

LAKE WALES RIDGE STATE FOREST
2018 LAND MANAGEMENT PLAN

EXHIBITS

Exhibit A

Ten-Year Management Accomplishment Summary

LAKE WALES RIDGE STATE FOREST
10 YEAR ACCOMPLISHMENT REPORT

Planting		ACTIVITIES		TOTAL
Bareroot (B) or	1	Containerized LL	No.	500
Containerized (C))			Acres	3
	2	Containerized SF Slash	No.	2,095
			Acres	25

Seedling Survival Checks		Survival Checks	Acres	163
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Timber Inventory		Inventory	Acres	5,713
		New Inventory	Acres	20,866
		Reinventory	Acres	8,284
Citrus Inventory		New Inventory	Acres	746

Exotic Species Control (Indicate Species & Method)	1	Cogon grass	Acres	822.95
	2	Rosary Pea	Acres	48.10
	3	Lygodium	Acres	569.00
	4	Tropical Soda Apple	Acres	251.00
	5	Caesar weed	Acres	176.30
	6	Brazilian Pepper	Acres	81.00
	7	Air Potato	Acres	4.30
	8	Grasses	Acres	365.20
	9	Other	Acres	254.85

Timber Sales	1	Marking	Acres	2,950
	2	Cruising	Acres	2,917
	3	Harvest	Acres	2,384
2006-2016			Tons	62,506
			Acres	150
Current Year Sales			Projected Tons	4,476

Recreation	1	Day Use	No.	99,503
	2	Overnight - Primitive	No.	6,056
	3	Annual Entrance Pass	No.	131

Fire	1	Wildfire	No.	13
	2	Wildfire	Acres	468
	3	Prescribed Burning	Acres	35,309

LAKE WALES RIDGE STATE FOREST
10 YEAR ACCOMPLISHMENT REPORT

Roads & Bridges	1	Roads Graded	Miles	359
	2	Roads Constructed	Miles	1
	3	Road Repaired	Miles	53
	4	Interior Roads Mowed	Miles	249
	5	Bridges Built	No.	2
	6	Bridges Repaired	No.	3
	7	Culverts installed/repared	No.	25
	8	Low W. Cross. Inst.	No.	2

Boundary Maint.	1	Maintenance/Marking/Firelines	Miles	502
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Other Activities	1	FTA	Hrs	5,962
Volunteers	2	Ridge Rangers	Hrs	998
	3	Individual Volunteer	Hrs	2,772
	4	Volunteer Groups	Hrs	2,788

Exhibit B

Location/Boundary Maps





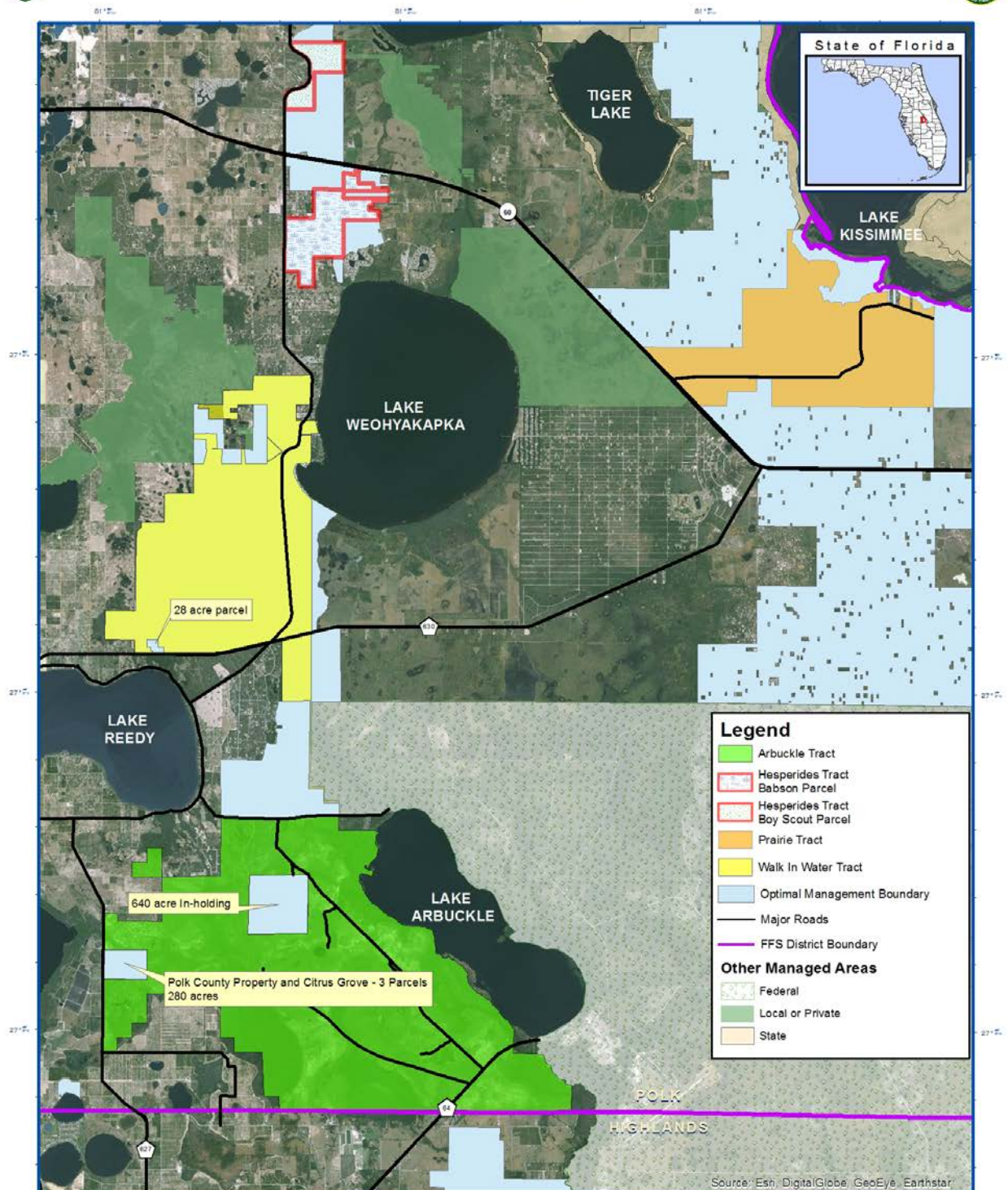
Florida Forest Service
Map Date: 8/18/2017
 Mangrove Area Management Strategy
 at the Florida Natural Areas Inventory
 Coordinate System: Universal Transverse Mercator (UTM)
 Zone 17 North
 High Precision Boundary Network (HPBN) Datum

Exhibit C

Optimal Management Boundary Map



LAKE WALES RIDGE STATE FOREST - FFS DISTRICT 14 - OPTIMAL MANAGEMENT BOUNDARY



Florida Forest Service
Map Date: 9/1/2017
WARNING: AVOID SCOURING COUNTRY
ALL DATA PROVIDED SUBJECT TO 100% ACCURACY
Coordinate System: Universal Transverse Mercator (UTM)
Zone 17 North
High Precision Geoid Network (HPGN) Datum

Exhibit D

Road Map



LAKE WALES RIDGE STATE FOREST - FFS DISTRICT 14 - ROADS MAP

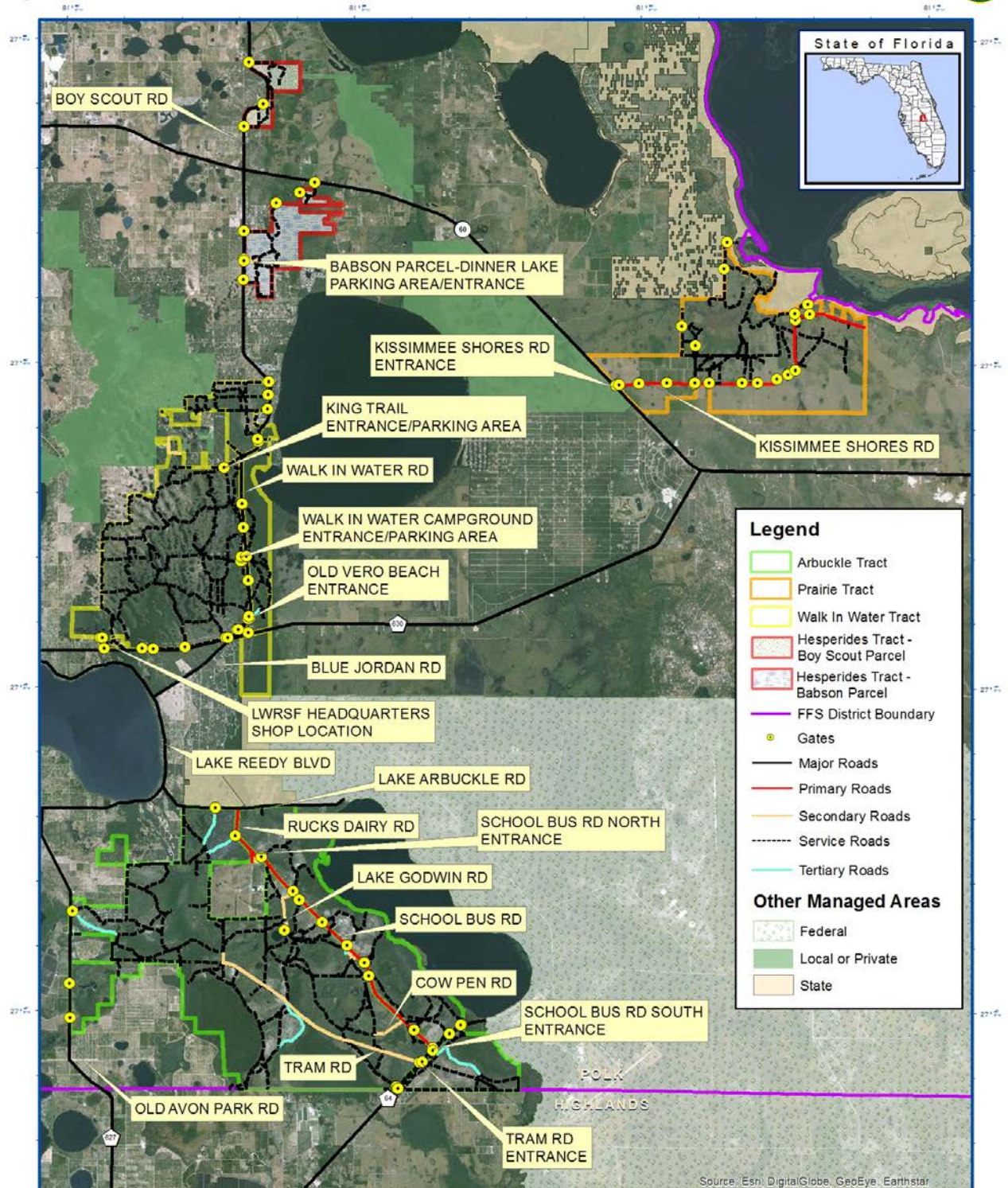
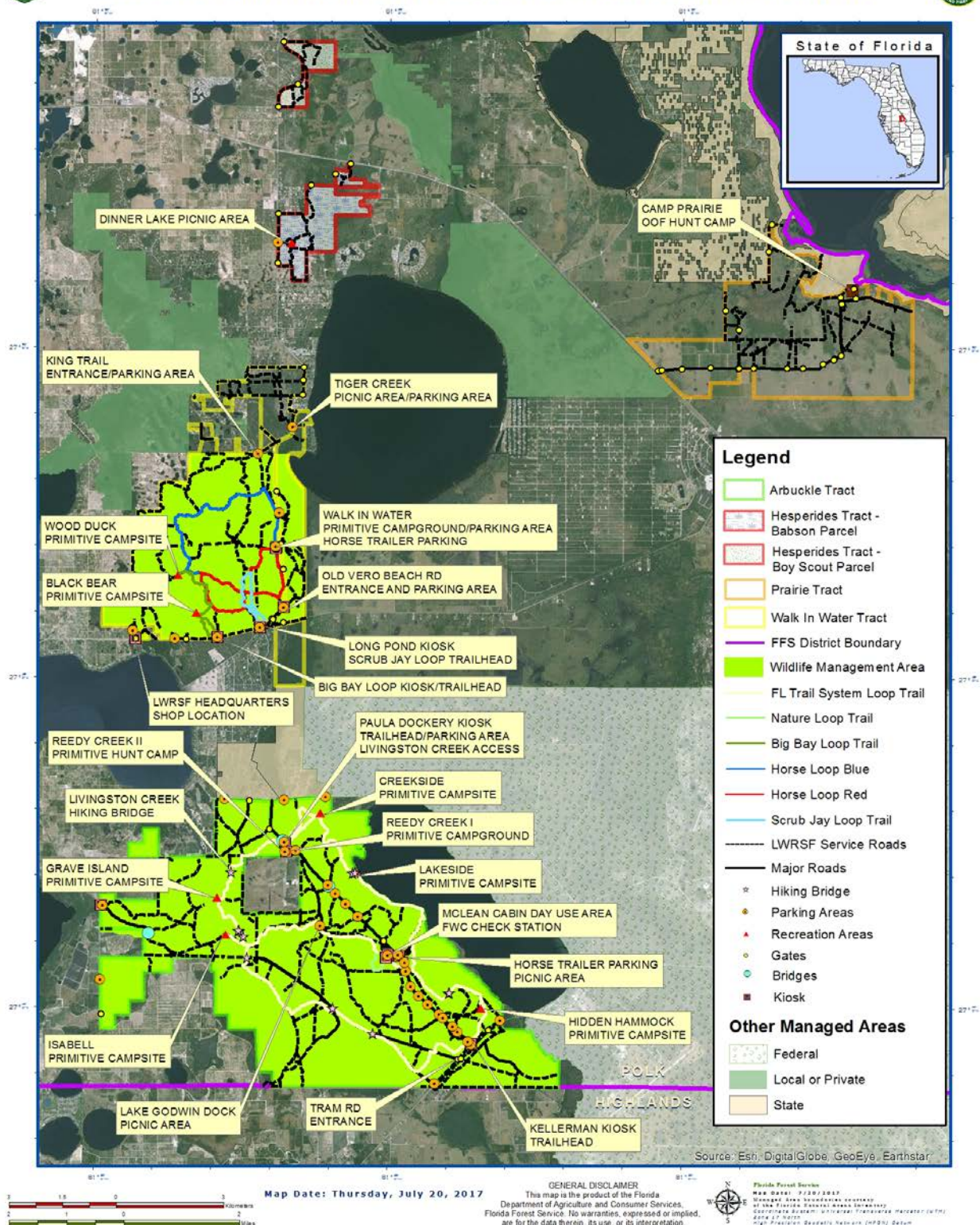


Exhibit E

Facilities, Recreation, and Improvements

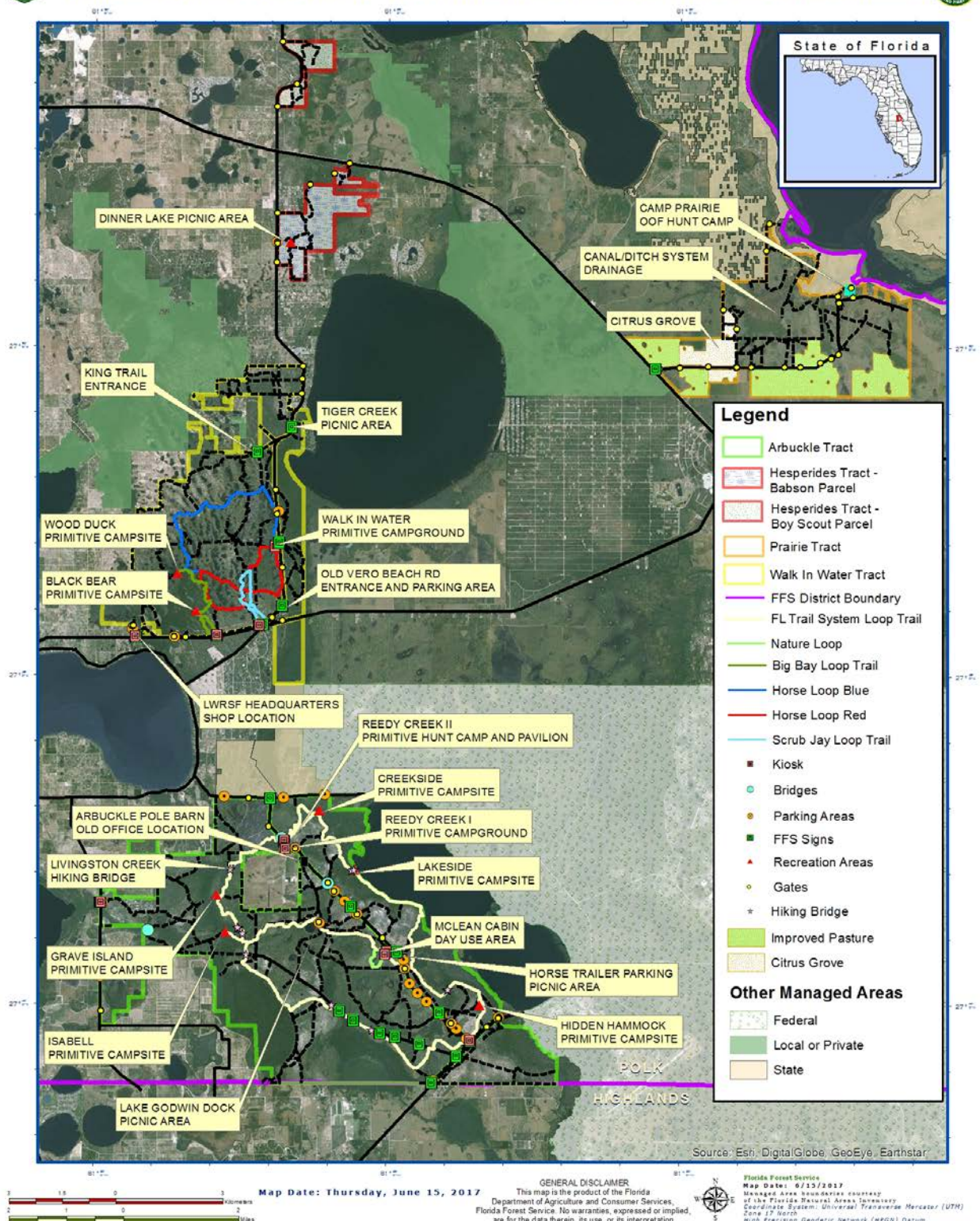


LAKE WALES RIDGE STATE FOREST - FFS DISTRICT 14 - CURRENT RECREATION FACILITIES

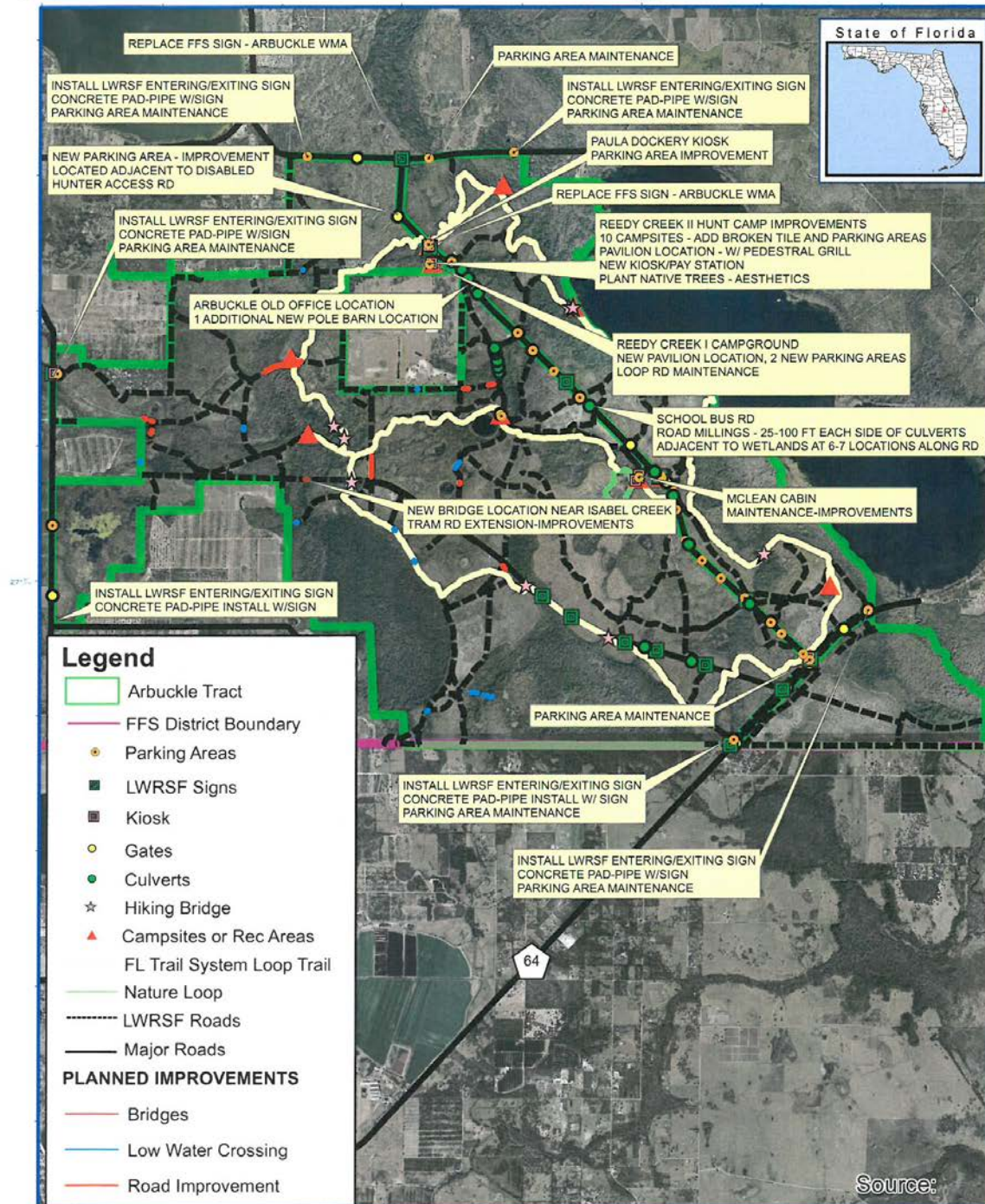




LAKE WALES RIDGE STATE FOREST - FFS DISTRICT 14 - CURRENT FACILITIES AND IMPROVEMENTS



LAKE WALES RIDGE STATE FOREST - FFS DISTRICT 14 -
ARBUCKLE TRACT PLANNED FACILITIES AND IMPROVEMENTS

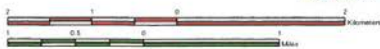


Map Date: Monday, August 14, 2017

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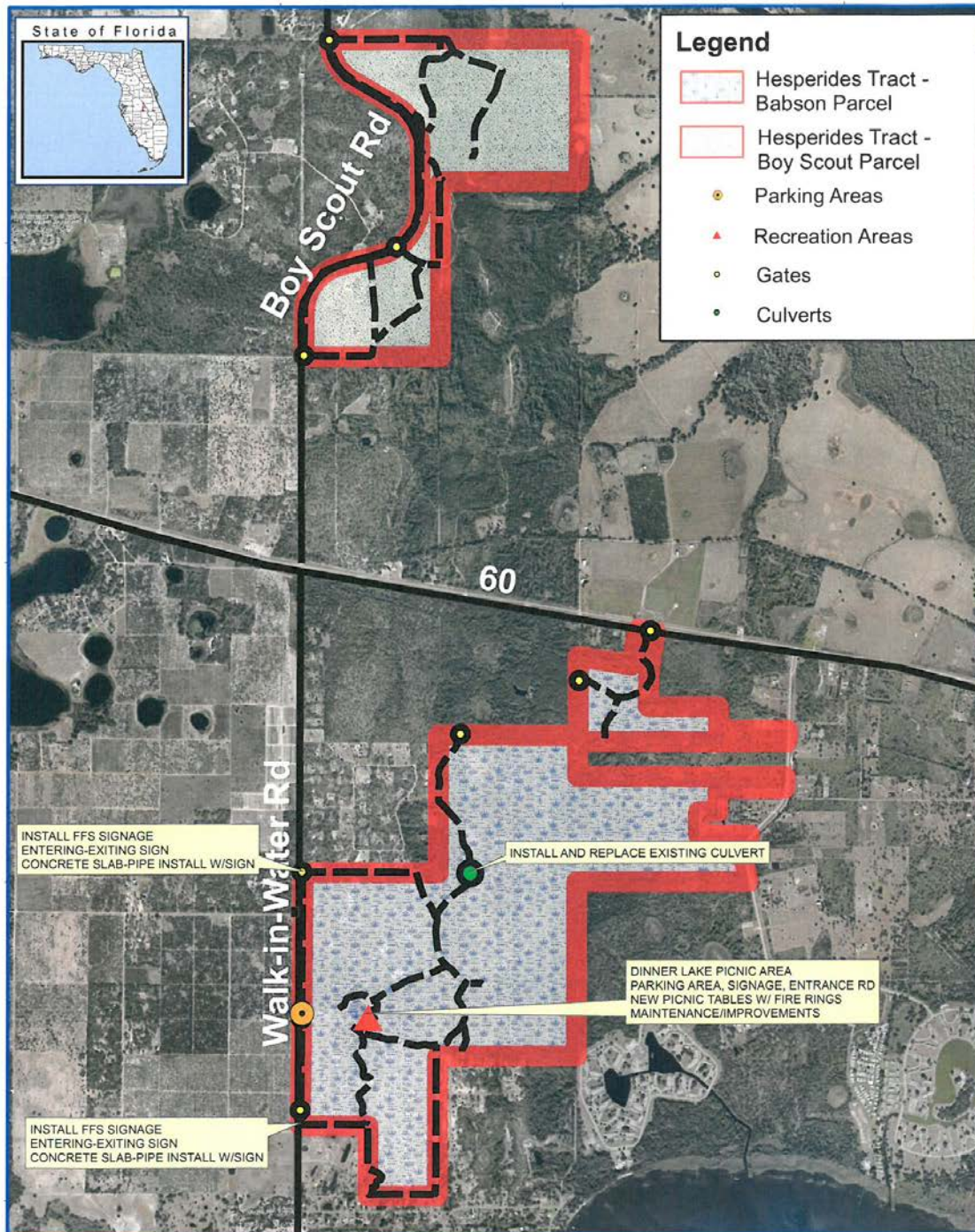


Florida Forest Service
Map Date: 8/14/2017
Managed Area boundaries courtesy
of the Florida Natural Areas Inventory
Coordinate System: Universal Transverse Mercator (UTM)
Zone 17 North
High Precision Geodetic Network (HPGN) Datum





LAKE WALES RIDGE STATE FOREST - FFS DISTRICT 14 -
HESPERIDES TRACT PLANNED FACILITIES AND IMPROVEMENTS

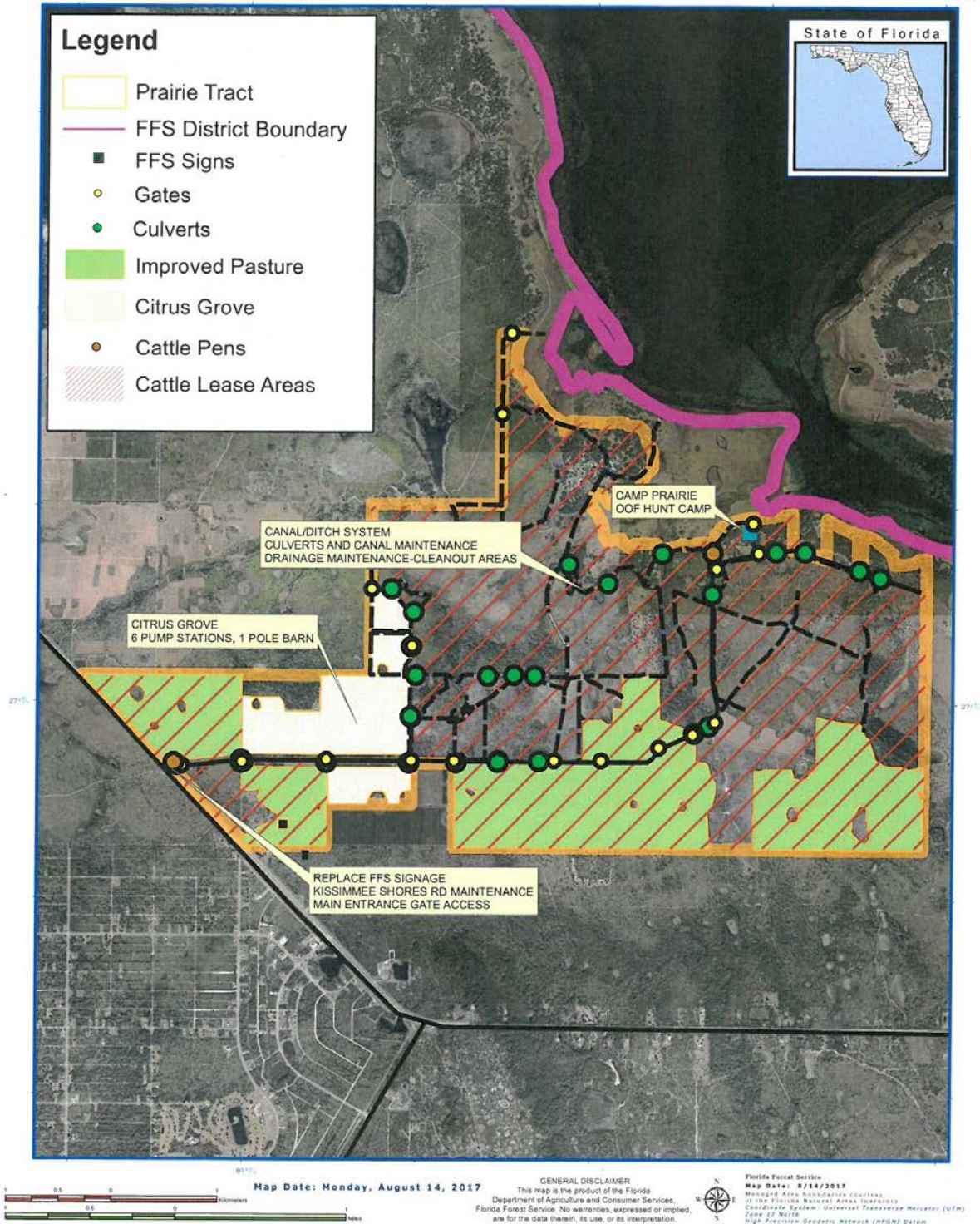


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Florida Forest Service
Map Date: 8/14/2017
Managed Area Boundary: Outlines
of the Florida Natural Areas Inventory
Coordinate System: Universal Transverse Mercator (UTM)
Zone 17 North
High Precision Geoidetic Network (HPGN) Datum



LAKE WALES RIDGE STATE FOREST - FFS DISTRICT 14 -
PRAIRIE TRACT PLANNED FACILITIES AND IMPROVEMENTS





LAKE WALES RIDGE STATE FOREST - FFS DISTRICT 14 -
WALK IN WATER TRACT PLANNED FACILITIES AND IMPROVEMENTS

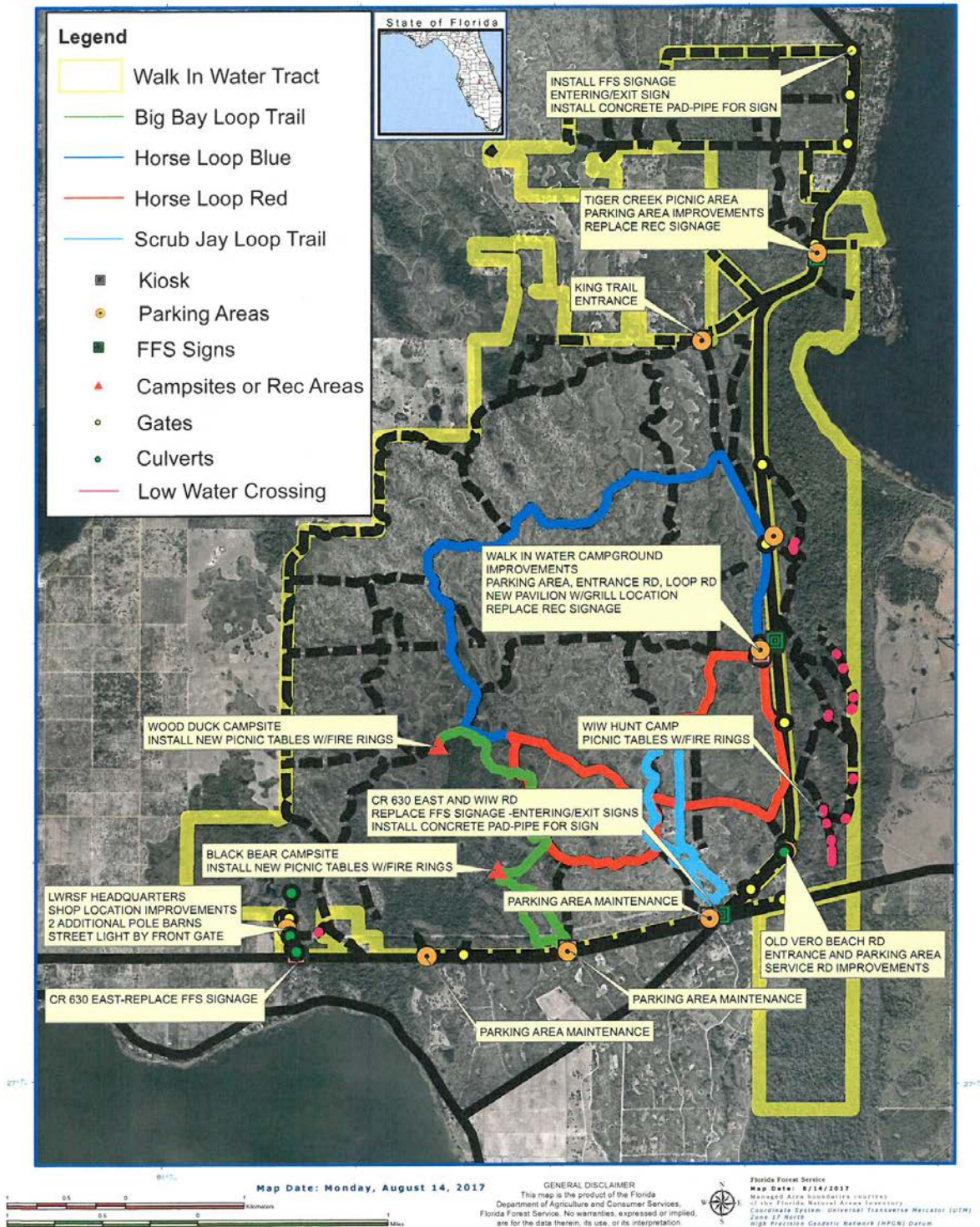
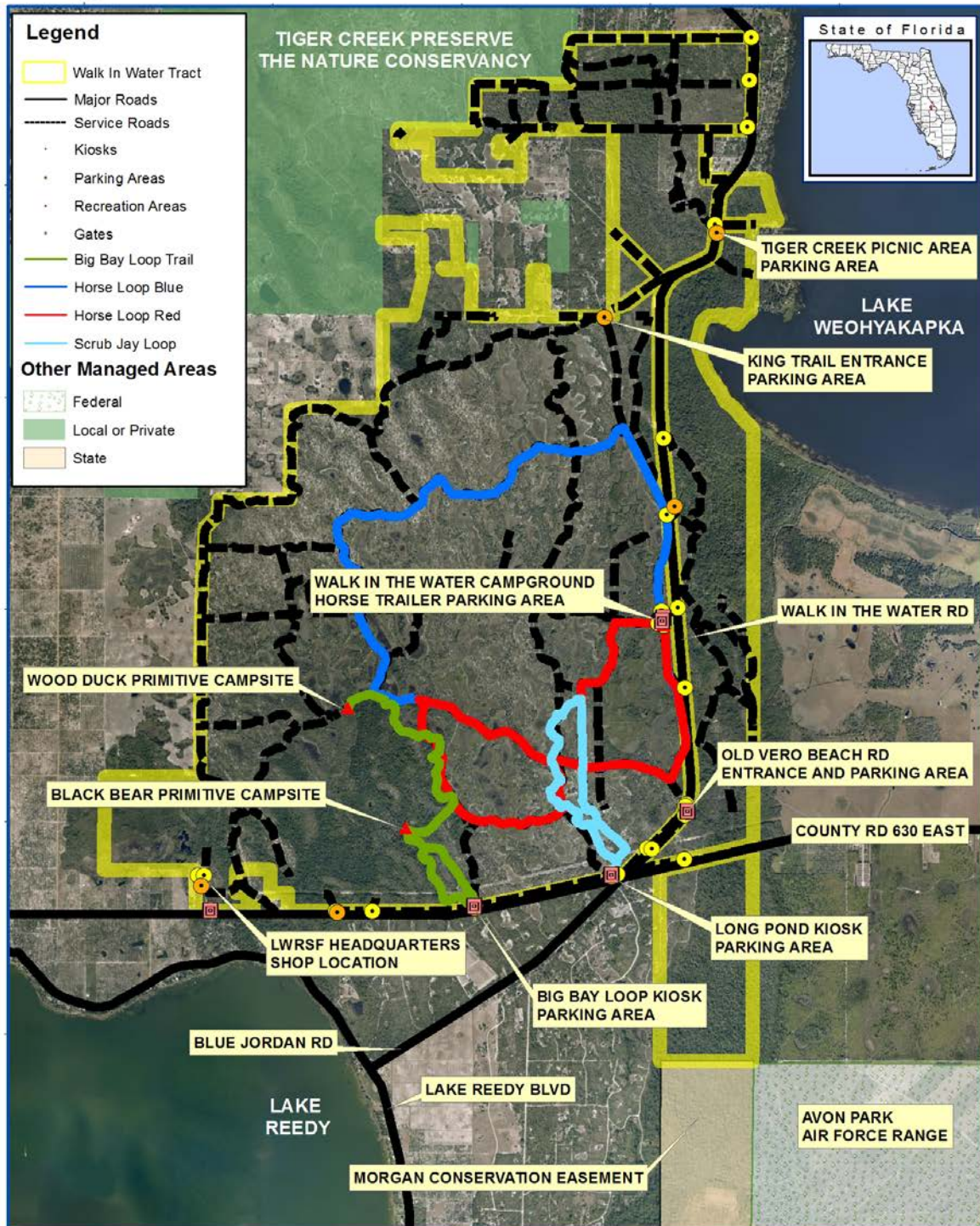


Exhibit F

Tract Maps



LAKE WALES RIDGE STATE FOREST - FFS DISTRICT 14 - WALK IN WATER TRACT



Map Date: Monday, June 12, 2017

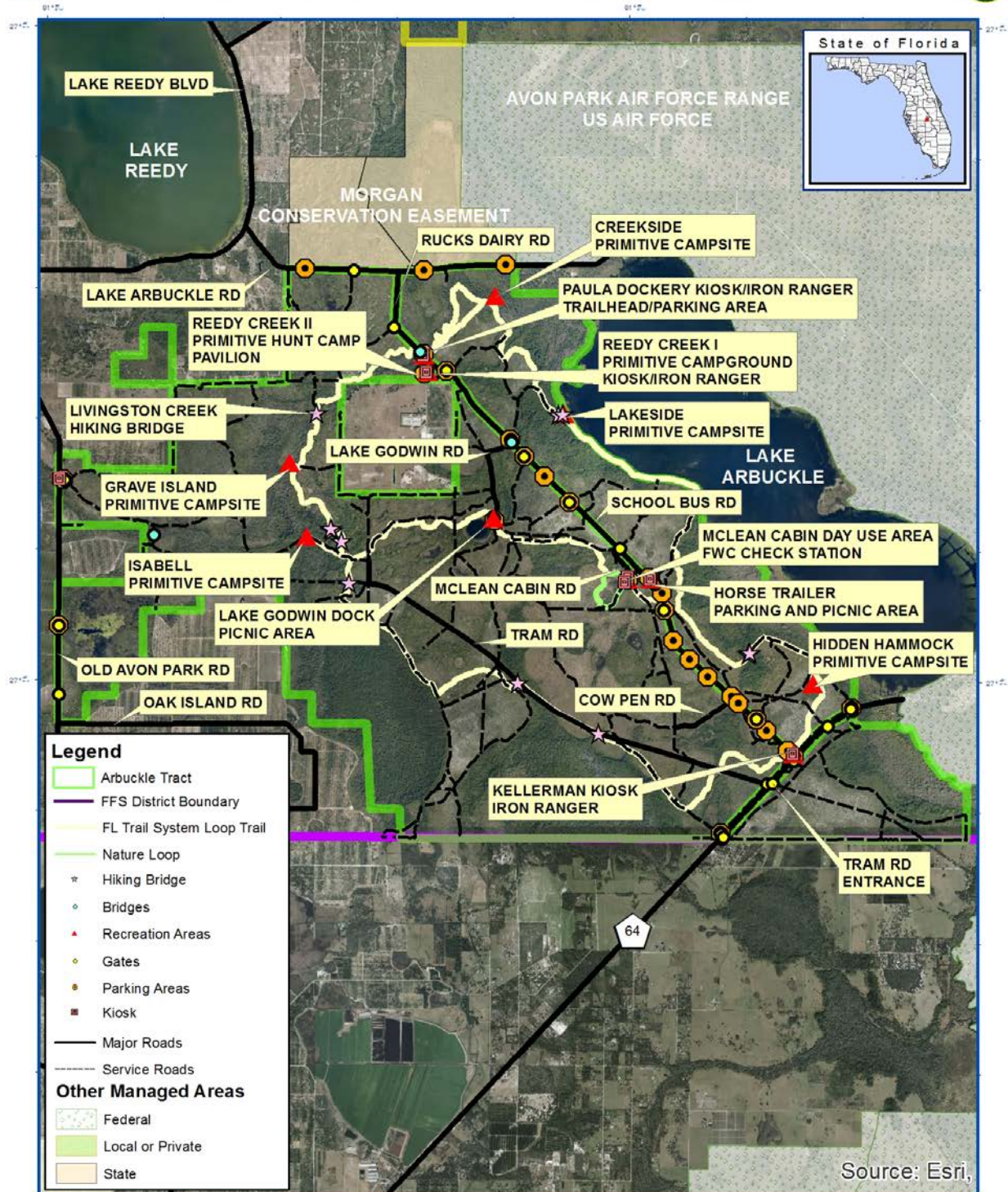
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Florida Forest Service
Map Date: 8/15/2007
WOODLAND AND SOUTHERN FOREST
OF THE FLORIDA NATURAL LANDS SYSTEM
Coordinate System: Universal Transverse Mercator (UTM)
Zone 17 North
High Precision Geoidetic Network (HPGN) Datum



LAKE WALES RIDGE STATE FOREST - FFS DISTRICT 14 - ARBUCKLE TRACT



Source: Esri,



Map Date: Thursday, June 15, 2017

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Florida Forest Service
Map Date: 6/15/2017
Background from geospatial authority of the Florida Natural Areas Inventory
Coordinate System: Universal Transverse Mercator (UTM)
Zone 17 North
High Precision Geoidetic Network (HPGN) Datum



