primary Habitat (for all species)
Dun Skipper	*Euphyes vestris*	MTC
Variegated fritillary	*Euptoieta claudia*	MTC
Barred sulphur butterfly	*Eurema daira*	MTC
Little yellow	*Eurema lisa*	MTC
Sleepy orange	*Eurema nicippe*	MTC
Zebra swallowtail	*Eurytides marcellus floridensis*	MTC
Zebra heliconian	*Heliconius charitonius*	MTC
Ceraunus blue	*Hemiargus ceraunus antibubastus*	MTC
Carolina satyr	*Hermeuptychia hermes sosybius*	MTC
Fiery Skipper	*Hylephila phyleus*	MTC
Common buckeye	*Junonia coenia*	MTC
Cassius blue	*Leptotes cassius*	MTC
Clouded Skipper	*Lerema accius*	MTC
Eufala skipper	*Lerodea eufala*	MTC
Viceroy	*Limenitis archippus*	MTC
Swarthy Skipper	*Nastra lherminier*	MTC
Dainty sulphur	*Nathalis iole*	MTC
Georgia satyr	*Neonympha areolata*	MTC
Twin-spot skipper	*Oligoria maculata*	MTC
Ocola Skipper	*Panoquina ocola*	MTC
Giant swallowtail	*Papilio cresphontes*	MTC
Eastern tiger swallowtail	*Papilio glaucus australis*	MTC
Palamedes swallowtail	*Papilio palamedes*	MTC
Black swallowtail	*Papilio polyxenes asterius*	MTC
Spice-bush swallowtail	*Papilio troilus ilioneus*	MTC
White M hairstreak	*Parrhasius m-album m-album*	MTC
Cloudless sulphur butterfly	*Phoebis sennae eubule*	MTC
Phaon crescent butterfly	*Phyciodes phaon*	MTC
Pearl crescent	*Phyciodes tharos*	MTC
Pearl crescent	*Phyciodes tharos tharos*	MTC
Aaron's skipper	*Poanes aaroni*	MTC
Whirlabout	*Polites vibex*	MTC
Question mark butterfly	*Polygonia interrogationis*	MTC
Spicebush Swallowtail	*Pterourus troilus*	MTC
Common checkered-skipper	*Pyrgus communis*	MTC
Tropical checkered-skipper	*Pyrgus oileus*	MTC
Southern Oak hairstreak	*Satyrium favonius*	MTC
Gray hairstreak	*Strymon melinus melinus*	MTC
Southern cloudywing	*Thorybes bathyllus*	MTC
Confused cloudywing	*Thorybes confusis*	MTC
Northern cloudywing	*Thorybes pylades*	MTC
Dorantes longtail	*Urbanus dorantes*	MTC
Long-tailed skipper	*Urbanus proteus*	MTC
Red admiral butterfly	*Vanessa atalanta rubria*	MTC
American lady butterfly	*Vanessa virginiensis*	MTC

* Non-Native Species

Common Name	*Scientific Name*	Primary Habitat (for all species)
Northern Broken-Dash	*Wallengrenia egeremet*	MTC
Southern Broken-Dash	*Wallengrenia otho*	MTC

ANTS, BEES AND WASPS

Velvet ant	*Dasymutilla occidentalis*	MTC
Ant	*Pseudomyrmex ejectus*	MTC
Mason wasp	*Monobia quadridens*	MTC
Cicada killer	*Sphecius spheciosus*	MTC