LAKE WALES RIDGE STATE FOREST - FFS DISTRICT 14 - HESPERIDES TRACT

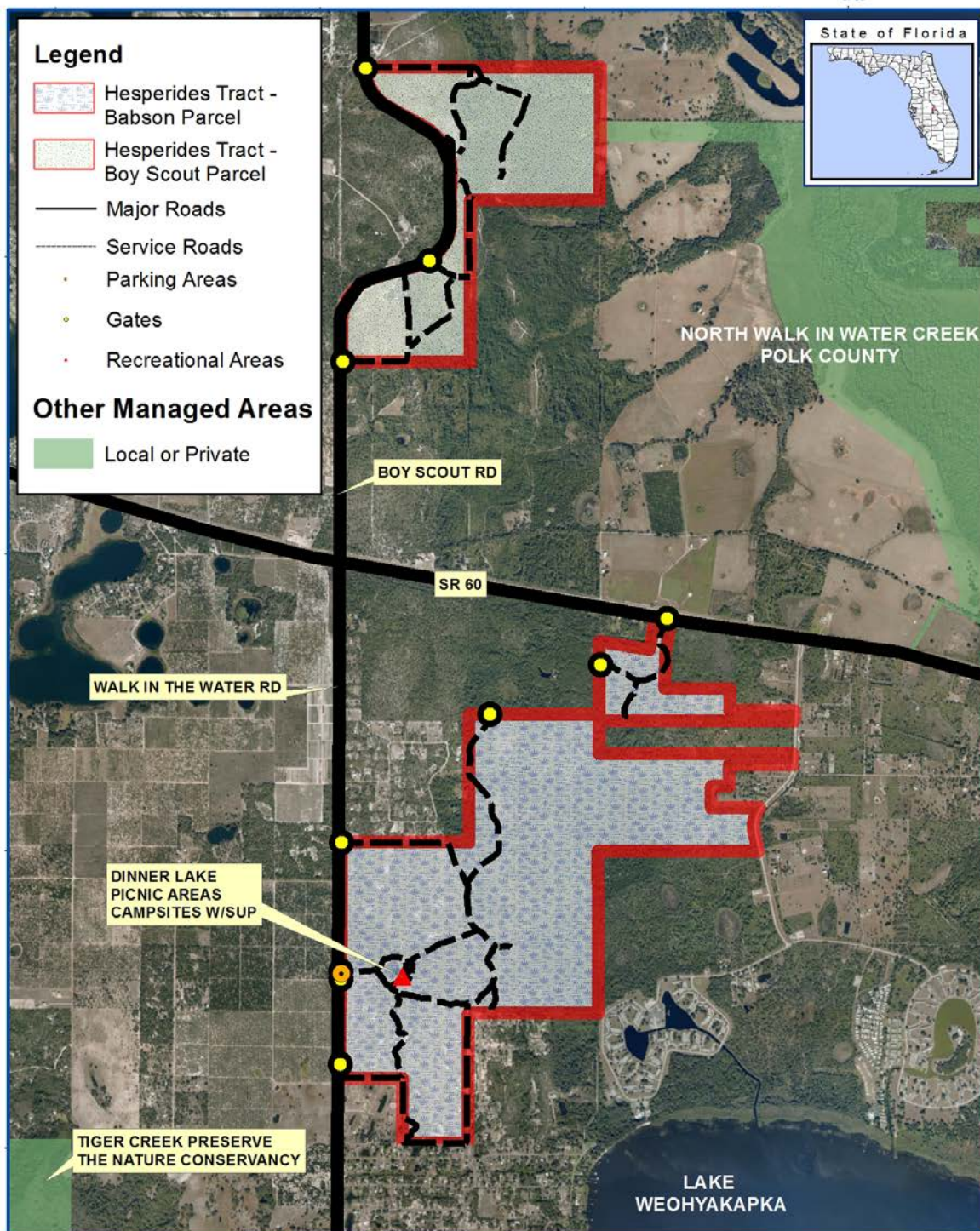




Exhibit G

Proximity to Significant Managed Lands



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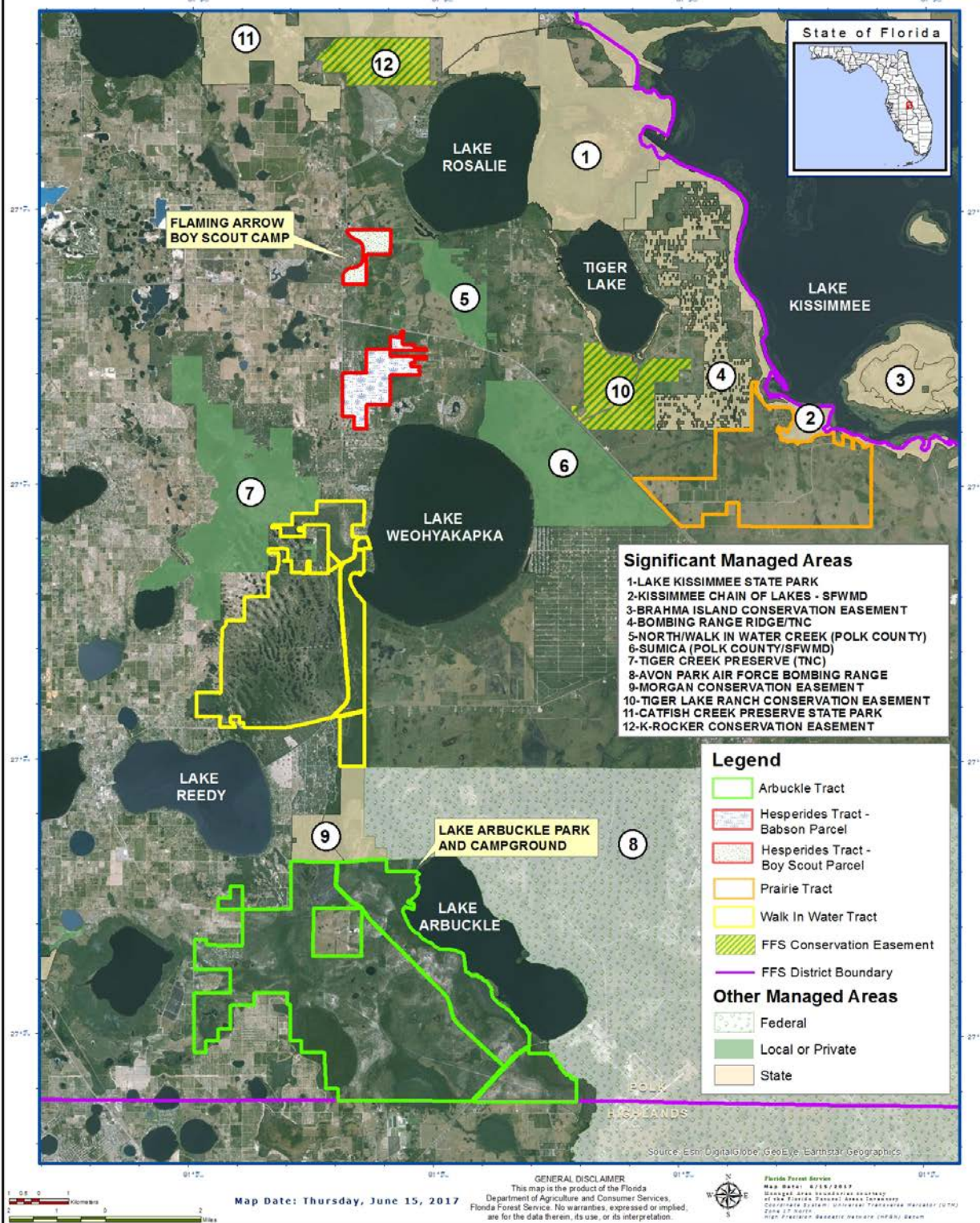


Exhibit H

Florida Forever Projects

Bombing Range Ridge

Polk, Highlands and Osceola Counties

Critical Natural Lands

Purpose for State Acquisition

Public acquisition of this project would conserve and protect significant habitat for native species and endangered and threatened species. Additionally, public acquisition would provide areas, including recreational trails, for natural-resource based recreation. This project may also help complete the Florida National Scenic Trail, a statewide non-motorized trail that crosses a number of Florida Forever project sites.

Manager

The Florida Forest Services (FFS) and the Florida Fish and Wildlife Conservation Commission (FWC) will manage all but some 540 acres in the north portion of the project. The 540 acres, lying adjacent to Rosalie Creek, will be managed by the Department of Environment Protection's Division of Recreation and Parks (DRP).

General Description

As originally proposed, the Bombing Range Ridge project, with flatwoods, marshes, swamps, hammocks, and part of a scrub ridge, would connect Avon Park Air Force Range, Lake Kissimmee State Park, and South Florida Water Management District (SFWMD) land. It provides critical habitat for at least 20 rare animals, including red-cockaded woodpeckers, snail kites, Florida scrub jays, and grasshopper sparrows. Water resources adjacent to the project include the Kissimmee River, Lake Rosalie, Tiger Lake, Lake Walk-in-Water,

and several creeks and marshes; the scrub ridge is a recharge area. The remains of Sumica, a 19th-century town, are in the project, and there are probably more archaeological and historical sites in the area.

Public Use

The area can support a range of recreation from hiking and primitive camping to canoeing, fishing, and hunting.

Acquisition Planning

The Bombing Range Ridge project was added to the Land Acquisition and Management Advisory Council's (LAMAC) 1997 Conservation and Recreation Lands (CARL) Priority list at their December meeting. This fee-simple acquisition, sponsored by the Florida Natural Areas Inventory (FNAI) and Florida Game & Fish Commission (FG&FC), consisted of approximately 39,073 acres, multiple owners, and a 1997 taxable value of \$15,238,510.

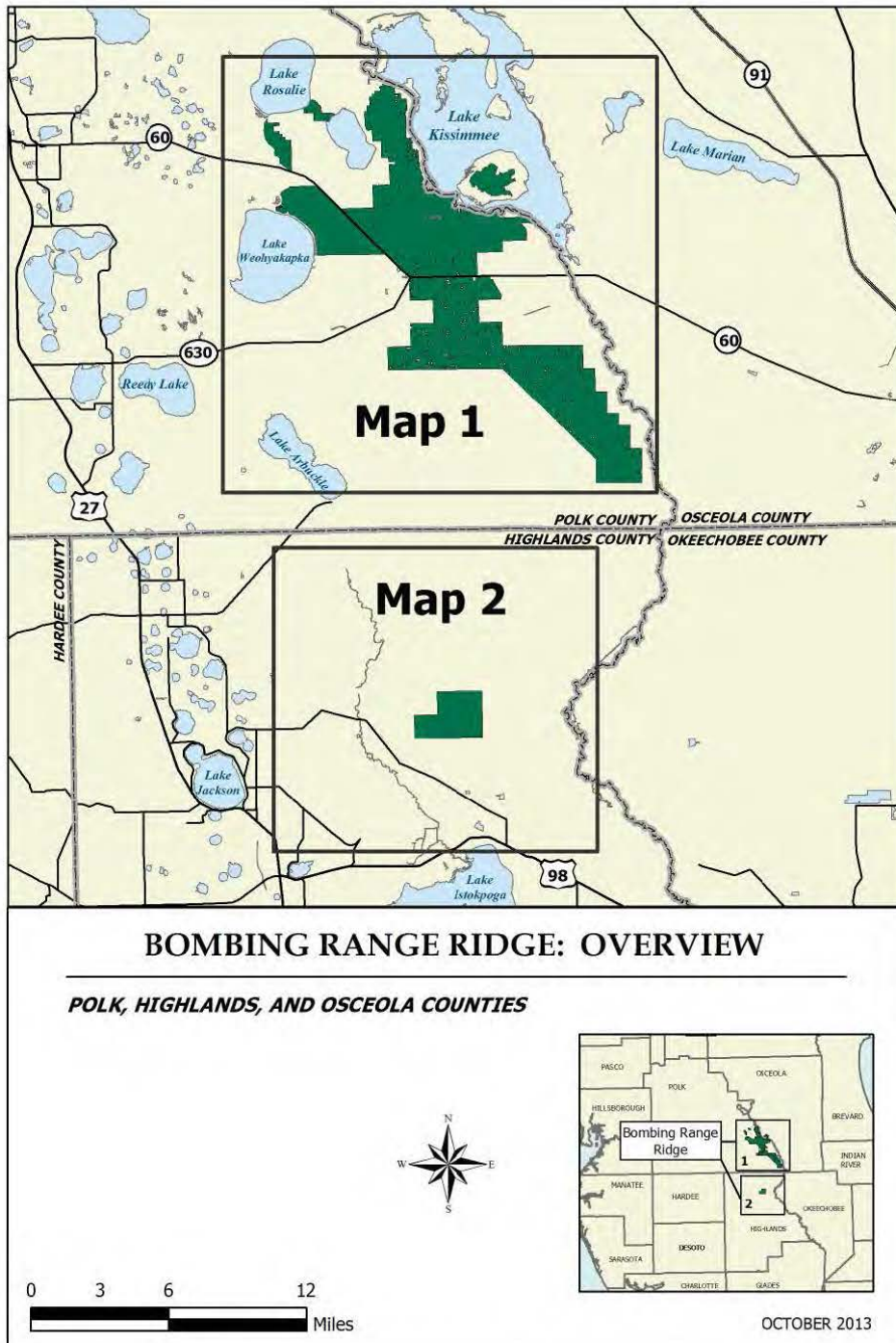
The project was divided into Priority I and Priority II areas. The essential parcels are Priority I, especially Wheeler, Avatar, Winter Haven Christian School, Lightsey, River Ranch Landowners Association members, Polk County, and the Patrick Nee ownerships.

On August 19, 1997, the Polk County Board of County Commissioners signed a resolution that gave high

Bombing Range Ridge FNAI Elements	
Florida Scrub-jay	G2/S2
Florida Black Bear	G5T2/S2
Red-cockaded Woodpecker	G3/S2
Eastern Indigo Snake	G3/S3
Swallow-tailed Kite	G5/S2
Berry's Skipper	G2/S2
Florida Sandhill Crane	G5T2T3/S2S3
Bachman's Sparrow	G3/S3
Nodding Pinweed	G3/S3
Florida Burrowing Owl	G4T3/S3
Bald Eagle	G5/S3
11 rare species are associated with the project	

Placed on List	1998
Project Area (GIS Acres)	46,298
Acres Acquired (GIS)	14,421*
at a Cost of	\$24,431,085*
Acres Remaining (GIS)	31,877
Estimated (Tax Assessed) Value of	\$13,179,693

* Including dollars spent and acres acquired by SFWMD, and Polk County



priority to this project and supported the acquisition through the CARL program.

In 1998, Polk County and the SFWMD acquired the Sumica tract (4,167 acres).

On May 17, 2001, the Acquisition and Restoration Council (ARC) approved a fee-simple 1,521-acre addition to the project boundary. It was sponsored by the owner, Meredith Scott MD Trust, and had a 2000 taxable value of \$3,256,856.

On August 15, 2003, the ARC approved a less-than-fee 1,691-acre addition (Brahma Island tract) to the project boundary. It was sponsored by the Saunders Realty, consisted of one owner, Cary & Layne Lightsey, and had a 2002 taxable value of \$176,180. The Office of Environmental Services (OES) will monitor the conservation easement. In April 2005, the Board of Trustees acquired the Brahma Island Tract (1,063.40 acres) through a conservation easement.

On October 13, 2006, the ARC approved a fee-simple, 3,189-acre addition (aka Goolsby Ranch) to the project boundary. It was sponsored by the Nature Conservancy (TNC), had one landowner, the Goolsby family, and had a 2004 taxable value of \$415,291. If acquired, the site, in Highlands County, will be managed by the FFS. In view of the configuration of the Bombing Range Ridge project, this site is not essential to project completion or manageability.

On August 15, 2011 the DSL purchased 2,674.61 acres from TNC (\$5,349,220); OES to manage as a conservation easement.

On December 9, 2011, ARC placed this project into the Florida Forever category of Critical Natural Lands projects.

Coordination

About 2 percent of the parcels within the project are either county owned or county tax certificates. The county has expressed interest in giving the land to the state and letting the state manage it, selling the parcels to the state, or exchanging the parcels with the state for other parcels outside the proposal. TNC is an intermediary on this project.

Management Policy Statement

The primary goals of management of the Bombing Range Ridge project are: to conserve and protect critical habitat for rare, endangered and threatened species; to

conserve, protect, manage, or restore important ecosystems, landscapes, and forests in order to enhance or protect significant surface water, recreational, timber, fish or wildlife resources which local or state regulatory programs cannot adequately protect; to provide areas, including recreational trails, for natural-resource-based recreation; and to preserve significant archaeological or historical sites.

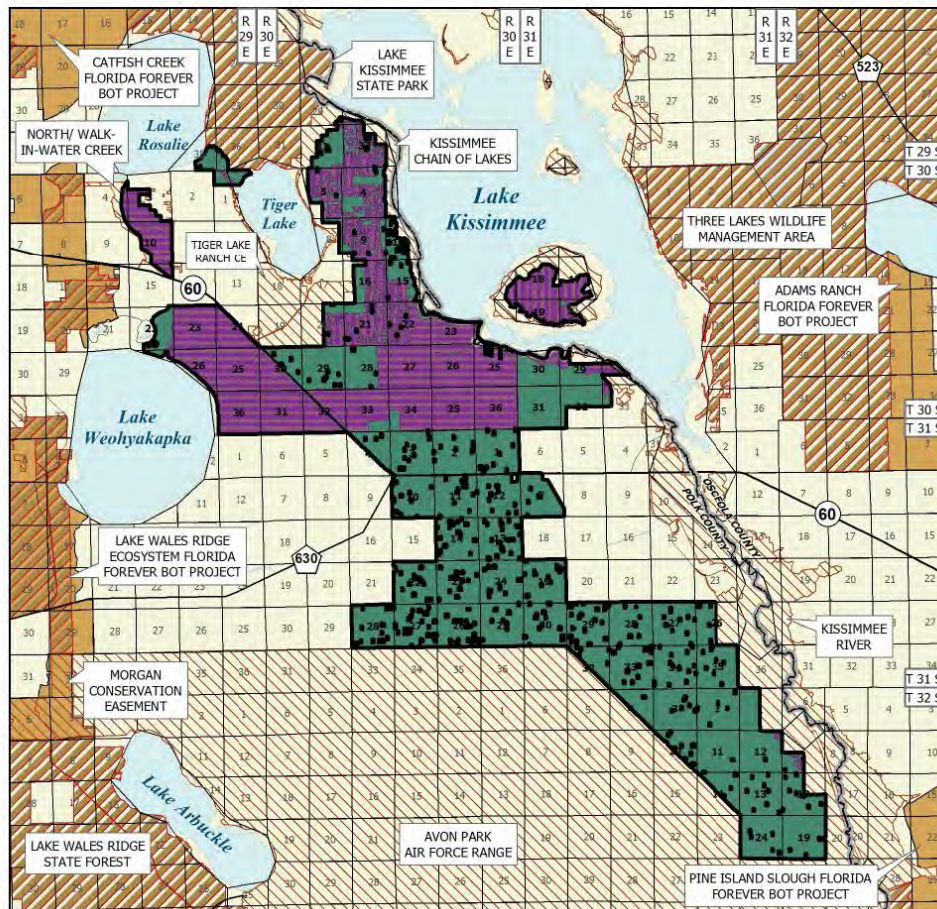
Management Prospectus

Qualifications for state designation The Bombing Range Ridge project is a vast area of quality flatwoods together with marshes, swamps, hammocks and scrub. The project contains valuable habitat for numerous listed bird species. Approximately 400 acres of the northwest corner of the project is adjacent to the Lake Kissimmee State Park. The area is largely a wetland through which Rosalie Creek flows. Rosalie Creek is a drainage joining Lake Rosalie with Tiger Lake, and a portion of the creek is already a part of the park. Also, the project's size and diversity make it desirable for a state forest. Management by the FFS as a state forest depends on the state obtaining legal public access to the site and acquiring fee simple title to the core parcels.

Manager FFS is recommended as lead manager, and DRP is recommended for the Oglesby and Beerman parcels in the northeast section of the project.

Conditions affecting intensity of management The project includes a "high-need" management area. Public use and recreation facility development would be done compatible with long-term resource protection.

Timetable for implementing management and provisions for security and protection of infrastructure Upon the fee title acquisition, the DRP proposes to provide public access for low intensity, non-facility related outdoor recreation activities. The FFS proposes to manage the site as a unit of the Lake Wales Ridge State Forest (LWRSF), and management activities will be done with district and LWRSF personnel. Initial or intermediate efforts of the FFS will concentrate on site security, public and fire management access, resource inventory, and removing trash. The public will have appropriate access while, simultaneously, sensitive resources will be affordably protected. Vehicle use by the public will be confined to designated roads and unnecessary access points will be closed. An inventory of the site's natural resources and threatened and endangered flora and fauna will be conducted to provide the basis for formulation of a management plan. Emphasis will be given to protection of Rosalie Creek and its surrounding ecological system. Resource management activities in the first year of each fee title acquisition will concentrate on site security



BOMBING RANGE RIDGE: MAP 1 OF 2

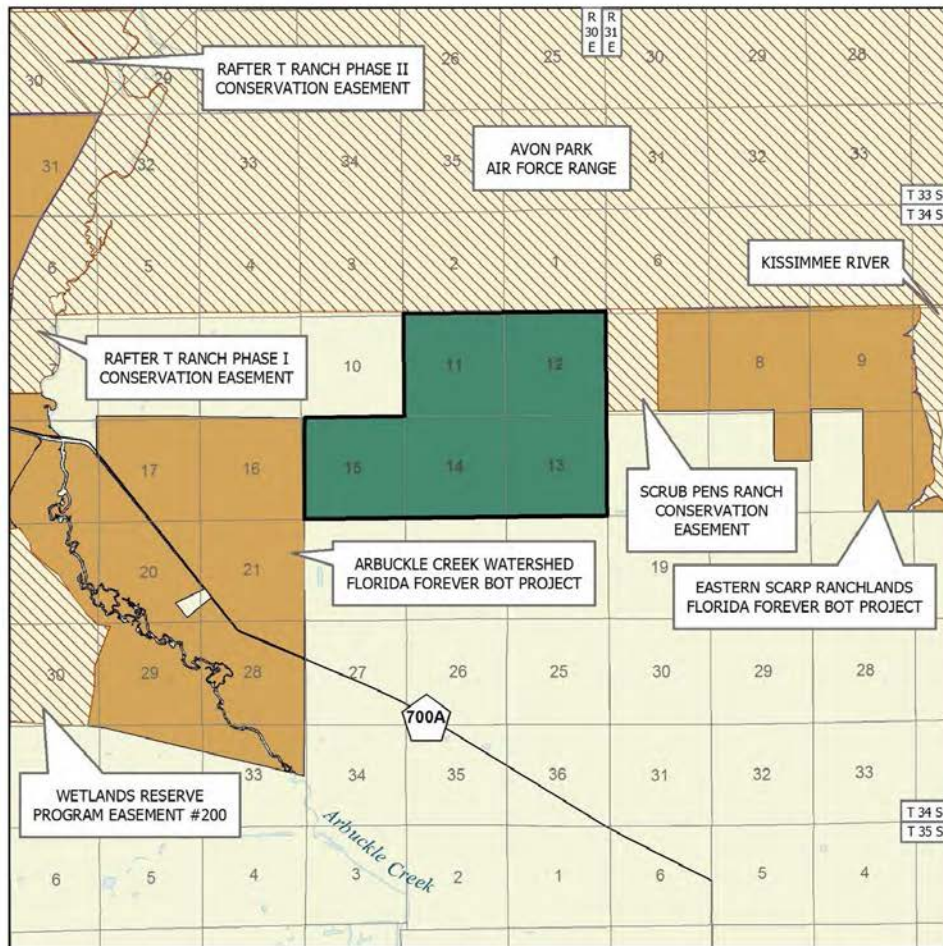
POLK AND OSCEOLA COUNTIES

- Florida Forever BOT Project Boundary
- Acquired for Conservation (Fee Simple)
- Acquired for Conservation (Less-Than-Fee)
- Essential Parcel(s) Remaining
- State Owned Lands
- Other Conservation Lands
- Other Florida Forever BOT Projects

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Miles



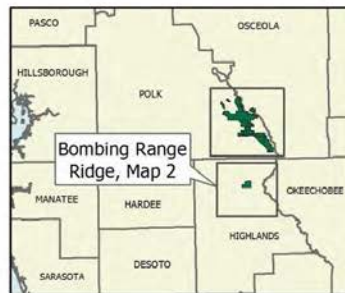
OCTOBER 2013



BOMBING RANGE RIDGE: MAP 2 OF 2

HIGHLANDS COUNTY

-  Florida Forever BOT Project Boundary
-  Essential Parcel(s) Remaining
-  Other Florida Forever BOT Projects
-  State Owned Lands
-  Other Conservation Lands



JANUARY 2016

including posting boundaries and development of a resource inventory in conjunction with the development of a comprehensive management plan. Long-term management of the 540 acres would include resource-based recreation and associated facilities compatible with the resources.

Revenue-generating potential Timber sales will be conducted as needed to improve or maintain desirable ecosystem conditions. These sales will primarily take place in upland pine stands and will provide a variable source of revenue dependent upon a variety of factors. Revenue generating potential of this project is expected to be moderate.

Cooperators in management activities The FFS and the DRP will cooperate with local governments, other state agencies, and the water management district to further resource management, recreational and educational opportunities, and the use of the lands for state park purposes.

Updated February 4, 2016



Management Cost Summary/DRP (1998)

Category	Startup	Recurring
Source of Funds	CARL	CARL
Salary	\$0	\$0
OPS	\$0	\$0
Expense	\$1,000	\$0
TOTAL	\$1,000	\$0

Management Cost Summary/FFS (1998)

Category	Startup	Recurring
Source of Funds	CARL	CARL
Salary	\$86,412	\$0
OPS	\$0	\$0
Expense	\$70,000	\$0
OCO	\$136,400	\$0
TOTAL	\$292,812	\$0

Catfish Creek

Polk County

Partnerships

Purpose for State Acquisition

The high, sandy Lake Wales Ridge, stretching south from near Orlando almost to Lake Okeechobee, was originally covered with a mosaic of scrub, flatwoods, wetlands, and lakes. The scrub is unique in the world—it is inhabited by many plants and animals found nowhere else—but it has almost completely been converted to citrus groves and housing developments. The Catfish Creek project, with its scrub ridges overlooking the nearly pristine shore of Lake Pierce, will protect an especially scenic example of Lake Wales Ridge scrub and its associated ecosystems and allow the public to enjoy camping, fishing, and swimming in this unique and beautiful natural area. It will also protect an important archaeological site on Lake Pierce. The Florida National Scenic Trail, a cross-Florida hiking and non-motorized trail, is also planned to cross this project. The trail is a congressionally designated national scenic trail.

Manager

The Division of Recreation and Parks (DRP), Department of Environmental Protection (DEP) will manage the project, less that portion known as Snodgrass Island.

General Description

Catfish Creek is a diverse natural area extending over

high scrub ridges, interspersed with lakes, next to the pristine shore of Lake Pierce. Natural communities include sandhill, scrub, scrubby flatwoods, mesic flatwoods, xeric hammock, bottomland hardwood forest, basin swamp, sandhill upland lake, wet flatwoods, blackwater stream, seepage slopes, and floodplain swamp, all in excellent condition. The tract harbors at least 19 rare plant and animal species state listed as endangered or threatened. Rare or endangered animal species include the bald eagle, wood stork, gopher tortoise, and scrub jay. The 1993 addition on Snodgrass Island contains a potentially important archaeological site. The project is threatened by agriculture and eventual residential development.

Public Use

This project is designated for use as a state preserve, with such uses as hiking, camping, fishing and nature study.

Acquisition Planning

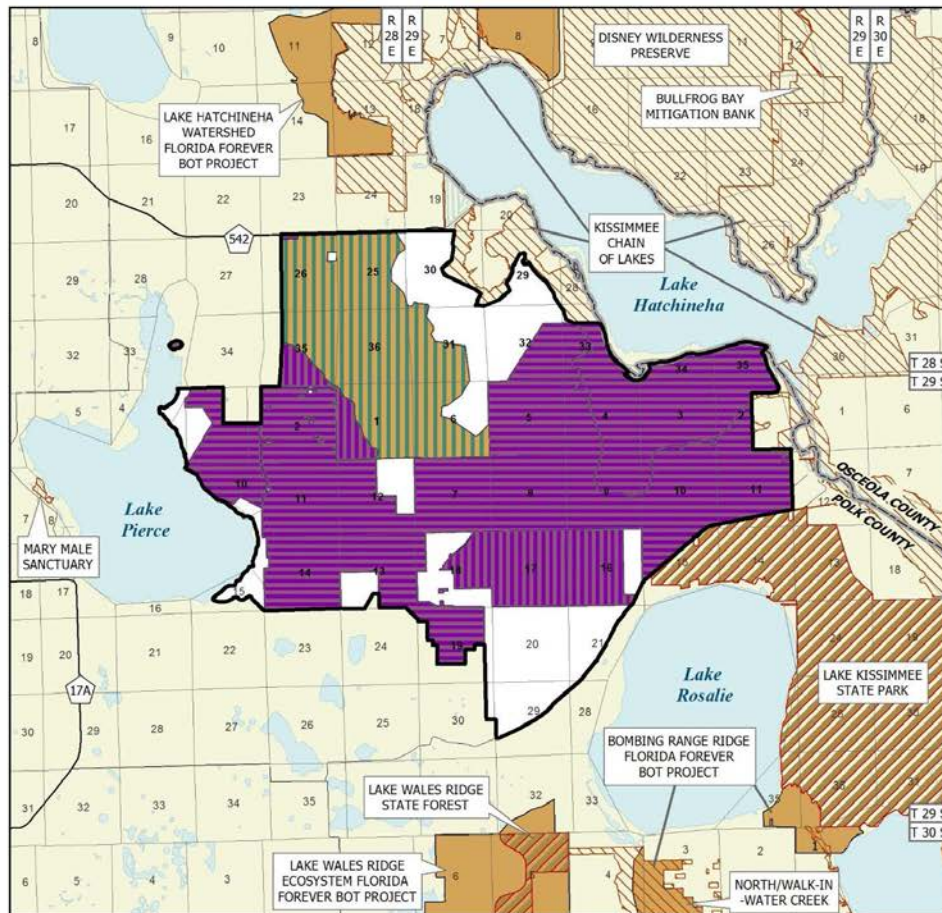
Phase I: (essential) Rolling Meadows (acquired), TNC (acquired) and Palo Alto (acquired); Phase II: Imagination Farms, Progress Homes (acquired) and K-Rocker. Phase III: Section two which is subdivided (state has acquired all of section consolidated by Bowen). In 1992 The Nature Conservancy (TNC) acquired 68 acres in this project and in August 2007 donated it to the state.

On December 9, 2011, ARC placed this project in the Partnerships category.

Placed on List	1990
Project Area (GIS Acres)	19,429
Acres Acquired (GIS)	11,658*
at a Cost of	\$49,414,766
Acres Remaining (GIS)	7,771
Estimated (Tax Assessed) Value of	\$13,586,636

* Includes a donation from TNC

Catfish Creek FNAI Elements	
Florida Scrub-Jay	G2/S2
Gopher Tortoise	G3/S3
Morris' Tiny Sand-loving Scarab	G1/S1
Archbold Cebrionid Beetle	G1G2/S1S2
Scrub Little Mole Scarab	G1G2/S1S2
<i>Florida Blazing Star</i>	G2/S2
Nocturnal Scrub Velvet Ant	G2/S2
Sand Skink	G2/S2
Sandyland Onthophagus Beetle	G2/S2
Florida Scrub Lizard	G2G3/S2S3
Highlands Tiger Beetle	G2G3/S2S3
<i>Lewton's Polygala</i>	G2G3/S2S3
37 rare species are associated with the project	



CATFISH CREEK

POLK COUNTY

-  Florida Forever BOT Project Boundary
-  Acquired for Conservation (Fee Simple)
-  Acquired for Conservation (Less-Than-Fee)
-  TNC Owned Lands Within Project
-  Other Florida Forever BOT Projects
-  State Owned Lands
-  Other Conservation Lands

0 1 2 4
Miles



DECEMBER 2015

On October 21, 1999, the Council added 6,991 acres and designated it as essential. In August, 2002, the Council added the Rolling Meadows Ranch to the project. On December 5, 2002, the Council added the K-Rocker Tract to the project.

On December 5, 2003 the Council moved the project to the Group B list.

Coordination

TNC sponsored this project, assisted in providing information in the preparation of the project, and in discussions with some of the major landowners. TNC and SFWMD are considered acquisition partners for this project.

Management Policy Statement

The primary goals of management of the Catfish Creek project are conserving and protecting environmentally unique and irreplaceable lands that contain native, relatively unaltered flora and fauna representing a natural area unique to, or scarce within, a region of this state or a larger geographic area. Also, the project can conserve and protect significant habitat for native species or endangered and threatened species, provide areas, including recreational trails, for natural-resource-based recreation; and preserve significant archaeological or historical sites.

Management Prospectus

Qualifications for state designation The sensitive resources in the Catfish Creek project—sandhills, a large lake, and high-quality scrub with its rare plants and animals—qualify it as a state preserve.

Manager The DRP, Department of Environmental Protection, is the manager of the project, less that portion known as Snodgrass Island.

Conditions affecting intensity of management The project is a low-need management area emphasizing resource protection while allowing compatible public recreational use and development.

Timetable for implementing management and provisions for security and protection of infrastructure

Within the first year after acquisition, management activities will concentrate on site security, natural and cultural resource protection, and the development of a plan for long-term public use and resource management.

Cooperators in management activities No local governments or others are recommended for management of this project area.

Revenue-generating potential No significant revenue is expected to be generated initially. After acquisition, it will probably be several years before any significant public use facilities are developed. The amount of any revenue generated will depend on the nature and extent of public use and facilities. With emphasis on resource protection, and with minimal public use, future generated revenues are not expected to be high.

Updated January 28, 2016

Management Cost Summary

Category	Startup
Source of Funds	CARL
Salary	\$22,167
OPS	\$0
Expense	\$5,712
OCO	\$6,978
FCO	\$8,640
TOTAL	\$43,497

Lake Wales Ridge Ecosystem

Highlands, Lake, Osceola and Polk Counties

Critical Natural Lands

Purpose for State Acquisition

The high, sandy Lake Wales Ridge, stretching south from near Orlando almost to Lake Okeechobee, was originally covered with a mosaic of scrub, flatwoods, wetlands, and lakes. The scrub is unique in the world—it is inhabited by many plants and animals found nowhere else—but it has almost completely been converted to citrus groves and housing developments. The Lake Wales Ridge Ecosystem project is designed to protect the best remaining tracts of this scrub and the ecosystems associated with it, thereby preserving numerous endangered species and allowing the public to see examples of the unique original landscape of the ridge. The Florida National Scenic Trail, a cross-Florida hiking and non-motorized trail, is also planned to cross this project. The trail is a congressionally designated national scenic trail.

Managers

Division of Recreation and Parks (DRP), Florida Department of Environmental Protection (Lake June West); Florida Forest Service, Department of Agriculture and Consumer Services (Lake Walk-in-Water, Hesperides and five Warea sites) and the Fish and Wildlife Conservation Commission (FWCC) (remaining sites). The FFS will monitor the less-than-fee portion. The Office of Environmental Services (OES) will monitor some CEs.

Lake Wales Ridge Ecosystem FNAI Elements	
<i>Clasping Warea</i>	G1/S1
<i>Garrett's Scrub Balm</i>	G1/S1
<i>Scrub Lupine</i>	G1/S1
<i>Scrub Ziziphus</i>	G1/S1
Florida Scrub-Jay	G2/S2
Florida Black Bear	G5T2/S2
Eastern Indigo Snake	G3/S3
Florida Mouse	G3/S3
Gopher Tortoise	G3/S3
A Comb-Clawed Beetle	G1/S1
Archbold's Treehopper	G1/S1
<i>Avon Park Rabbit-bells</i>	G1/S1
95 rare species are associated with the project	

General Description

Judging from its many unique species, Central Florida Ridge scrub may be among the oldest of Florida's upland ecosystems. This project consists of separate sites along the Lake Wales Ridge which are intended to be part of a system of managed areas that conserve the character, biodiversity, and biological function of the ancient scrubs of the Ridge. The sites contain the best remaining examples of unprotected ancient scrub as well as lakefront, swamps, black water streams, pine flatwoods, seepage slopes, hammocks, and sandhills. The project is the last opportunity to protect the highest concentration of narrowly endemic scrub plants and animals on the Lake Wales Ridge, many in jeopardy of extinction. Seventy-five rare elements are found in this diverse ecosystem (62 cited by FNAI), including a population of scrub mint that may be a new species. No archaeological or historical sites are known from the project. All the sites are fragments, and vulnerable to mismanagement and disturbance. They are also seriously threatened by conversion to citrus groves or immediate development pressure.

Public Use

Sites within this project are designated for use as state parks, state forests, botanical sites and preserves, providing opportunities for natural-resource education, hiking, and on some sites, camping, picnicking, hunting and fishing.

The Boy Scouts and Morgan less-than-fee parcels qualify as state forests. The amount and nature of public use will be negotiated with the landowners.

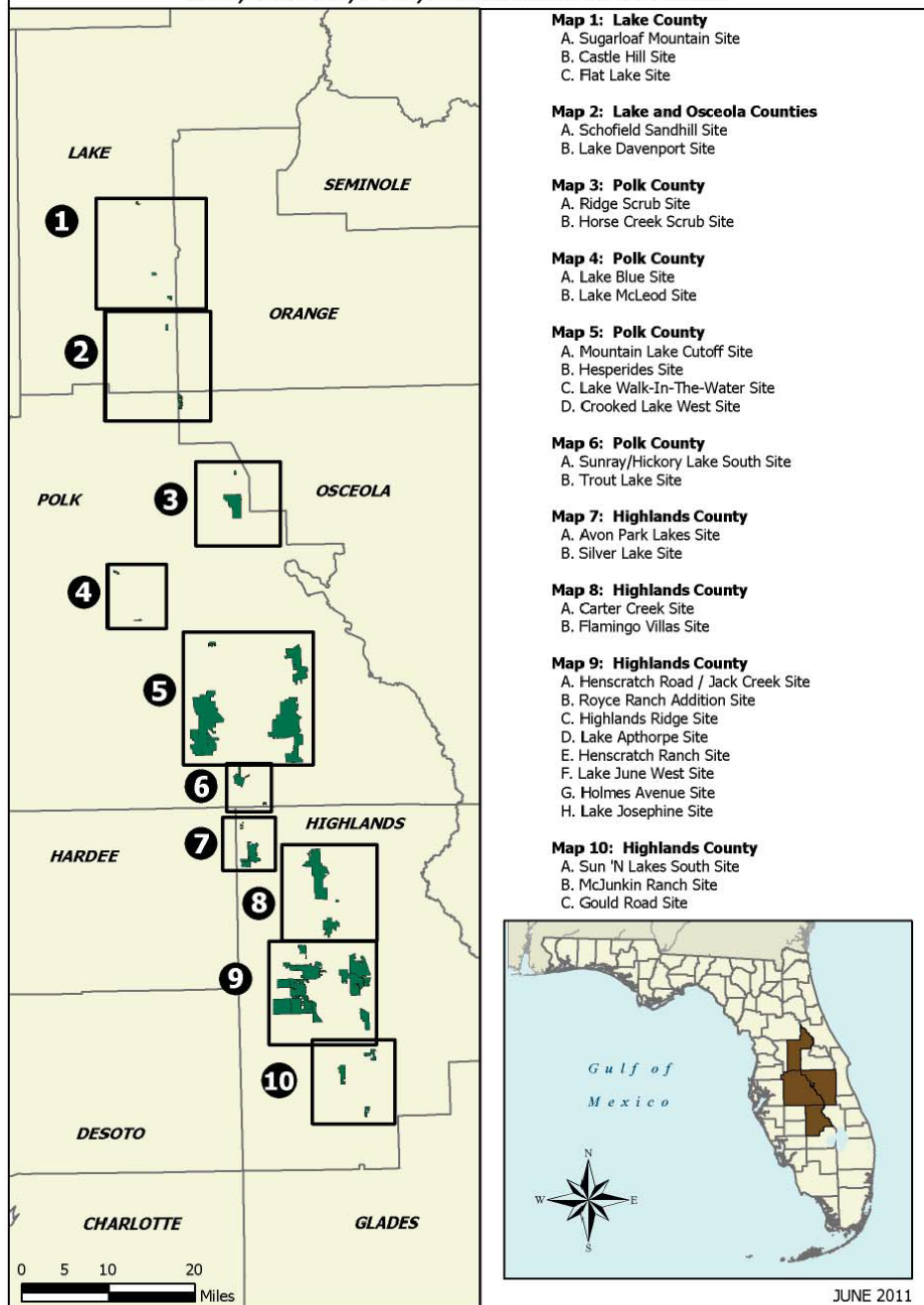
Placed on List	1992*
Project Area (GIS Acres)	59,034
Acres Acquired (GIS)	36,351**
at a Cost of	\$93,500,015**
Acres Remaining (GIS)	22,683
Estimated (Tax Assessed) Value of	\$15,522,254

*Lake Wales Ridge sites and Warea Archipelago projects were combined in 1994.

**Includes acres and expenditures by the SWFWMD, SWFMD, SJRWMD, U.S. Fish and Wildlife Service, Polk Co. and NRCS.

LAKE WALES RIDGE ECOSYSTEM: OVERVIEW

LAKE, OSCEOLA, POLK, AND HIGHLANDS COUNTIES



Acquisition Planning

Full Fee: The Nature Conservancy (TNC) is an intermediary in the majority of the ridge sites. Lake Walk-in-Water (8,615 acres): major owner, Alico, has been acquired; contracts have been approved/negotiations ongoing on other relatively large tracts; TNC worked with Morgan on details of the completed less-than-fee acquisition. Lake June West (831 acres): acquired. Gould Road (419 acres): major ownership acquired; discussions ongoing with owner of smaller inholding. Henscratch Road (2,869 acres): largest tracts acquired by the Southwest Florida Water Management District (SWFWMD) and CARL; TNC planned to negotiate a few other relatively large tracts in 1999. Silver Lake (2,020 acres): largest tracts acquired. Lake McLeod (55 acres): at least 45 acres acquired by USFWS. Mountain Lake Cutoff (217 acres): negotiations ongoing with owner of the one large tract. Lake Blue (65 acres) has been acquired. Hesperides (2,696 acres) has been acquired from Babson. Acquisition of most other tracts dependent upon acquisition of these ownerships. Boy Scouts West (335 acres): acquired. Horse Creek (1,325 acres): SWFWMD has acquired the major ownerships within this site. Trout Lake (65 acres): appraisal completed. Eagle Lake (10 acres): removed from list - developed. Ridge Scrub (80 acres): on hold pending reanalysis by FNAI. McJunkin Ranch (750 acres): acquired.

Priority phasing for the Warea Archipelago sites is: Scofield Sandhill (120 acres): negotiations were scheduled to begin in early 1999 on both ownerships. Lake Davenport (500 acres): appraisals on hold pending reanalysis of site. Flat Lake (120 acres): acquired. Castle Hill (75 acres): negotiations unsuccessful with major owner. Purchase of other tracts contingent on major owner. Ferndale Ridge (104 acres): removed from list due to site fragmentation and habitat destruction.

Sugarloaf Mountain (52 acres): southernmost tract acquired by St. Johns River Water Management District (SJRWMD). TNC was unable to reach agreements with a large ownership at northern end and owners of small tracts in between.

Less-than-Fee and Small Holdings: Carter Creek (4,630 acres): the majority of this parcel is acquired, a few large ownerships on western project boundary also remain.

Flamingo Villas (1,420 acres): USFWS acquired approximately 600 acres. Holmes Avenue (1,269 acres): approximately half of the site has been acquired, multiple ownerships remain. Sunray (1,970 acres): negotiations have begun on major owners. Avon Park

Lakes (225 acres): subdivided, TNC projects a three-year 70 percent success rate. Highlands Park Estates (232 acres) subdivided, acquisition activity not yet begun. Sun 'N Lakes South (570): more than 200 acres acquired, remaining developed and fragmented. Lake Apthorpe (2,503 acres): larger ownerships acquired, several lots important for management acquired as well. On December 6, 1991, the Land Acquisition Advisory Council (LAAC) added the Lake Wales Ridge Ecosystem (LWRE) project to the CARL Priority list. This fee simple and less-than-fee acquisition, sponsored by TNC, consisted of approximately 32,480 acres, several thousand ownerships, and a taxable value of \$33,954,187. The project contains 20 separate sites located in Polk and Highlands counties and breaks down as follows: Ridge Scrub (80 acres); Lake Blue (65.23 acres); Eagle Lake (10.30 acres); Lake McLeod (55 acres); Mountain Lake Cutoff (201.05 acres); Hesperides (3,900 acres); Lake Walk-in-the-Water (9,835 acres); Sunray/Hickory Lake South (1,925 acres); Trout Lake (59 acres); Avon Park Lakes (225 acres); Silver Lake (1,194 acres); Carter Creek (4,630 acres); Flamingo Villas (1,420 acres); Henscratch Road/Jack Creek (3,985 acres); Lake Apthorpe (1,722 acres); Highlands Park Estates (232 acres); Holmes Avenue (1,199 acres); Lake June West (897 acres); Sun 'N Lakes South (503 acres); Gould Road (343 acres). The SWFWMD acquired 1,309 acres within the Henscratch Road/Jack Creek site for \$1,540,000.

On July 23, 1993, the LAAC approved an 848-acre addition to the Lake Apthorpe site within the project boundary. The addition in Highlands County was sponsored by TNC, consisted of two ownerships, Clements Family (4 parcels) and Michael Rider (1 parcel), with a taxable value of \$313,910.



On September 20, 1993, the LAAC approved a 16-acre addition to the Mountain Lake Cutoff site within the project boundary. It was sponsored by the landowner, J. K. Stuart, and had a taxable value of \$18,548. The landowner has holdings within the site and is unwilling to sell only a part of his tract. The Council recommended that the addition be sold or exchanged if it is not needed for resource protection or management purposes.

On March 9, 1994, the LAAC approved a 160-acre addition to the Lake Walk-in-the-Water site within the project boundary. It was sponsored by the landowner (Alico) and TNC with a taxable value of \$160,000. The landowner has holdings within the current boundary and is unwilling to sell only a part of its holdings. The Council recommended that the addition be sold or exchanged if it is not needed for resource protection or management purposes. In July 1994, the LAAC approved a 61-acre addition to Flamingo Villas site within the project boundary. The addition was sponsored by the landowner; American Homes Service Corp.–Wohl tract, consisted of 2 contiguous parcels, with a taxable value of \$95,180. The landowner has holdings within the current boundary and is unwilling to sell only a part of his holdings. The Council recommended that the addition be sold or exchanged if it is not needed for resource protection or management purposes. In November 1994, the LAAC combined the Warea Archipelago project (1,021 acres/taxable value \$4,552,797/Lake and Osceola Counties), with the LWRE. The Warea Archipelago project contained 6 separate sites that break down as follows: Schofield Sandcastle (120 acres); Lake Davenport (500 acres); Flat Lake (120 acres); Castle Hill (125 acres); Ferndale Ridge (104 acres); Sugarloaf Mountain (52 acres). On November 18, 1994, the LAAC approved a 2,336-acre addition, in Highlands County, to the project boundary. It was sponsored by TNC with a taxable value of \$2,201,330. The breakdown follows: 400 acres to the Silver Lake site, 76 acres to the Gould Road site, and the 1,860-acre McJunkin Ranch was added. On July 14, 1995, the LAAC approved an 850-acre (sponsored by TNC; taxable value of \$2,035,980 addition in Highlands County to the project boundary, 70 acres to the Holmes Avenue site and 780 acres to the Lake Apthorpe site. On December 7, 1995, the LAAC approved combining the Horse Creek Scrub project (2,365 acres/taxable value \$3,330,700/Polk County) with the LWRE. The SFWMD made the request to expand the LWRE boundary. On December 7, 1995, the LAAC approved combining the Highlands Ridge

project (6,318 acres/taxable value \$11,980,140/Highlands County/several thousand parcels/600-700 landowners) with the LWRE. TNC sponsored the Ridge project in 1994.

On December 5, 1996, the LAAC approved the transfer of two ownerships – Boy Scouts West in the Hesperides site and Morgan in the Lake Walk-in-the-Water site – to the newly created Less-Than-Fee category. These Polk Co. ownerships, total 2,407 acres and a taxable value of \$2,407,000.

On December 7, 1997, the Land Acquisition Management Advisory Council (LAMAC) approved a 3,724-acre deletion (sponsored by TNC) to the project boundary. The deletion affected 10 sites, with a taxable value of \$5,036,700. The breakdown of the deletions follows: Ferndale Ridge (104 acres), Castle Hill (50 acres), Eagle Lake (10 acres), Hesperides (177 acres), Sun Ray/Hickory Lake (1,070 acres), Henscratch Road (760 acres), Lake June West (66 acres), Highlands Park Estates (232 acres), Holmes Avenue (145 acres), and McJunkin Ranch (1,110 acres).

On October 15, 1998, the LAMAC approved a 580-acre addition to the project boundary, sponsored by TNC. It totalled 1,414 parcels (1,132 landowners) with a taxable value of \$159,086. Several landowners already have ownerships within the current boundary and will not sell without including the proposed additions. The additions to sites in Polk and Highlands counties follows: Lake Apthorpe site (.34 acre, Levingston), Silver Lake site (427 acres, multiple owners), Sun 'N' Lakes South site (67 acres, Gables Engineering, Inc.), Sunray/Hickory Lake South site (80 acres, Alico, Inc.), and Trout Lake site (7 acres, Sistrunk, Trustee). The parcels were designated as essential. On October 15, 1998, the LAMAC approved the addition of the following tracts to the list of essential parcels: approximately 320 acres of the Saddleblanket Resorts II ownership in the Lake Walk-in-the-Water site, and approximately 3,200 acres (two large ownerships) in the Highlands Ridge site. July 12, 2001, the Acquisition & Restoration Council (ARC) approved a fee-simple, 2,512-acre addition (Royce Ranch next to Lake Apthorpe site) to the project boundary, sponsored by the FWC, it consisted of one landowner owner, Raymond Royce, with a taxable value of \$1,230,591. The FWC will manage the addition. On November 11, 2002, 1.25 acres were bought in Carter Creek (Benvenuti--\$3,800) to be managed by FWC. On October 17, 2003, the ARC approved a less-than-fee 2,330-acre addition

(Henscratch Ranch-Highlands Co.--taxable value of \$352,419) to the project boundary. Sponsored by a representative for the landowner, Highlands Farms, Inc. The Office of Environmental Services (OES) will monitor the easement.

On August 20, 2004, the ARC approved a less-than-fee, 520-acre addition (Lake Josephine--Highlands Co.--taxable value of \$17,063) to the project boundary. It was sponsored by representatives of the landowner, E. P. Jones Jr. The OES will monitor the easement.

On October 13, 2006, the ARC approved a fee-simple and less-than-fee, 11,444-acre addition (Crooked Lake West) to the project boundary. It was sponsored by Polk County, FWCC, and the SWFWMD. The addition, in Polk County, consisted of 1,430 parcels; 1,120 landowners; a taxable value of \$6,612,464. The parcels have been designated as essential.

In June 2008, the following acreages (ownerships) were purchased: 0.9 acre (McKay) in Carter Creek for \$11,500 - FWCC's FF funds; 1,146.91 acres (Dunham/Cannon) in Dunham Ranch known as Gopher Tortoise Mitigation Park for \$12,353,761 - FWCC's LATF money was used for purchase. FWCC will manage these sites. In September of 2008, the following acreages (ownerships) were purchased with DSL FF funds: 1.19 acres (Boise) in Carter Creek for \$11,500; 1.3 acres (Carpinello) for \$11,500; and 1.3 acres (O Such) for \$11,500--all in the Carter Creek area, and FWCC will manage. In October 2008 the following acreages (ownerships) were purchased with DSL FF funds: 1.1 acres (Dumervil/Cameron) for \$11,500; 1.3 acres (Hreschak) for \$11,500; 5.4 acres (Pollard) for \$46,000; 1.3 acres (Romani) for \$11,500; and 1.3 acres (Higgins Estate) for \$11,500. FWCC will manage these sites. On October 3, 2008, DSL Florida Forever funds were used to buy a 345-acre parcels from the Palmer ownership in Pine Plantation for \$24,930,304 (40 acres in the SE corner of the parcel were acquired by the Orlando-Orange County Expressway Authority to be conveyed to Orange County for a park). On 10/15/2008, TNC bought a Conservation Easement of 57.62 acres within the Scrub Conservation Bank which overlaps the Gould Road site. Archbold Biological Station monitors the easement. In November 2008, the following acreages (ownerships) were purchased with DSL FF funds: 1.3 acres (Roselle) for \$11,500; 1.3 acres (Stockard) for \$11,500; 1.4 acres (Barbuto) for \$11,500; 1.3 acres (Schaffner) for \$11,500; and 1.1

acres (Smith) for \$11,500. Again, FWC will manage these sites.

December 2008 through May 2009, 46 acres were purchased for \$445,161. In January 2009, SWFWMD and Polk Co. acquired 3510 acres (Crooked Lake West site) for \$5,369,950 from SWFWMD; \$2,000,000 from Polk Co.; and \$12,239,500 from NRCS. In 6/2009, 5 acres were purchased in Carter Creek site for \$46,000. In July 2009 another acre was received as a donation from C.L./Vera Stegmaier in Lake Aphorpe. In October 2009 a little over 2 acres were purchased for \$24,000 in Carter Creek site. All of these are to be managed by FWCC. On December 29, 2009, 1.1 acres were purchased by DSL for \$11,500. FWC will manage this.

On March 29, 2011, 1/2 acre on Holmes Ave. was donated (Dorothy A. Sanders Revocable Trust--\$2,000), FWCC managing. On April 5, 2011 16.21 acres were purchased (TNC/Lawson--\$97,000). FFS will manage this. On April 15, 2011 ARC recommended a 2,071-acre reduction to the project boundary due to residential/rural/commercial development. On July 20, 2011, DSL purchased 1.87 acres on Holmes Avenue for \$8,422. In August 2011, DSL bought 13.53 acres on Holmes Avenue via tax deed sales for \$40,429.

On December 9, 2011 ARC placed this project in the new Critical Natural Lands (CNL) category.

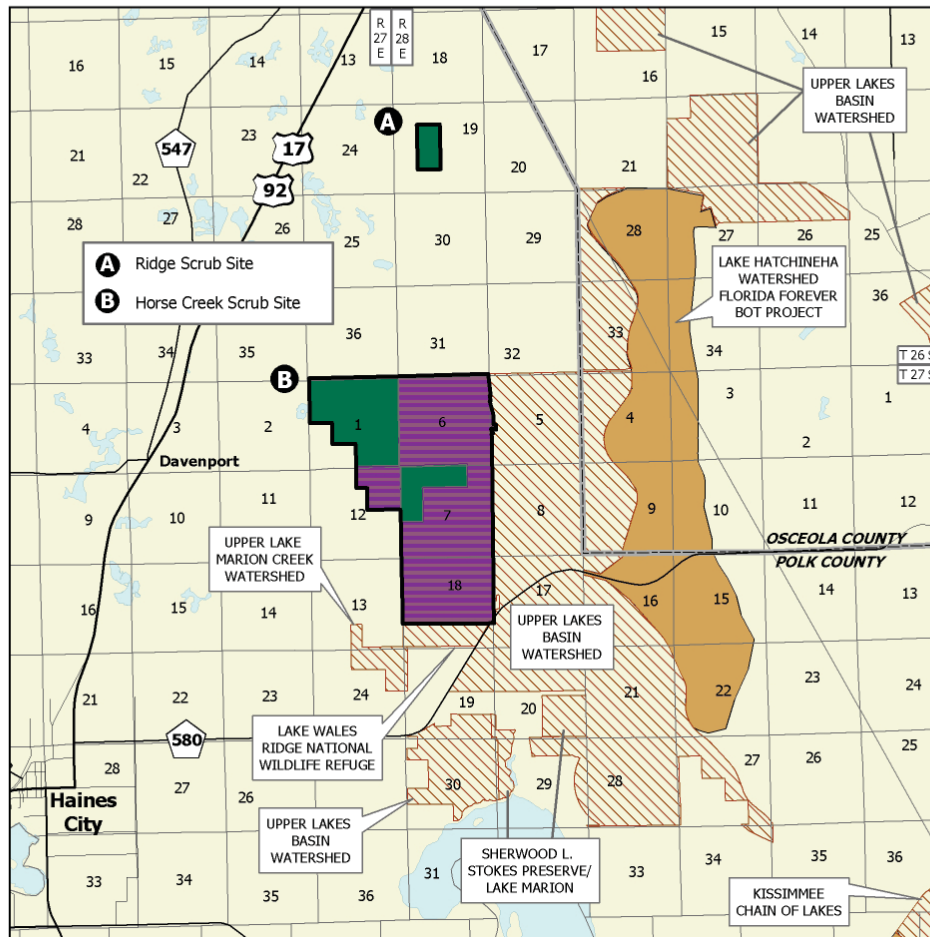
Coordination

The Lake Wales Ridge sites are included within the U.S. Fish and Wildlife Service (USFWS) Lake Wales Ridge National Wildlife Refuge which is the top priority endangered species project of the Service. The Service will also participate in management. TNC is an intermediary for non-mega parcel sites on this project.

Full Fee

Management Policy Statement

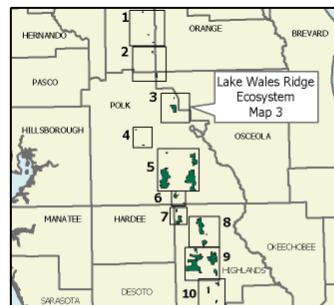
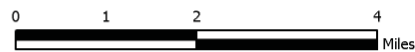
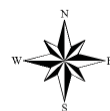
The primary goals of management of the Lake Wales Ridge Ecosystems project are to conserve and protect environmentally unique and irreplaceable lands that contain native, relatively unaltered flora and fauna representing a natural area unique to, or scarce within, a region of this state or a larger geographic area; to conserve and protect significant habitat for native species or endangered and threatened species; and to conserve, protect, manage, or restore important



LAKE WALES RIDGE ECOSYSTEM: MAP 3 OF 10

POLK COUNTY

- Florida Forever BOT Project Boundary
- Acquired
- Essential Parcel(s) Remaining
- Other Florida Forever BOT Projects
- Other Conservation Lands



OCTOBER 2006

ecosystems, landscapes, and forests, in order to enhance or protect significant surface water, coastal, recreational, timber, fish or wildlife resources which local or state regulatory programs cannot adequately protect.

Management Prospectus

Qualifications for state designation The full fee sites of the Lake Wales Ridge project qualify as single-use Wildlife and Environmental Areas (WEA) because of their high concentration of threatened or endangered species, particularly plants. The forest resources of the Lake Walk-in-Water, Hesperides and Warea sites make them desirable for use as state forests. The natural and recreational resources of the Lake June West parcel qualify it as a unit of the state park system.

Manager DRP (Lake June West); FFS (Lake Walk-in-Water, Hesperides and five Warea sites) and FWCC (remaining sites). FFS will monitor the less-than-fee portion.

Conditions affecting intensity of management

This project is a high-needs area which will require additional funding to stabilize and protect the natural resources. Managing this ecosystem will require large prescribed burning crews that are well-trained and well-equipped to handle high intensity fires in close proximity to residential areas.

Timetable for implementing management and provisions for security and protection of infrastructure During the first year after acquisition, management will focus on site security, conducting fuel reduction burns, conducting inventories of natural resources, and mapping of sensitive resources and conceptual planning. Public use facilities, if any, will be provided in succeeding years.

Revenue-generating potential No significant revenue is expected to be generated initially. As public use increases, modest revenue may be generated.

Cooperators in management activities It is recommended that the Archbold Biological Station and TNC serve as cooperators in managing some of the sites.

Less Than Fee and Small Holdings

Management Prospectus

Qualifications for state designation The forest resources of the Lake Walk-in-Water, and Hesperides sites make them desirable for use as state forests. The small parcels sites of the Lake Wales Ridge project qualify as single-use WEA because of its high concentration of threatened or endangered species, particularly plants. Thirty percent of the plants and animals of the Lake Wales Ridge occur nowhere else in the world.

Manager The FWCC is recommended as project manager for the small holdings. OES and FFS to monitor CEs.

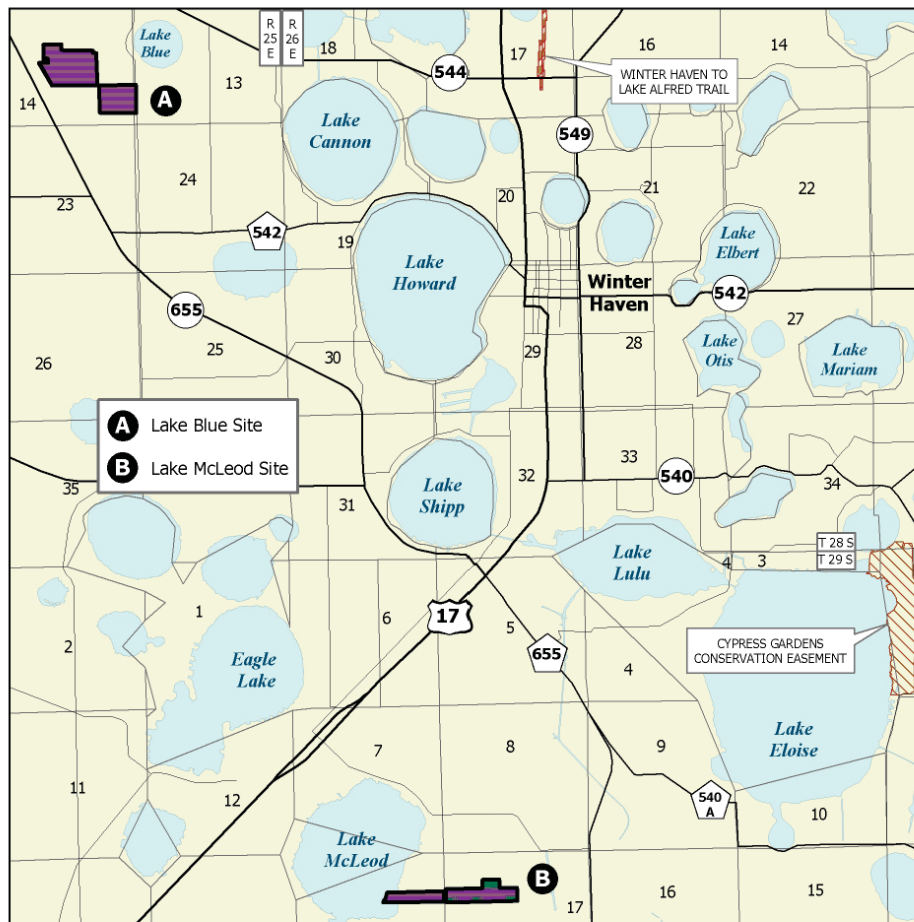
Conditions affecting intensity of management This project is a high-need area, which will require additional funding to stabilize and protect the natural resources. Managing this ecosystem will require large prescribed burning crews that are well-trained and well-equipped to handle high intensity fires in close proximity to residential areas.

Timetable for implementing management and provisions for security and protection of infrastructure

During the first year after acquisition, management will focus on site security, conducting fuel reduction burns, conducting inventories of natural resources, and mapping of sensitive resources and conceptual planning. Public use facilities, if any, will be provided in succeeding years.

Revenue-generating potential No significant revenue is expected to be generated initially. As public use increases, modest revenue may be generated.

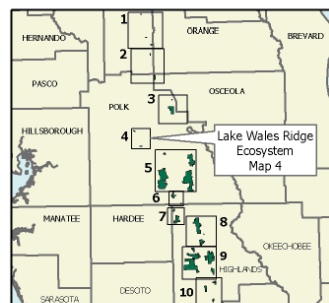
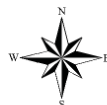
Updated April 13, 2016



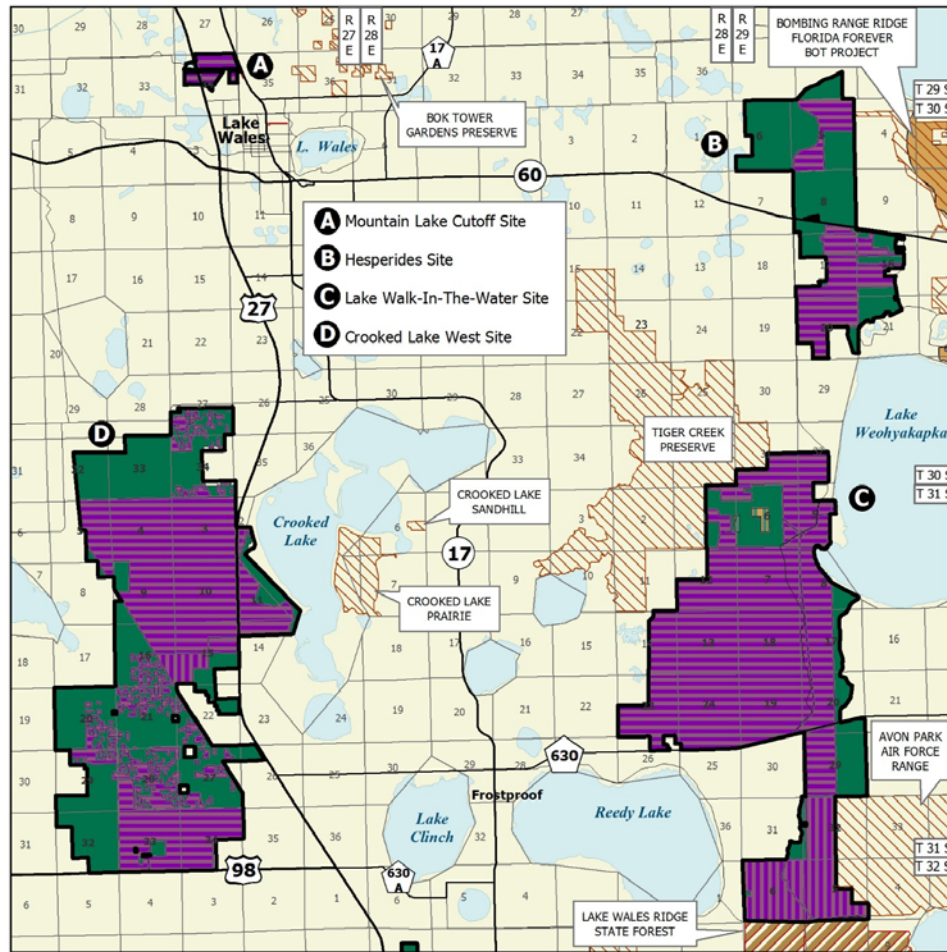
LAKE WALES RIDGE ECOSYSTEM: MAP 4 OF 10

POLK COUNTY

- Florida Forever BOT Project Boundary
- Essential Parcel(s) Remaining
- Acquired
- State Owned Lands
- Other Conservation Lands



OCTOBER 2006

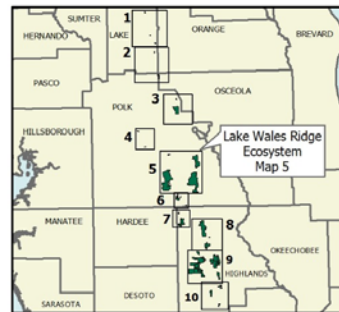


LAKE WALES RIDGE ECOSYSTEM: MAP 5 OF 10

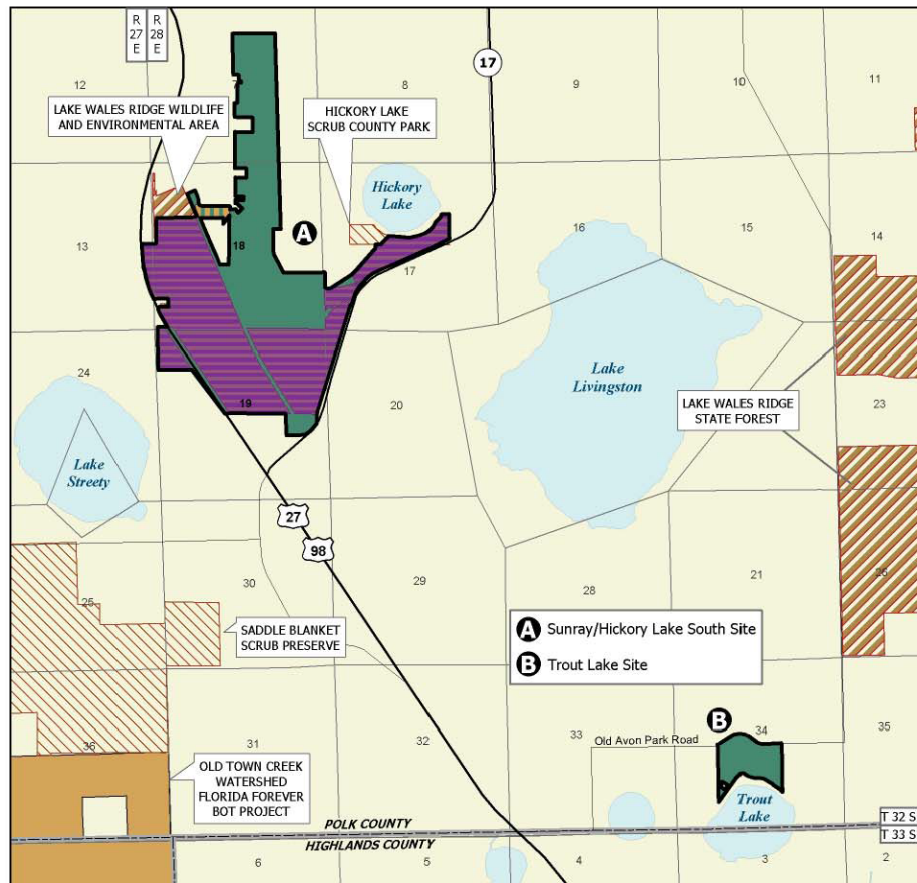
POLK COUNTY

- Florida Forever BOT Project Boundary
- Acquired for Conservation (Fee-Simple)
- Acquired for Conservation (Less-Than-Fee)
- TNC Owned Lands Within Project
- Essential Parcel(s) Remaining
- Other Florida Forever BOT Projects
- State Owned Lands
- Other Conservation Lands

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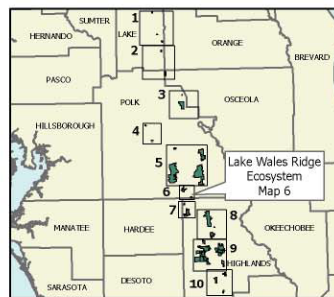
MARCH 2016



LAKE WALES RIDGE ECOSYSTEM: MAP 6 OF 10

POLK COUNTY

- Florida Forever BOT Project Boundary
- Acquired for Conservation (Fee Simple)
- TNC Owned Lands Within Project
- Essential Parcel(s) Remaining
- Other Florida Forever BOT Projects
- State Owned Lands
- Other Conservation Lands



OCTOBER 2011

Management Cost Summary/DRP

Category Source of Funds	Startup CARL	Recurring CARL
Salary	\$44,334	\$97,575
OPS	\$14,560	\$12,000
Expense	\$23,000	\$24,000
OCO	\$67,000	\$1,000
FCO	\$57,720	\$0
TOTAL	\$206,614	\$134,575

Management Cost Summary/FFS (Warea)

Category Source of Funds	Startup CARL	Recurring CARL	Category Source of Funds	Startup CARL	Recurring CARL
Salary	\$44,334	\$97,575	Salary	\$0	\$0
OPS	\$14,560	\$12,000	OPS	\$0	\$0
Expense	\$23,000	\$24,000	Expense	\$5,000	\$4,000
OCO	\$67,000	\$1,000	OCO	\$0	\$0
FCO	\$57,720	\$0	FCO	\$0	\$0
TOTAL	\$206,614	\$134,575	TOTAL	\$5,000	\$4,000

Management Cost Summary/FFS (Hesperides)

Category Source of Funds	Startup CARL	Recurring CARL
Salary	\$63,440	\$63,440
OPS	\$0	\$0
Expense	\$20,000	\$17,000
OCO	\$111,700	\$10,000
FCO	\$0	\$0
TOTAL	\$195,140	\$90,440

Exhibit I

Department of State Report on Archeological Sites and Historical Sites



This record search is for informational purposes only and does NOT constitute a project review. This search only identifies resources recorded at the Florida Master Site File and does NOT provide project approval from the Division of Historical Resources. Contact the Compliance and Review Section of the Division of Historical Resources at 850-245-6333 for project review information.

July 20, 2017

Alan L. Davis
Land Planning Coordinator
Florida DA&CS
3125 Conner Boulevard
Tallahassee, FL 32399-1650
E-mail: Alan.Davis@freshfromflorida.com



Re: Lake Wales Ridge State Forest

In response to your inquiry of July 17, 2017, the Florida Master Site File lists nine archeological sites, one standing structure, one cemetery and one resource group found at the designated area for Lake Wales Ridge State Forest, Polk County, Florida.

When interpreting the results of our search, please consider the following information:

- This search area may contain *unrecorded* archaeological sites, historical structures or other resources even if previously surveyed for cultural resources.
- Because vandalism and looting are common at Florida sites, we ask that you limit the distribution of location information on archaeological sites.
- While many of our records document historically significant resources, the documentation of a resource at the Florida Master Site File does not necessarily mean the resource is historically significant.
- Federal, state and local laws require formal environmental review for most projects. This search **DOES NOT** constitute such a review. If your project falls under these laws, you should contact the Compliance and Review Section of the Division of Historical Resources at 850-245-6333.

Please do not hesitate to contact us if you have any questions regarding the results of this search.

Sincerely,

Eman M. Vovsi
Florida Master Site File
Eman.Vovsi@DOS.MyFlorida.com



AR=9
SS=1
CN=1
RG=1
BR=0
Total=12

Cultural Resource Roster

SiteID	Type	Site Name	Address	Additional Info	SHPO Eval	NR Status
HG01064	RG	Old Government Railroad	none	Linear Resource	Eligible	
PO00010	AR	ARBUCKLE MOUNDS				
PO03863	SS	KEEN'S RANCH	STATE ROAD 60, LAKE WALES	c1948 Frame Vernacular	Not Eligible	
PO04697	AR	MEYER'S MIDDEN				
PO05320	AR	WPS STANDARD				
PO05321	AR	LAKE GODWIN DIPPING VAT				
PO05322	AR	CABIN SCRUB				
PO05323	AR	McLean Cabin Site	Frostproof			
PO05324	AR	ARBUCKLE ROAD DIPPING VAT				
PO05325	AR	SULLIVAN DAIRY				
PO05446	AR	BUZZARD ROOST MIDDEN SITE				
PO07295	CM	Lake Wales Ridge St. Forest Prairie Trac	Lake Wales	Established c1910, Graves #4		

Exhibit J

Management Procedures for Archaeological and Historical Sites and Properties on State Owned or Controlled Lands

Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties

(revised March 2013)

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

A. General Discussion

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

B. Agency Responsibilities

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

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

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

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

C. Statutory Authority

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

D. Management Implementation

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

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.

* * *

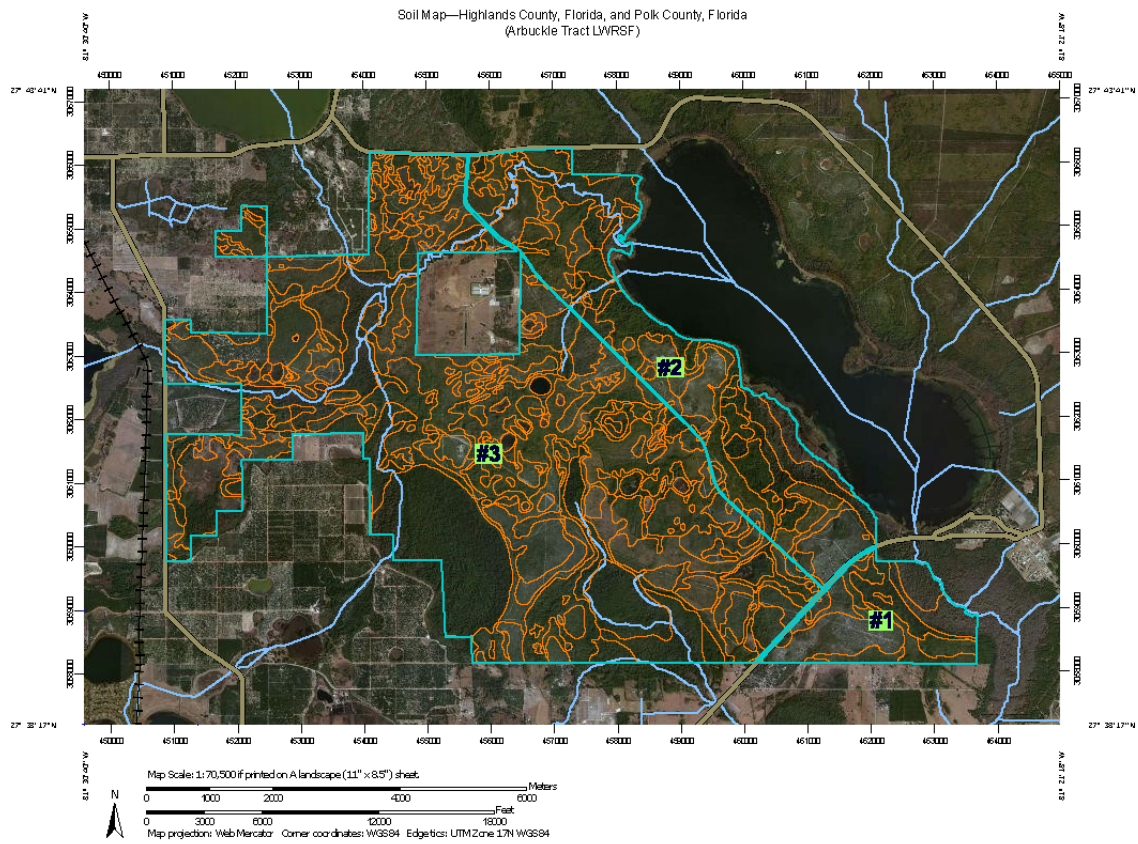
Questions relating to the treatment of archaeological and historic resources on state lands should be directed to:

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

Exhibit K

Soil Maps and Descriptions



MAP LEGEND

- Area of Interest (AOI)**
-  Area of Interest (AOI)
- Soils**
-  Soil Map Unit Polygons
 -  Soil Map Unit Lines
 -  Soil Map Unit Points
 -  Special Line Features
- Water Features**
-  Streams and Canals
- Transportation**
-  Rails
 -  Interstate Highways
 -  US Routes
 -  Major Roads
 -  Local Roads
- Background**
-  Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at scales ranging from 1:20,000 to 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Highlands County, Florida
Survey Area Data: Version 15, Sep 14, 2016

Soil Survey Area: Polk County, Florida
Survey Area Data: Version 14, Sep 28, 2016

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 8, 2010—Feb 11, 2015

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

#1, Highlands County, Florida (FL055)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
12	Basinger fine sand, 0 to 2 percent slopes	0.6	0.0%
Subtotals for #1		0.6	0.0%
Totals for Area of Interest		13,651.3	100.0%

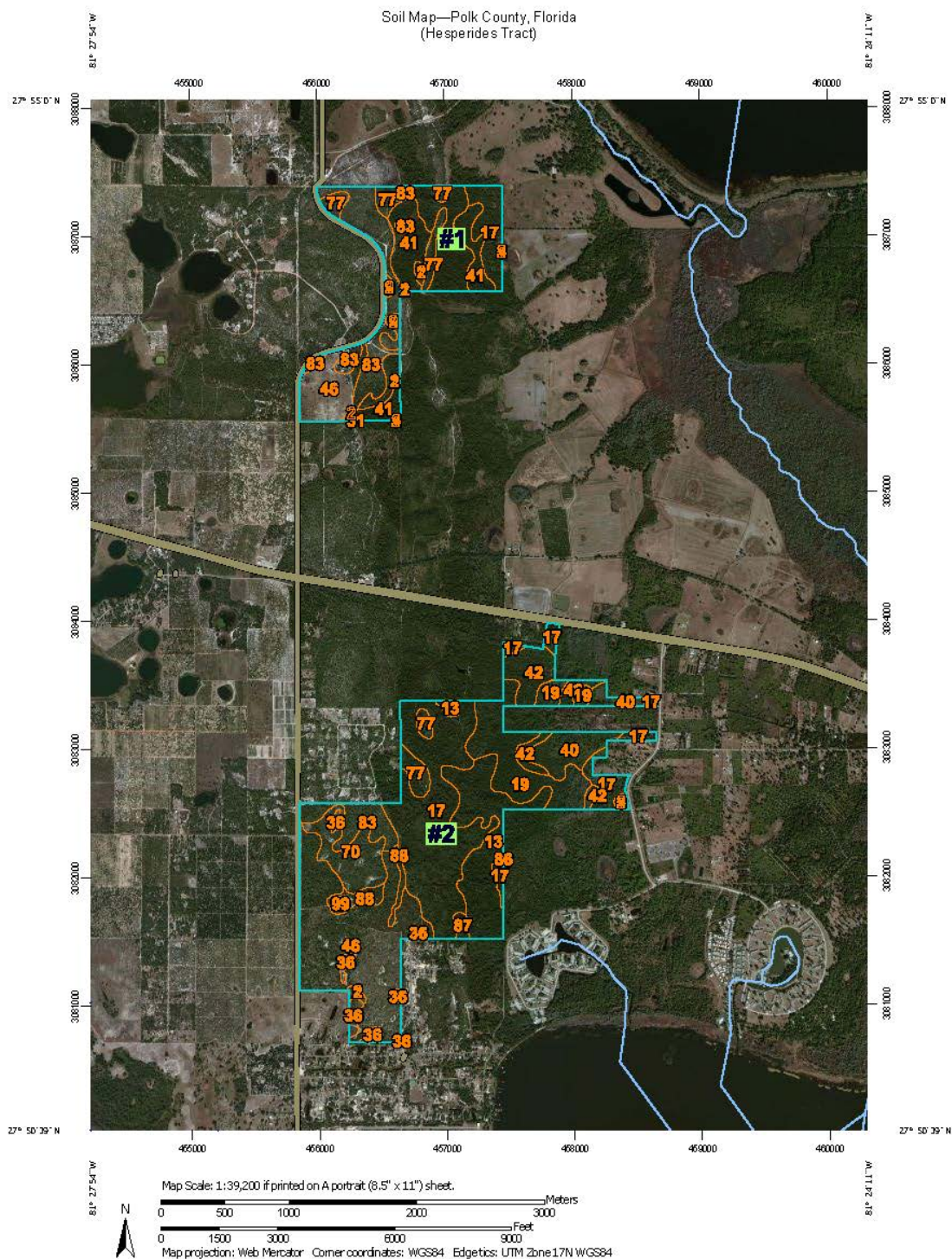
#1, Polk County, Florida (FL105)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
13	Samsula muck, frequently ponded, 0 to 1 percent slopes	120.0	0.9%
17	Smyrna and Myakka fine sands	10.5	0.1%
21	Immokalee sand	106.8	0.8%
22	Pomello fine sand	54.9	0.4%
25	Placid and Myakka fine sands, depressional	10.1	0.1%
29	St. Lucie fine sand, 0 to 5 percent slopes	257.6	1.9%
30	Pompano fine sand	68.7	0.5%
70	Duette fine sand	9.8	0.1%
74	Narcoossee sand	19.0	0.1%
77	Satellite sand, 0 to 2 percent slopes	26.5	0.2%
80	Chobee fine sandy loam, frequently flooded	96.0	0.7%
83	Archbold sand, 0 to 5 percent slopes	68.0	0.5%
87	Basinger fine sand	127.5	0.9%
Subtotals for #1		975.4	7.1%
Totals for Area of Interest		13,651.3	100.0%

#2, Polk County, Florida (FL105)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
13	Samsula muck, frequently ponded, 0 to 1 percent slopes	297.7	2.2%
15	Tavares fine sand, 0 to 5 percent slopes	82.3	0.6%
17	Smyrna and Myakka fine sands	70.7	0.5%

#2, Polk County, Florida (FL105)			
Map Unit Symbol	Map Unit Name	Acres In AOI	Percent of AOI
19	Floridana mucky fine sand, frequently ponded, 0 to 1 percent slopes	0.6	0.0%
21	Immokalee sand	182.3	1.3%
23	Ona-Ona, wet, fine sand, 0 to 2 percent slopes	7.9	0.1%
25	Placid and Myakka fine sands, depressional	1.3	0.0%
29	St. Lucie fine sand, 0 to 5 percent slopes	114.8	0.8%
30	Pompano fine sand	622.1	4.6%
31	Adamsville fine sand, 0 to 2 percent slopes	77.8	0.6%
33	Holopaw fine sand, depressional	137.5	1.0%
34	Anclote mucky fine sand, depressional, 0 to 1 percent slopes	50.5	0.4%
35	Hontoon muck, frequently ponded, 0 to 1 percent slopes	133.8	1.0%
36	Basinger mucky fine sand, depressional	118.7	0.9%
46	Astatula sand, 0 to 5 percent slopes	80.7	0.6%
58	Udorthents, excavated	1.6	0.0%
70	Duette fine sand	20.2	0.1%
74	Narcoossee sand	5.8	0.0%
77	Satellite sand, 0 to 2 percent slopes	179.5	1.3%
83	Archbold sand, 0 to 5 percent slopes	410.1	3.0%
86	Felda fine sand, frequently ponded, 0 to 1 percent slopes	4.4	0.0%
87	Basinger fine sand	249.0	1.8%
99	Water	0.3	0.0%
Subtotals for #2		2,849.5	20.9%
Totals for Area of Interest		13,651.3	100.0%

#3, Polk County, Florida (FL105)			
Map Unit Symbol	Map Unit Name	Acres In AOI	Percent of AOI
3	Candler sand, 0 to 5 percent slopes	33.6	0.2%

#3, Polk County, Florida (FL105)			
Map Unit Symbol	Map Unit Name	Acres In AOI	Percent of AOI
13	Samsula muck, frequently ponded, 0 to 1 percent slopes	855.6	6.3%
15	Tavares fine sand, 0 to 5 percent slopes	422.8	3.1%
17	Smyrna and Myakka fine sands	332.7	2.4%
21	Immokalee sand	638.7	4.7%
22	Pomello fine sand	16.8	0.1%
23	Ona-Ona, wet, fine sand, 0 to 2 percent slopes	213.7	1.6%
25	Placid and Myakka fine sands, depressional	374.9	2.7%
30	Pompano fine sand	1,437.4	10.5%
31	Adamsville fine sand, 0 to 2 percent slopes	41.7	0.3%
34	Anclote mucky fine sand, depressional, 0 to 1 percent slopes	8.2	0.1%
35	Hontoon muck, frequently ponded, 0 to 1 percent slopes	1,247.7	9.1%
36	Basinger mucky fine sand, depressional	114.4	0.8%
37	Placid fine sand, frequently flooded	442.1	3.2%
41	St. Johns sand	80.0	0.6%
46	Astatula sand, 0 to 5 percent slopes	456.7	3.3%
47	Zolfo fine sand, 0 to 2 percent slopes	105.8	0.8%
70	Duette fine sand	243.4	1.8%
74	Narcoossee sand	73.8	0.5%
77	Satellite sand, 0 to 2 percent slopes	995.8	7.3%
83	Archbold sand, 0 to 5 percent slopes	573.9	4.2%
87	Basinger fine sand	1,079.0	7.9%
88	Astatula sand, 5 to 12 percent slopes	14.3	0.1%
99	Water	22.8	0.2%
Subtotals for #3		9,825.7	72.0%
Totals for Area of Interest		13,651.3	100.0%



**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

4/13/2017
Page 1 of 4

Soil Map—Polk County, Florida
(Hespendes Tract)

MAP LEGEND

- Area of Interest (AOI)**
-  Area of Interest (AOI)
- Soils**
-  Soil Map Unit Polygons
 -  Soil Map Unit Lines
 -  Soil Map Unit Points
 -  Special Line Features
- Water Features**
-  Streams and Canals
- Transportation**
-  Rails
 -  Interstate Highways
 -  US Routes
 -  Major Roads
 -  Local Roads
- Background**
-  Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Polk County, Florida
Survey Area Data: Version 14, Sep 28, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 8, 2010—Mar 8, 2011