SPIDERS

Orb weaver	*Araneus sp.*	MEH
Golden silk spider	*Nephila clavipes*	MEH,MF

BONY FISHES

White catfish	*Ameiurus catus*	BST
Brown bullhead	*Ameiurus nebulosus*	BST
Bowfin	*Amia calva*	BST
Walking catfish	*Clarias batrachus**	BS,DM
Gizzard shad	*Dorosoma cepedianum*	BST
Threadfin shad	*Dorosoma petenense*	BST
Everglades pygmy sunfish	*Elassoma evergladei*	DM
Bluespotted sunfish	*Enneacanthus gloriosus*	BST
Lake chubsucker	*Erimyzon sucetta*	BST
Chain pickerel	*Esox niger*	BST
Swamp darter	*Etheostoma fusiforme*	BST
Golden topminnow	*Fundulus chrysotus*	DM
Seminole killifish	*Fundulus seminolis*	BST
Mosquitofish	*Gambusia holbrooki*	DM,BST
Least killifish	*Heterandria Formosa*	DM,BST
Channel catfish	*Ictalurus punctatus*	BST
Florida flagfish	*Jordanella floridae*	BST
Brook silverside	*Labidesthes sicculus*	BST
Warmouth	*Lepomis gulosus*	BST
Bluegill	*Lepomis macrochirus*	BST
Dollar sunfish	*Lepomis marginatus*	BST
Redear sunfish	*Lepomis microlophus*	BST
Spotted sunfish	*Lepomis punctatus*	BST
Longnose gar	*Lepisosteus osseus*	BST
Florida gar	*Lepisosteus platyrhincus*	BST
Bluefin killifish	*Lucania goodie*	BST
Largemouth bass	*Micropterus salmoides*	BST

* Non-Native Species

Common Name	*Scientific Name*	Primary Habitat (for all species)
Golden shiner	*Notemigonus crysoleucas*	BST
Taillight shiner	*Notropis maculatus*	BST
Coastal shiner	*Notropis petersoni*	BST
Tadpole madtom	*Noturus gyrinus*	BST
Blue tilapia	*Oreochromis aureus**	BST
Sailfin molly	*Poecilia latipinna*	BST
Broadspotted molly	*Poecilia latipunctata*	BST
Black crappie	*Pomoxis nigromaculatus*	BST
Atlantic needlefish	*Strongylura marina*	BST

AMPHIBIANS

Frogs and Toads

Florida cricket frog	*Acris gryllus dorsalis*	BST
Oak toad	*Bufo quercicus*	SCF
Southern toad	*Bufo terrestris*	MF,SCF
Greenhouse frog	*Eleutherodactylus planirostris**	MTC
Green treefrog	*Hyla cinerea*	MTC
Pine woods treefrog	*Hyla femoralis*	MTC
Barking treefrog	*Hyla gratiosa*	MTC
Squirrel treefrog	*Hyla squirella*	MTC
Florida chorus frog	*Pseudacris nigrita verrucosa*	DM,DS
Little grass frog	*Pseudacris ocularis*	DM,DS
Florida gopher frog	*Rana capito aesopus*	SCF,DM
Bullfrog	*Rana catesbeiana*	MTC
Pig frog	*Rana grylio*	MTC
Florida leopard frog	*Rana sphenocephala sphenocephala*	MTC

Salamanders

Greater siren	*Siren lacertina*	DM,FS

REPTILES

Crocodilians

American alligator	*Alligator mississippiensis*	MTC

Turtles and tortoises

Florida snapping turtle	*Chelydra serpentine*	BST,FS
Gopher tortoise	*Gopherus polyphemus*	SCF,MF
Striped mud turtle	*Kinosternon baurii*	DM,FS
Florida mud turtle	*Kinosternon subrubrum steindachneri*	DM
Peninsula cooter	*Pseudemys floridana peninsularis*	BST
Florida red-bellied turtle	*Pseudemys nelsoni*	BST
Common musk turtle	*Sternotherus odoratus*	BST,FS
Florida box turtle	*Terrapene carolina bauri*	MF,MEH
Florida softshell turtle	*Trionyx ferox*	BST