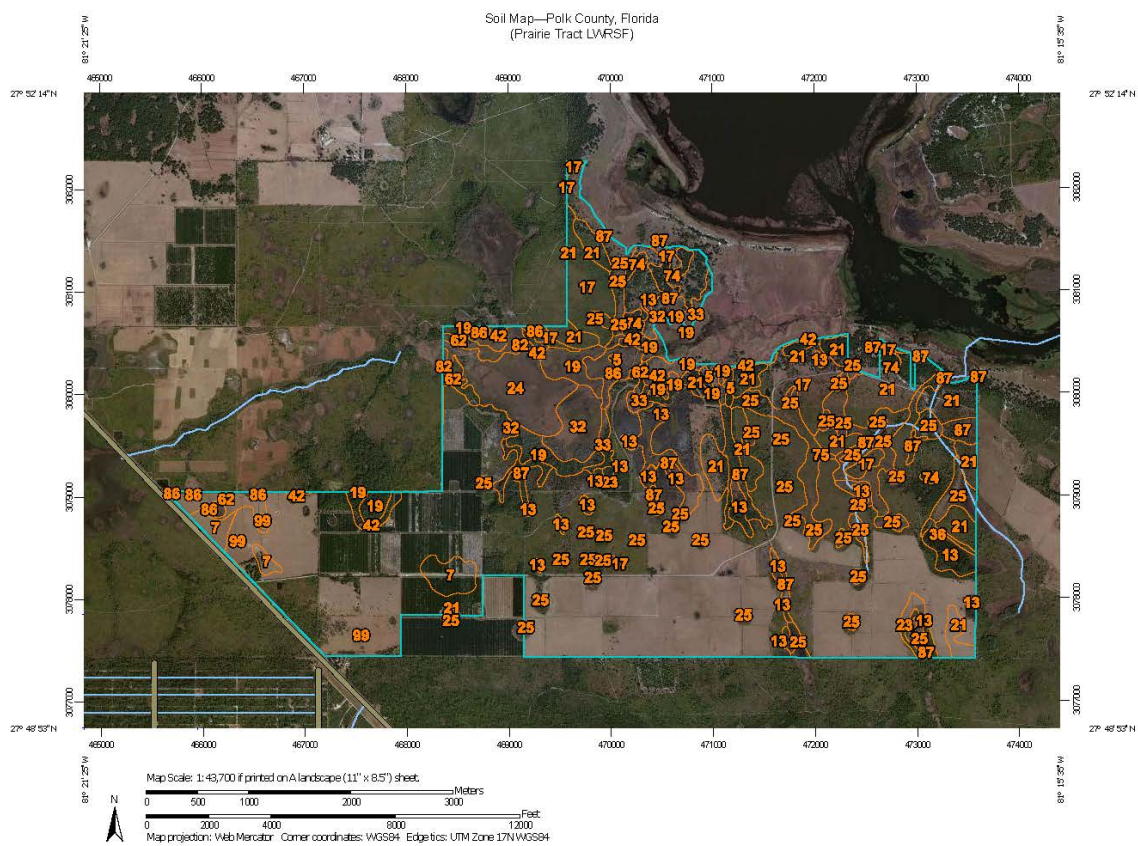
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

#1, Polk County, Florida (FL105)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
17	Smyrna and Myakka fine sands	36.8	2.9%
21	Immokalee sand	71.2	5.6%
22	Pomello fine sand	0.3	0.0%
25	Placid and Myakka fine sands, depressional	0.6	0.0%
29	St. Lucie fine sand, 0 to 5 percent slopes	9.7	0.8%
31	Adamsville fine sand, 0 to 2 percent slopes	0.3	0.0%
41	St. Johns sand	72.6	5.7%
46	Astatula sand, 0 to 5 percent slopes	48.0	3.8%
77	Satellite sand, 0 to 2 percent slopes	29.5	2.3%
83	Archbold sand, 0 to 5 percent slopes	85.5	6.7%
Subtotals for #1		354.6	28.0%
Totals for Area of Interest		1,267.6	100.0%

#2, Polk County, Florida (FL105)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
13	Samsula muck, frequently ponded, 0 to 1 percent slopes	109.5	8.6%
17	Smyrna and Myakka fine sands	234.9	18.5%
19	Floridana mucky fine sand, frequently ponded, 0 to 1 percent slopes	101.1	8.0%
21	Immokalee sand	2.5	0.2%
25	Placid and Myakka fine sands, depressional	2.3	0.2%
36	Basinger mucky fine sand, depressional	15.3	1.2%
40	Wauchula fine sand	48.6	3.8%
42	Felda fine sand	51.5	4.1%
46	Astatula sand, 0 to 5 percent slopes	215.0	17.0%
70	Duette fine sand	53.2	4.2%
77	Satellite sand, 0 to 2 percent slopes	19.1	1.5%

#2, Polk County, Florida (FL105)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
83	Archbold sand, 0 to 5 percent slopes	36.6	2.9%
86	Felda fine sand, frequently ponded, 0 to 1 percent slopes	0.3	0.0%
87	Basinger fine sand	4.9	0.4%
88	Astatula sand, 5 to 12 percent slopes	16.3	1.3%
99	Water	1.9	0.2%
Subtotals for #2		912.9	72.0%
Totals for Area of Interest		1,267.6	100.0%



MAP LEGEND

- Area of Interest (AOI)**
-  Area of Interest (AOI)
- Soils**
-  Soil Map Unit Polygons
 -  Soil Map Unit Lines
 -  Soil Map Unit Points
 -  Special Line Features
- Water Features**
-  Streams and Canals
- Transportation**
-  Rails
 -  Interstate Highways
 -  US Routes
 -  Major Roads
 -  Local Roads
- Background**
-  Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Polk County, Florida
Survey Area Data: Version 14, Sep 28, 2016

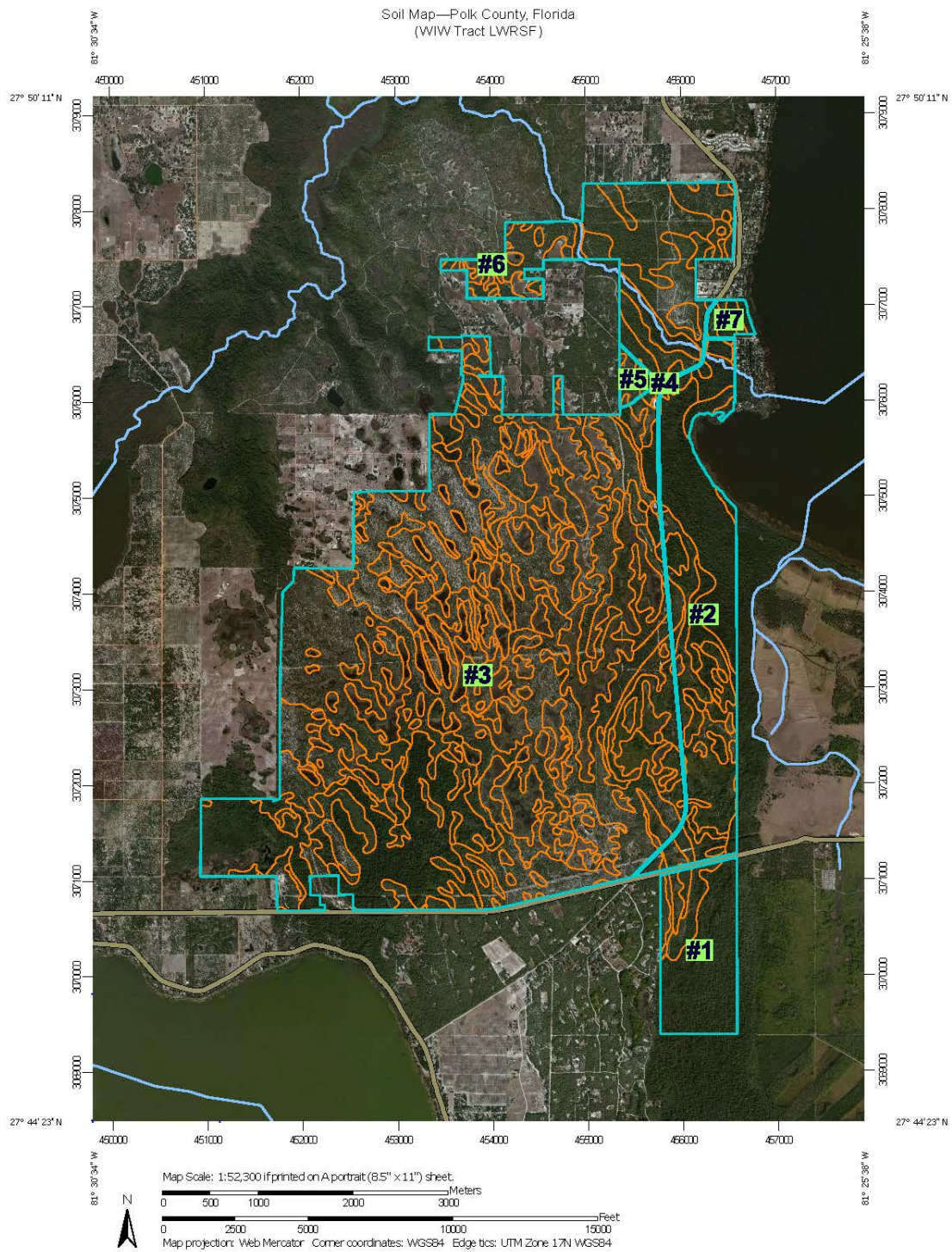
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 8, 2010—Mar 8, 2011

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Map Unit Legend

Polk County, Florida (FL105)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
5	EauGallie fine sand	14.4	0.3%
7	Pomona fine sand	69.8	1.4%
13	Samsula muck, frequently ponded, 0 to 1 percent slopes	102.1	2.1%
17	Smyrna and Myakka fine sands	3,055.2	62.8%
19	Floridana mucky fine sand, frequently ponded, 0 to 1 percent slopes	124.9	2.6%
21	Immokalee sand	359.4	7.4%
23	Ona-Ona, wet, fine sand, 0 to 2 percent slopes	24.7	0.5%
24	Nittaw sandy clay loam, frequently flooded	145.6	3.0%
25	Placid and Myakka fine sands, depressiona	174.0	3.6%
32	Kaliga muck, frequently ponded, 0 to 1 percent slopes	74.1	1.5%
33	Holopaw fine sand, depressiona	27.6	0.6%
36	Basinger mucky fine sand, depressiona	7.2	0.1%
42	Felda fine sand	89.5	1.8%
62	Wabasso fine sand	75.1	1.5%
74	Narcoossee sand	46.5	1.0%
75	Valkaria sand	70.8	1.5%
82	Felda fine sand, 0 to 2 percent slopes, frequently flooded	29.2	0.6%
86	Felda fine sand, frequently ponded, 0 to 1 percent slopes	49.6	1.0%
87	Basinger fine sand	318.0	6.5%
99	Water	5.8	0.1%
Totals for Area of Interest		4,863.4	100.0%



MAP LEGEND

- Area of Interest (AOI)**
-  Area of Interest (AOI)
- Soils**
-  Soil Map Unit Polygons
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 -  Soil Map Unit Points
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MAP INFORMATION

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Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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Soil Survey Area: Polk County, Florida
Survey Area Data: Version 14, Sep 28, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 8, 2010—Mar 8, 2011

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Map Unit Legend

#1, Polk County, Florida (FL105)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
17	Smyrna and Myakka fine sands	41.7	0.6%
35	Hontoon muck, frequently ponded, 0 to 1 percent slopes	260.4	3.8%
36	Basinger mucky fine sand, depressionial	14.3	0.2%
46	Astatula sand, 0 to 5 percent slopes	24.4	0.4%
88	Astatula sand, 5 to 12 percent slopes	9.3	0.1%
Subtotals for #1		350.0	5.1%
Totals for Area of Interest		6,895.3	100.0%

#2, Polk County, Florida (FL105)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
13	Samsula muck, frequently ponded, 0 to 1 percent slopes	63.1	0.9%
15	Tavares fine sand, 0 to 5 percent slopes	14.7	0.2%
17	Smyrna and Myakka fine sands	247.0	3.6%
21	Immokalee sand	10.8	0.2%
23	Ona-Ona, wet, fine sand, 0 to 2 percent slopes	4.2	0.1%
30	Pompano fine sand	34.1	0.5%
34	Anclote mucky fine sand, depressionial, 0 to 1 percent slopes	5.7	0.1%
35	Hontoon muck, frequently ponded, 0 to 1 percent slopes	284.8	4.1%
36	Basinger mucky fine sand, depressionial	100.2	1.5%
46	Astatula sand, 0 to 5 percent slopes	37.0	0.5%
68	Arents, 0 to 5 percent slopes	7.1	0.1%
83	Archbold sand, 0 to 5 percent slopes	0.6	0.0%
87	Basinger fine sand	15.7	0.2%
88	Astatula sand, 5 to 12 percent slopes	2.1	0.0%

#2, Polk County, Florida (FL105)			
Map Unit Symbol	Map Unit Name	Acres In AOI	Percent of AOI
Subtotals for #2		827.1	12.0%
Totals for Area of Interest		6,895.3	100.0%

#3, Polk County, Florida (FL105)			
Map Unit Symbol	Map Unit Name	Acres In AOI	Percent of AOI
13	Samsula muck, frequently ponded, 0 to 1 percent slopes	223.8	3.2%
15	Tavares fine sand, 0 to 5 percent slopes	481.8	7.0%
17	Smyrna and Myakka fine sands	109.8	1.6%
22	Pomello fine sand	1.5	0.0%
25	Placid and Myakka fine sands, depressional	18.1	0.3%
31	Adamsville fine sand, 0 to 2 percent slopes	154.0	2.2%
35	Hontoon muck, frequently ponded, 0 to 1 percent slopes	614.1	8.9%
36	Basinger mucky fine sand, depressional	968.7	14.0%
41	St. Johns sand	117.5	1.7%
46	Astatula sand, 0 to 5 percent slopes	1,642.3	23.8%
58	Udorthents, excavated	3.5	0.1%
88	Astatula sand, 5 to 12 percent slopes	581.4	8.4%
89	Astatula sand, 12 to 20 percent slopes	5.2	0.1%
Subtotals for #3		4,921.8	71.4%
Totals for Area of Interest		6,895.3	100.0%

#4, Polk County, Florida (FL105)			
Map Unit Symbol	Map Unit Name	Acres In AOI	Percent of AOI
15	Tavares fine sand, 0 to 5 percent slopes	0.4	0.0%
Subtotals for #4		0.4	0.0%
Totals for Area of Interest		6,895.3	100.0%

#5, Polk County, Florida (FL105)			
Map Unit Symbol	Map Unit Name	Acres In AOI	Percent of AOI
15	Tavares fine sand, 0 to 5 percent slopes	12.6	0.2%

#5, Polk County, Florida (FL105)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
36	Basinger mucky fine sand, depressional	1.8	0.0%
46	Astatula sand, 0 to 5 percent slopes	19.0	0.3%
70	Duette fine sand	1.6	0.0%
Subtotals for #5		35.0	0.5%
Totals for Area of Interest		6,895.3	100.0%

#6, Polk County, Florida (FL105)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
15	Tavares fine sand, 0 to 5 percent slopes	56.7	0.8%
17	Smyrna and Myakka fine sands	4.6	0.1%
21	Immokalee sand	7.2	0.1%
22	Pomello fine sand	4.4	0.1%
23	Ona-Ona, wet, fine sand, 0 to 2 percent slopes	0.0	0.0%
29	St. Lucie fine sand, 0 to 5 percent slopes	19.1	0.3%
30	Pompano fine sand	0.5	0.0%
31	Adamsville fine sand, 0 to 2 percent slopes	54.0	0.8%
36	Basinger mucky fine sand, depressional	55.9	0.8%
46	Astatula sand, 0 to 5 percent slopes	178.0	2.6%
68	Arents, 0 to 5 percent slopes	0.3	0.0%
70	Duette fine sand	201.2	2.9%
77	Satellite sand, 0 to 2 percent slopes	10.8	0.2%
83	Archbold sand, 0 to 5 percent slopes	128.4	1.9%
Subtotals for #6		721.1	10.5%
Totals for Area of Interest		6,895.3	100.0%

#7, Polk County, Florida (FL105)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
13	Samsula muck, frequently ponded, 0 to 1 percent slopes	10.3	0.1%
21	Immokalee sand	8.4	0.1%
34	Anclote mucky fine sand, depressional, 0 to 1 percent slopes	7.7	0.1%

#7, Polk County, Florida (FL105)			
Map Unit Symbol	Map Unit Name	Acres In AOI	Percent of AOI
36	Basinger mucky fine sand, depressional	12.7	0.2%
68	Arents, 0 to 5 percent slopes	0.4	0.0%
83	Archbold sand, 0 to 5 percent slopes	0.4	0.0%
Subtotals for #7		39.9	0.6%
Totals for Area of Interest		6,895.3	100.0%

Component Legend

This report presents general information about the map units and map unit components in the selected area. It shows map unit symbols and names and the components in each map unit. It also shows the percent of the components in the map units, the kind of component, and the slope range of each component.

Report—Component Legend

Component Legend--Highlands County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
12—Basinger fine sand, 0 to 2 percent slopes	63,856						
		90	Basinger	Series	0.0	0.5	2.0
		4	Eaugallie	Series	0.0	0.5	2.0
		3	Margate	Series	0.0	0.5	2.0
		3	Placid, depressional	Series	0.0	0.5	2.0

Component Legend--Polk County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
3—Candler sand, 0 to 5 percent slopes	97,496						
		90	Candler	Series	0.0	3.0	5.0
		5	Millhopper	Series	0.0	3.0	5.0
		5	Tavares	Series	0.0	1.0	5.0
5—EauGallie fine sand	11,266						
		65	Eaugallie, non-hydric	Series	0.0	1.0	2.0
		20	Eaugallie, hydric	Series	0.0	1.0	2.0
		4	Felda	Series	0.0	1.0	2.0
		4	Pomona, non-hydric	Series	0.0	1.0	2.0
		4	Malabar	Series	0.0	1.0	2.0
		3	Wabasso, non-hydric	Series	0.0	1.0	2.0
7—Pomona fine sand	91,570						
		70	Pomona, non-hydric	Series	0.0	1.0	2.0
		20	Pomona, hydric	Series	0.0	1.0	2.0
		4	Myakka	Series	0.0	1.0	2.0
		3	Smyrna, non-hydric	Series	0.0	1.0	2.0
		3	Wauchula, non-hydric	Series	0.0	1.0	2.0

Component Legend--Polk County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
13--Samsula muck, frequently ponded, 0 to 1 percent slopes	53,893						
		85	Samsula	Series	0.0	0.5	1.0
		3	Myakka, depressional	Series	0.0	0.5	1.0
		3	Basinger, depressional	Series	0.0	0.5	1.0
		3	Kaliga	Series	0.0	0.5	1.0
		2	Anclote	Series	0.0	0.5	1.0
		2	Floridana, depressional	Series	0.0	0.5	1.0
		2	Sanibel	Series	0.0	0.5	1.0
15--Tavares fine sand, 0 to 5 percent slopes	53,679						
		85	Tavares	Series	0.0	3.0	5.0
		5	Candler	Series	0.0	3.0	5.0
		4	Apopka	Series	0.0	3.0	5.0
		3	Narcoossee	Series	0.0	1.0	2.0
		3	Zolfo	Series	0.0	1.0	2.0
17--Smyrna and Myakka fine sands	144,718						
		40	Smyrna, non-hydric	Series	0.0	1.0	2.0
		40	Myakka	Series	0.0	1.0	2.0
		15	Smyrna, hydric	Series	0.0	1.0	2.0
		2	Basinger	Series	0.0	1.0	2.0
		1	Immokalee, non-hydric	Series	0.0	1.0	2.0
		1	Ona, non-hydric	Series	0.0	1.0	2.0
		1	Pomona, non-hydric	Series	0.0	1.0	2.0
19--Floridana mucky fine sand, frequently ponded, 0 to 1 percent slopes	17,921						
		85	Floridana	Series	0.0	0.5	1.0
		5	Gator	Series	0.0	0.5	1.0
		3	Placid	Series	0.0	0.5	1.0
		3	Holopaw	Series	0.0	0.5	1.0
		2	Winder	Series	0.0	0.5	1.0
		2	Samsula	Series	0.0	0.5	1.0

Component Legend--Polk County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
21—Immokalee sand	30,288						
		75	Immokalee, non-hydric	Series	0.0	1.0	2.0
		10	Immokalee, hydric	Series	0.0	1.0	2.0
		5	Smyrna, non-hydric	Series	0.0	1.0	2.0
		5	Myakka	Series	0.0	1.0	2.0
		5	Basinger	Series	0.0	1.0	2.0
22—Pomello fine sand	10,350						
		80	Pomello	Series	0.0	1.0	2.0
		5	Immokalee, non-hydric	Series	0.0	1.0	2.0
		5	Archbold	Series	0.0	3.0	5.0
		5	Satellite	Series	0.0	1.0	2.0
		5	Duette	Series	0.0	1.0	2.0
23—Ona-Ona, wet, fine sand, 0 to 2 percent slopes	11,837						
		75	Ona	Series	0.0	1.0	2.0
		12	Ona, wet	Series	0.0	1.0	2.0
		5	Myakka	Series	0.0	1.0	2.0
		4	Basinger, hydric	Series	0.0	1.0	2.0
		4	Immokalee	Series	0.0	1.0	2.0
24—Nittaw sandy clay loam, frequently flooded	8,777						
		85	Nittaw	Taxadjunct	0.0	1.0	2.0
		5	Chobee	Series	0.0	1.0	2.0
		5	Kaliga	Series	0.0	1.0	2.0
		5	Floridana, depressional	Series	0.0	1.0	2.0
25—Placid and Myakka fine sands, depressional	18,486						
		60	Placid, depressional	Series	0.0	1.0	2.0
		30	Myakka, depressional	Series	0.0	1.0	2.0
		3	Basinger, depressional	Series	0.0	1.0	2.0
		3	Ona, hydric	Series	0.0	1.0	2.0
		2	St. Johns, hydric	Series	0.0	1.0	2.0
		2	Pomona, hydric	Series	0.0	1.0	2.0

Component Legend--Polk County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
29—St. Lucie fine sand, 0 to 5 percent slopes	2,360						
		90	St. Lucie	Series	0.0	3.0	5.0
		4	Archbold	Series	0.0	3.0	5.0
		3	Cassia	Series	0.0	1.0	2.0
		3	Myakka	Series	0.0	1.0	2.0
30—Pompano fine sand	10,466						
		85	Pompano	Series	0.0	1.0	2.0
		5	Anclote, depressional	Series	0.0	1.0	2.0
		5	Basinger	Series	0.0	1.0	2.0
		5	Placid, depressional	Series	0.0	1.0	2.0
31—Adamsville fine sand, 0 to 2 percent slopes	17,048						
		95	Adamsville	Series	0.0	1.0	2.0
		3	Myakka	Series	0.0	1.0	2.0
		2	Basinger	Series	0.0	1.0	2.0
32—Kaliga muck, frequently ponded, 0 to 1 percent slopes	26,090						
		80	Kaliga	Series	0.0	0.5	1.0
		5	Samsula	Series	0.0	0.5	1.0
		4	Tequesta	Series	0.0	0.5	1.0
		4	Felda	Series	0.0	0.5	1.0
		3	Placid	Series	0.0	0.5	1.0
		3	Chobee	Series	0.0	0.5	1.0
		1	Nittaw	Series	0.0	0.6	1.0
33—Holopaw fine sand, depressional	10,868						
		70	Holopaw, depressional	Series	0.0	1.0	2.0
		10	Basinger, depressional	Series	0.0	1.0	2.0
		10	Floridana, depressional	Series	0.0	1.0	2.0
		10	Felda, depressional	Series	0.0	1.0	2.0
34—Anclote mucky fine sand, depressional, 0 to 1 percent slopes	1,511						
		85	Anclote, depressional	Series	0.0	0.5	1.0
		6	Basinger, depressional	Series	0.0	0.5	1.0
		5	Floridana	Series	0.0	0.5	1.0
		2	Samsula, muck	Series	0.0	0.5	1.0
		2	Valkaria	Series	0.0	0.5	1.0

Component Legend--Polk County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
35---Hontoon muck, frequently ponded, 0 to 1 percent slopes	50,474						
		85	Hontoon	Series	0.0	0.5	1.0
		5	Samsula	Series	0.0	0.5	1.0
		5	Hontoon, drained	Series	0.0	0.5	1.0
		3	Placid	Series	0.0	0.5	1.0
		2	Basinger	Series	0.0	0.5	1.0
36---Basinger mucky fine sand, depressional	22,052						
		85	Basinger, depressional	Series	0.0	1.0	2.0
		4	Pompano	Series	0.0	1.0	2.0
		4	Placid, depressional	Series	0.0	1.0	2.0
		4	Samsula	Series	0.0	1.0	2.0
		3	St. Johns, hydric	Series	0.0	1.0	2.0
37---Placid fine sand, frequently flooded	2,113						
		85	Placid	Series	0.0	1.0	2.0
		3	Anclote, depressional	Series	0.0	1.0	2.0
		3	Basinger	Series	0.0	1.0	2.0
		3	Adamsville	Series	0.0	1.0	2.0
		3	Holopaw, depressional	Series	0.0	1.0	2.0
		3	Pompano	Series	0.0	1.0	2.0
40---Wauchula fine sand	15,916						
		65	Wauchula, non-hydric	Series	0.0	1.0	2.0
		15	Wauchula, hydric	Series	0.0	1.0	2.0
		7	Pompano	Series	0.0	1.0	2.0
		7	Lynne, non-hydric	Series	0.0	1.0	2.0
		6	Myakka, non-hydric	Series	0.0	1.0	2.0
41---St. Johns sand	2,413						
		40	St. Johns, non-hydric	Series	0.0	1.0	2.0
		20	St. Johns, hydric	Series	0.0	1.0	2.0
		10	Basinger	Series	0.0	1.0	2.0
		10	Samsula	Series	0.0	1.0	2.0
		10	Placid, depressional	Series	0.0	1.0	2.0
		10	Ona, non-hydric	Series	0.0	1.0	2.0

Component Legend--Polk County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
42--Felda fine sand	11,201						
		80	Felda	Series	0.0	1.0	2.0
		5	Bradenton, hydric	Series	0.0	1.0	2.0
		5	Oldsmar, non-hydric	Series	0.0	1.0	2.0
		5	Floridana, depressional	Series	0.0	1.0	2.0
		5	Malabar	Series	0.0	1.0	2.0
46--Astatula sand, 0 to 5 percent slopes	34,785						
		90	Astatula	Series	0.0	2.5	5.0
		5	Tavares	Series	0.0	2.5	5.0
		5	Candler, very deep loamy substratum	Series	0.0	3.0	5.0
47--Zolfo fine sand, 0 to 2 percent slopes	13,098						
		88	Zolfo	Series	0.0	1.0	2.0
		4	Myakka	Series	0.0	1.0	2.0
		3	Tavares	Series	0.0	3.0	5.0
		3	Millhopper	Series	0.0	3.0	5.0
		1	Lochloosa	Series	0.0	1.0	2.0
		1	Malabar	Series	0.0	1.0	2.0
58--Udorthents, excavated	2,653						
		100	Udorthents, excavated	Taxon above family	1.0	3.0	4.0
62--Wabasso fine sand	7,528						
		70	Wabasso, non-hydric	Series	0.0	1.0	2.0
		10	Wabasso, hydric	Series	0.0	1.0	2.0
		4	Eaugallie, non-hydric	Series	0.0	1.0	2.0
		4	Felda	Series	0.0	1.0	2.0
		3	Malabar	Series	0.0	1.0	2.0
		3	Holopaw, depressional	Series	0.0	1.0	2.0
		3	Floridana, depressional	Series	0.0	1.0	2.0
		3	Pomona, non-hydric	Series	0.0	1.0	2.0
68--Arents, 0 to 5 percent slopes	34,396						
		100	Arents	Taxon above family	2.0	4.0	5.0

Component Legend--Polk County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
70—Duette fine sand	6,301						
		85	Duette	Series	0.0	1.0	2.0
		5	Archbold	Series	0.0	3.0	5.0
		5	Pomello	Series	0.0	1.0	2.0
		5	Electra	Series	0.0	1.0	2.0
74—Narcoossee sand	8,489						
		90	Narcoossee	Series	0.0	1.0	2.0
		3	Myakka	Series	0.0	1.0	2.0
		3	Adamsville	Series	0.0	1.0	2.0
		2	Tavares	Series	0.0	3.0	5.0
		2	Pomello	Series	0.0	1.0	2.0
75—Valkaria sand	6,489						
		80	Valkaria	Series	0.0	1.0	2.0
		4	Basinger	Series	0.0	1.0	2.0
		4	Myakka	Series	0.0	1.0	2.0
		4	Malabar	Series	0.0	1.0	2.0
		4	Felda	Series	0.0	1.0	2.0
		4	Smyrna, non-hydric	Series	0.0	1.0	2.0
77—Satellite sand, 0 to 2 percent slopes	9,410						
		85	Satellite	Series	0.0	1.0	2.0
		6	Myakka	Series	0.0	1.0	2.0
		5	Immokatee	Series	0.0	1.0	2.0
		3	Basinger	Series	0.0	1.0	2.0
		1	Pompano	Series	0.0	1.0	2.0
80—Chobee fine sandy loam, frequently flooded	4,004						
		90	Chobee	Series	0.0	1.0	2.0
		3	Kaliga	Series	0.0	1.0	2.0
		3	Floridana, depressional	Series	0.0	1.0	2.0
		2	Nittaw	Taxadjunct	0.0	1.0	2.0
		2	Paisley, hydric	Series	0.0	1.0	2.0

Component Legend--Polk County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
82—Felda fine sand, 0 to 2 percent slopes, frequently flooded	6,522						
		83	Felda, flooded	Series	0.0	1.0	2.0
		7	Basinger, flooded	Series	0.0	0.5	1.0
		6	Floridana	Series	0.0	0.5	1.0
		4	Pineda	Series	0.0	1.0	2.0
83—Archbold sand, 0 to 5 percent slopes	9,294						
		90	Archbold	Series	0.0	3.0	5.0
		5	Duette	Series	0.0	1.0	2.0
		5	Satellite	Series	0.0	1.0	2.0
86—Felda fine sand, frequently ponded, 0 to 1 percent slopes	11,411						
		85	Felda	Series	0.0	0.5	1.0
		5	Floridana	Series	0.0	0.5	1.0
		3	Basinger	Series	0.0	0.5	1.0
		2	Winder	Series	0.0	0.5	1.0
		2	Eaton, depressional	Series	0.0	0.5	1.0
		1	Sanibel	Series	0.0	0.5	1.0
		1	Myakka	Series	0.0	1.0	2.0
		1	Kaliga	Series	0.0	0.5	1.0
87—Basinger fine sand	22,607						
		80	Basinger	Series	0.0	1.0	2.0
		4	Smyrna, non-hydric	Series	0.0	1.0	2.0
		4	Myakka, depressional	Series	0.0	1.0	2.0
		4	St. Johns, hydric	Series	0.0	1.0	2.0
		4	Placid, depressional	Series	0.0	1.0	2.0
		4	Immokalee, non-hydric	Series	0.0	1.0	2.0
88—Astatula sand, 5 to 12 percent slopes	6,137						
		90	Astatula	Series	5.0	8.0	12.0
		5	Tavares	Series	0.0	2.5	5.0
		5	Candler, very deep loamy substratum	Series	5.0	8.0	12.0

Component Legend--Polk County, Florida							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
89--Astatula sand, 12 to 20 percent slopes	189						
		90	Astatula	Series	12.0	14.0	20.0
		5	Tavares	Series	0.0	2.5	5.0
		5	Candler, very deep loamy substratum	Series	12.0	14.0	20.0
99--Water	105,018						
		100	Water	Miscellaneous area			

Data Source Information

Soil Survey Area: Highlands County, Florida

Survey Area Data: Version 15, Sep 14, 2016

Soil Survey Area: Polk County, Florida

Survey Area Data: Version 14, Sep 28, 2016

Map Unit Description (Brief, Generated)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, provide information on the composition of map units and properties of their components.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

The Map Unit Description (Brief, Generated) report displays a generated description of the major soils that occur in a map unit. Descriptions of non-soil (miscellaneous areas) and minor map unit components are not included. This description is generated from the underlying soil attribute data.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description (Brief, Generated)

Highlands County, Florida

Map Unit: 12—Basinger fine sand, 0 to 2 percent slopes

Component: Basinger (90%)

The Basinger component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on drainageways, coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during July, August. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: EauGallie (4%)

Generated brief soil descriptions are created for major soil components. The EauGallie soil is a minor component.

Component: Margate (3%)

Generated brief soil descriptions are created for major soil components. The Margate soil is a minor component.

Component: Placid, depressional (3%)

Generated brief soil descriptions are created for major soil components. The Placid soil is a minor component.

Polk County, Florida**Map Unit:** 3—Candler sand, 0 to 5 percent slopes**Component:** Candler (90%)

The Candler component makes up 90 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on marine terraces on coastal plains, knolls on marine terraces on coastal plains. The parent material consists of eolian deposits and/or sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Millhopper (5%)

Generated brief soil descriptions are created for major soil components. The Millhopper soil is a minor component.

Component: Tavares (5%)

Generated brief soil descriptions are created for major soil components. The Tavares soil is a minor component.

Map Unit: 5—EauGallie fine sand**Component:** EauGallie, non-hydric (65%)

The EauGallie, non-hydric component makes up 65 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: EauGallie, hydric (20%)

The EauGallie, hydric component makes up 20 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Felda (4%)

Generated brief soil descriptions are created for major soil components. The Felda soil is a minor component.

Component: Pomona, non-hydric (4%)

Generated brief soil descriptions are created for major soil components. The Pomona soil is a minor component.

Component: Malabar (4%)

Generated brief soil descriptions are created for major soil components. The Malabar soil is a minor component.

Component: Wabasso, non-hydric (3%)

Generated brief soil descriptions are created for major soil components. The Wabasso soil is a minor component.

Map Unit: 7—Pomona fine sand

Component: Pomona, non-hydric (70%)

The Pomona, non-hydric component makes up 70 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pomona, hydric (20%)

The Pomona, hydric component makes up 20 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Myakka (4%)

Generated brief soil descriptions are created for major soil components. The Myakka soil is a minor component.

Component: Smyrna, non-hydric (3%)

Generated brief soil descriptions are created for major soil components. The Smyrna soil is a minor component.

Component: Wauchula, non-hydric (3%)

Generated brief soil descriptions are created for major soil components. The Wauchula soil is a minor component.

Map Unit: 13—Samsula muck, frequently ponded, 0 to 1 percent slopes**Component: Samsula (85%)**

The Samsula component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of herbaceous organic material over sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 75 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Myakka, depressional (3%)

Generated brief soil descriptions are created for major soil components. The Myakka soil is a minor component.

Component: Basinger, depressional (3%)

Generated brief soil descriptions are created for major soil components. The Basinger soil is a minor component.

Component: Kaliga (3%)

Generated brief soil descriptions are created for major soil components. The Kaliga soil is a minor component.

Component: Anclole (2%)

Generated brief soil descriptions are created for major soil components. The Anclole soil is a minor component.

Component: Floridana, depressional (2%)

Generated brief soil descriptions are created for major soil components. The Floridana soil is a minor component.

Component: Sanibel (2%)

Generated brief soil descriptions are created for major soil components. The Sanibel soil is a minor component.

Map Unit: 15—Tavares fine sand, 0 to 5 percent slopes

Component: Tavares (85%)

The Tavares component makes up 85 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of eolian or sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 57 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Candler (5%)

Generated brief soil descriptions are created for major soil components. The Candler soil is a minor component.

Component: Apopka (4%)

Generated brief soil descriptions are created for major soil components. The Apopka soil is a minor component.

Component: Narcoossee (3%)

Generated brief soil descriptions are created for major soil components. The Narcoossee soil is a minor component.

Component: Zolfo (3%)

Generated brief soil descriptions are created for major soil components. The Zolfo soil is a minor component.

Map Unit: 17—Smyrna and Myakka fine sands

Component: Smyrna, non-hydric (40%)

The Smyrna, non-hydric component makes up 40 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Myakka (40%)

The Myakka component makes up 40 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Smyrna, hydric (15%)

The Smyrna, hydric component makes up 15 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Basinger (2%)

Generated brief soil descriptions are created for major soil components. The Basinger soil is a minor component.

Component: Immokalee, non-hydric (1%)

Generated brief soil descriptions are created for major soil components. The Immokalee soil is a minor component.

Component: Ona, non-hydric (1%)

Generated brief soil descriptions are created for major soil components. The Ona soil is a minor component.

Component: Pomona, non-hydric (1%)

Generated brief soil descriptions are created for major soil components. The Pomona soil is a minor component.

Map Unit: 19—Floridana mucky fine sand, frequently ponded, 0 to 1 percent slopes

Component: Floridana (85%)

The Floridana component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 11 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Gator (5%)

Generated brief soil descriptions are created for major soil components. The Gator soil is a minor component.

Component: Placid (3%)

Generated brief soil descriptions are created for major soil components. The Placid soil is a minor component.

Component: Holopaw (3%)

Generated brief soil descriptions are created for major soil components. The Holopaw soil is a minor component.

Component: Winder (2%)

Generated brief soil descriptions are created for major soil components. The Winder soil is a minor component.

Component: Samsula (2%)

Generated brief soil descriptions are created for major soil components. The Samsula soil is a minor component.

Map Unit: 21—Immokalee sand**Component: Immokalee, non-hydric (75%)**

The Immokalee, non-hydric component makes up 75 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Immokalee, hydric (10%)

The Immokalee, hydric component makes up 10 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces, coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Smyrna, non-hydric (5%)

Generated brief soil descriptions are created for major soil components. The Smyrna soil is a minor component.

Component: Myakka (5%)

Generated brief soil descriptions are created for major soil components. The Myakka soil is a minor component.

Component: Basinger (5%)

Generated brief soil descriptions are created for major soil components. The Basinger soil is a minor component.

Map Unit: 22—Pomello fine sand

Component: Pomello (80%)

The Pomello component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on ridges on marine terraces on coastal plains, knolls on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 33 inches during July, August, September, October, November. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Immokalee, non-hydric (5%)

Generated brief soil descriptions are created for major soil components. The Immokalee soil is a minor component.

Component: Archbold (5%)

Generated brief soil descriptions are created for major soil components. The Archbold soil is a minor component.

Component: Satellite (5%)

Generated brief soil descriptions are created for major soil components. The Satellite soil is a minor component.

Component: Duette (5%)

Generated brief soil descriptions are created for major soil components. The Duette soil is a minor component.

Map Unit: 23—Ona-Ona, wet, fine sand, 0 to 2 percent slopes

Component: Ona (75%)

The Ona component makes up 75 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Ona, wet (12%)

The Ona, wet component makes up 12 percent of the map unit. Slopes are 0 to 2 percent. This component is on sloughs on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 8 inches during July, August, September. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Myakka (5%)

Generated brief soil descriptions are created for major soil components. The Myakka soil is a minor component.

Component: Basinger, hydric (4%)

Generated brief soil descriptions are created for major soil components. The Basinger soil is a minor component.

Component: Immokalee (4%)

Generated brief soil descriptions are created for major soil components. The Immokalee soil is a minor component.

Map Unit: 24—Nittaw sandy clay loam, frequently flooded**Component:** Nittaw (85%)

The Nittaw component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is high. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during June, July, August, September. Organic matter content in the surface horizon is about 10 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Chobee (5%)

Generated brief soil descriptions are created for major soil components. The Chobee soil is a minor component.

Component: Kaliga (5%)

Generated brief soil descriptions are created for major soil components. The Kaliga soil is a minor component.

Component: Floridana, depressional (5%)

Generated brief soil descriptions are created for major soil components. The Floridana soil is a minor component.

Map Unit: 25—Placid and Myakka fine sands, depressional**Component:** Placid, depressional (60%)

The Placid, depressional component makes up 60 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Myakka, depressional (30%)

The Myakka, depressional component makes up 30 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Basinger, depressional (3%)

Generated brief soil descriptions are created for major soil components. The Basinger soil is a minor component.

Component: Ona, hydric (3%)

Generated brief soil descriptions are created for major soil components. The Ona soil is a minor component.

Component: St. Johns, hydric (2%)

Generated brief soil descriptions are created for major soil components. The St. Johns soil is a minor component.

Component: Pomona, hydric (2%)

Generated brief soil descriptions are created for major soil components. The Pomona soil is a minor component.

Map Unit: 29—St. Lucie fine sand, 0 to 5 percent slopes

Component: St. Lucie (90%)

The St. Lucie component makes up 90 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of eolian or sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Archbold (4%)

Generated brief soil descriptions are created for major soil components. The Archbold soil is a minor component.

Component: Cassia (3%)

Generated brief soil descriptions are created for major soil components. The Cassia soil is a minor component.

Component: Myakka (3%)

Generated brief soil descriptions are created for major soil components. The Myakka soil is a minor component.

Map Unit: 30—Pompano fine sand

Component: Pompano (85%)

The Pompano component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains, drainageways on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Ancloze, depressional (5%)

Generated brief soil descriptions are created for major soil components. The Ancloze soil is a minor component.

Component: Basinger (5%)

Generated brief soil descriptions are created for major soil components. The Basinger soil is a minor component.

Component: Placid, depressional (5%)

Generated brief soil descriptions are created for major soil components. The Placid soil is a minor component.

Map Unit: 31—Adamsville fine sand, 0 to 2 percent slopes

Component: Adamsville (95%)

The Adamsville component makes up 95 percent of the map unit. Slopes are 0 to 2 percent. This component is on rises, coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 20 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Myakka (3%)

Generated brief soil descriptions are created for major components. The Myakka soil is a minor component.

Component: Basinger (2%)

Generated brief soil descriptions are created for major components. The Basinger soil is a minor component.

Map Unit: 32—Kaliga muck, frequently ponded, 0 to 1 percent slopes

Component: Kaliga (80%)

The Kaliga component makes up 80 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions, coastal plains. The parent material consists of herbaceous organic material over loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 75 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Samsula (5%)

Generated brief soil descriptions are created for major soil components. The Samsula soil is a minor component.

Component: Tequesta (4%)

Generated brief soil descriptions are created for major soil components. The Tequesta soil is a minor component.

Component: Felda (4%)

Generated brief soil descriptions are created for major soil components. The Felda soil is a minor component.

Component: Placid (3%)

Generated brief soil descriptions are created for major soil components. The Placid soil is a minor component.

Component: Chobee (3%)

Generated brief soil descriptions are created for major soil components. The Chobee soil is a minor component.

Component: Nittaw (1%)

Generated brief soil descriptions are created for major soil components. The Nittaw soil is a minor component.

Map Unit: 33—Holopaw fine sand, depressional

Component: Holopaw, depressional (70%)

The Holopaw, depressional component makes up 70 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Basinger, depressional (10%)

Generated brief soil descriptions are created for major soil components. The Basinger soil is a minor component.

Component: Floridana, depressional (10%)

Generated brief soil descriptions are created for major soil components. The Floridana soil is a minor component.

Component: Felda, depressional (10%)

Generated brief soil descriptions are created for major soil components. The Felda soil is a minor component.

Map Unit: 34—Anclote mucky fine sand, depressional, 0 to 1 percent slopes

Component: Anclote, depressional (85%)

The Anclote, depressional component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 15 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 7 percent. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Basinger, depressional (6%)

Generated brief soil descriptions are created for major soil components. The Basinger soil is a minor component.

Component: Floridana (5%)

Generated brief soil descriptions are created for major soil components. The Floridana soil is a minor component.

Component: Samsula, muck (2%)

Generated brief soil descriptions are created for major soil components. The Samsula soil is a minor component.

Component: Valkaria (2%)

Generated brief soil descriptions are created for major soil components. The Valkaria soil is a minor component.

Map Unit: 35—Hontoon muck, frequently ponded, 0 to 1 percent slopes

Component: Hontoon (85%)

The Hontoon component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of herbaceous organic material. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 80 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Samsula (5%)

Generated brief soil descriptions are created for major soil components. The Samsula soil is a minor component.

Component: Hontoon, drained (5%)

Generated brief soil descriptions are created for major soil components. The Hontoon soil is a minor component.