* Non-Native Species

Common Name	*Scientific Name*	Primary Habitat (for all species)
Lizards		
Green anole	*Anolis carolinensis*	MTC
Brown anole	*Anolis sagrei**	MTC
Six-lined racerunner	*Cnemidophorus sexlineatus sexlineatus*	SCF
Bluetail mole skink	*Eumeces egregius lividus*	SCF
Southeastern five-lined skink	*Eumeces inexpectatus*	MEH,SCF
Eastern glass lizard	*Ophisaurus ventralis*	MTC
Ground skink	*Scincella lateralis*	MEH,MF
Worm Lizards		
Florida worm lizard	*Rhineura floridana*	SCF
Snakes		
Florida cottonmouth	*Agkistrodon piscivorus conanti*	BG,FS
Florida scarlet snake	*Cemophora coccinea coccinea*	SCF
Southern black racer	*Coluber constrictor priapus*	MTC
Eastern diamondback Rattlesnake	*Crotalus adamanteus*	MTC
Southern ringneck snake	*Diadophis punctatus punctatus*	MEH
Eastern indigo snake	*Drymarchon corais couperi*	SCF
Corn snake	*Elaphe guttata guttata*	MTC
Yellow rat snake	*Elaphe obsoleta quadrivittata*	MTC
Eastern mud snake	*Farancia abacura abacura*	BS,FS
Eastern hognose snake	*Heterodon platyrhinos*	SCF
Southern hognose snake	*Heterodon simus*	SCF
Florida kingsnake	*Lampropeltis getula floridana*	MF
Scarlet kingsnake	*Lampropeltis trianglulum elapsoides*	MEH
Eastern coachwhip	*Masticophis flagellum flagellum*	SCF
Eastern coral snake	*Micrurus fulvius fulvius*	MTC
Florida watersnake	*Nerodia fasciata pictiventris*	DM,BST,FS
Florida green watersnake	*Nerodia floridana*	BST,FS
Brown watersnake	*Nerodia taxispilota*	BST,FS
Rough green snake	*Opheodrys aestivus*	SCF
Florida pine snake	*Pituophis melanoleucus mugitus*	SCF
Striped crayfish snake	*Regina alleni*	DM,FS
Pine woods snake	*Rhadinaea flavilata*	MF,WF
South Florida swamp snake	*Seminatrix pygaea cyclas*	DM,FS
Dusky pigmy rattlesnake	*Sistrurus miliarius barbouri*	MTC
Central Florida crowned snake	*Tantilla relicta neilli*	SCF
Peninsula ribbon snake	*Thamnophis sauritus sackeni*	WF,DM
Eastern garter snake	*Thamnophis sirtalis sirtalis*	WF,DM

BIRDS

Ducks

* Non-Native Species

Common Name	*Scientific Name*	Primary Habitat (for all species)
Wood duck	*Aix sponsa*	FS,BST
Blue-winged teal	*Anas discors*	SWLK
Mottled duck	*Anas fulvigula*	MLK,SWLK
Mallard	*Anas platyrhynchos*	MLK,SWLK
American black duck	*Anas rubripes*	MLK
Lesser scaup	*Aythya affinis*	MLK,SWLK
Ring-necked duck	*Aythya collaris*	MLK,SWLK
Hooded merganser	*Lophodytes cucullatus*	MLK,SWLK
Grebes		
Pied-billed grebe	*Podilymbus podiceps*	DM
Pelicans		
American white pelican	*Pelecanus erythrorhynchos*	BST
Brown pelican	*Pelecanus occidentalis*	BST
Cormorants		
Double-crested cormorant	*Phalacrocorax auritus*	BST
Darters		
Anhinga	*Anhinga anhinga*	BST
Bitterns and Herons		
Great egret	*Ardea alba*	FM,DM,BST
Great blue heron	*Ardea herodias herodias*	FM,DM,BST
American bittern	*Botaurus lentiginosus*	DM,FM
Cattle egret	*Bubulcus ibis*	DM,FM,ABP,PI
Green heron	*Butorides virescens*	DM,FS,FM
Little blue heron	*Egretta caerulea*	DM,FM
Snowy egret	*Egretta thula*	DM,FM
Tricolored heron	*Egretta tricolor*	DM,FM
Black-crowned night-heron	*Nycticorax nycticorax*	FM,FS
Ibises and Spoonbills		
White ibis	*Eudocimus albus*	BS,FM,PI
Roseate spoonbill	*Platalea ajaja*	FM
Glossy ibis	*Plegadis falcinellus*	BS,FM,PI
Storks		
Wood stork	*Mycteria americana*	BS,FM
Vultures		
Turkey vulture	*Cathartes aura*	OF
Black vulture	*Coragyps atratus*	OF
Ospreys		

* Non-Native Species

Common Name	*Scientific Name*	Primary Habitat (for all species)
Osprey	*Pandion haliaetus*	FS,FM,OF
Hawks, Eagles and Kites		
Cooper's hawk	*Accipiter cooperii*	MEH,SCF,WF
Sharp-shinned hawk	*Accipiter striatus*	MEH, SCF,WF
Short-tailed hawk	*Buteo brachyurus*	FS
Red-tailed hawk	*Buteo jamaicensis*	SCF,MF,WF
Red-shouldered hawk	*Buteo lineatus*	MEH, MF,SCF,WF
Broad-winged hawk	*Buteo platypterus*	SCF,MF
Northern harrier	*Circus cyaneus*	DM,MLK,ABF
Swallow-tailed kite	*Elanoides forficatus*	FS,WF,BS
Bald eagle	*Haliaeetus leucocephalus*	WF,MF,FM
Snail kite	*Rostrhamus sociabilis plumbeus*	FS,FM,BST
Falcons		
Crested caracara	*Polyborus plancus audubonii*	PI,ABP,FM
Merlin	*Falco columbarius*	PI,ABP
American kestrel	*Falco sparverius*	SCF, PI,ABP
Southeastern American kestrel	*Falco sparverius paulus*	PI,ABP SCF
Turkey and Quail		
Northern bobwhite	*Colinus virginianus*	SCF,MF,WF
Wild turkey	*Meleagris gallopavo*	MF,WF,MEH
Rails and Coots		
American coot	*Fulica americana*	BST
Common moorhen	*Gallinula chloropus*	BST
Purple gallinule	*Porphyrula martinica*	BST
Sora	*Porzana carolina*	DM,FM
Limpkin		
Limpkin	*Aramus guarauna*	BST,FS,FM
Cranes		
Whooping crane	*Grus americana*	DM,ABP,PI
Sandhill crane	*Grus canadensis*	DM,FM
Plovers		
Killdeer	*Charadrius vociferus*	ABP,PI,FM
Black-bellied plover	*Pluvialis squatarola*	FM
Stilts and Avocets		
Black-necked stilt	*Himantopus mexicanus*	FM
Snipes and Sandpipers		
Spotted sandpiper	*Actitis macularia*	FM

* Non-Native Species

Common Name	*Scientific Name*	Primary Habitat (for all species)
Pectoral sandpiper	*Calidris melanotos*	FM
Least sandpiper	*Calidris minutilla*	FM
Wilson's snipe	*Gallinago delicata*	FM
American woodcock	*Scolopax minor*	FS
Lesser yellowlegs	*Tringa flavipes*	FM
Greater yellowlegs	*Tringa melanoleuca*	FM
Solitary sandpiper	*Tringa solitaria*	FM
Gulls and Terns		
Black tern	*Chlidonias niger*	FM
Laughing gull	*Larus atricilla*	FM
Ring-billed gull	*Larus delawarensis*	FM
Forster's tern	*Sterna forsteri*	FM
Doves		
Common ground-dove	*Columbina passerina*	SCF,WF,HEH
Rock pigeon	*Columba livia**	ABP,DV
Mourning dove	*Zenaida macroura*	MF,SCF,WF
Owls		
Great horned owl	*Bubo virginianus*	FS,WF
Eastern screech-owl	*Megascops asio*	SCF,WF
Barred owl	*Strix varia*	MEH,FS,WF
Barn owl	*Tyto alba*	ABP,DV
Goatsuckers		
Chuck-will's-widow	*Caprimulgus carolinensis*	MF,MEH,WF
Whip-poor-will	*Caprimulgus vociferus*	MF,MEH
Common nighthawk	*Chordeiles minor*	SCF,WF,MF
Swifts		
Chimney swift	*Chaetura pelagica*	SCF,MF,WF
Hummingbirds		
Ruby-throated hummingbird	*Archilochus colubris*	MEH
Kingfishers		
Belted kingfisher	*Megaceryle alcyon*	FS,FM,DM
Woodpeckers		
Northern flicker	*Colaptes auratus*	SCF,MF,WF
Pileated woodpecker	*Dryocopus pileatus*	BG,FS,WF,MF
Red-bellied woodpecker	*Melanerpes carolinus*	MF,SCF,FS
Red-headed woodpecker	*Melanerpes erythrocephalus*	MF
Downy woodpecker	*Picoides pubescens*	MF,SCF,FS,MEH
Hairy woodpecker	*Picoides villosus*	MF,SCF,FS