Component: Placid (3%)

Generated brief soil descriptions are created for major soil components. The Placid soil is a minor component.

Component: Basinger (2%)

Generated brief soil descriptions are created for major soil components. The Basinger soil is a minor component.

Map Unit: 36—Basinger mucky fine sand, depressional

Component: Basinger, depressional (85%)

The Basinger, depressional component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 14 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pompano (4%)

Generated brief soil descriptions are created for major soil components. The Pompano soil is a minor component.

Component: Placid, depressional (4%)

Generated brief soil descriptions are created for major soil components. The Placid soil is a minor component.

Component: Samsula (4%)

Generated brief soil descriptions are created for major soil components. The Samsula soil is a minor component.

Component: St. Johns, hydric (3%)

Generated brief soil descriptions are created for major soil components. The St. Johns soil is a minor component.

Map Unit: 37—Placid fine sand, frequently flooded**Component:** Placid (85%)

The Placid component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Anclole, depressional (3%)

Generated brief soil descriptions are created for major soil components. The Anclole soil is a minor component.

Component: Basinger (3%)

Generated brief soil descriptions are created for major soil components. The Basinger soil is a minor component.

Component: Adamsville (3%)

Generated brief soil descriptions are created for major soil components. The Adamsville soil is a minor component.

Component: Holopaw, depressional (3%)

Generated brief soil descriptions are created for major soil components. The Holopaw soil is a minor component.

Component: Pompano (3%)

Generated brief soil descriptions are created for major soil components. The Pompano soil is a minor component.

Map Unit: 40—Wauchula fine sand**Component:** Wauchula, non-hydric (65%)

The Wauchula, non-hydric component makes up 65 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Wauchula, hydric (15%)

The Wauchula, hydric component makes up 15 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pompano (7%)

Generated brief soil descriptions are created for major soil components. The Pompano soil is a minor component.

Component: Lynne, non-hydric (7%)

Generated brief soil descriptions are created for major soil components. The Lynne soil is a minor component.

Component: Myakka, non-hydric (6%)

Generated brief soil descriptions are created for major soil components. The Myakka soil is a minor component.

Map Unit: 41—St. Johns sand

Component: St. Johns, non-hydric (40%)

The St. Johns, non-hydric component makes up 40 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: St. Johns, hydric (20%)

The St. Johns, hydric component makes up 20 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Basinger (10%)

Generated brief soil descriptions are created for major soil components. The Basinger soil is a minor component.

Component: Samsula (10%)

Generated brief soil descriptions are created for major soil components. The Samsula soil is a minor component.

Component: Placid, depressional (10%)

Generated brief soil descriptions are created for major soil components. The Placid soil is a minor component.

Component: Ona, non-hydric (10%)

Generated brief soil descriptions are created for major soil components. The Ona soil is a minor component.

Map Unit: 42—Felda fine sand**Component:** Felda (80%)

The Felda component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on drainageways on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, July, August, September, October, November, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3w. This soil meets hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 7 percent. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Bradenton, hydric (5%)

Generated brief soil descriptions are created for major soil components. The Bradenton soil is a minor component.

Component: Oldsmar, non-hydric (5%)

Generated brief soil descriptions are created for major soil components. The Oldsmar soil is a minor component.

Component: Floridana, depressional (5%)

Generated brief soil descriptions are created for major soil components. The Floridana soil is a minor component.

Component: Malabar (5%)

Generated brief soil descriptions are created for major soil components. The Malabar soil is a minor component.

Map Unit: 46—Astatula sand, 0 to 5 percent slopes

Component: Astatula (90%)

The Astatula component makes up 90 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of eolian or sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Tavares (5%)

Generated brief soil descriptions are created for major soil components. The Tavares soil is a minor component.

Component: Candler, very deep loamy substratum (5%)

Generated brief soil descriptions are created for major soil components. The Candler soil is a minor component.

Map Unit: 47—Zolfo fine sand, 0 to 2 percent slopes**Component: Zolfo (88%)**

The Zolfo component makes up 88 percent of the map unit. Slopes are 0 to 2 percent. This component is on rises on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 33 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Myakka (4%)

Generated brief soil descriptions are created for major components. The Myakka soil is a minor component.

Component: Tavares (3%)

Generated brief soil descriptions are created for major soil components. The Tavares soil is a minor component.

Component: Millhopper (3%)

Generated brief soil descriptions are created for major components. The Millhopper soil is a minor component.

Component: Lochloosa (1%)

Generated brief soil descriptions are created for major components. The Lochloosa soil is a minor component.

Component: Malabar (1%)

Generated brief soil descriptions are created for major components. The Malabar soil is a minor component.

Map Unit: 58—Udorthents, excavated**Component:** Udorthents, excavated (100%)

The Udorthents, excavated component makes up 100 percent of the map unit. Slopes are 1 to 4 percent. This component is on fills on marine terraces on coastal plains. The parent material consists of altered marine deposits. Depth to a root restrictive layer is greater than 60 inches. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Nonirrigated land capability classification is 8. This soil does not meet hydric criteria.

Map Unit: 62—Wabasso fine sand**Component:** Wabasso, non-hydric (70%)

The Wabasso, non-hydric component makes up 70 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Wabasso, hydric (10%)

The Wabasso, hydric component makes up 10 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: EauGallie, non-hydric (4%)

Generated brief soil descriptions are created for major soil components. The EauGallie soil is a minor component.

Component: Felda (4%)

Generated brief soil descriptions are created for major soil components. The Felda soil is a minor component.

Component: Malabar (3%)

Generated brief soil descriptions are created for major soil components. The Malabar soil is a minor component.

Component: Holopaw, depressional (3%)

Generated brief soil descriptions are created for major soil components. The Holopaw soil is a minor component.

Component: Floridana, depressional (3%)

Generated brief soil descriptions are created for major soil components. The Floridana soil is a minor component.

Component: Pomona, non-hydric (3%)

Generated brief soil descriptions are created for major soil components. The Pomona soil is a minor component.

Map Unit: 68—Arents, 0 to 5 percent slopes

Component: Arents (100%)

The Arents component makes up 100 percent of the map unit. Slopes are 2 to 5 percent. This component is on fills, rises on marine terraces on coastal plains. The parent material consists of altered marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 36 inches during January, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 1 percent. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map Unit: 70—Duette fine sand

Component: Duette (85%)

The Duette component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on rises on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 60 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Archbold (5%)

Generated brief soil descriptions are created for major soil components. The Archbold soil is a minor component.

Component: Pomello (5%)

Generated brief soil descriptions are created for major soil components. The Pomello soil is a minor component.

Component: Electra (5%)

Generated brief soil descriptions are created for major soil components. The Electra soil is a minor component.

Map Unit: 74—Narcoossee sand

Component: Narcoossee (90%)

The Narcoossee component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on rises on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 33 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Myakka (3%)

Generated brief soil descriptions are created for major soil components. The Myakka soil is a minor component.

Component: Adamsville (3%)

Generated brief soil descriptions are created for major soil components. The Adamsville soil is a minor component.

Component: Tavares (2%)

Generated brief soil descriptions are created for major soil components. The Tavares soil is a minor component.

Component: Pomello (2%)

Generated brief soil descriptions are created for major soil components. The Pomello soil is a minor component.

Map Unit: 75—Valkaria sand

Component: Valkaria (80%)

The Valkaria component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on drainageways on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Basinger (4%)

Generated brief soil descriptions are created for major soil components. The Basinger soil is a minor component.

Component: Myakka (4%)

Generated brief soil descriptions are created for major soil components. The Myakka soil is a minor component.

Component: Malabar (4%)

Generated brief soil descriptions are created for major soil components. The Malabar soil is a minor component.

Component: Felda (4%)

Generated brief soil descriptions are created for major soil components. The Felda soil is a minor component.

Component: Smyrna, non-hydric (4%)

Generated brief soil descriptions are created for major soil components. The Smyrna soil is a minor component.

Map Unit: 77—Satellite sand, 0 to 2 percent slopes

Component: Satellite (85%)

The Satellite component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on rises on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 18 inches during July, August, September. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Myakka (6%)

Generated brief soil descriptions are created for major soil components. The Myakka soil is a minor component.

Component: Immokalee (5%)

Generated brief soil descriptions are created for major soil components. The Immokalee soil is a minor component.

Component: Basinger (3%)

Generated brief soil descriptions are created for major soil components. The Basinger soil is a minor component.

Component: Pompano (1%)

Generated brief soil descriptions are created for major soil components. The Pompano soil is a minor component.

Map Unit: 80—Chobee fine sandy loam, frequently flooded

Component: Chobee (90%)

The Chobee component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of loamy alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 5 percent. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Kaliga (3%)

Generated brief soil descriptions are created for major soil components. The Kaliga soil is a minor component.

Component: Floridana, depressional (3%)

Generated brief soil descriptions are created for major soil components. The Floridana soil is a minor component.

Component: Nittaw (2%)

Generated brief soil descriptions are created for major soil components. The Nittaw soil is a minor component.

Component: Paisley, hydric (2%)

Generated brief soil descriptions are created for major soil components. The Paisley soil is a minor component.

Map Unit: 82—Felda fine sand, 0 to 2 percent slopes, frequently flooded

Component: Felda, flooded (83%)

The Felda, flooded component makes up 83 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during July, August, September, October, November. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Basinger, flooded (7%)

Generated brief soil descriptions are created for major soil components. The Basinger soil is a minor component.

Component: Floridana (6%)

Generated brief soil descriptions are created for major soil components. The Floridana soil is a minor component.

Component: Pineda (4%)

Generated brief soil descriptions are created for major soil components. The Pineda soil is a minor component.

Map Unit: 83—Archbold sand, 0 to 5 percent slopes

Component: Archbold (90%)

The Archbold component makes up 90 percent of the map unit. Slopes are 0 to 5 percent. This component is on knolls on marine terraces on coastal plains, ridges on marine terraces on coastal plains. The parent material consists of eolian or sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 57 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Duette (5%)

Generated brief soil descriptions are created for major soil components. The Duette soil is a minor component.

Component: Satellite (5%)

Generated brief soil descriptions are created for major soil components. The Satellite soil is a minor component.

Map Unit: 86—Felda fine sand, frequently ponded, 0 to 1 percent slopes**Component: Felda (85%)**

The Felda component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 2 percent. This component is in the R155XY011FL Slough ecological site. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Floridana (5%)

Generated brief soil descriptions are created for major soil components. The Floridana soil is a minor component.

Component: Basinger (3%)

Generated brief soil descriptions are created for major soil components. The Basinger soil is a minor component.

Component: Winder (2%)

Generated brief soil descriptions are created for major soil components. The Winder soil is a minor component.

Component: Eaton, depressional (2%)

Generated brief soil descriptions are created for major soil components. The Eaton soil is a minor component.

Component: Sanibel (1%)

Generated brief soil descriptions are created for major soil components. The Sanibel soil is a minor component.

Component: Myakka (1%)

Generated brief soil descriptions are created for major soil components. The Myakka soil is a minor component.

Component: Kaliga (1%)

Generated brief soil descriptions are created for major soil components. The Kaliga soil is a minor component.

Map Unit: 87—Basinger fine sand

Component: Basinger (80%)

The Basinger component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on drainageways on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Smyrna, non-hydric (4%)

Generated brief soil descriptions are created for major soil components. The Smyrna soil is a minor component.

Component: Myakka, depressional (4%)

Generated brief soil descriptions are created for major soil components. The Myakka soil is a minor component.

Component: St. Johns, hydric (4%)

Generated brief soil descriptions are created for major soil components. The St. Johns soil is a minor component.

Component: Placid, depressional (4%)

Generated brief soil descriptions are created for major soil components. The Placid soil is a minor component.

Component: Immokalee, non-hydric (4%)

Generated brief soil descriptions are created for major soil components. The Immokalee soil is a minor component.

Map Unit: 88—Astatula sand, 5 to 12 percent slopes

Component: Astatula (90%)

The Astatula component makes up 90 percent of the map unit. Slopes are 5 to 12 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of eolian or sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Tavares (5%)

Generated brief soil descriptions are created for major soil components. The Tavares soil is a minor component.

Component: Candler, very deep loamy substratum (5%)

Generated brief soil descriptions are created for major soil components. The Candler soil is a minor component.

Map Unit: 89—Astatula sand, 12 to 20 percent slopes**Component: Astatula (90%)**

The Astatula component makes up 90 percent of the map unit. Slopes are 12 to 20 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of eolian or sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Tavares (5%)

Generated brief soil descriptions are created for major soil components. The Tavares soil is a minor component.

Component: Candler, very deep loamy substratum (5%)

Generated brief soil descriptions are created for major soil components. The Candler soil is a minor component.

Map Unit: 99—Water

Component: Water (100%)

Generated brief soil descriptions are created for major soil components. The Water is a miscellaneous area.

Data Source Information

Soil Survey Area: Highlands County, Florida

Survey Area Data: Version 15, Sep 14, 2016

Soil Survey Area: Polk County, Florida

Survey Area Data: Version 14, Sep 28, 2016

Exhibit L

Department of Environmental Protection
Outstanding Florida Waters



Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Noah Valenstein
Secretary

July 20, 2017

Mr. Alan L. Davis
Land Planning Coordinator
Florida Forest Service
Florida Department of Agriculture and Consumer Services
The Conner Building
3125 Conner Boulevard, Suite J-237
Tallahassee, Florida 32399-1650

RE: Lake Wales Ridge State Forest

Dear Mr. Davis:

Thank you for your inquiry regarding the surface water quality classifications on and near Lake Wales Ridge State Forest in Polk County. Part of the site (Arbuckle Tract) has been designated as Outstanding Florida Waters (OFW) under subparagraph 62-302.700(9)(c)44., Florida Administrative Code (FAC). It appears that this tract was historically a state park that was designated as OFW, but was then subsequently transferred to the Florida Forest Service for management. All of the surface waters on or adjacent to the site are classified as Class III waters (subparagraph 62-302.400(17)(b)53., FAC), which is the statewide default classification.

If you have any questions or need additional information, please feel free to contact me at the letterhead address (mail station 6511), by phone at 850/245-8429, or via E-mail at Eric.Shaw@dep.state.fl.us.

Sincerely,

A handwritten signature in black ink, appearing to read "Eric Shaw".

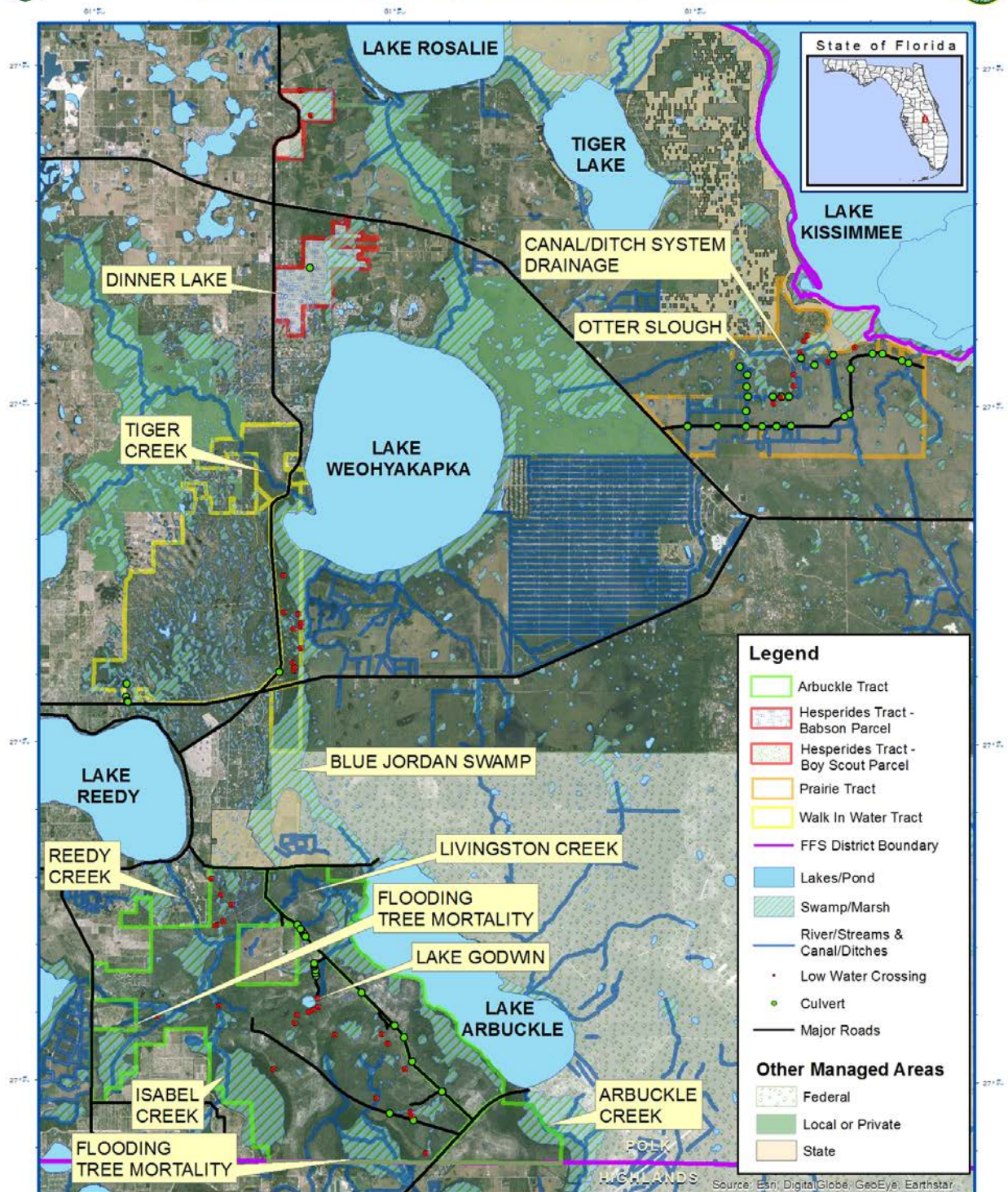
Eric Shaw
Environmental Manager
Water Quality Standards Program
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 6511
Tallahassee, FL 32399-2400
Phone: (850) 245-8429
Email: Eric.Shaw@dep.state.fl.us

Exhibit M

Water Resources Map & BMAP Map



LAKE WALES RIDGE STATE FOREST - FFS DISTRICT 14 - WATER RESOURCES



Map Date: Thursday, June 15, 2017

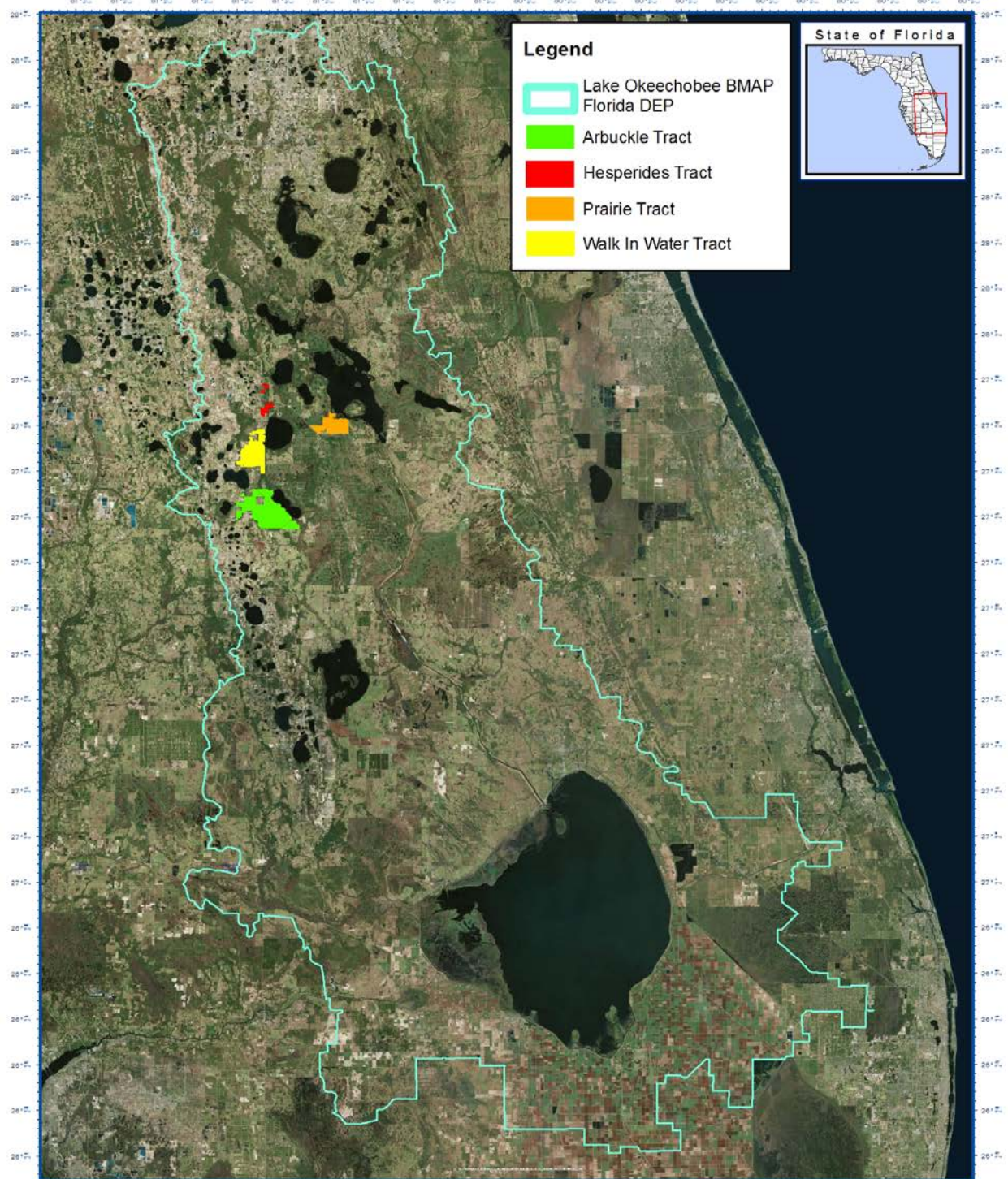
GENERAL DISCLAIMER
This map is the product of the Florida
Department of Agriculture and Consumer Services,
Florida Forest Service. No warranties, expressed or implied,
are for the data therein, its use, or its interpretation.



Florida Forest Service
Map Date: 6/15/2017
Managed Area Information courtesy
of the Florida Natural Areas Inventory
Coordinate System: Universal Transverse Mercator (UTM)
Zone 17 North
High Precision Geoidetic Network (HPGN) Datum



LAKE WALES RIDGE STATE FOREST - FFS DISTRICT 14 - BASIN MANAGEMENT ACTION PLAN MAP



Legend

- Lake Okeechobee BMAP Florida DEP
- Arbuckle Tract
- Hesperides Tract
- Prairie Tract
- Walk In Water Tract



Map Date: Friday, July 21, 2017

GENERAL DISCLAIMER
This map is the product of the Florida Department of Agriculture and Consumer Services, Florida Forest Service. No warranties, expressed or implied, are for the data therein, its use, or its interpretation.



Florida Forest Service
Map Date: 7/21/2017
Managed Area boundaries courtesy of the Florida Natural Areas Inventory
Coordinate System: Universal Transverse Mercator (UTM)
Zone 17 North
High Precision Geospatial Network (HPGN) Datum

Exhibit N

Florida Natural Areas Inventory Response



1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
850-224-8207
fax 850-681-9164
www.fnai.org

March 29, 2017

Candice Knothe
FDACS, Florida Forest Service
851 CR 630E
Frostproof, FL 33843

Dear Ms. Knothe,

Thank you for requesting information from the Florida Natural Areas Inventory (FNAI). We have compiled the following information for your project area.

Project: Lake Wales Ridge State Forest
Date Received: 3/7/2017
Location: Polk County

Based on the information available, this site appears to be located on or very near a significant region of scrub habitat, a natural community in decline that provides important habitat for several rare species within a small area. Additional consideration should be given to avoid and/or mitigate impacts to these natural resources, and to design land uses that are compatible with these resources.

Element Occurrences

A search of our maps and database indicates that we currently have several element occurrences mapped within the study area (see managed area summary report). Please be advised that a lack of element occurrences in the FNAI database is not a sufficient indication of the absence of rare or endangered species on a site.

Federally Listed Species

Our data indicate several federally listed species are present on or very near this site (see table for details). This statement should not be interpreted as a legal determination of presence or absence of federally listed species on a property.

The element occurrences data layer includes occurrences of rare species and natural communities. The map legend indicates that some element occurrences occur in the general vicinity of the label point. This may be due to lack of precision of the source data, or an element that occurs over an extended area (such as a wide ranging species or large natural community). For animals and plants, element occurrences generally refer to more than a casual sighting, they usually indicate a viable population of the species. Note that some element occurrences represent historically documented observations which may no longer be extant.



Florida Resources
and Environmental
Analysis Center

Institute of Science
and Public Affairs

The Florida State University

Likely and Potential Rare Species

In addition to documented occurrences, other rare species and natural communities may be identified on or near the site based on habitat models and species range models (see enclosed Biodiversity

Tracking Florida's Biodiversity

Matrix Report). These species should be taken into consideration in field surveys, land management, and impact avoidance and mitigation.

FNAI habitat models indicate areas, which based on land cover type, offer suitable habitat for one or more rare species that is known to occur in the vicinity. Habitat models have been developed for approximately 300 of the rarest species tracked by the Inventory, including all federally listed species.

FNAI species range models indicate areas that are within the known or predicted range of a species, based on climate variables, soils, vegetation, and/or slope. Species range models have been developed for approximately 340 species, including all federally listed species.

The FNAI Biodiversity Matrix Geodatabase compiles Documented, Likely, and Potential species and natural communities for each square mile Matrix Unit statewide.

Land Acquisition Projects

This site appears to be located within the Lake Wales Ridge Ecosystem and the Bombing Range Ridge Florida Forever BOT Projects, which are part of the State of Florida's Conservation and Recreation Lands land acquisition program. A description of these projects can be found at http://www.dep.state.fl.us/lands/FFplan_county.htm. For more information on this Florida Forever Project, contact the Florida Department of Environmental Protection, Division of State Lands.

Florida Forever Board of Trustees (BOT) projects are proposed and acquired through the Florida Department of Environmental Protection, Division of State Lands. The state has no specific land management authority over these lands until they are purchased.

The Inventory always recommends that professionals familiar with Florida's flora and fauna conduct a site-specific survey to determine the current presence or absence of rare, threatened, or endangered species.

Please visit www.fnai.org/trackinglist.cfm for county or statewide element occurrence distributions and links to more element information.

The database maintained by the Florida Natural Areas Inventory is the single most comprehensive source of information available on the locations of rare species and other significant ecological resources. However, the data are not always based on comprehensive or site-specific field surveys. Therefore this information should not be regarded as a final statement on the biological resources of the site being considered, nor should it be substituted for on-site surveys. Inventory data are designed for the purposes of conservation planning and scientific research, and are not intended for use as the primary criteria for regulatory decisions.

Information provided by this database may not be published without prior written notification to the Florida Natural Areas Inventory, and the Inventory must be credited as an information source in these publications. FNAI data may not be resold for profit.

This report is made available at no charge due to funding from the Florida Department of Environmental Protection, Division of State Lands.

Thank you for your use of FNAI services. If I can be of further assistance, please contact me at (850) 224-8207 or at npasco@fnai.fsu.edu.

Sincerely,

Nathan Pasco

Nathan Pasco
GIS / Data Services

Encl

Tracking Florida's Biodiversity



Florida Natural Areas Inventory
Managed Area Element Summary
Lake Wales Ridge State Forest



SCIENTIFIC NAME	COMMON NAME	Global rank	State rank	Federal status	State status
PLANTS AND LICHENS					
<i>Bonamia grandiflora</i>	Florida Bonamia	G3	S3	LT	E
<i>Calamintha ashei</i>	Ashe's Savory	G3	S3	N	T
<i>Chionanthus pygmaeus</i>	Pygmy Fringe Tree	G2G3	S2S3	LE	E
<i>Chrysopsis highlandsensis</i>	Highlands Goldenaster	G2	S2	N	E
<i>Cladonia perforata</i>	Perforate Reindeer Lichen	G1	S1	LE	E
<i>Clitoria fragrans</i>	Scrub Pigeon-wing	G3	S3	LT	E
<i>Conradina brevifolia</i>	Short-leaved Rosemary	G2Q	S2	LE	E
<i>Eriogonum longifolium</i> var. <i>gnaphalifolium</i>	Scrub Buckwheat	G4T3	S3	LT	E
<i>Hypericum cumulicola</i>	Highlands Scrub Hypericum	G2	S2	LE	E
<i>Lechea cernua</i>	Nodding Pinweed	G3	S3	N	T
<i>Lechea divaricata</i>	Pine Pinweed	G2	S2	N	E
<i>Liatris ohlingerae</i>	Florida Blazing Star	G2	S2	LE	E
<i>Nolina brittoniana</i>	Britton's Beargrass	G3	S3	LE	E
<i>Panicum abscissum</i>	Cutthroat Grass	G3	S3	N	E
<i>Paronychia chartacea</i> ssp. <i>chartacea</i>	Paper-like Nailwort	G3T3	S3	LT	E
<i>Polygala lewtonii</i>	Lewton's Polygala	G2G3	S2S3	LE	E
<i>Polygonella basiramia</i>	Florida Jointweed	G3	S3	LE	E
<i>Polygonella myriophylla</i>	Small's Jointweed	G3	S3	LE	E
<i>Prunus geniculata</i>	Scrub Plum	G3	S3	LE	E
<i>Rhynchospora megaplumosa</i>	Large-plumed Beaksedge	G2	S2	N	E
<i>Schizachyrium niveum</i>	Scrub Bluestem	G1G2	S1S2	N	E
<i>Stylisma abdita</i>	Scrub Stylisma	G3	S3	N	E
<i>Thelypteris serrata</i>	Toothed Maiden Fern	G5	S1	N	E
<i>Warea carteri</i>	Carter's Warea	G3	S3	LE	E
<i>Ziziphus celata</i>	Scrub Ziziphus	G1	S1	LE	E
AMPHIBIANS					
<i>Lithobates capito</i>	Carolina Gopher Frog	G3	S3	N	N
REPTILES					
<i>Drymarchon couperi</i>	Eastern Indigo Snake	G3Q	S3	LT	FT
<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	ST
<i>Plestiodon egregius lividus</i>	Blue-tailed Mole Skink	G5T2	S2	LT	FT
<i>Plestiodon reynoldsi</i>	Sand Skink	G2	S2	LT	FT
<i>Sceloporus woodi</i>	Florida Scrub Lizard	G2G3	S2S3	N	N
BIRDS					
<i>Aphelocoma coerulescens</i>	Florida Scrub-Jay	G2	S2	LT	FT
<i>Buteo brachyurus</i>	Short-tailed Hawk	G4G5	S1	N	N
<i>Elanoides forficatus</i>	Swallow-tailed Kite	G5	S2	N	N
<i>Haliaeetus leucocephalus</i>	Bald Eagle	G5	S3	N	N
<i>Peucaea aestivalis</i>	Bachman's Sparrow	G3	S3	N	N
<i>Picoides villosus</i>	Hairy Woodpecker	G5	S3	N	N
MAMMALS					
<i>Mustela frenata peninsulæ</i>	Florida Long-tailed Weasel	G5T3	S3	N	N
<i>Neofiber alleni</i>	Round-tailed Muskrat	G3	S3	N	N

Note: Summary includes all documented and likely species occurrence records currently in the FNAI database.



Florida Natural Areas Inventory
Managed Area Element Summary
Lake Wales Ridge State Forest



SCIENTIFIC NAME	COMMON NAME	Global rank	State rank	Federal status	State status
MAMMALS (cont.)					
<i>Podomys floridanus</i>	Florida Mouse	G3	S3	N	N
<i>Sciurus niger shermani</i>	Sherman's Fox Squirrel	G5T3	S3	N	SSC
<i>Ursus americanus floridanus</i>	Florida Black Bear	G5T2	S2	N	N
INVERTEBRATES					
<i>Aethecerinus hornii</i>	Horn's Aethecerinus Long-Horned Beetle	G2	S2	N	N
<i>Aneflomorpha delongi</i>	Delong's Aneflomorpha Long-Horned Beetle	G2	S1S2	N	N
<i>Aphodius troglodytes</i>	Gopher Tortoise Aphodius Beetle	G2G3	S2	N	N
<i>Cernotina truncona</i>	Florida Cernotinian Caddisfly	G4	S3	N	N
<i>Chelyoxenus xerobatis</i>	Gopher Tortoise Hister Beetle	G2G3	S2	N	N
<i>Chimarra florida</i>	Floridian Finger-net Caddisfly	G4	S3S4	N	N
<i>Cicindela highlandensis</i>	Highlands Tiger Beetle	G2G3	S2S3	C	N
<i>Cicindela scabrosa</i>	Scrub Tiger Beetle	G3	S3	N	N
<i>Dasymutilla archboldi</i>	Lake Wales Ridge Velvet Ant	G2G3	S2S3	N	N
<i>Dorymyrmex flavopectus</i>	Bi-colored Scrub Cone Ant	G2	S2	N	N
<i>Floridobolus penneri</i>	Florida Scrub Millipede	G1G2	S1S2	N	N
<i>Geolycosa xera</i>	McCrone's Burrowing Wolf Spider	G2G3	S2S3	N	N
<i>Geopsammodius relictillus</i>	Relictual Tiny Sand-loving Scarab	G2G3	S2S3	N	N
<i>Haroldiataenius saramari</i>	Sand Pine Scrub Ataenius Beetle	G3G4	S3S4	N	N
<i>Hetaerina americana</i>	American Rubyspot	G5	S2	N	N
<i>Ischyrys dunedinensis</i>	Three Spotted Pleasing Fungus Beetle	G2G3	S2S3	N	N
<i>Keltonia rubrofemorata</i>	Scrub Wireweed Mirid Bug	G2	S2	N	N
<i>Latrodectus bishopi</i>	Red Widow Spider	G2G3	S2S3	N	N
<i>Melanoplus tequestae</i>	Tequesta Grasshopper	G2G3	S2S3	N	N
<i>Nectopsyche tavana</i>	Tavares White Miller Caddisfly	G3	S3	N	N
<i>Oecetis porteri</i>	Porter's Long-horn Caddisfly	G3G4	S2S3	N	N
<i>Onthophagus aciculatulus</i>	Sandyland Onthophagus Beetle	G2	S2	N	N
<i>Onthophagus polyphemi polyphemi</i>	Punctate Gopher Tortoise Onthophagus Beetle	G2G3T2T	S2	N	N
<i>Orthotrichia curta</i>	Short Orthotrichian Microcaddisfly	G4	S2S3	N	N
<i>Photomorphus archboldi</i>	Nocturnal Scrub Velvet Ant	G2	S2	N	N
<i>Phyllophaga elongata</i>	Elongate June Beetle	G3	S3	N	N
<i>Phyllophaga panorpa</i>	Southern Lake Wales Ridge June Beetle	G1	S1	N	N
<i>Pleotomodes needhami</i>	Ant-loving Scrub Firefly	G1G2	S1S2	N	N
<i>Plesioclytus relictus</i>	Florida Relictual Long-horned Beetle	G1	S1	N	N
<i>Praticolella bakeri</i>	Ridge Scrubsnail	G2G3	S2S3	N	N
<i>Selonodon archboldi</i>	Archbold Cebrionid Beetle	G1G2	S1S2	N	N
<i>Serica frosti</i>	Frost's Silky June Beetle	G1G2	S1S2	N	N
<i>Sosippus placidus</i>	Lake Placid Funnel Wolf Spider	G1G2	S1S2	N	N
<i>Stenacron floridense</i>	A Mayfly	G3G4	S3S4	N	N
<i>Telamona archboldi</i>	Archbold's Treehopper	G1	S1	N	N
<i>Trigonopeltastes floridana</i>	Scrub Palmetto Flower Scarab Beetle	G2G3	S2S3	N	N

Note: Summary includes all documented and likely species occurrence records currently in the FNAI database.



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FLORIDA
Natural Areas
INVENTORY

Florida Natural Areas Inventory
Managed Area Element Summary
Lake Wales Ridge State Forest



SCIENTIFIC NAME	COMMON NAME	Global rank	State rank	Federal status	State status
INVERTEBRATES (cont.) <i>Typocerus fulvocinctus</i>	Yellow-banded Typocerus Long-horned Beetle	G2G3	S2S3	N	N

Note: Summary includes all documented and likely species occurrence records currently in the FNAI database.



Florida Natural Areas Inventory

Managed Area Element Summary

Lake Wales Ridge State Forest



SCIENTIFIC NAME	COMMON NAME	Global rank	State rank	Federal status	State status
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Using a ranking system developed by NatureServe and the Natural Heritage Program Network, the Florida Natural Areas Inventory assigns two ranks for 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 (EOs), estimated abundance (number of individuals for species; area for natural communities), geographic range, estimated number of adequately protected EOs, relative threat of destruction, and ecological fragility.

FNAI GLOBAL ELEMENT RANK

- 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 man-made 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 and local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from 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 = Unrankable; due to a lack of information no rank or range can be assigned (e.g., GUT2).
- GNA = Ranking is not applicable because the element is not a suitable target for conservation (e.g. a hybrid species).
- GNR = Element not yet ranked (temporary).
- GNRTR = Neither the element nor the taxonomic subgroup has yet been ranked.

FNAI STATE ELEMENT RANK

- 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 and local in Florida (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.
- S4 = Apparently secure in Florida (may be rare in parts of range).
- S5 = Demonstrably secure in Florida.
- SH = Of historical occurrence in Florida, possibly extirpated, but may be rediscovered (e.g., ivory-billed woodpecker).
- SX = Believed to be extirpated throughout Florida.
- SU = Unrankable; due to a lack of information no rank or range can be assigned.
- SNA = State ranking is not applicable because the element is not a suitable target for conservation (e.g. a hybrid species).
- SNR = Element not yet ranked (temporary).

FEDERAL LEGAL STATUS

Note: Summary includes all documented and likely species occurrence records currently in the FNAI database.



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Florida Natural Areas Inventory

Managed Area Element Summary

Lake Wales Ridge State Forest



Legal status information provided by FNAI for information only. For official definitions and lists of protected species, consult the relevant federal agency.

Definitions derived from U.S. Endangered Species Act of 1973, Sec. 3. Note that the federal status given by FNAI refers only to Florida populations and that federal status may differ elsewhere.

C = Candidate species for which federal listing agencies have sufficient information on biological vulnerability and threats to support proposing to list the species as Endangered or Threatened.
LE = Endangered: species in danger of extinction throughout all or a significant portion of its range.
LE, LT = Species currently listed endangered in a portion of its range but only listed as threatened in other areas
LE, PDL = Species currently listed endangered but has been proposed for delisting.
LE, PT = Species currently listed endangered but has been proposed for listing as threatened.
LE, XN = Species currently listed endangered but tracked population is a non-essential experimental population.
LT = Threatened: species likely to become Endangered within the foreseeable future throughout all or a significant portion of its range.
SAT = Treated as threatened due to similarity of appearance to a species which is federally listed such that enforcement personnel have difficulty in attempting to differentiate between the listed and unlisted species.
SC = Not currently listed, but considered a "species of concern" to USFWS.

STATE LEGAL STATUS

Provided by FNAI for information only. For official definitions and lists of protected species, consult the relevant state agency.

Animals: Definitions derived from "Florida's Endangered Species and Species of Special Concern, Official Lists" published by Florida Fish and Wildlife Conservation Commission, 1 August 1997, and subsequent updates.

FE = Listed as Endangered Species at the Federal level by the U. S. Fish and Wildlife Service
FT = Listed as Threatened Species at the Federal level by the U. S. Fish and Wildlife Service
F(XN) = Federal listed as an experimental population in Florida
FT(S/A) = Federal Threatened due to similarity of appearance
ST = State population listed as Threatened by the FFWCC. Defined as a species, subspecies, or isolated population which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat is decreasing in area at a rapid rate and as a consequence is destined or very likely to become an endangered species within the foreseeable future. (ST* for *Ursus americanus floridanus* (Florida black bear) indicates that this status does not apply in Baker and Columbia counties and in the Apalachicola National Forest. ST* for *Neovison vison* pop.1 (Southern mink, South Florida population) indicates that this status applies to the Everglades population only.)
SSC = Listed as Species of Special Concern by the FFWCC. Defined as a population which warrants special protection, recognition, or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance, or substantial human exploitation which, in the foreseeable future, may result in its becoming a threatened species. (SSC* indicates that a species has SSC status only in selected portions of its range in Florida. SSC* for *Pandion haliaetus* (Osprey) indicates that this status applies in Monroe county only.)
N = Not currently listed, nor currently being considered for listing.

Plants: Definitions derived from Sections 581.011 and 581.185(2), Florida Statutes, and the Preservation of Native Flora of Florida Act, 5B-40.001. FNAI does not track all state-regulated plant species; for a complete list of state-regulated plant species, call Florida Division of Plant Industry, 352-372-3505 or see: <http://www.doacs.state.fl.us/pi/>.



Florida Natural Areas Inventory
Managed Area Element Summary
Lake Wales Ridge State Forest



LE = Endangered: species of plants native to Florida 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; includes all species determined to be endangered or threatened pursuant to the U.S. Endangered Species Act.

LT = Threatened: 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 number as to cause them to be Endangered.

N = Not currently listed, nor currently being considered for listing.



Florida Natural Areas Inventory Aggregated Biodiversity Matrix Report



Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Documented					
<i>Aethecerinus hornii</i>	Horn's Aethecerinus Long-Horned Bee	G2	S2	N	N
<i>Aneflomorpha delongi</i>	Delong's Aneflomorpha Long-Horned		S1S2	N	N
<i>Anomala exigua</i>	Pygmy Anomala Scarab Beetle	G1	S1	N	N
<i>Aphelocoma coerulescens</i>	Florida Scrub-Jay	G2	S2	LT	FT
<i>Aphodius troglodytes</i>	Gopher Tortoise Aphodius Beetle	G2G3	S2	N	N
Basin swamp		G4	S3	N	N
Baygall			S4	N	N
<i>Bonamia grandiflora</i>	Florida Bonamia	G3	S3	LT	E
<i>Calamintha ashei</i>	Ashe's Savory		S3	N	T
<i>Chelyoxenus xerobatis</i>	Gopher Tortoise Hister Beetle	G2G3	S2	N	N
<i>Chionanthus pygmaeus</i>	Pygmy Fringe Tree		S2S3	LE	E
<i>Chrysopsis highlandsensis</i>	Highlands Goldenaster	G2	S2	N	E
<i>Cicindela highlandensis</i>	Highlands Tiger Beetle	G2G3	S2S3	C	N
<i>Cicindela scabrosa</i>	Scrub Tiger Beetle	G3	S3	N	N
<i>Cladonia perforata</i>	Perforate Reindeer Lichen	G1	S1	LE	E
<i>Clitoria fragrans</i>	Scrub Pigeon-wing	G3	S3	LT	E
<i>Conradina brevifolia</i>	Short-leaved Rosemary	G2Q	S2	LE	E
<i>Dasymutilla archboldi</i>	Lake Wales Ridge Velvet Ant	G2G3	S2S3	N	N
<i>Dorymyrmex flavopectus</i>	Bi-colored Scrub Cone Ant	G2	S2	N	N
<i>Drymarchon couperi</i>	Eastern Indigo Snake	G3Q	S3	T	FT
<i>Eriogonum longifolium</i> var. <i>gnaphalifolium</i>	Scrub Buckwheat	G4T3	S3	LT	E
<i>Floridobolus penneri</i>	Florida Scrub Millipede	G1G2	S1S2	N	N
<i>Geopsammodius relictillus</i>	Relictual Tiny Sand-loving Scarab	G2G3	S2S3	N	N
<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	C	ST
<i>Haliaeetus leucocephalus</i>	Bald Eagle	G5	S3	N	N
<i>Haroldiaaenius saramari</i>	Sand Pine Scrub Ataenius Beetle	G3G4	S3S4	N	N
Hydric hammock		G4	S4	N	N
<i>Hypericum cumulicola</i>	Highlands Scrub Hypericum	G2	S2	LE	E
<i>Ischyrys dunedinensis</i>	Three Spotted Pleasing Fungus Beetl	G2G3	S2S3	N	N
<i>Keltonia rubrofemorata</i>	Scrub Wireweed Mirid Bug	G2	S2	N	N
<i>Liatris ohlingerae</i>	Florida Blazing Star		S2	LE	E
<i>Melanoplus forcipatus</i>	Broad Cercus Scrub Grasshopper		S2	N	N
<i>Melanoplus tequestae</i>	Tequesta Grasshopper	G2G3	S2S3	N	N
<i>Nectopsyche tavana</i>	Tavares White Miller Caddisfly	G3	S3	N	N
<i>Nolina brittoniana</i>	Britton's Beargrass		S3	LE	E
<i>Oecetis porteri</i>	Porter's Long-horn Caddisfly	G3G4	S2S3	N	N
<i>Onthophagus aciculatulus</i>	Sandyland Onthophagus Beetle	G2	S2	N	N
<i>Onthophagus polyphemi polyphemi</i>	Punctate Gopher Tortoise Onthophag	G2G3T2T3	S2	N	N
<i>Orthotrichia curta</i>	Short Orthotrichian Microcaddisfly	G4	S2S3	N	N
<i>Panicum abscissum</i>	Cutthroat Grass	G3	S3	N	E
<i>Paronychia chartacea</i> ssp. <i>chartacea</i>	Paper-like Nailwort	G3T3	S3	LT	E
<i>Photomorphus archboldi</i>	Nocturnal Scrub Velvet Ant	G2	S2	N	N
<i>Phyllophaga elongata</i>	Elongate June Beetle	G3	S3	N	N
<i>Picoides villosus</i>	Hairy Woodpecker	G5	S3	N	N
<i>Pleotomodes needhami</i>	Ant-loving Scrub Firefly	G1G2	S1S2	N	N
<i>Plesioclytus relictus</i>	Florida Relictual Long-horned Beetle	G1	S1	N	N
<i>Plestiodon reynoldsi</i>	Sand Skink	G2	S2	T	FT
<i>Podomys floridanus</i>	Florida Mouse	G3	S3	N	SSC
<i>Polygala lewtonii</i>	Lewton's Polygala	G2G3	S2S3	LE	E
<i>Polygonella basiramaia</i>	Florida Jointweed	G3	S3	LE	E

Definitions: Documented - Rare species and natural communities documented on or near this site.
 Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
 Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
 Potential - This site lies within the known or predicted range of the species listed.