* Non-Native Species

Common Name	*Scientific Name*	Primary Habitat (for all species)
Yellow-bellied sapsucker	*Sphyrapicus varius*	MF,SCF,FS
Flycatchers and Kingbirds		
Eastern wood-pewee	*Contopus virens*	MF,WF
Acadian flycatcher	*Empidonax virescens*	MEH,FS
Great-crested flycatcher	*Myiarchus crinitus*	MF,WF,MEH
Eastern phoebe	*Sayornis phoebe*	ABP,MEH
Eastern kingbird	*Tyrannus tyrannus*	PI,ABP
Shrikes		
Loggerhead shrike	*Lanius ludovicianus*	PI,ABP
Vireos		
Yellow-throated vireo	*Vireo flavifrons*	BG,FS
White-eyed vireo	*Vireo griseus*	MTC
Red-eyed vireo	*Vireo olivaceus*	BG,FS,WF
Philadelphia vireo	*Vireo philadelphicus*	MTC
Blue-headed vireo	*Vireo solitarius*	BG,FS,WF
Jays and Crows		
Florida scrub-jay	*Aphelocoma coerulescens*	SCF,MF
American crow	*Corvus brachyrhynchos*	MTC
Fish crow	*Corvus ossifragus*	FS,FM
Blue jay	*Cyanocitta cristata*	WF,MF,SCF,MEH
Swallows and Martins		
Barn swallow	*Hirundo rustica*	DM,FM,ABP
Purple martin	*Progne subis*	DM,ABP
Northern rough-winged swallow	*Stelgidopteryx serripennis*	MF
Tree swallow	*Tachycineta bicolor*	DM,FM,PI,ABP
Titmice		
Tufted titmouse	*Parus bicolor*	MH,SCF
Carolina chickadee	*Parus carolinensis*	MF,SCF,MEH
Nuthhatches		
Brown-headed nuthatch	*Sitta pusilla*	MF,WF
Wrens		
Marsh wren	*Cistothorus palustris*	DM,FM
Sedge wren	*Cistothorus platensis*	DM,FM
Carolina wren	*Thryothorus ludovicianus*	MTC
House wren	*Troglodytes aedon*	WF,MEH
Kinglets		