Florida Natural Areas Inventory Aggregated Biodiversity Matrix Report



Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
<i>Polygonella myriophylla</i>	Small's Jointweed	G3	S3	LE	E
<i>Prunus geniculata</i>	Scrub Plum		S3	LE	E
<i>Rhynchospora megaplumosa</i>	Large-plumed Beaksedge	G2	S2	N	E
<i>Romulus globosus</i>	Round-Necked Romulus Long-Hornet	G1G2	S1S2	N	N
<i>Rostrhamus sociabilis</i>	Snail Kite	G4G5	S2	LE	N
Sandhill		G3	S2	N	N
<i>Sceloporus woodi</i>	Florida Scrub Lizard	G2G3	S2S3	N	N
<i>Schizachyrium niveum</i>	Scrub Bluestem	G1G2	S1S2	N	E
Scrub		G2	S2	N	N
<i>Selonodon archboldi</i>	Archbold Cebrionid Beetle	G1G2	S1S2	N	N
<i>Stenacron floridense</i>	A Mayfly	G3G4	S3S4	N	N
<i>Stylisma abdita</i>	Scrub Stylisma	G3	S3	N	E
<i>Telamona archboldi</i>	Archbold's Treehopper	G1	S1	N	N
<i>Thelypteris serrata</i>	Toothed Maiden Fern	G5	S1	N	E
<i>Trigonopeltastes floridana</i>	Scrub Palmetto Flower Scarab Beetle	G2G3	S2S3	N	N
<i>Typocerus fulvocinctus</i>	Yellow-banded Typocerus Long-horn		S2S3	N	N
<i>Warea carteri</i>	Carter's Warea	G3	S3	LE	E
<i>Ziziphus celata</i>	Scrub Ziziphus	G1	S1	LE	E
Documented-Historic					
<i>Geolycosa xera</i>	McCrone's Burrowing Wolf Spider	G2G3	S2S3	N	N
<i>Latrodectus bishopi</i>	Red Widow Spider		S2S3	N	N
<i>Lechea cernua</i>	Nodding Pinweed	G3	S3	N	T
<i>Lechea divaricata</i>	Pine Pinweed	G2	S2	N	E
<i>Lithobates capito</i>	Gopher Frog	G3	S3	N	SSC
<i>Phyllophaga panorpa</i>	Southern Lake Wales Ridge June Bee	G1	S1	N	N
<i>Pituophis melanoleucus</i>	Pine Snake	G4	S3	N	SSC
<i>Plestiodon egregius lividus</i>	Blue-tailed Mole Skink	G5T2	S2	T	FT
<i>Serica frosti</i>	Frost's Silky June Beetle	G1G2	S1S2	N	N
<i>Sosippus placidus</i>	Lake Placid Funnel Wolf Spider		S1S2	N	N
Likely					
<i>Caracara cheriway</i>	Crested Caracara	G5	S2	LT	FT
Dry prairie		G2	S2	N	N
<i>Euphyes berryi</i>	Berry's Skipper		S2	N	N
<i>Hetaerina americana</i>	American Rubyspot	G5	S2	N	N
Mesic flatwoods		G4	S4	N	N
<i>Mycteria americana</i>	Wood Stork		S2	LT	FT
<i>Picoides borealis</i>	Red-cockaded Woodpecker	G3	S2	LE	FE
Sandhill upland lake			S2	N	N
Scrubby flatwoods		G2	S2?	N	N
Upland hardwood forest		G5	S3	N	N
<i>Ursus americanus floridanus</i>	Florida Black Bear	G5T2	S2	N	N
Potential					
<i>Agrimonia incisa</i>	Incised Groove-bur	G3	S2	N	T
<i>Ammodramus savannarum floridanus</i>	Florida Grasshopper Sparrow	G5T1	S1	LE	FE
<i>Andropogon arctatus</i>	Pine-woods Bluestem	G3	S3	N	T
<i>Athene cunicularia floridana</i>	Florida Burrowing Owl	G4T3	S3	N	SSC
<i>Bird Rookery</i>		G5	SNR	N	N
<i>Buteo brachyurus</i>	Short-tailed Hawk	G4G5	S1	N	N

Definitions: Documented - Rare species and natural communities documented on or near this site.
 Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
 Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
 Potential - This site lies within the known or predicted range of the species listed.



1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax

Florida Natural Areas Inventory

Aggregated Biodiversity Matrix Report



Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
<i>Calopogon multiflorus</i>	Many-flowered Grass-pink	G2G3	S2S3	N	T
<i>Carex chapmanii</i>	Chapman's Sedge	G3	S3	N	T
<i>Centrosema arenicola</i>	Sand Butterfly Pea	G2Q	S2	N	E
<i>Coelorachis tuberculosa</i>	Piedmont Jointgrass	G3	S3	N	T
<i>Corynorhinus rafinesquii</i>	Rafinesque's Big-eared Bat	G3G4	S2	N	N
<i>Crotalaria avonensis</i>	Avon Park Rabbit-bells	G1	S1	LE	E
<i>Dicerandra christmanii</i>	Garrett's Scrub Balm		S1	LE	E
<i>Dicerandra frutescens</i>	Scrub Mint		S1	LE	E
<i>Egretta caerulea</i>	Little Blue Heron	G5	S4	N	SSC
<i>Egretta thula</i>	Snowy Egret		S3	N	SSC
<i>Elanoides forficatus</i>	Swallow-tailed Kite		S2	N	N
<i>Eptesicus fuscus</i>	Big Brown Bat		S3	N	N
<i>Eudocimus albus</i>	White Ibis		S4	N	SSC
<i>Grus canadensis pratensis</i>	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
<i>Gymnopogon chapmanianus</i>	Chapman's Skeletongrass	G3	S3	N	N
<i>Hartwrightia floridana</i>	Hartwrightia	G2	S2	N	T
<i>Heterodon simus</i>	Southern Hognose Snake		S2	N	N
<i>Hypericum edisonianum</i>	Edison's Ascyrum		S2	N	E
<i>Illicium parviflorum</i>	Star Anise		S2	N	E
<i>Lampropeltis extenuata</i>	Short-tailed Snake	G3	S3	N	ST
<i>Litsea aestivalis</i>	Pondspice	G3?	S2	N	E
<i>Matelea floridana</i>	Florida Spiny-pod	G2	S2	N	E
<i>Mustela frenata peninsulæ</i>	Florida Long-tailed Weasel	G5T3	S3	N	N
<i>Nemastylis floridana</i>	Celestial Lily	G2	S2	N	E
<i>Neofiber alleni</i>	Round-tailed Muskrat	G3	S3	N	N
<i>Nolina atopocarpa</i>	Florida Beargrass		S3	N	T
<i>Peucaea aestivalis</i>	Bachman's Sparrow		S3	N	N
<i>Phyllophaga elizoria</i>	Elizoria June Beetle	G2	S2	N	N
<i>Phyllophaga okeechobea</i>	Diurnal Scrub June Beetle		S2	N	N
<i>Platanthera integra</i>	Yellow Fringeless Orchid	G3G4	S3	N	E
<i>Praticolella bakeri</i>	Ridge Scrubsnail	G2G3	S2S3	N	N
<i>Pteroglossaspis ecrinata</i>	Giant Orchid		S2	N	T
<i>Puma concolor coryi</i>	Florida Panther	G5T1	S1	LE	FE
<i>Salix floridana</i>	Florida Willow	G2	S2	N	E
<i>Sciurus niger shermani</i>	Sherman's Fox Squirrel	G5T3	S3	N	SSC
<i>Warea amplexifolia</i>	Clasping Warea	G1	S1	LE	E

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 Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
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 Potential - This site lies within the known or predicted range of the species listed.

Exhibit O

Florida Fish and Wildlife Conservation Commission Response



**Florida Fish
and Wildlife
Conservation
Commission**

Commissioners

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Chairman
Tallahassee

Aliese P. "Liesa" Priddy
Vice Chairman
Immokalee

Ronald M. Bergeron
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Key West

Executive Staff

Nick Wiley
Executive Director

Eric Sutton
Assistant Executive Director

Jennifer Fitzwater
Chief of Staff

**Fish and Wildlife
Research Institute
Gil McRae**
Director

(727) 896-8626
(727) 823-0166 FAX

*Managing fish and wildlife
resources for their long-term
well-being and the benefit
of people.*

**Fish and Wildlife
Research Institute**
100 Eighth Avenue SE
St. Petersburg, Florida
33701-6020
Voice: (727) 896-8626
Fax: (727) 823-0166
Hearing/speech-impaired:
(800) 955-8771 (T)
(800) 955-8770 (V)
MyFWC.com/Research

5/25/2017

Candice Knothe
Biologist
Florida Forest Service
Lake Wales Ridge State Forest
851 CR 630E
Frostproof, FL
33843

Dear Candice Knothe:

This letter is in response to your request for listed species occurrence records and critical habitats for your project (Lake Wales Ridge State Forest) located in Polk County, Florida. Records from The Florida Fish and Wildlife Conservation Commission's database indicate that listed species occurrence data are located within project area. Enclosed are 8.5 x 11 maps showing listed species locations, Prioritized SHCA's, species richness, and priority wetlands for listed species for the project site and surrounding area.

This letter and attachments should not be considered as a review or an assessment of the impact upon threatened or endangered species of the project site. It provides FWC's most current data regarding the location of listed species and their associated habitats.

Our SHCA recommendations are intended to be used as a guide. Land development and ownership in Florida is ever-changing and priority areas identified as SHCA might already have been significantly altered due to development or acquired into public ownership. Onsite surveys, literature reviews, and coordination with FWC biologists remain essential steps in documenting the presence or absence of rare and imperiled species and habitats within the project area.

Our fish and wildlife location data represents only those occurrences recorded by FWC staff and other affiliated researchers. It is important to understand that our database does not necessarily contain records of all listed species that may occur in a given area. Also, data on certain species, such as gopher tortoises, are not entered into our database on a site-specific basis. **Therefore, one should not assume that an absence of occurrences in our database indicates that species of significance do not occur in the area.**

Name of Addressee
Page 2
Date

The Florida Natural Areas Inventory (FNAI) maintains a separate database of listed plant and wildlife species, please contact FNAI directly for specific information on the location of element occurrences within the project area.

Because FNAI is funded to provide information to public agencies only, you may be required to pay a fee for this information. County-wide listed species information can be located at their website (<http://www.fnai.org>).

Please credit the Florida Fish and Wildlife Conservation Commission in any publication or presentation of these data. If you have any questions or further requests, please contact me at (850) 488-0588 or gisrequests@myfwc.com.

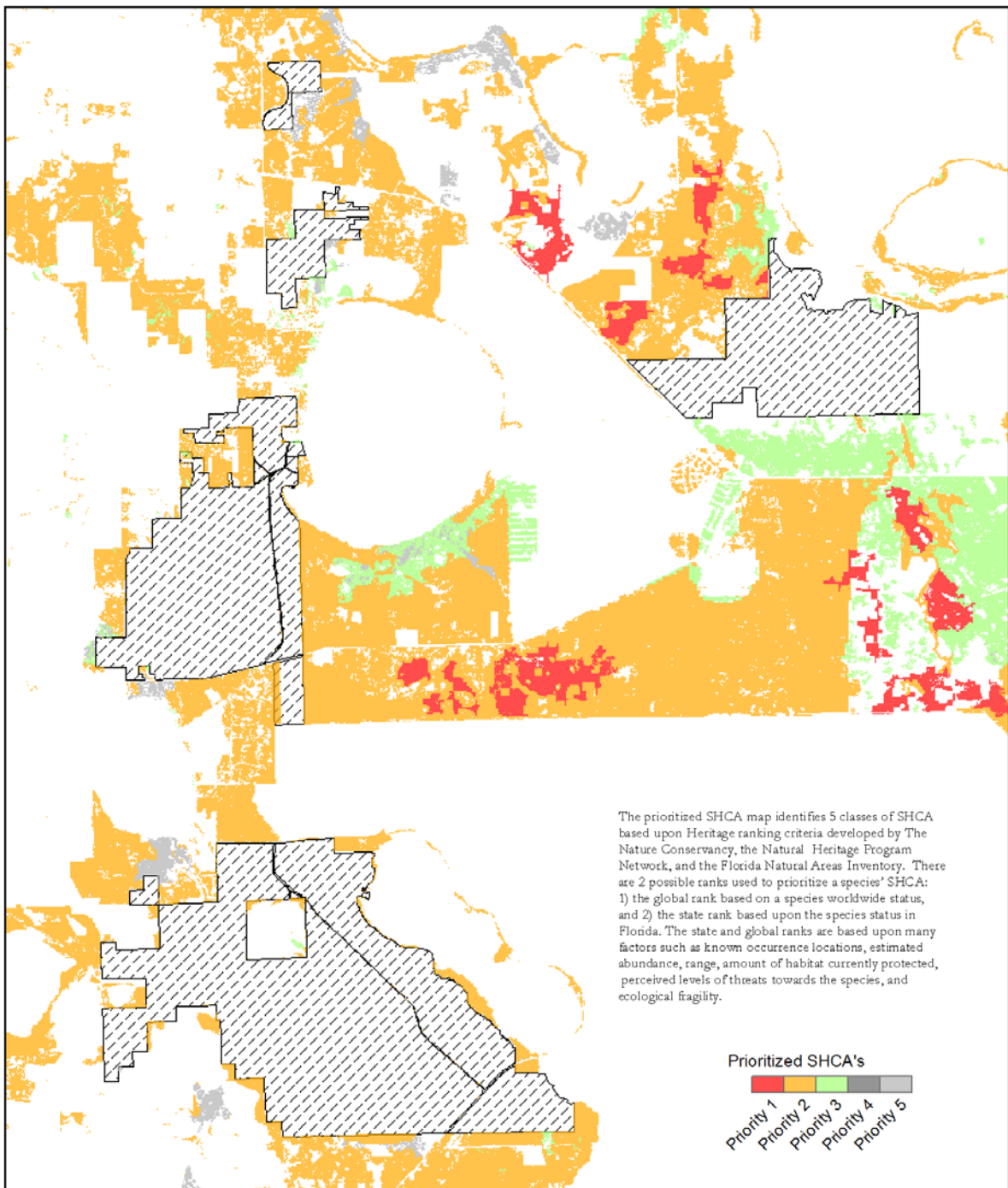
If you have any questions or further requests, please contact me at (850) 488-0588 or gisrequests@myfwc.com

Sincerely,

Eva Salinas

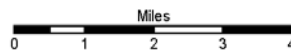
Eva Salinas
Research Assistant

ES
2017_6197
Enclosures



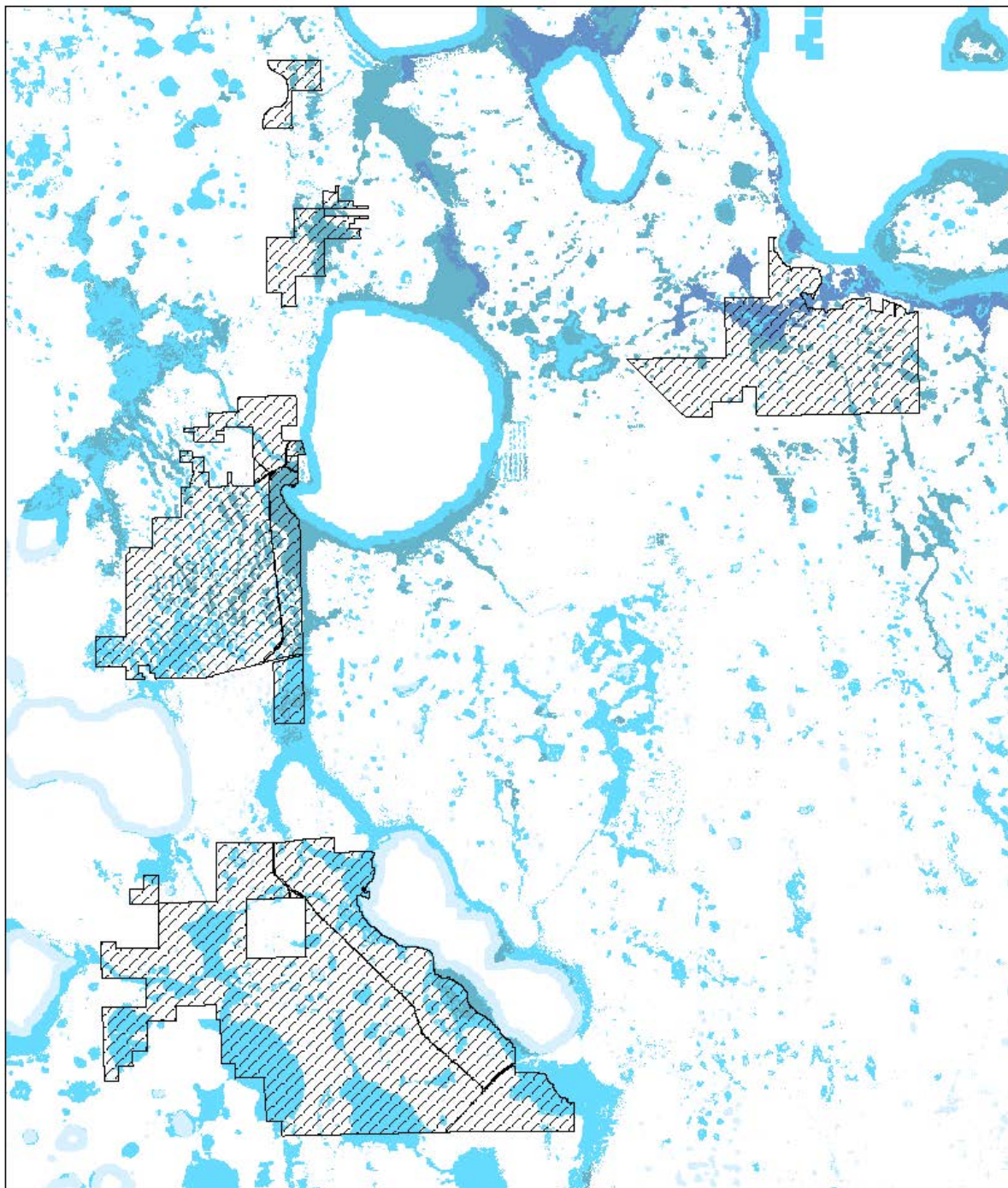
Strategic Habitat Conservation Areas

Lake Wales Ridge State Forest



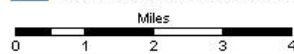
Florida Fish and Wildlife
Conservation Commission
MyFWC.com

FWC ID: 2017_6197 May 25, 2017



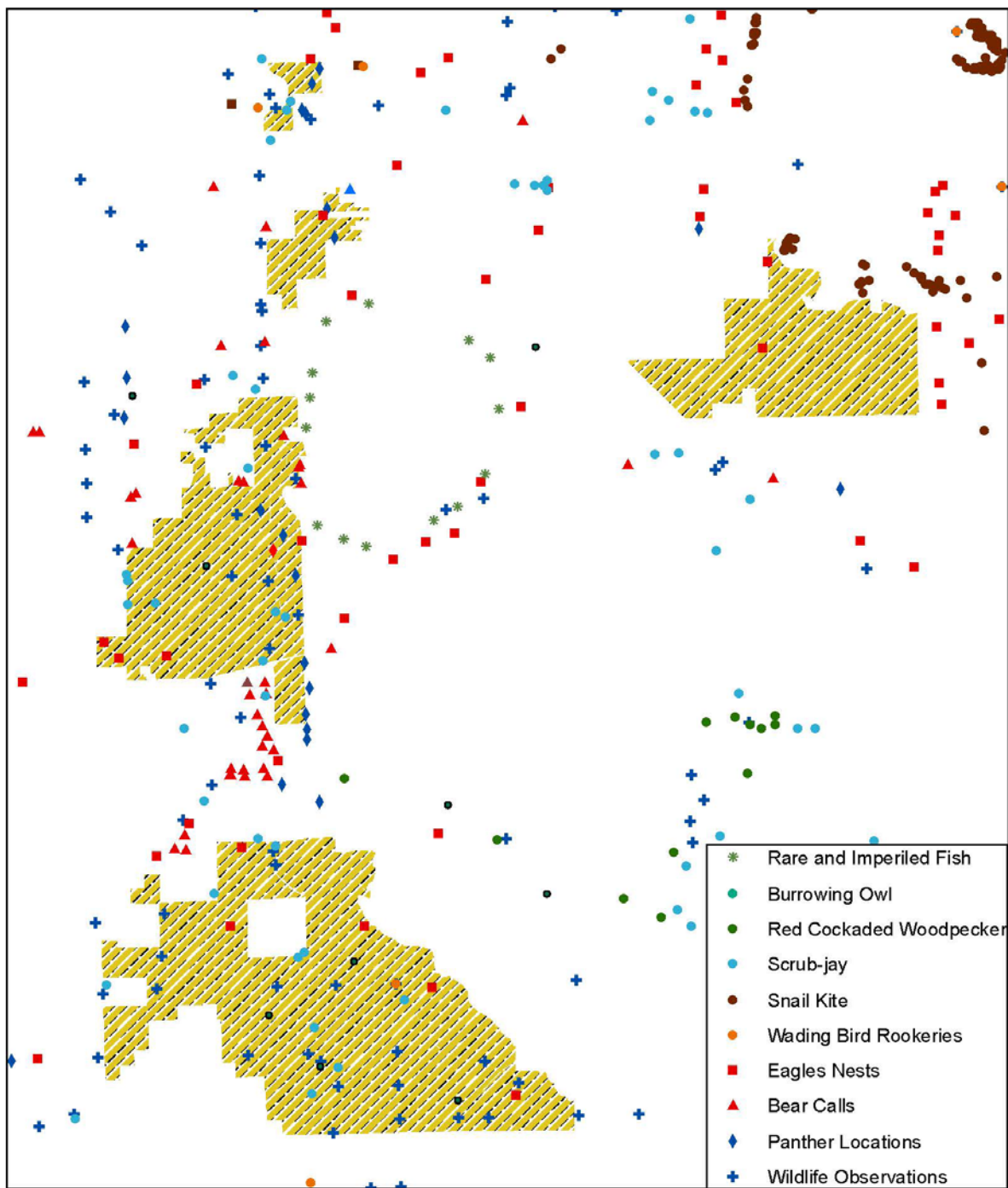
Priority Wetlands

Lake Wales Ridge State Forest



Florida Fish and Wildlife
Conservation Commission
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FWC ID: 2017_6197 May 25, 2017



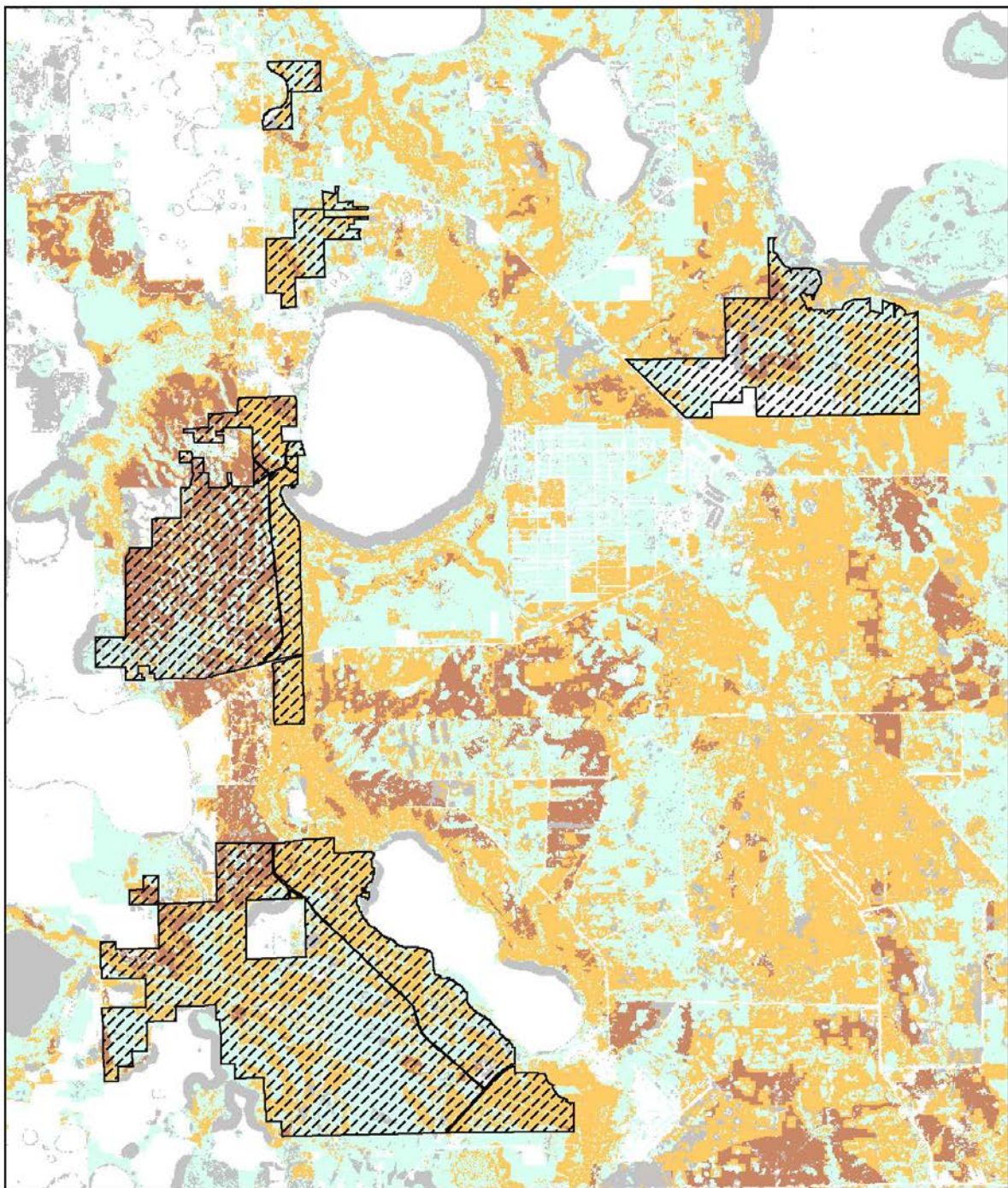
Species Locations

Lake Wales Ridge State Forest

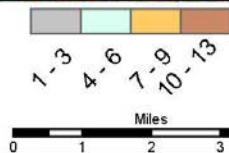


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Species Richness Lake Wales Ridge State Forest



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Conservation Commission
MyFWC.com

FWC ID: 2017_6197 May 25, 2017

Exhibit P

Fire History

Lake Wales Ridge State Forest Burn Acres by FY

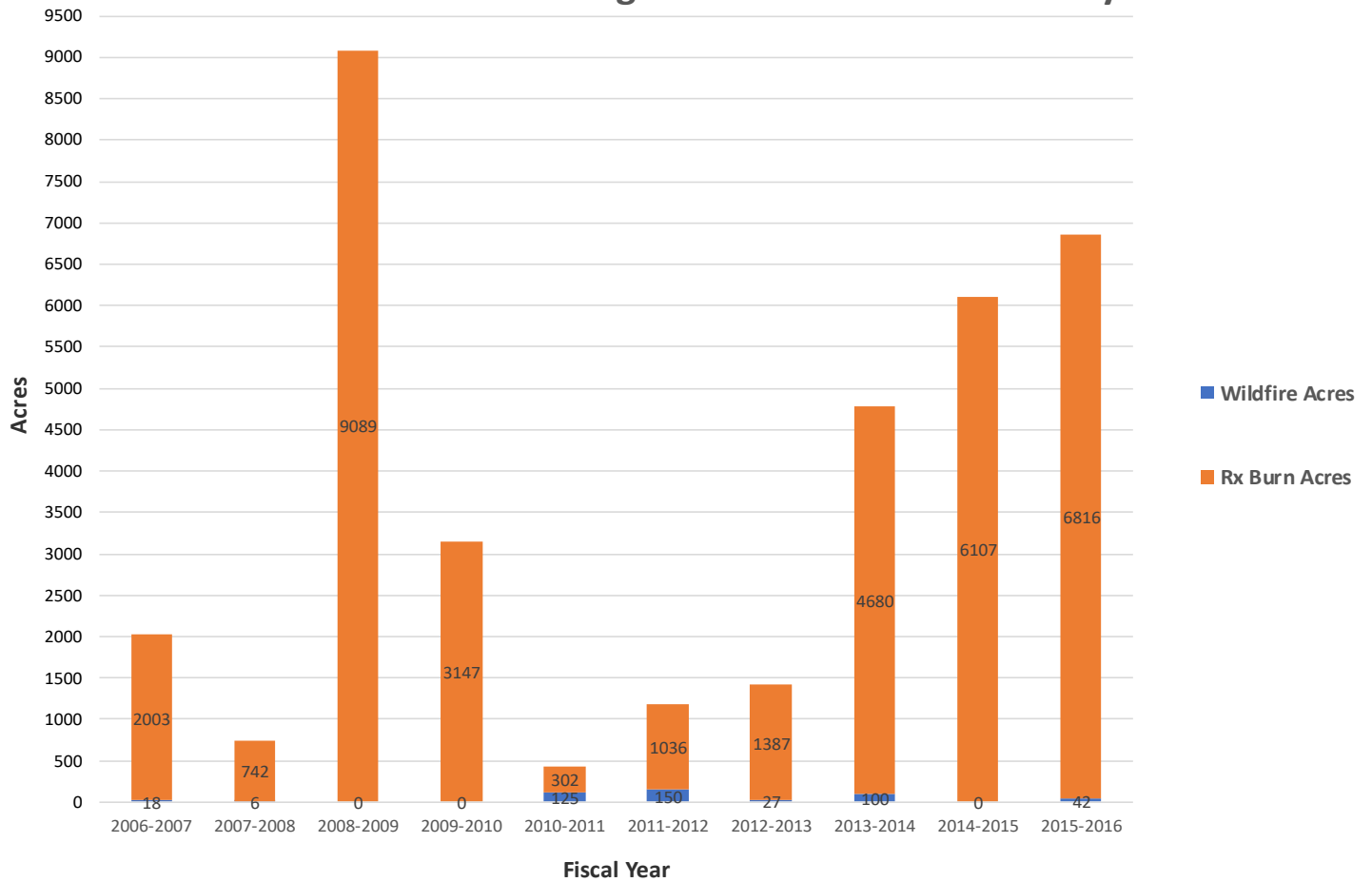


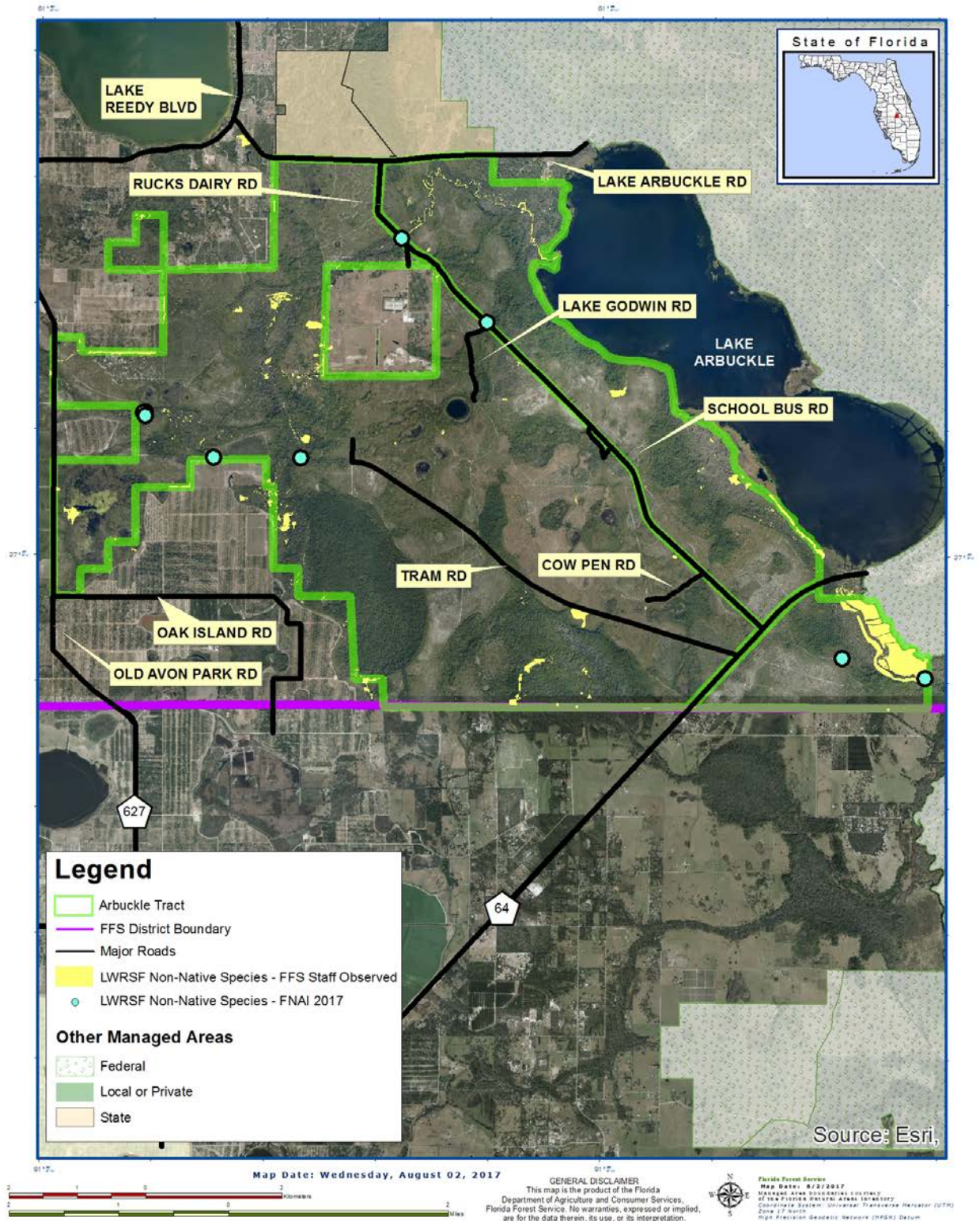
Exhibit Q

Non-Native Invasive Species



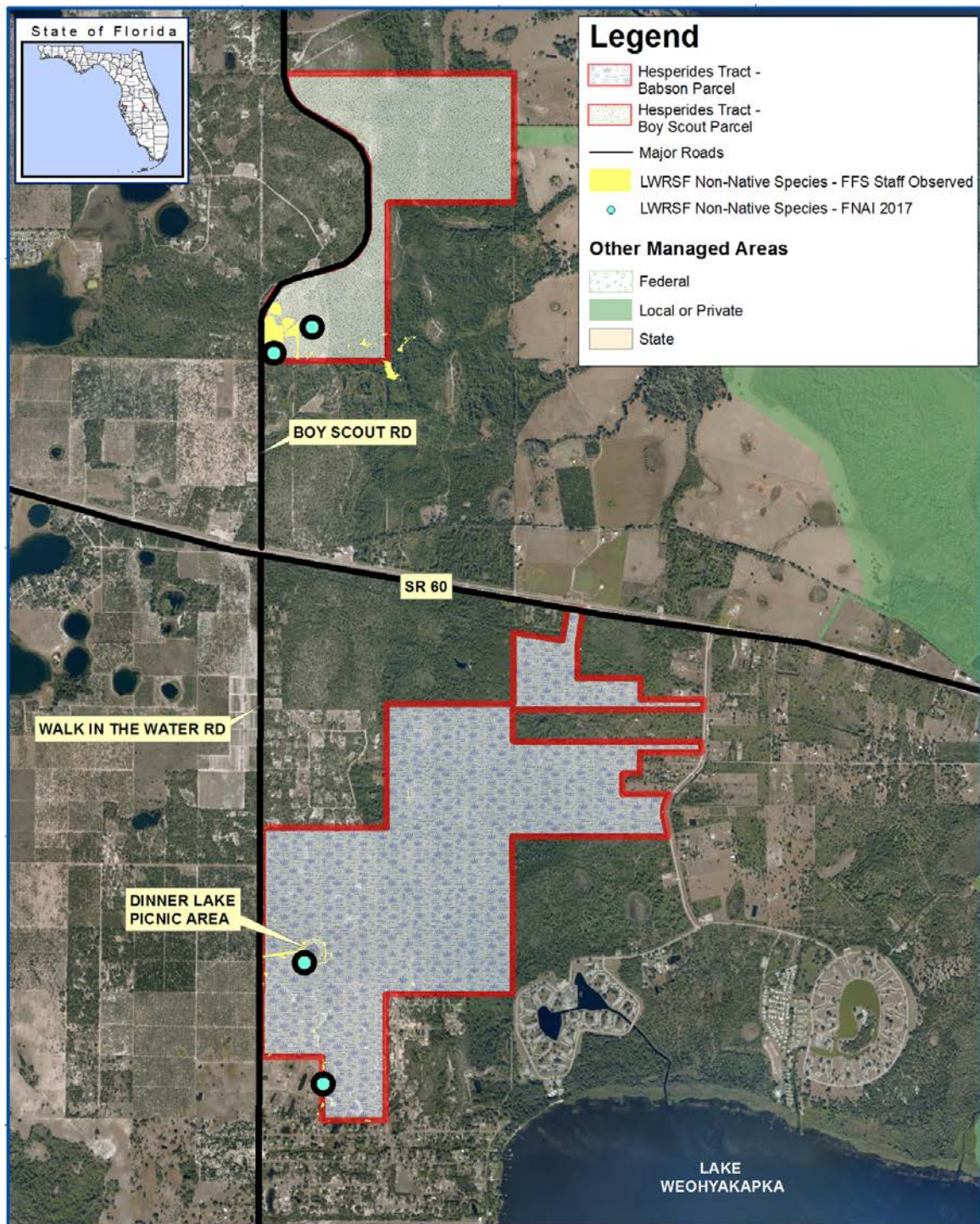
Florida Forest Service
Map Date: 7/21/2017
Managed Area boundaries courtesy
of the Florida Natural Areas Inventory
Coordinate System: Universal Transverse Mercator (UTM)
Zone 17 North
High Precision Geodetic Network (HPGN) Datum

LAKE WALES RIDGE STATE FOREST - FFS DISTRICT 14 - ARBUCKLE TRACT INVASIVE SPECIES MAP





LAKE WALES RIDGE STATE FOREST - FFS DISTRICT 14 - HESPERIDES TRACT INVASIVE SPECIES MAP



Map Date: Wednesday, August 02, 2017

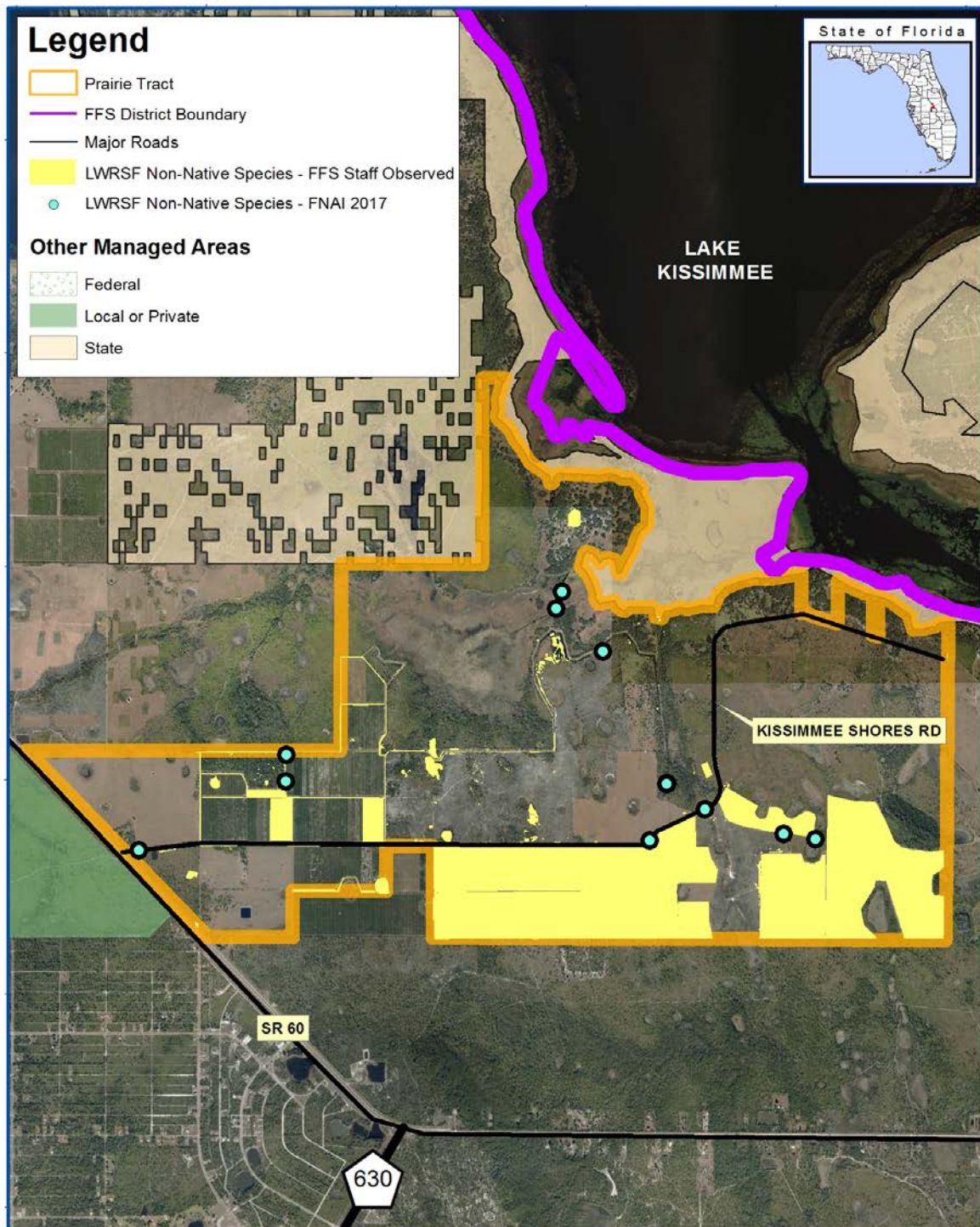
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Florida Forest Service
Map Date: 8/2/2017
Source: Aerial Photography (2012)
Data: Florida Department of Agriculture and Consumer Services
Coordinate System: Universal Transverse Mercator (UTM)
Zone 17 North
High Precision Geoidetic Datum (HPGD) Datum



LAKE WALES RIDGE STATE FOREST - FFS DISTRICT 14 - PRAIRIE TRACT INVASIVE SPECIES MAP



Map Date: Wednesday, August 02, 2017

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Florida Forest Service
Map Date: 8/2/2017
BORDER AND COORDINATE SYSTEM
of the Florida Natural Areas Inventory
Coordinate System: Universal Transverse Mercator (UTM)
Zone 17 North
High Precision Geospatial Network (HPGN) Datum



LAKE WALES RIDGE STATE FOREST - FFS DISTRICT 14 - WALK IN WATER TRACT INVASIVE SPECIES MAP

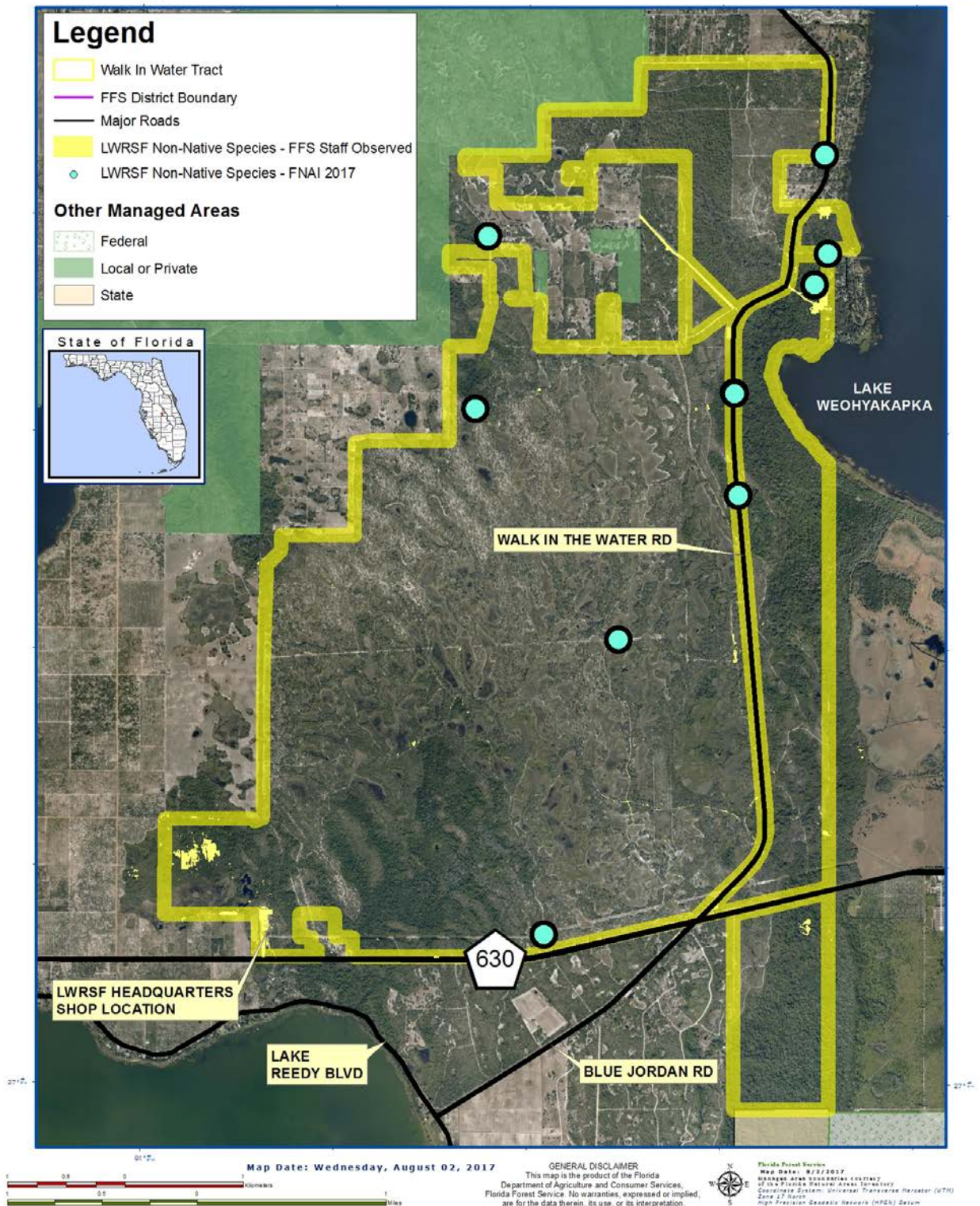
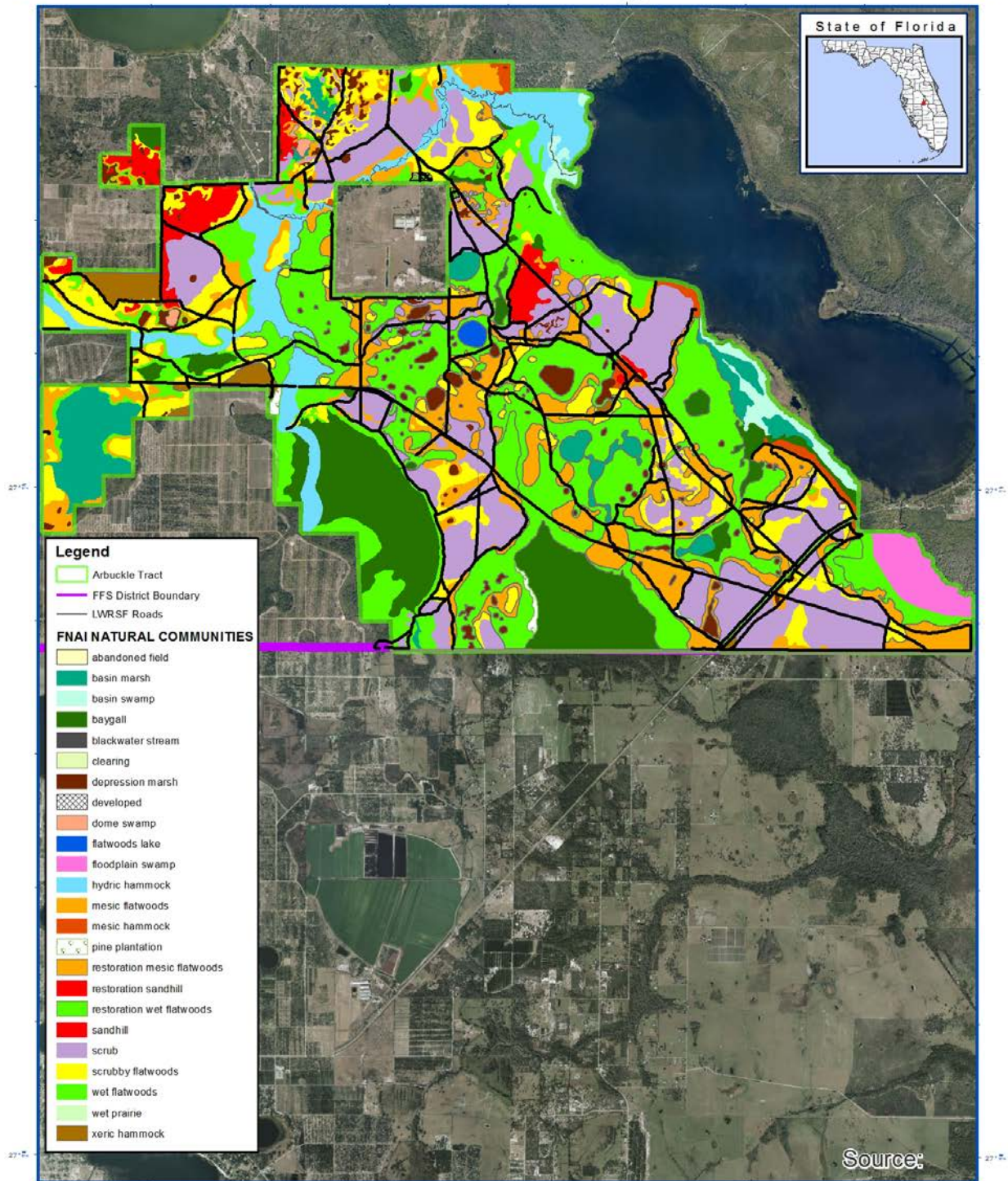


Exhibit R

Current Natural Communities



LAKE WALES RIDGE STATE FOREST - FFS DISTRICT 14
ARBUCKLE TRACT CURRENT NATURAL COMMUNITIES MAP



Map Date: Thursday, June 29, 2017

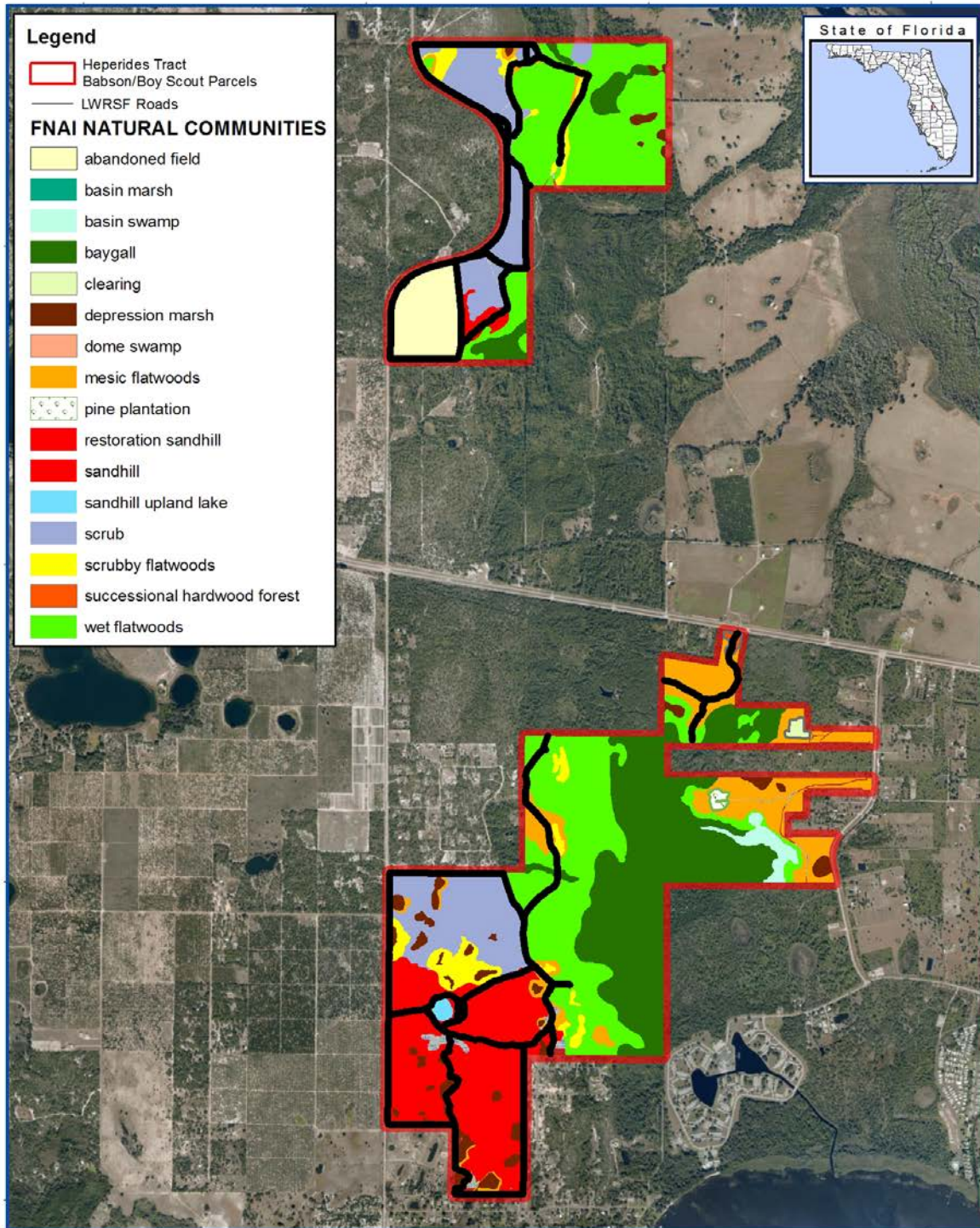
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Florida Forest Service
Map Date: 6/29/2017
Mapmaker: John H. Hargrett, Jr.
of the Florida Natural Areas Inventory
Coordinate System: Universal Transverse Mercator (UTM)
Zone 17 North
High Precision Geoidetic Datum (HPGD) Datum



LAKE WALES RIDGE STATE FOREST - FFS DISTRICT 14
HESPERIDES TRACT CURRENT NATURAL COMMUNITIES MAP

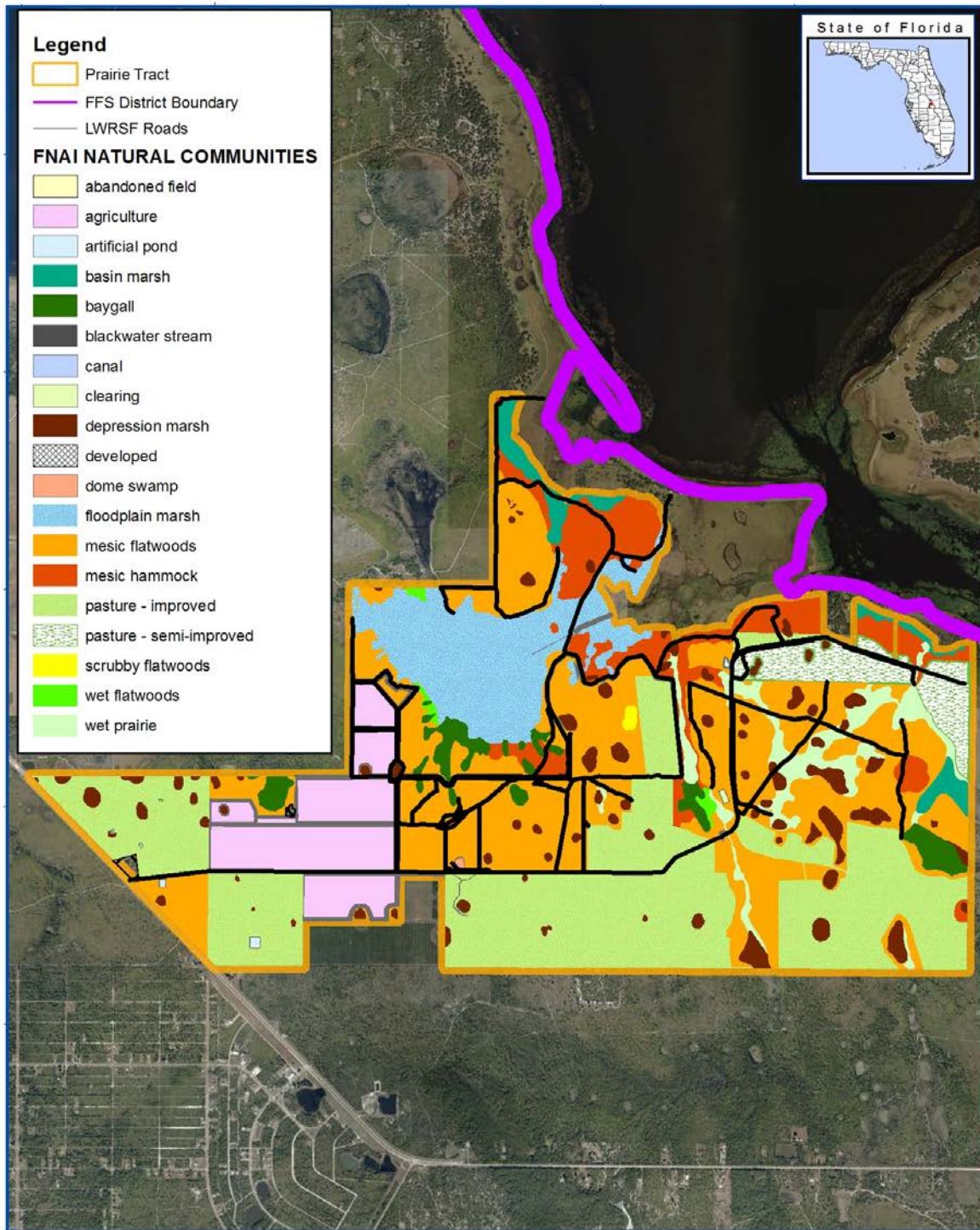


Map Date: Thursday, June 29, 2017

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Florida Forest Service
Map Date: 6/29/2017
Map Scale: 1:25,000
Map Projection: Universal Transverse Mercator (UTM)
Zone 17 North
High Precision Geoidetic Datum (HPGD) Datum



Map Date: Thursday, June 29, 2017

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Florida Forest Service
Map Date: 6/29/2017
Manager: Aron Souderland courtesy
of the Florida Natural Areas Inventory
Coordinate System: Universal Transverse Mercator (UTM)
Zone 17 North
High Precision Geodetic Network (HPGN) Datum



91. 92.



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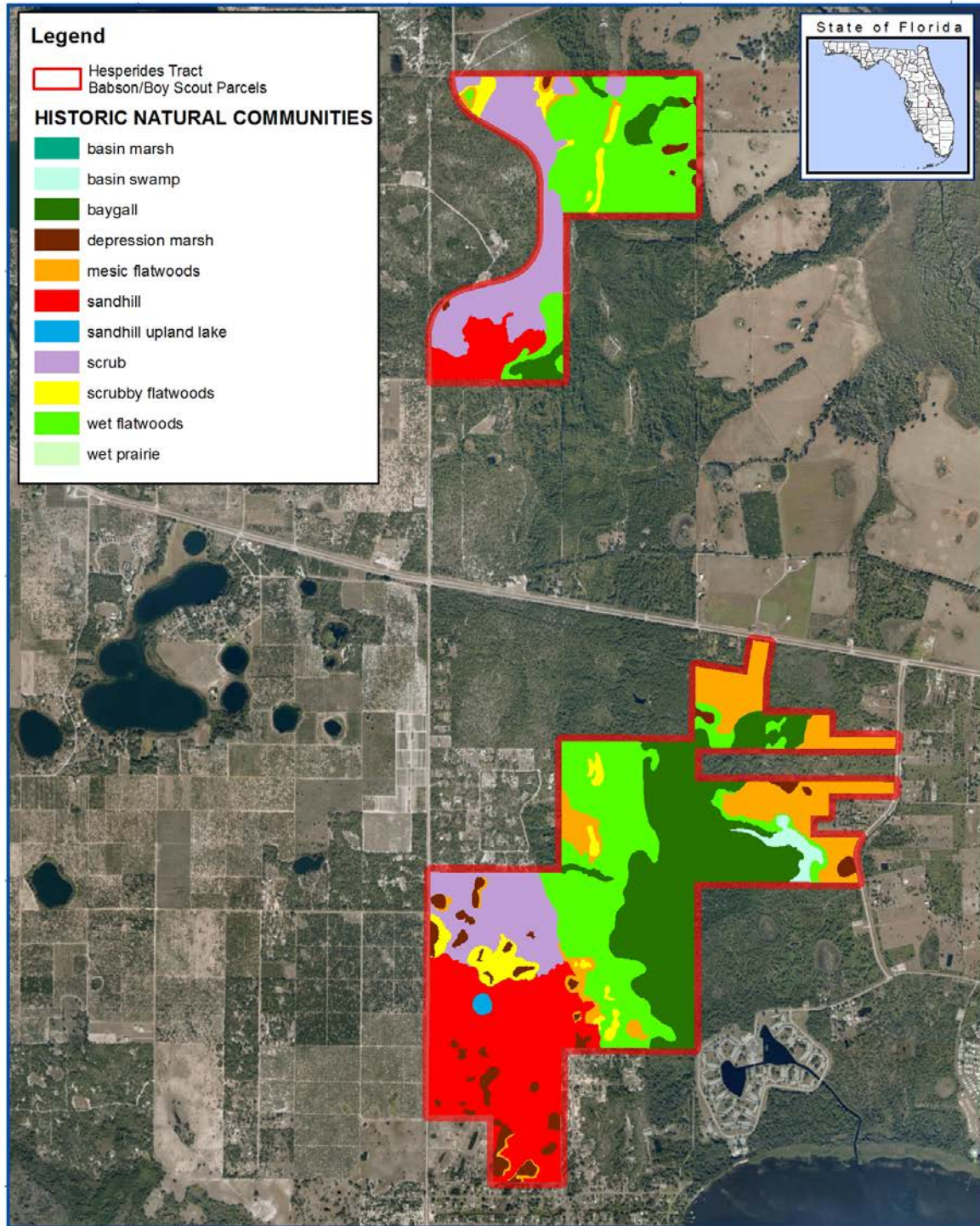
Florida Forest Service
Map Date: 7/24/2017
Mangrove Area boundaries courtesy
of the Florida Natural Areas Inventory
Coordinate System: Universal Transverse Mercator (UTM)
Zone 17 North
High Precision Geodetic Network (HPGN) Datum

Exhibit S

Historic Natural Communities



LAKE WALES RIDGE STATE FOREST - FFS DISTRICT 14
HESPERIDES TRACT HISTORIC NATURAL COMMUNITIES MAP



Map Date: Thursday, June 29, 2017

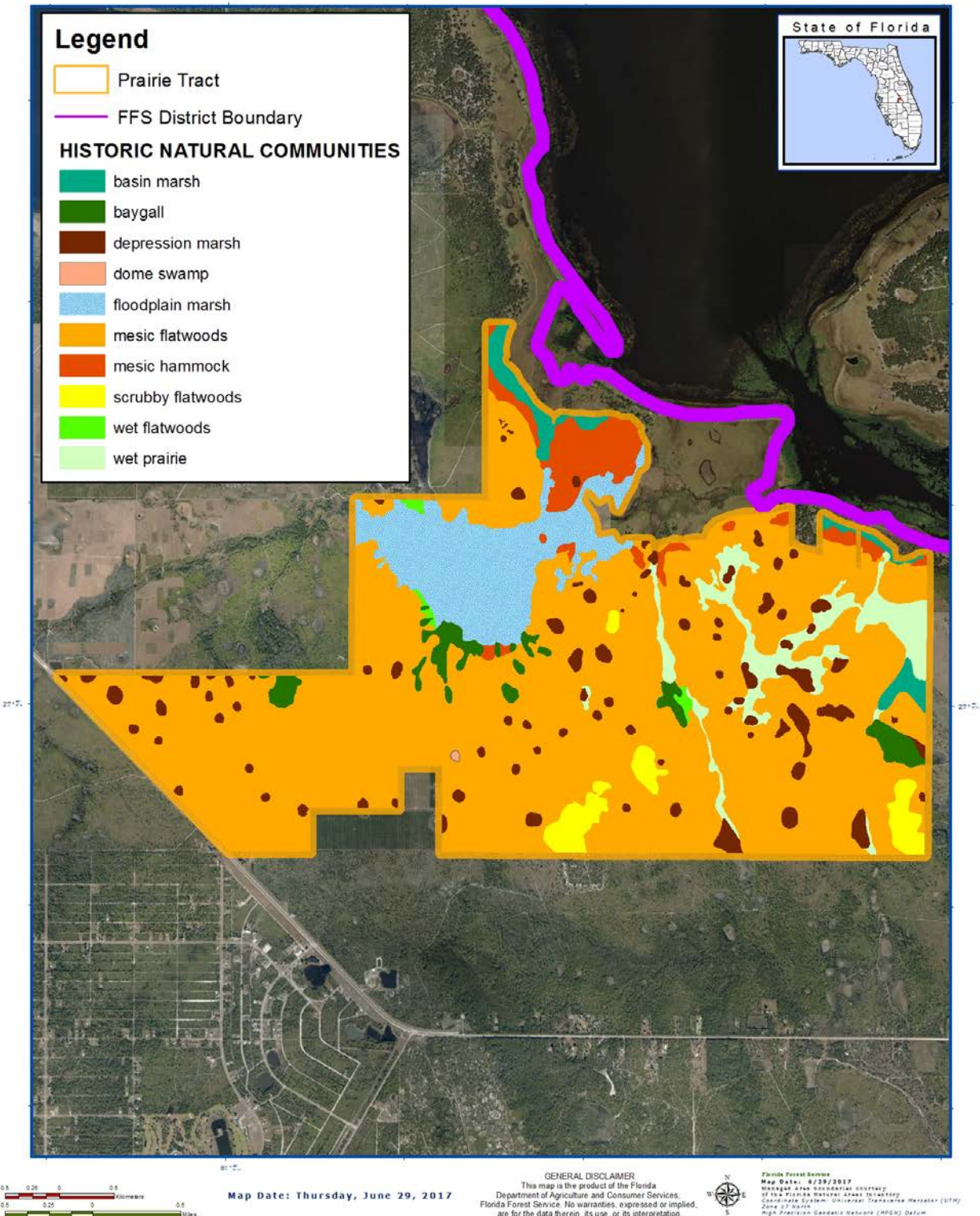
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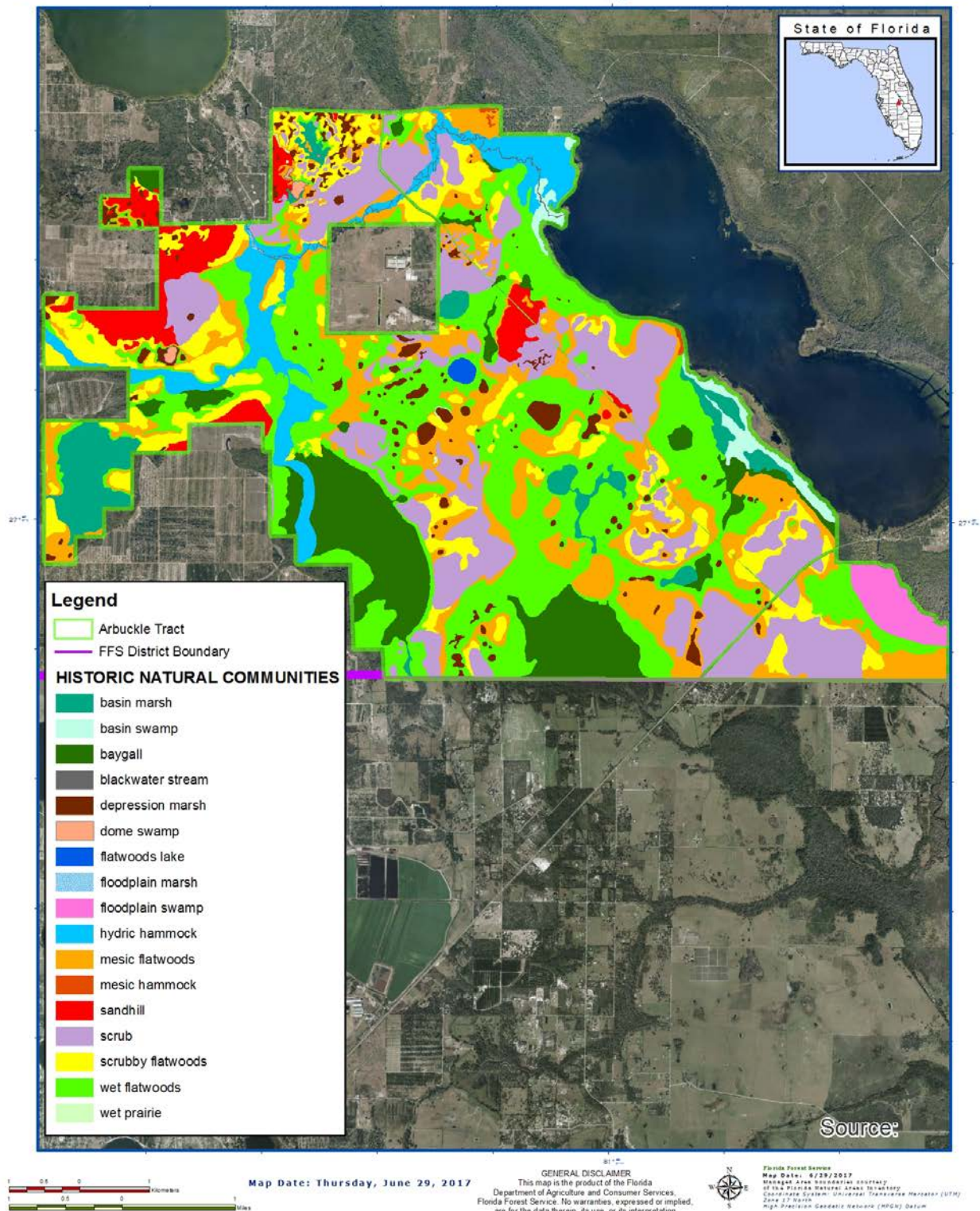


Florida Forest Service
Map Date: 6/29/2017
Background data provided courtesy
of the Florida Natural Areas Inventory
Coordinate System: Universal Transverse Mercator (UTM)
Zone 17 North
High Precision Geoidetic Datum (HPGD) Datum



LAKE WALES RIDGE STATE FOREST - FFS DISTRICT 14
PRAIRIE TRACT HISTORIC NATURAL COMMUNITIES MAP







LAKE WALES RIDGE STATE FOREST - FFS DISTRICT 14
WALK IN WATER TRACT HISTORIC NATURAL COMMUNITIES MAP

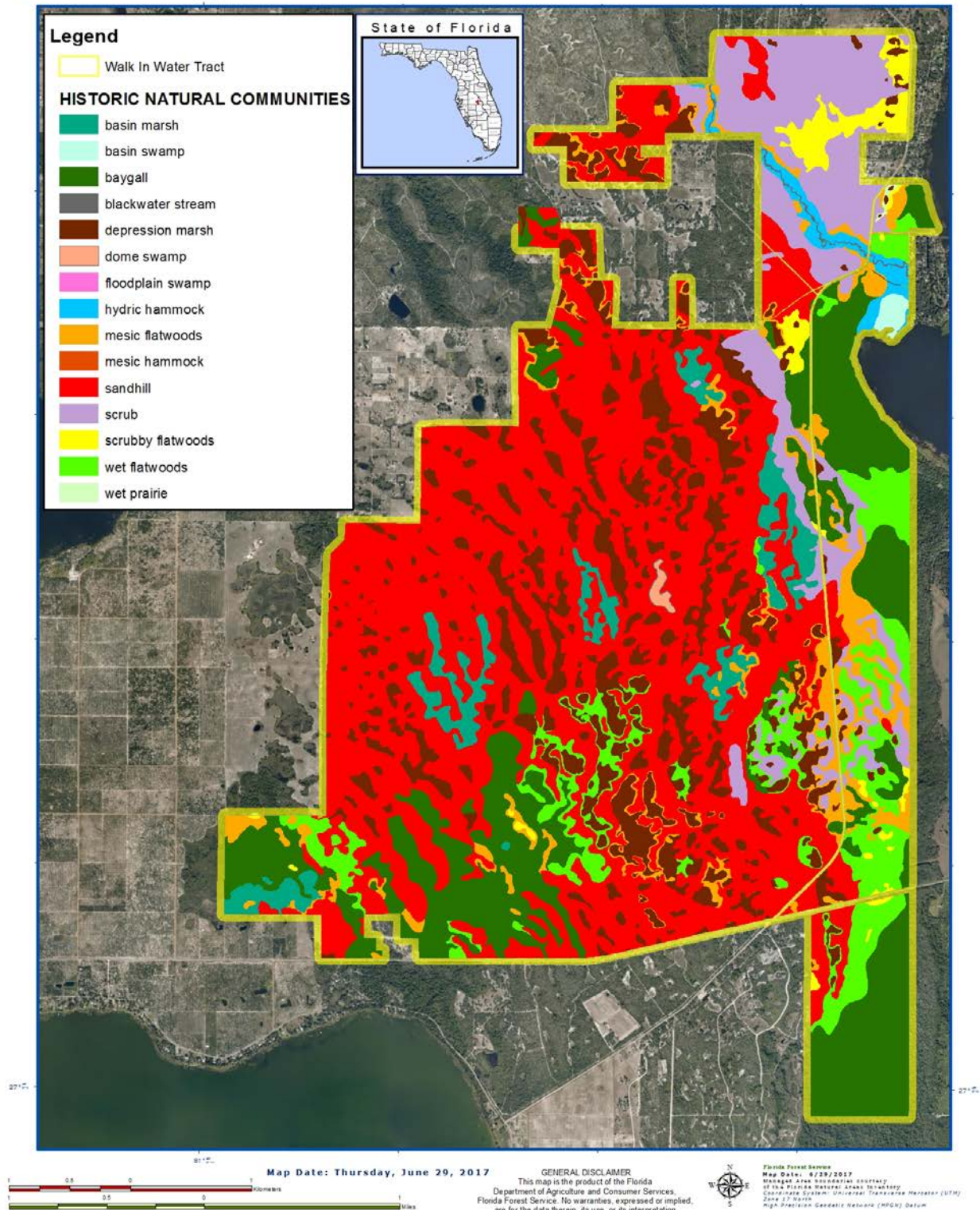


Exhibit T

Management Prospectus

Lake Wales Ridge Ecosystem

Highlands, Lake, Osceola and Polk Counties

Critical Natural Lands

Purpose for State Acquisition

The high, sandy Lake Wales Ridge, stretching south from near Orlando almost to Lake Okeechobee, was originally covered with a mosaic of scrub, flatwoods, wetlands, and lakes. The scrub is unique in the world—it is inhabited by many plants and animals found nowhere else—but it has almost completely been converted to citrus groves and housing developments. The Lake Wales Ridge Ecosystem project is designed to protect the best remaining tracts of this scrub and the ecosystems associated with it, thereby preserving numerous endangered species and allowing the public to see examples of the unique original landscape of the ridge. The Florida National Scenic Trail, a cross-Florida hiking and non-motorized trail, is also planned to cross this project. The trail is a congressionally designated national scenic trail.

Managers

Division of Recreation and Parks (DRP), Florida Department of Environmental Protection (Lake June West); Florida Forest Service, Department of Agriculture and Consumer Services (Lake Walk-in-Water, Hesperides and five Warea sites) and the Fish and Wildlife Conservation Commission (FWCC) (remaining sites). The FFS will monitor the less-than-fee portion. The Office of Environmental Services (OES) will monitor some CEs.

General Description

Judging from its many unique species, Central Florida Ridge scrub may be among the oldest of Florida's upland ecosystems. This project consists of separate sites along the Lake Wales Ridge which are intended to be part of a system of managed areas that conserve the character, biodiversity, and biological function of the ancient scrubs of the Ridge. The sites contain the best remaining examples of unprotected ancient scrub as well as lakefront, swamps, black water streams, pine flatwoods, seepage slopes, hammocks, and sandhills. The project is the last opportunity to protect the highest concentration of narrowly endemic scrub plants and animals on the Lake Wales Ridge, many in jeopardy of extinction. Seventy-five rare elements are found in this diverse ecosystem (62 cited by FNAI), including a population of scrub mint that may be a new species. No archaeological or historical sites are known from the project. All the sites are fragments, and vulnerable to mismanagement and disturbance. They are also seriously threatened by conversion to citrus groves or immediate development pressure.

Public Use

Sites within this project are designated for use as state parks, state forests, botanical sites and preserves, providing opportunities for natural-resource education, hiking, and on some sites, camping, picnicking, hunting and fishing.

The Boy Scouts and Morgan less-than-fee parcels qualify as state forests. The amount and nature of public use will be negotiated with the landowners.

Lake Wales Ridge Ecosystem FNAI Elements	
<i>Clasping Warea</i>	G1/S1
<i>Garrett's Scrub Balm</i>	G1/S1
<i>Scrub Lupine</i>	G1/S1
<i>Scrub Ziziphus</i>	G1/S1
Florida Scrub-Jay	G2/S2
Florida Black Bear	G5T2/S2
Eastern Indigo Snake	G3/S3
Florida Mouse	G3/S3
Gopher Tortoise	G3/S3
A Comb-Clawed Beetle	G1/S1
Archbold's Treehopper	G1/S1
<i>Avon Park Rabbit-bells</i>	G1/S1
95 rare species are associated with the project	

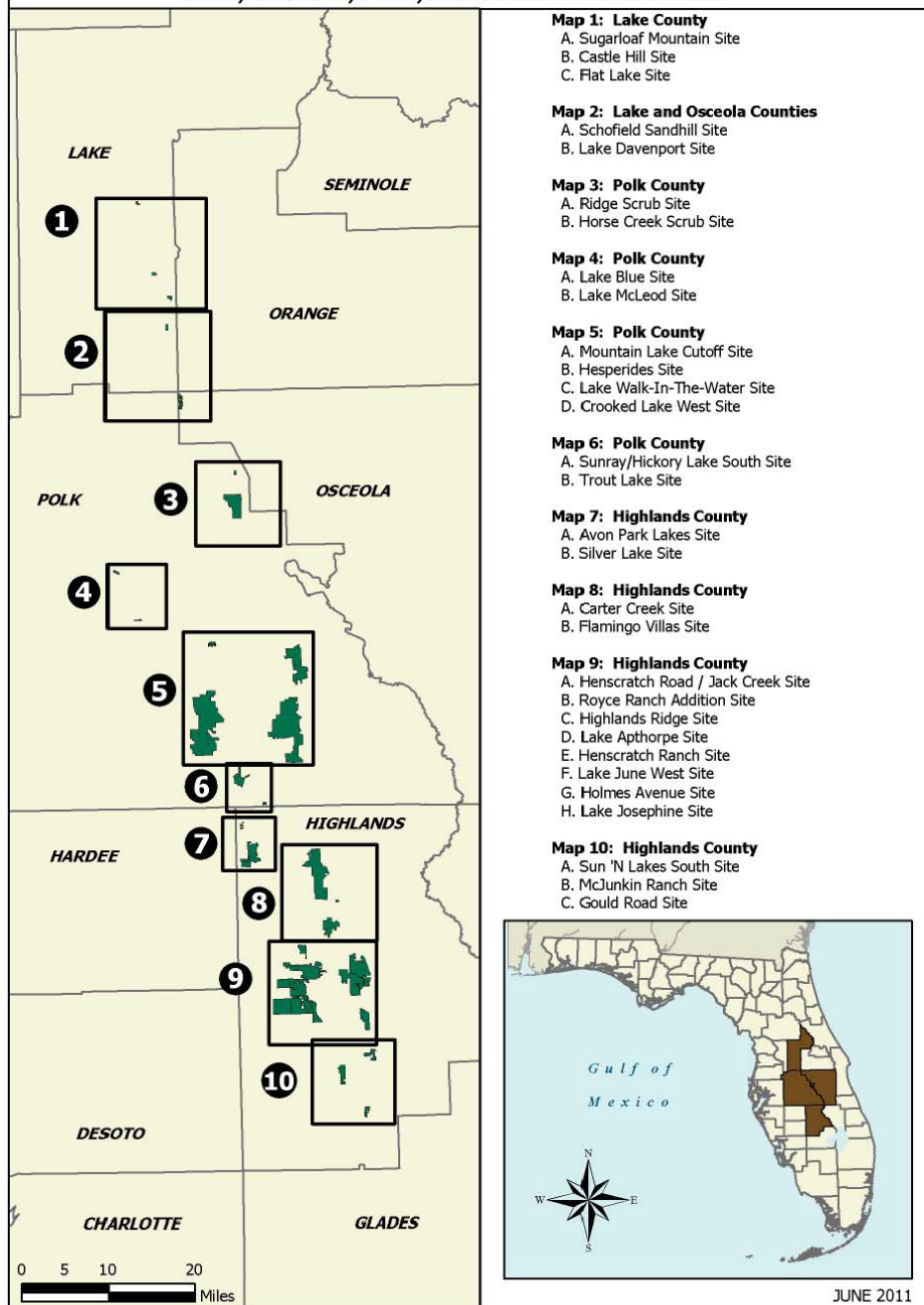
Placed on List	1992*
Project Area (GIS Acres)	59,034
Acres Acquired (GIS)	36,351**
at a Cost of	\$93,500,015**
Acres Remaining (GIS)	22,683
Estimated (Tax Assessed) Value of	\$15,522,254

*Lake Wales Ridge sites and Warea Archipelago projects were combined in 1994.

**Includes acres and expenditures by the SWFWMD, SFWMD, SJRWMD, U.S. Fish and Wildlife Service, Polk Co. and NRCS.

LAKE WALES RIDGE ECOSYSTEM: OVERVIEW

LAKE, OSCEOLA, POLK, AND HIGHLANDS COUNTIES



Acquisition Planning

Full Fee: The Nature Conservancy (TNC) is an intermediary in the majority of the ridge sites. Lake Walk-in-Water (8,615 acres): major owner, Alico, has been acquired; contracts have been approved/negotiations ongoing on other relatively large tracts; TNC worked with Morgan on details of the completed less-than-fee acquisition. Lake June West (831 acres): acquired. Gould Road (419 acres): major ownership acquired; discussions ongoing with owner of smaller inholding. Henscratch Road (2,869 acres): largest tracts acquired by the Southwest Florida Water Management District (SWFWMD) and CARL; TNC planned to negotiate a few other relatively large tracts in 1999. Silver Lake (2,020 acres): largest tracts acquired. Lake McLeod (55 acres): at least 45 acres acquired by USFWS. Mountain Lake Cutoff (217 acres): negotiations ongoing with owner of the one large tract. Lake Blue (65 acres) has been acquired. Hesperides (2,696 acres) has been acquired from Babson. Acquisition of most other tracts dependent upon acquisition of these ownerships. Boy Scouts West (335 acres): acquired. Horse Creek (1,325 acres): SWFWMD has acquired the major ownerships within this site. Trout Lake (65 acres): appraisal completed. Eagle Lake (10 acres): removed from list - developed. Ridge Scrub (80 acres): on hold pending reanalysis by FNAI. McJunkin Ranch (750 acres): acquired.

Priority phasing for the Warea Archipelago sites is: Scofield Sandhill (120 acres): negotiations were scheduled to begin in early 1999 on both ownerships. Lake Davenport (500 acres): appraisals on hold pending reanalysis of site. Flat Lake (120 acres): acquired. Castle Hill (75 acres): negotiations unsuccessful with major owner. Purchase of other tracts contingent on major owner. Ferndale Ridge (104 acres): removed from list due to site fragmentation and habitat destruction.

Sugarloaf Mountain (52 acres): southernmost tract acquired by St. Johns River Water Management District (SJRWMD). TNC was unable to reach agreements with a large ownership at northern end and owners of small tracts in between.

Less-than-Fee and Small Holdings: Carter Creek (4,630 acres): the majority of this parcel is acquired, a few large ownerships on western project boundary also remain.

Flamingo Villas (1,420 acres): USFWS acquired approximately 600 acres. Holmes Avenue (1,269 acres): approximately half of the site has been acquired, multiple ownerships remain. Sunray (1,970 acres): negotiations have begun on major owners. Avon Park

Lakes (225 acres): subdivided, TNC projects a three-year 70 percent success rate. Highlands Park Estates (232 acres) subdivided, acquisition activity not yet begun. Sun 'N Lakes South (570): more than 200 acres acquired, remaining developed and fragmented. Lake Apthorpe (2,503 acres): larger ownerships acquired, several lots important for management acquired as well. On December 6, 1991, the Land Acquisition Advisory Council (LAAC) added the Lake Wales Ridge Ecosystem (LWRE) project to the CARL Priority list. This fee simple and less-than-fee acquisition, sponsored by TNC, consisted of approximately 32,480 acres, several thousand ownerships, and a taxable value of \$33,954,187. The project contains 20 separate sites located in Polk and Highlands counties and breaks down as follows: Ridge Scrub (80 acres); Lake Blue (65.23 acres); Eagle Lake (10.30 acres); Lake McLeod (55 acres); Mountain Lake Cutoff (201.05 acres); Hesperides (3,900 acres); Lake Walk-in-the-Water (9,835 acres); Sunray/Hickory Lake South (1,925 acres); Trout Lake (59 acres); Avon Park Lakes (225 acres); Silver Lake (1,194 acres); Carter Creek (4,630 acres); Flamingo Villas (1,420 acres); Henscratch Road/Jack Creek (3,985 acres); Lake Apthorpe (1,722 acres); Highlands Park Estates (232 acres); Holmes Avenue (1,199 acres); Lake June West (897 acres); Sun 'N Lakes South (503 acres); Gould Road (343 acres). The SWFWMD acquired 1,309 acres within the Henscratch Road/Jack Creek site for \$1,540,000.