* Non-Native Species

Common Name	*Scientific Name*	Primary Habitat (for all species)
Ruby-crowned kinglet	*Regulus calendula*	FS,WF
Gnatcatchers		
Blue-gray gnatcatcher	*Polioptila caerulea*	MEH,FS,WF
Thrushes		
Hermit thrush	*Catharus guttatus*	FS,WF
Gray-cheeked thrush	*Catharus minimus*	MEH
Wood thrush	*Hylocichla mustelina*	MEH
Eastern bluebird	*Sialia sialis*	MF,SCF
American robin	*Turdus migratorius*	MTC
Thrashers		
Gray catbird	*Dumetella carolinensis*	SCF,FS,WF
Northern mockingbird	*Mimus polyglottos*	MTC
Brown thrasher	*Toxostoma rufum*	SCF,WF
Starlings		
European starling	*Sturnus vulgaris**	PI,ABP
Waxwings		
Cedar waxwing	*Bombycilla cedrorum*	MF,SCF
Warblers		
Black-throated blue warbler	*Dendroica caerulescens*	SCF,FS,WF
Bay-breasted warbler	*Dendroica castanea*	MEH
Cerulean warbler	*Dendroica cerulea*	MEH
Yellow-rumped warbler	*Dendroica coronata*	MEH,FS,WF
Prairie warbler	*Dendroica discolor*	MEH,FS,WF
Yellow-throated warbler	*Dendroica dominica*	WF
Blackburnian warbler	*Dendroica fusca*	SCF,MEH
Magnolia warbler	*Dendroica magnolia*	SCF,MEH
Palm warbler	*Dendroica palmarum*	MF,MEH,FS,WF
Chestnut-sided warbler	*Dendroica pensylvanica*	MEH
Yellow warbler	*Dendroica petechia*	MEH
Pine warbler	*Dendroica pinus*	FS,WF,MF
Blackpoll warbler	*Dendroica striata*	SCF
Cape may warbler	*Dendroica tigrina*	WF
Black-throated green warbler	*Dendroica virens*	MEH,FS,WF
Common yellowthroat	*Geothlypis trichas*	DM,FM,WF,FS
Worm-eating warbler	*Helmitheros vermivorus*	WF
Black-and-white warbler	*Mniotilta varia*	FS,WF
Northern parula	*Parula americana*	FS,WF
Prothonotary warbler	*Protonotaria citrea*	FS
Ovenbird	*Seiurus aurocapilla*	FS,MEH,WF
Northern Waterthrush	*Seiurus noveboracenesis*	FS
American Redstart	*Setophaga ruticilla*	FS,MEH,WF

* Non-Native Species

Common Name	*Scientific Name*	Primary Habitat (for all species)
Orange-crowned warbler	*Vermivora celata*	MEH
Tennessee warbler	*Vermivora peregrina*	MEH
Blue-winged warbler	*Vermivora pinus*	MEH
Hooded warbler	*Wilsonia citrina*	FS,WF
Sparrows		
Bachman's sparrow	*Aimophila aestivalis*	MF,SCF
Swamp sparrow	*Melospiza georgiana*	DM,FM
Song sparrow	*Melospiza melodia*	FM
Savannah sparrow	*Passerculus sandwichensis*	DM,ABP
Eastern towhee	*Pipilo erythrophthalmus*	SCF
Chipping sparrow	*Spizella passerina*	DM,ABP
Field sparrow	*Spizella pusilla*	MF,SCF
White-throated sparrow	*Zonotrichia albicollis*	MEH
Cardinals, Tanagers, Grosbeaks, and Buntings		
Northern cardinal	*Cardinalis cardinalis*	MTC
Indigo bunting	*Passerina cyanea*	MF
Rose-breasted grosbeak	*Pheucticus ludovicianus*	MEH
Scarlet tanager	*Piranga olivacea*	MF,WF
Summer tanager	*Piranga rubra*	MF,WF
Meadowlarks, Blackbirds and Orioles		
Red-winged blackbird	*Agelaius phoeniceus*	DM,FM
Bobolink	*Dolichonyx oryzivorus*	ABP
Baltimore oriole	*Icterus galbula*	WF,MEH
Brown-headed cowbird	*Molothrus ater*	ABP,PI
Boat-tailed grackle	*Quiscalus major*	DM,ABP,FM
Common grackle	*Quiscalus quiscula*	MTC
Eastern meadowlark	*Sturnella magna*	FM,PI,ABP
Finches		
Pine siskin	*Carduelis pinus*	WF
American goldfinch	*Spinus tristis*	WF
MAMMALS		
Didelphids		
Virginia opossum	*Didelphis virginiana*	MTC
Bats		
Rafinesque's big-eared bat	*Corynorhinus rafinesquii*	OF
Northern yellow bat	*Lasiurus intermedius*	OF
Seminole bat	*Lasiurus seminolus*	OF
Evening bat	*Nycticeius humeralis*	OF

* Non-Native Species

Lake Kissimmee State Park Animals

Common Name	*Scientific Name*	Primary Habitat (for all species)
Eastern pipistrelle	*Pipistrellus subflavus*	OF
Brazilian free-tailed bat	*Tadarida brasiliensis*	OF
Insectivores		
Northern short-tailed shrew	*Blarina brevicauda*	MF,SCF
Least shrew	*Cryptotis parva*	MF,SCF
Eastern mole	*Scalopus aquaticus*	MTC
Edentates		
Nine-banded armadillo	*Dasypus novemcinctus**	MTC
Lagomorphs		
Eastern cottontail	*Sylvilagus floridanus*	MTC
Marsh rabbit	*Sylvilagus palustris*	MTC
Rodents		
Southeastern pocket gopher	*Geomys pinetis*	SCF
Southern flying squirrel	*Glaucomys volans*	MTC
Round-tailed muskrat	*Neofiber alleni*	FM
Eastern woodrat	*Neotoma floridana*	MEH
Marsh rice rat	*Oryzomys palustris*	DM,FM
Cotton mouse	*Peromyscus gossypinus*	MTC
Florida mouse	*Podomys floridanus*	SCF
Eastern gray squirrel	*Sciurus carolinensis*	MTC
Sherman's fox squirrel	*Sciurus niger shermani*	MF,WF
Hispid cotton rat	*Sigmodon hispidus*	MTC
Carnivores		
Coyote	*Canis latrans**	MTC
Feral cat	*Felis catus**	MTC
Bobcat	*Felis rufus*	MTC
River otter	*Lutra canadensis*	MTC
Striped skunk	*Mephitis mephitis*	MF,SCF
Florida long-tailed weasel	*Mustela frenata peninsulae*	MF,SCF
Raccoon	*Procyon lotor*	MTC
Florida panther	*Puma [=Felis] concolor coryi*	MTC
Gray fox	*Urocyon cinereoargenteus*	MTC
Florida black bear	*Ursus americanus floridanus*	MTC
Artiodactyls		
White-tailed deer	*Odocoileus virginianus*	MTC
Wild Pig	*Sus scrofa**	MTC

* Non-Native Species

Lake Kissimmee State Park Animals

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

* Non-Native Species

Addendum 6—Imperiled Species Ranking Definitions

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

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

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

FNAI GLOBAL RANK DEFINITIONS

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

G2 ..... Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.

G3 ..... Either very rare or local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction of other factors.

G4 ..... apparently secure globally (may be rare in parts of range)

G5 ..... demonstrably secure globally

GH ..... of historical occurrence throughout its range may be rediscovered (e.g., ivory-billed woodpecker)

GX ..... believed to be extinct throughout range

GXC ..... extirpated from the wild but still known from captivity or cultivation

G#? ..... Tentative rank (e.g.,G2?)

G#G# ..... range of rank; insufficient data to assign specific global rank (e.g., G2G3)

G#T# ..... rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definition as above (e.g., G3T1)

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

LEGAL STATUS

FEDERAL

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

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

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

STATE

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

FE ..... Federally-designated Endangered

FT ..... Federally-designated Threatened

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

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

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

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

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

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

Addendum 7—Cultural Information

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

A. General Discussion

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

B. Agency Responsibilities

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

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

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

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

C. Statutory Authority

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

D. Management Implementation

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

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

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

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

E. Minimum Review Documentation Requirements

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

* * *

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

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

Phone: (850) 245-6425

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

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

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

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

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

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

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

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

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

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

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

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

Addendum 8 —Land Management Review

Memorandum

Florida Department of
Environmental Protection

May 11, 2012

TO: Marianne Gengenbach, Program Administrator
Division of State Lands

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

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

SUBJECT: Response to Draft Land Management Review (LMR)
Lake Kissimmee State Park

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

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

PLAN REVIEW

Management of Natural Communities, specifically mesic flatwoods, scrubby flatwoods, mesic hammock, floodplain swamp, hydric hammock and cutthroat wet flatwoods, with documentation in the management plan.

Managing Agency Response: Agree; On pages 10 and 14 in the parks 2004 approved unit management plan (UMP), it describes the desired future condition for mesic flatwoods, scrubby flatwoods, hydric hammock, and wet flatwoods and specifics on how to manage each of these communities. However, Mesic hammock is currently not included in the current UMP because the natural community type was not defined by FNAI at the time the UMP was developed. When the new UMP is developed, mesic hammock will be included along with specific management actions if it is found to exist at the park. Also, floodplain swamp is currently not mapped within the boundaries of the park but may be added if it is found to exist. The next UMP will contain more specific information about each natural community and overall goals and objectives for each.

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

Managing Agency Response: Agree; Addendum #5 of the parks UMP contains a list of listed species that have been found within the park. The list does not include potential or undocumented species. Also on page 20 of the UMP, it describes some of the protections that the park will enact in order to protect listed species in the park. However, the plan does not go into great detail as to what specific measurable protections DRP will do for each species. DRP's plan format now includes more individual descriptions for each species and a complete list of species incorporated into the text. This will be included in the next re-write of the parks UMP.

Discussion regarding the deficiencies relating to natural resource survey, more specifically fire effects monitoring and other habitat management effects monitoring, with documentation in the management plan.

Managing Agency Response: Agree; Currently, DRP has an immediate post burn form that is completed after each burn and a post burn form that is done several months after each burn when time is available to re-evaluate the burn effects. More staff and funding would be required in order to spend more time monitoring and documenting the effects that individual fires have on each management zone. Maintaining fire frequency is currently the primary focus.

Increased resource management activities related to prescribed fire, specifically frequency, with documentation in the management plan.

Managing Agency Response: Agree; DRP strives to burn each community within their specific fire return interval as described by the Florida Natural Areas Inventory and site specific objectives; however, weather, funding, listed species needs, equipment, and staff restrictions sometimes affect the frequency of fire within the park. In the new UMP for the park, more specific details related to the frequency of fire will be described for each community along with other specifics.

Increased restoration of ruderal areas, specifically Lake Rosalie marsh, pasture north of Lake Rosalie and Lake Kissimmee spoil bank, with documentation in the management plan.

Managing Agency Response: Agree; DRP is currently working with SFWMD in the development of a restoration plan that would work toward restoring over 400 acres of the Lake Rosalie marsh north of the lake. A Memorandum of Understanding is currently in place with both parties that states that SFWMD will primarily restore the hydrology of the area by developing a hydrological model, removing berms, filling, ditches and other means. The plan also calls for exotic plant control and potential some upland mesic flatwoods restoration between the marsh and the park proper on the east side of the marsh area. This project along with the background and history of it will be incorporated into the next UMP for the park.

Hydrologic/Geologic Function, specifically roads and culverts, with documentation in the management plan.

Managing Agency Response: Agree; Currently no new roads or culverts are planned outside of the proposed cabin development and marina improvement areas. However, if a road is to be planned and constructed, DRP will evaluate that hydrologic/geologic context of the project and identify issues that need to be addressed to ensure hydrological impacts are minimized.

Proposed Uses, specifically cabins, with documentation in the management plan.

Managing Agency Response: Disagree; Pages 31-33 of the current UMP contains a map of the proposed area for the cabins and a description of the cabins. Specific cost estimates for the cabin project can be found in Addendum #7.

FIELD REVIEW

Increased protection of listed species, specifically Florida mouse, with documentation in the management plan.

Managing Agency Response: Agree; There are no specific protection measures listed in the current UMP for the Florida mouse, a state listed SSC. Studies have been shown that the Florida mouse is compatible with the management of the gopher tortoise and the scrub-jay. At this time, this species is no longer a listed species but will be managed correctly like every other species as part of the Division's natural systems management approach.

Increased restoration of ruderal areas, specifically pasture north of Lake Rosalie, with documentation in the management plan.
Managing Agency Response: Agree; As explained in the above section, DRP is working with SFWMD to restore the pasture north of Lake Rosalie and the information will be added to the next UMP for the park.

Thank you for your attention.

/gk

CC: Larry Fooks, Chief, Bureau of Parks District 3
Robert Yero, Assistant Chief, Bureau of Parks District 3
Andy Noland, Park Manager, Lake Kissimmee State Park
Jason Depue, Environmental Specialist, Bureau of Parks District 3