On July 23, 1993, the LAAC approved an 848-acre addition to the Lake Apthorpe site within the project boundary. The addition in Highlands County was sponsored by TNC, consisted of two ownerships, Clements Family (4 parcels) and Michael Rider (1 parcel), with a taxable value of \$313,910.



On September 20, 1993, the LAAC approved a 16-acre addition to the Mountain Lake Cutoff site within the project boundary. It was sponsored by the landowner, J. K. Stuart, and had a taxable value of \$18,548. The landowner has holdings within the site and is unwilling to sell only a part of his tract. The Council recommended that the addition be sold or exchanged if it is not needed for resource protection or management purposes.

On March 9, 1994, the LAAC approved a 160-acre addition to the Lake Walk-in-the-Water site within the project boundary. It was sponsored by the landowner (Alico) and TNC with a taxable value of \$160,000. The landowner has holdings within the current boundary and is unwilling to sell only a part of its holdings. The Council recommended that the addition be sold or exchanged if it is not needed for resource protection or management purposes. In July 1994, the LAAC approved a 61-acre addition to Flamingo Villas site within the project boundary. The addition was sponsored by the landowner; American Homes Service Corp.–Wohl tract, consisted of 2 contiguous parcels, with a taxable value of \$95,180. The landowner has holdings within the current boundary and is unwilling to sell only a part of his holdings. The Council recommended that the addition be sold or exchanged if it is not needed for resource protection or management purposes. In November 1994, the LAAC combined the Warea Archipelago project (1,021 acres/taxable value \$4,552,797/Lake and Osceola Counties), with the LWRE. The Warea Archipelago project contained 6 separate sites that break down as follows: Schofield Sandcastle (120 acres); Lake Davenport (500 acres); Flat Lake (120 acres); Castle Hill (125 acres); Ferndale Ridge (104 acres); Sugarloaf Mountain (52 acres). On November 18, 1994, the LAAC approved a 2,336-acre addition, in Highlands County, to the project boundary. It was sponsored by TNC with a taxable value of \$2,201,330. The breakdown follows: 400 acres to the Silver Lake site, 76 acres to the Gould Road site, and the 1,860-acre McJunkin Ranch was added. On July 14, 1995, the LAAC approved an 850-acre (sponsored by TNC; taxable value of \$2,035,980 addition in Highlands County to the project boundary, 70 acres to the Holmes Avenue site and 780 acres to the Lake Apthorpe site. On December 7, 1995, the LAAC approved combining the Horse Creek Scrub project (2,365 acres/taxable value \$3,330,700/Polk County) with the LWRE. The SFWMD made the request to expand the LWRE boundary. On December 7, 1995, the LAAC approved combining the Highlands Ridge

project (6,318 acres/taxable value \$11,980,140/Highlands County/several thousand parcels/600-700 landowners) with the LWRE. TNC sponsored the Ridge project in 1994.

On December 5, 1996, the LAAC approved the transfer of two ownerships – Boy Scouts West in the Hesperides site and Morgan in the Lake Walk-in-the-Water site – to the newly created Less-Than-Fee category. These Polk Co. ownerships, total 2,407 acres and a taxable value of \$2,407,000.

On December 7, 1997, the Land Acquisition Management Advisory Council (LAMAC) approved a 3,724-acre deletion (sponsored by TNC) to the project boundary. The deletion affected 10 sites, with a taxable value of \$5,036,700. The breakdown of the deletions follows: Ferndale Ridge (104 acres), Castle Hill (50 acres), Eagle Lake (10 acres), Hesperides (177 acres), Sun Ray/Hickory Lake (1,070 acres), Henscratch Road (760 acres), Lake June West (66 acres), Highlands Park Estates (232 acres), Holmes Avenue (145 acres), and McJunkin Ranch (1,110 acres).

On October 15, 1998, the LAMAC approved a 580-acre addition to the project boundary, sponsored by TNC. It totalled 1,414 parcels (1,132 landowners) with a taxable value of \$159,086. Several landowners already have ownerships within the current boundary and will not sell without including the proposed additions. The additions to sites in Polk and Highlands counties follows: Lake Apthorpe site (.34 acre, Levingston), Silver Lake site (427 acres, multiple owners), Sun 'N' Lakes South site (67 acres, Gables Engineering, Inc.), Sunray/Hickory Lake South site (80 acres, Alico, Inc.), and Trout Lake site (7 acres, Sistrunk, Trustee). The parcels were designated as essential. On October 15, 1998, the LAMAC approved the addition of the following tracts to the list of essential parcels: approximately 320 acres of the Saddleblanket Resorts II ownership in the Lake Walk-in-the-Water site, and approximately 3,200 acres (two large ownerships) in the Highlands Ridge site. July 12, 2001, the Acquisition & Restoration Council (ARC) approved a fee-simple, 2,512-acre addition (Royce Ranch next to Lake Apthorpe site) to the project boundary, sponsored by the FWC, it consisted of one landowner owner, Raymond Royce, with a taxable value of \$1,230,591. The FWC will manage the addition. On November 11, 2002, 1.25 acres were bought in Carter Creek (Benvenuti--\$3,800) to be managed by FWC. On October 17, 2003, the ARC approved a less-than-fee 2,330-acre addition

(Henscratch Ranch-Highlands Co.--taxable value of \$352,419) to the project boundary. Sponsored by a representative for the landowner, Highlands Farms, Inc. The Office of Environmental Services (OES) will monitor the easement.

On August 20, 2004, the ARC approved a less-than-fee, 520-acre addition (Lake Josephine--Highlands Co.--taxable value of \$17,063) to the project boundary. It was sponsored by representatives of the landowner, E. P. Jones Jr. The OES will monitor the easement.

On October 13, 2006, the ARC approved a fee-simple and less-than-fee, 11,444-acre addition (Crooked Lake West) to the project boundary. It was sponsored by Polk County, FWCC, and the SWFWMD. The addition, in Polk County, consisted of 1,430 parcels; 1,120 landowners; a taxable value of \$6,612,464. The parcels have been designated as essential.

In June 2008, the following acreages (ownerships) were purchased: 0.9 acre (McKay) in Carter Creek for \$11,500 - FWCC's FF funds; 1,146.91 acres (Dunham/Cannon) in Dunham Ranch known as Gopher Tortoise Mitigation Park for \$12,353,761 - FWCC's LATF money was used for purchase. FWCC will manage these sites. In September of 2008, the following acreages (ownerships) were purchased with DSL FF funds: 1.19 acres (Boise) in Carter Creek for \$11,500; 1.3 acres (Carpinello) for \$11,500; and 1.3 acres (O Such) for \$11,500--all in the Carter Creek area, and FWCC will manage. In October 2008 the following acreages (ownerships) were purchased with DSL FF funds: 1.1 acres (Dumervil/Cameron) for \$11,500; 1.3 acres (Hreschak) for \$11,500; 5.4 acres (Pollard) for \$46,000; 1.3 acres (Romani) for \$11,500; and 1.3 acres (Higgins Estate) for \$11,500. FWCC will manage these sites. On October 3, 2008, DSL Florida Forever funds were used to buy a 345-acre parcels from the Palmer ownership in Pine Plantation for \$24,930,304 (40 acres in the SE corner of the parcel were acquired by the Orlando-Orange County Expressway Authority to be conveyed to Orange County for a park). On 10/15/2008, TNC bought a Conservation Easement of 57.62 acres within the Scrub Conservation Bank which overlaps the Gould Road site. Archbold Biological Station monitors the easement. In November 2008, the following acreages (ownerships) were purchased with DSL FF funds: 1.3 acres (Roselle) for \$11,500; 1.3 acres (Stockard) for \$11,500; 1.4 acres (Barbuto) for \$11,500; 1.3 acres (Schaffner) for \$11,500; and 1.1

acres (Smith) for \$11,500. Again, FWC will manage these sites.

December 2008 through May 2009, 46 acres were purchased for \$445,161. In January 2009, SWFWMD and Polk Co. acquired 3510 acres (Crooked Lake West site) for \$5,369,950 from SWFWMD; \$2,000,000 from Polk Co.; and \$12,239,500 from NRCS. In 6/2009, 5 acres were purchased in Carter Creek site for \$46,000. In July 2009 another acre was received as a donation from C.L./Vera Stegmaier in Lake Aphorpe. In October 2009 a little over 2 acres were purchased for \$24,000 in Carter Creek site. All of these are to be managed by FWCC. On December 29, 2009, 1.1 acres were purchased by DSL for \$11,500. FWC will manage this.

On March 29, 2011, 1/2 acre on Holmes Ave. was donated (Dorothy A. Sanders Revocable Trust--\$2,000), FWCC managing. On April 5, 2011 16.21 acres were purchased (TNC/Lawson--\$97,000). FFS will manage this. On April 15, 2011 ARC recommended a 2,071-acre reduction to the project boundary due to residential/rural/commercial development. On July 20, 2011, DSL purchased 1.87 acres on Holmes Avenue for \$8,422. In August 2011, DSL bought 13.53 acres on Holmes Avenue via tax deed sales for \$40,429.

On December 9, 2011 ARC placed this project in the new Critical Natural Lands (CNL) category.

Coordination

The Lake Wales Ridge sites are included within the U.S. Fish and Wildlife Service (USFWS) Lake Wales Ridge National Wildlife Refuge which is the top priority endangered species project of the Service. The Service will also participate in management. TNC is an intermediary for non-mega parcel sites on this project.

Full Fee

Management Policy Statement

The primary goals of management of the Lake Wales Ridge Ecosystems project are to conserve and protect environmentally unique and irreplaceable lands that contain native, relatively unaltered flora and fauna representing a natural area unique to, or scarce within, a region of this state or a larger geographic area; to conserve and protect significant habitat for native species or endangered and threatened species; and to conserve, protect, manage, or restore important

ecosystems, landscapes, and forests, in order to enhance or protect significant surface water, coastal, recreational, timber, fish or wildlife resources which local or state regulatory programs cannot adequately protect.

Management Prospectus

Qualifications for state designation The full fee sites of the Lake Wales Ridge project qualify as single-use Wildlife and Environmental Areas (WEA) because of their high concentration of threatened or endangered species, particularly plants. The forest resources of the Lake Walk-in-Water, Hesperides and Warea sites make them desirable for use as state forests. The natural and recreational resources of the Lake June West parcel qualify it as a unit of the state park system.

Manager DRP (Lake June West); FFS (Lake Walk-in-Water, Hesperides and five Warea sites) and FWCC (remaining sites). FFS will monitor the less-than-fee portion.

Conditions affecting intensity of management

This project is a high-needs area which will require additional funding to stabilize and protect the natural resources. Managing this ecosystem will require large prescribed burning crews that are well-trained and well-equipped to handle high intensity fires in close proximity to residential areas.

Timetable for implementing management and provisions for security and protection of infrastructure During the first year after acquisition, management will focus on site security, conducting fuel reduction burns, conducting inventories of natural resources, and mapping of sensitive resources and conceptual planning. Public use facilities, if any, will be provided in succeeding years.

Revenue-generating potential No significant revenue is expected to be generated initially. As public use increases, modest revenue may be generated.

Cooperators in management activities It is recommended that the Archbold Biological Station and TNC serve as cooperators in managing some of the sites.

Less Than Fee and Small Holdings

Management Prospectus

Qualifications for state designation The forest resources of the Lake Walk-in-Water, and Hesperides sites make them desirable for use as state forests. The small parcels sites of the Lake Wales Ridge project qualify as single-use WEA because of its high concentration of threatened or endangered species, particularly plants. Thirty percent of the plants and animals of the Lake Wales Ridge occur nowhere else in the world.

Manager The FWCC is recommended as project manager for the small holdings. OES and FFS to monitor CEs.

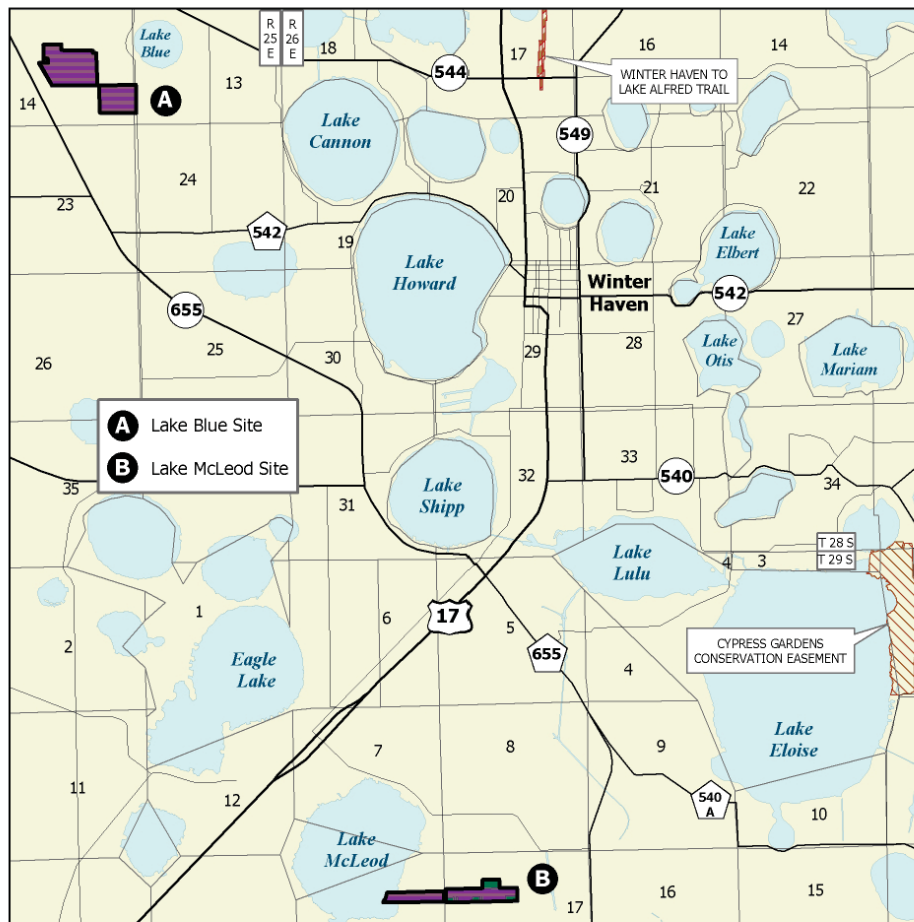
Conditions affecting intensity of management This project is a high-need area, which will require additional funding to stabilize and protect the natural resources. Managing this ecosystem will require large prescribed burning crews that are well-trained and well-equipped to handle high intensity fires in close proximity to residential areas.

Timetable for implementing management and provisions for security and protection of infrastructure

During the first year after acquisition, management will focus on site security, conducting fuel reduction burns, conducting inventories of natural resources, and mapping of sensitive resources and conceptual planning. Public use facilities, if any, will be provided in succeeding years.

Revenue-generating potential No significant revenue is expected to be generated initially. As public use increases, modest revenue may be generated.

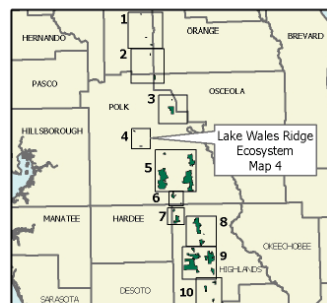
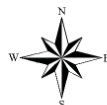
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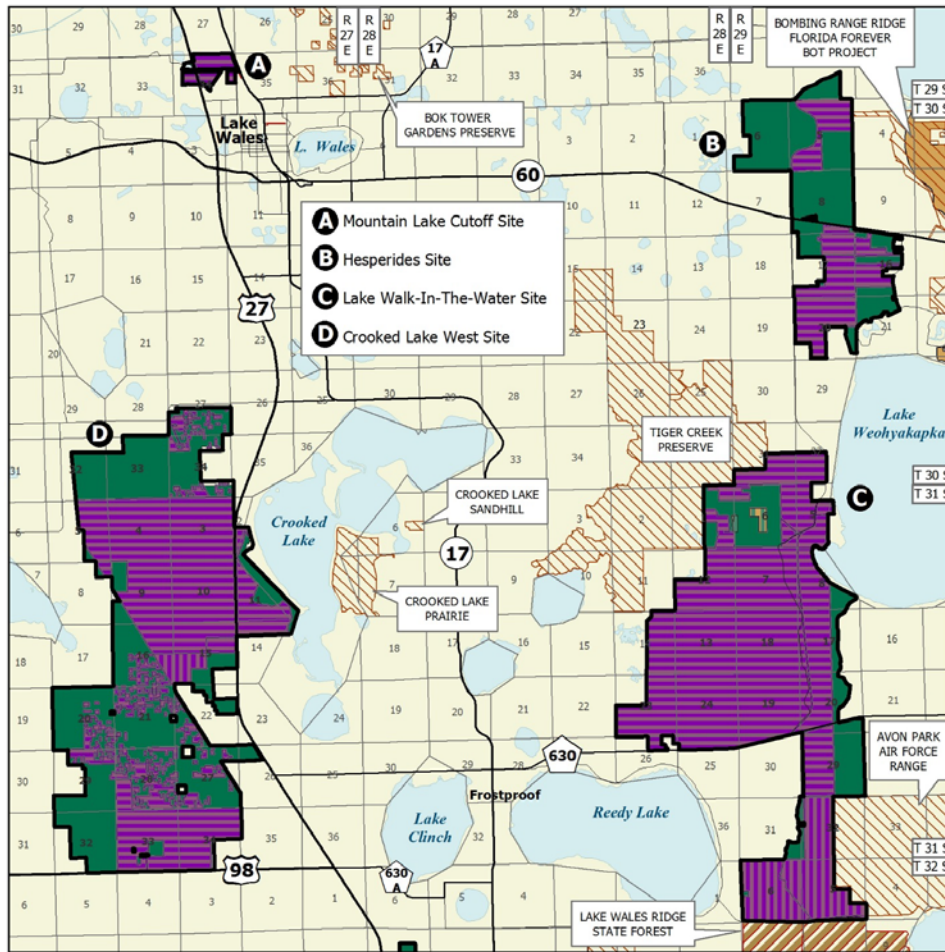
LAKE WALES RIDGE ECOSYSTEM: MAP 4 OF 10

POLK COUNTY

- Florida Forever BOT Project Boundary
- Essential Parcel(s) Remaining
- Acquired
- State Owned Lands
- Other Conservation Lands



OCTOBER 2006

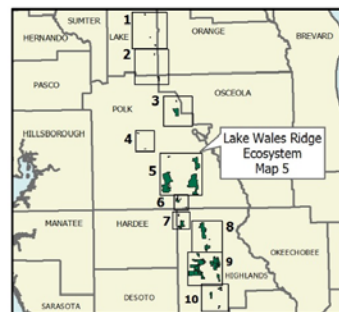


LAKE WALES RIDGE ECOSYSTEM: MAP 5 OF 10

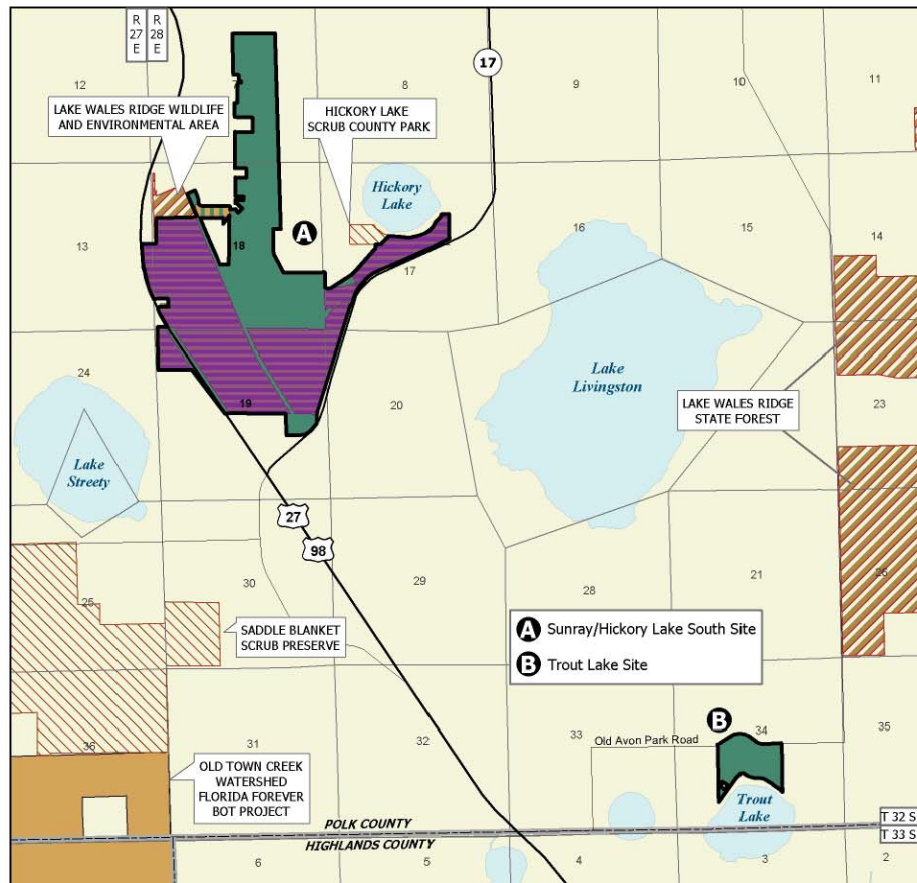
POLK COUNTY

- Florida Forever BOT Project Boundary
- Acquired for Conservation (Fee-Simple)
- Acquired for Conservation (Less-Than-Fee)
- TNC Owned Lands Within Project
- Essential Parcel(s) Remaining
- Other Florida Forever BOT Projects
- State Owned Lands
- Other Conservation Lands

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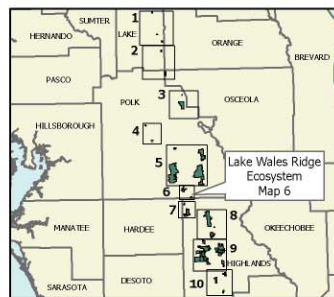
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LAKE WALES RIDGE ECOSYSTEM: MAP 6 OF 10

POLK COUNTY

- Florida Forever BOT Project Boundary
- Acquired for Conservation (Fee Simple)
- TNC Owned Lands Within Project
- Essential Parcel(s) Remaining
- Other Florida Forever BOT Projects
- State Owned Lands
- Other Conservation Lands



OCTOBER 2011

Management Cost Summary/DRP

Category Source of Funds	Startup CARL	Recurring CARL
Salary	\$44,334	\$97,575
OPS	\$14,560	\$12,000
Expense	\$23,000	\$24,000
OCO	\$67,000	\$1,000
FCO	\$57,720	\$0
TOTAL	\$206,614	\$134,575

Management Cost Summary/FFS (Warea)

Category Source of Funds	Startup CARL	Recurring CARL	Category Source of Funds	Startup CARL	Recurring CARL
Salary	\$44,334	\$97,575	Salary	\$0	\$0
OPS	\$14,560	\$12,000	OPS	\$0	\$0
Expense	\$23,000	\$24,000	Expense	\$5,000	\$4,000
OCO	\$67,000	\$1,000	OCO	\$0	\$0
FCO	\$57,720	\$0	FCO	\$0	\$0
TOTAL	\$206,614	\$134,575	TOTAL	\$5,000	\$4,000

Management Cost Summary/FFS (Hesperides)

Category Source of Funds	Startup CARL	Recurring CARL
Salary	\$63,440	\$63,440
OPS	\$0	\$0
Expense	\$20,000	\$17,000
OCO	\$111,700	\$10,000
FCO	\$0	\$0
TOTAL	\$195,140	\$90,440

Exhibit U

Land Management Reviews

2017 Land Management Review Team Report for Lake Wales Ridge State Forest

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1. Introduction

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

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

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

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

1.1. Property Reviewed in this Report

Name of Site: Lake Wales Ridge State Forest

Managed by: Division of Agriculture and Consumer Services, Florida Forest Service

Acres: 26,579.49 **County:** Polk

Purpose(s) for Acquisition: to protect the threatened and endangered ecosystems such as scrub, southern ridge sandhill, dry prairie, and cutthroat grass seeps that are unique to the Lake Wales Ridge, Bombing Range Ridge, and the Kissimmee Valley.

Acquisition Program(s): CARL/P2000, Florida Forever

Original Acquisition Date: February 2, 1985

Area Reviewed: Entire Property

Last Management Plan Approval Date: December 8, 2006

Review Date: February 6, 2017

Agency Manager and Key Staff Present:

Corey Walk

Kawika Bailey

Ricky Britt

Nathan Bartosek

Candice Knothe

Review Team Members Present (voting)

DRP: Chris Matson

FWC: Jennifer Myers

FFS: Bill Korn

DEP: Lance Kautz

SFWMD: Ayouna Riddick

Polk County: Tabitha Biehl

Conservation organization: Nancy Bissett

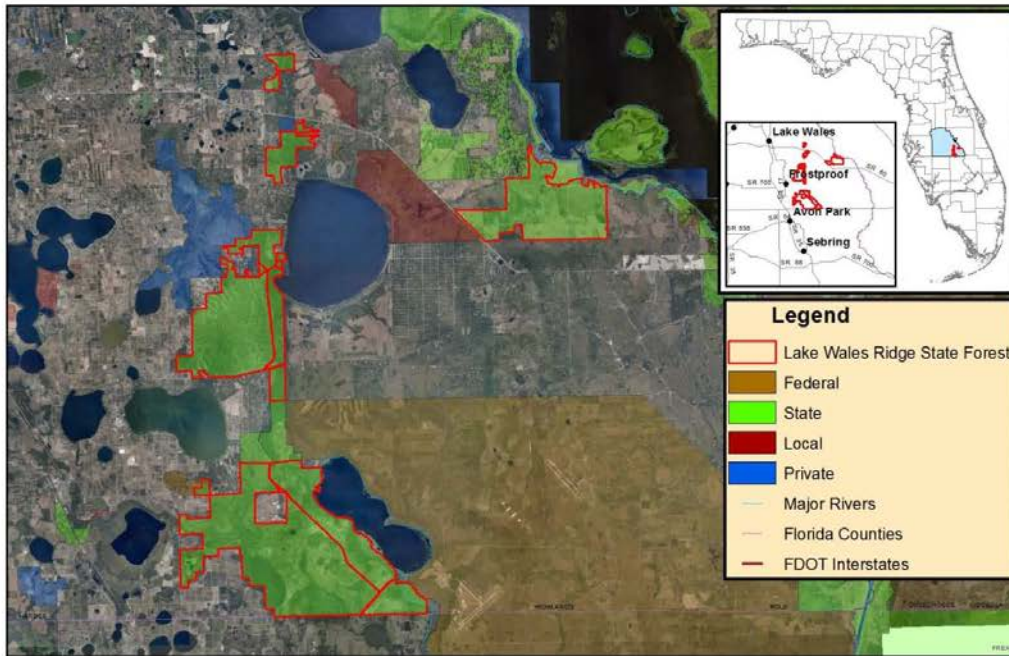
Private land manager: Sam Van Hook

Other Non-Team Members Present (attending)

Aric Larson, DEP/DSL

Dwight Myers, FWC

1.2 Property Map



1.3. Overview of Land Management Review Results

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

Yes = 8, No = 0

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

Yes = 8, No = 0

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

Table 1: Results at a glance.

Major Land Management Categories	Field Review	Management Plan Review
Natural Communities / Forest Management	3.90	3.48
Prescribed Fire / Habitat Restoration	3.55	2.94
Hydrology	3.50	2.75

Imperiled Species	3.77	3.23
Exotic / Invasive Species	4.15	3.42
Cultural Resources	4.38	3.81
Public Access / Education / Law Enforcement	3.79	3.32
Infrastructure / Equipment / Staffing	3.58	N/A
Color Code (See Appendix A for detail)		
Excellent	Above Average	Below Average
		Poor

1.3.1 Consensus Commendations for the Managing Agency

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

1. The team commends FFS for initiating habitat enhancement efforts for scrub jays at the Walk-in-the-Water Tract, including excellent support from local FWC staff during both restoration and monitoring activities. (8+, 0-)
2. The team commends FFS for management activities that have improved conditions for cutthroat grass within wet flatwoods on the Arbuckle Tract. (8+, 0-)
3. The team commends FFS for development of the Operation Outdoor Freedom program, and provision of the Camp Prairie facility to the program. (8+, 0-)
4. The team commends FFS for aggressive treatment of invasive exotic plants, and efforts of the herbicide team. (8+, 0-)
5. The team commends FFS for providing a great example of a multiple use property. (8+, 0-)
6. The team commends FFS for increasing prescribed fire management since the last LMR, which has burned nearly 13,000 acres over the last two fiscal years. (8+, 0-)
7. The team commends FFS for maintaining a dedicated plant biologist position for the forest; Ms. Knothe is very committed and knowledgeable. (8+, 0-)
8. The team commends all the LWRSF staff for their dedication and enthusiasm. All staff at the forest appear to be incredibly ambitious. (8+, 0-)

1.3.2. Consensus Recommendations to the Managing Agency

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

1. The team recommends that FFS manage scrub habitat on the Arbuckle Tract that is not included in the Save our Hardwoods research project to attain optimal conditions for Florida scrub jays across the tract (see FWC scrub management guidelines). (8+, 0-)

Managing Agency Response: FFS will continue to prescribe burn scrub habitat on a 6-19 year fire interval at LWRSF. As mentioned in the commendations there has been a positive trend in burning over the last 2 years. Considerations for different fire ignition techniques will be used

through aerial/hand ignition. Mechanical and herbicide techniques will also be used to assist in application of prescribed fire in scrub management at LWRSF. FFS will continue to work with the local FWC Biologist for FSJ management, FSJ surveys and restoration projects on the Arbuckle and WIW tract.

2. The team recommends that FFS clarify / define acceptable management options within the Save our Hardwoods scrub sites. (8+, 0-)

Managing Agency Response: Local decision is to allow the agreement to lapse and then apply management without restrictions. Once the 10 years pass in these scrub SOH units, FFS will plan and facilitate prescribed burns within these units and continue to burn on a 6-19 year fire interval. Units that don't burn well will be assessed for mechanical and herbicide treatments to help enhance future prescribed burns.

3. The team recommends that FFS seek opportunities to enhance cooperation with neighboring landowners with regard to land management activities. (8+, 0-).

Managing Agency Response: FFS has worked with several adjacent landowners in land management activities at LWRSF. Several examples include working with Alico for invasives access on southwest Arbuckle, flooding/tree mortality issues on south Arbuckle with private landowners to the south of boundary (Highlands County), SFWMD on Prairie tract for invasive plant management and cattle leases, Polk County on west Arbuckle for culvert/drainage improvements, etc. FFS will continue to look for opportunities and assist any cooperation opportunities with neighboring landowners at LWRSF.

4. The team recommends that FFS continue to increase prescribed burning to reach desired fire frequencies, including a goal of every 1-3 years in flatwoods. (8+, 0-)

Managing Agency Response: As mentioned in the commendations there has been a positive trend in burning over the last 2 years. FNAI recommends a burn rotation of 1-4 years. Most flatwoods on LWRSF have been consistently burned on average every 2 years except in flatwoods restoration sites before logging operations to prevent from degrading or killing existing timber resources. FFS will continue prescribed burning in flatwoods on a 1-5 year interval based on assessments of forest health, timber sales, and native pine reforestation projects. Site characteristics and pine density will need to be considered with prescribed fire within all flatwoods at LWRSF.

5. The team recommends that FFS research and establish a habitat management strategy to implement restoration of the Walk-in-the-Water sandhill. (8+, 0-)

Managing Agency Response: FFS will develop a 5 year Ecology Operation Plan that will outline restoration in WIW sandhill. Several sections will also be addressed in the next 10 year plan in habitat restoration and natural community management needs/current conditions. Restoration areas will be identified and prioritized in having the greatest restoration potential. Site specific management actions and strategies will be developed for each site and monitoring will be developed to track changes. Sandhill areas outside of the core FSJ area may be managed using prescribed fire, mechanical treatment, herbicide treatment, groundcover planting or a combination of these strategies. For sandhill habitat within the core FSJ area on the WIW tract, management may use prescribed fire, mechanical work and herbicide treatment, or a combination of these strategies to attain optimal FSJ habitat. FFS will continue to pursue funding for sandhill restoration through outside agencies like FWC.

The team recommends that FFS consider selective thinning of pines in appropriate wetland areas to achieve desirable habitat conditions. (8+, 0-)

Managing Agency Response: FFS will consider when adjacent to harvesting operations or timber sale areas. The balance of BA reduction with potential hydrological and habitat impacts (rutting) will need to be considered. FFS will continue to follow timber harvesting Silvicultural BMPs within and adjacent to wetlands on LWRSF. In previous timber sale harvests on Arbuckle, logging equipment has shown to easily rut or sink when logging too close or within adjacent wetlands, especially in cutthroat/wet flatwoods areas adjacent to baygall or basin marsh.

6. The team recommends that FFS continue to emphasize growing season burns throughout the forest, particularly in cutthroat grass flatwoods, to optimize ecological benefit to native plants and animals.

Managing Agency Response: FFS will continue to prescribe burn cutthroat grass flatwoods on a 1-5 year fire interval within both wet and mesic flatwoods at LWRSF. Reforestation of native pine plantings and stands of dense pine timber will be considered for growing season burning. As mentioned in the commendations there has been a positive trend in burning over the last 2 years. There has also been a positive trend in growing season burns.

7. The team recommends that FFS increase efforts to systematically reduce hardwood component in dry prairie communities. (8+, 0-)

Managing Agency Response: There is no longer dry prairie on LWRSF as determined by FNAI in the 2017 natural communities survey. LWRSF is outside the historic range of dry prairie. These areas have been mapped as mesic flatwoods in 2017 by FNAI and will be burned on a 1-4 year fire interval with combined efforts with cattle lessees and LWRSF. Invasives control and mechanical use will continue in these areas on the Prairie tract as part of the cattle leases.

8. The team recommends that FFS seek partners to assist in developing an area-wide plant list. (8+, 0-)

Managing Agency Response: FFS will pursue collaboration with area-wide researchers, partners and use existing plant inventories to develop a wide-ranging plant species list for LWRSF. Efforts will be made to conduct more vegetation inventories in un-sampled areas. There is already interest to formally document more plant specimens using resources like the University of South Florida Herbarium.

9. The team recommends that FFS assess the need to implement more mechanical vegetation site preparation along the perimeters of prescribed fire units to facilitate the movement of fire into the interiors of units and eliminate fire shadows and overgrown edges. (8+, 0-)

Managing Agency Response: FFS has used a brown tree cutter, bobcat/w attachments, and gyrotrac in fireline/burn prep along perimeters and within burn units to help enhance prescribed fire into interior of burn units. This currently is done for burn prep for various natural

community types at LWRSF that include sandhill, xeric hammock, scrub, scrubby flatwoods and other flatwoods types. Mechanical preparation needs to be assessed for negative impact on T&E species as well.

10. The team recommends that FFS better define the extent of dry prairie community at the Prairie Tract, and develop/implement a strategy to achieve desired habitat conditions in this community. (8+, 0-)

Managing Agency Response: N/A. There is no longer dry prairie on LWRSF as determined by FNAI. This community is mapped as mesic flatwoods in 2017 by FNAI. All previous dry prairie will be managed as mesic flatwoods at LWRSF on the Prairie tract moving forward. These areas on the Prairie tract are currently managed through cattle leases and invasives control. Prescribed burns will be continued to be conducted on a 1-4 year fire interval.

2. Field Review Details

2.1 Field Review Checklist Findings

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

1. Natural communities, specifically dome swamp, wet flatwoods, baygall, xeric hammock, depression marsh, shell mound, marsh lake/sandhill upland:
2. Listed species protection and preservation, specifically listed plants in general:
3. Natural resources survey/monitoring, specifically invasive species survey and monitoring:
4. Cultural resources, specifically cultural resource survey, and protection and preservation:
5. Restoration, specifically restoration of cutthroat grass flatwoods:
6. Forest management, specifically timber inventory/assessment, timber harvesting, and site preparation:
7. Non-native, invasive and problem species, specifically the prevention and control of plants, pests and pathogens:
8. Resource protection, specifically gates and fencing:
9. Public access, specifically roads, parking and boat access:
10. Environmental education and outreach, specifically pertaining to invasive species, interpretive facilities and signs, and recreational opportunities:
11. Management resources, specifically waste disposal and sanitary facilities:
12. Infrastructure, specifically pertaining to buildings:

2.2. Items Requiring Improvement Actions in the Field

The following items received low scores on the review team checklist, which indicates that management actions noted during the Field Review were not considered sufficient (less than 3.0 score on average). Please note that overall good scores do not preclude specific recommendations by the review team

requiring remediation. **The management plan update should include information on how these items have been addressed:**

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

Managing Agency Response: All natural communities in maintenance condition will be discussed in the next 10 year plan at LWRSF. For the above evaluation of NC in maintenance – Scrub -4, Sandhill-3, Dry Prairie – Remove from List; Now mesic flatwoods – 5.

2. Restoration, specifically sandhill restoration on Walk-in-the-Water Tract, received a below average score. The review team is asked to evaluate, based on their perspective, whether restoration efforts are adequate.

Managing Agency Response: FFS requested FNAI in 2017 to better define the sandhill communities on WIW compared to xeric hammock for existing current conditions. Based off this information FFS will define restoration efforts and determine if they are adequate. Restoration efforts have continued on the WIW tract in sandhill that includes mechanic, herbicide treatments, and wiregrass plantings. This will be detailed in several sections in the next 10 year plan at LWRSF.

3. Resources Protection, specifically law enforcement presence, received a below average score. The review team is asked to evaluate, based on information provided by the managing agency, whether resources are sufficient to protect the property.

Managing Agency Response: DOACS no longer has employees for state lands law enforcement. FFS will continue to rely on other agencies (FWC LE, Polk County Sheriff's Office) for law enforcement. Law enforcement presence on the state forest is based on their priorities. Currently, FFS regularly coordinates and reports issues with local FWC LE staff as needed on all tracts at LWRSF.

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

Managing Agency Response: While we would like a full time District Biologist and additional funding for restoration projects, staffing and budgets are decided by the legislature and Department in state office. FFS will continue to apply for funding projects for NWTF, FWC, Upland Invasives Treatment Program, FFS internal Invasives funding, Prescribed Fire/restoration projects, and other grant proposals to help with funding projects at LWRSF.

2.3. Field Review Checklist and Scores

Field Review Item	Reference #	Anonymous Team Members								Average
		1	2	3	4	5	6	7	8	
Natural Communities (I.A)										
Mesic flatwoods	I.A.1	3	4	4	3	4	4	4	4	3.75
Scrub	I.A.2	3	3	2	2	2	3	3	3	2.63
Dry prairie	I.A.3	2	3	1	2	1	4	3	4	2.50
Hydric hammock, bottomland forest/floodplain forest	I.A.4	4	4	3	3	3	3	4	3	3.38
Dome Swamp	I.A.5	4	5	5	4	4	5	5	5	4.63
Wet prairie	I.A.7	3	4	1	2	4	4	4	4	3.25
Wet flatwoods	I.A.8	4	5	4	3	5	4	4	5	4.25
Floodplain swamp	I.A.11	4	3	3	4	3	3	4	4	3.50
Basin swamp	I.A.12	4	x	3	4	4	4	4	4	3.86
Sandhill	I.A.13	3	3	1	2	2	2	3	2	2.25
Scrubby flatwoods	I.A.14	4	4	2	2	2	3	4	3	3.00
Baygall	I.A.15	4	4	3	4	4	4	4	5	4.00
Xeric hammock	I.A.17	4	4	4	X	5	5	4	5	4.43
Depression marsh	I.A.18	4	5	5	5	5	5	5	5	4.88
Basin marsh	I.A.19	5	x	3	3	4	X	4	4	3.83
Shell mound	I.A.20	4	x	5	3	5	X	3	X	4.00
Marsh Lake/sandhill upland lake	I.A.21	3	4	5	4	4	5	5	5	4.38
Natural Communities Average Score										3.68
Listed Species: Protection & Preservation (I.B)										
Animals	I.B.1		4			3	4	3	3	3.40
Scrub Jay	I.B.1.a	4	4		3	3	3	4	4	3.57
Plants	I.B.2		4		4	5	4	4	5	4.33
Listed Species Average Score										3.77
Natural Resources Survey/Management Resources (I.C)										
Listed species or their habitat monitoring	I.C.2	4	4	4	3	3	4	4	5	3.88
Other non-game species or their habitat monitoring	I.C.3	4	4	3	3	3	3	3	4	3.38
Fire effects monitoring	I.C.4	3	4	4	3	3	5	4	5	3.88
Other habitat management effects monitoring	I.C.5	3	4	4	3	3	5	4	4	3.75
Invasive species survey / monitoring	I.C.6	5	5	4	4	5	5	4	5	4.63
Cultural Resources (Archeological & Historic sites) (II.A, II.B)										
Cultural Res. Survey	II.A	5	4	4	4	5	5	4	4	4.38
Protection and preservation	II.B	5	4	4	4	5	5	4	4	4.38
Cultural Resources Average Score										4.38

Resource Management, Prescribed Fire (III.A)										
Area Being Burned (no. acres)	III.A.1	4	3	3	4	3	4	3	3	3.38
Frequency	III.A.2	4	4	2	3	2	3	4	4	3.25
Quality	III.A.3	4	4		2	2	4	3	5	3.43
Resource Management, Prescribed Fire Average Score										3.35
Restoration (III.B)										
Sandhill (Walk-in-the-water Tract)	III.B.1	2		4	2	3	3	4	2	2.86
Cutthroat flatwoods	III.B.2	5	4	5	4	4	5	5	5	4.63
Restoration Average Score										3.74
Forest Management (III.C)										
Timber Inventory / Assessment	III.C.1	4	4	4	4	5	4	5	5	4.38
Timber Harvesting	III.C.2	4	4	4	4	4	5	4	5	4.25
Reforestation/Afforestation	III.C.3	4	4	3	4	4	4	4	4	3.88
Site Preparation	III.C.4	4	4	X	4	4	4	4	4	4.00
Forest Management Average Score										4.13
Non-Native, Invasive & Problem Species (III.D)										
Prevention										
prevention - plants	III.D.1.a	5	4	3	4	5	5	4	3	4.13
prevention - animals	III.D.1.b	5	4	3	4	3	5	4	3	3.88
prevention - pests/pathogens	III.D.1.c	5	4	3	4	4	5	3	4	4.00
Control										
control - plants	III.D.2.a	5	5	4	5	5	5	5	5	4.88
control - animals	III.D.2.b	5	4	1	4	3	5	5	4	3.88
control - pest/pathogens	III.D.2.c	5	4	3	4	4	5	4	4	4.13
Non-Native, Invasive & Problem Species Average Score										4.15
Hydrologic/Geologic function Hydro-Alteration (III.E.1)										
Roads/culverts	III.E.1.a	3	4	4	4	4	4	4	4	3.88
Ditches	III.E.1.b	5	2	1	2	4	4	3	4	3.13
Hydrologic/Geologic function, Hydro-Alteration Average Score										3.50
Ground Water Monitoring (III.E.2)										
Ground Water Monitoring Average Score										n/a
Surface Water Monitoring (III.E.3)										
Surface Water Monitoring Average Score										n/a
Resource Protection (III.F)										
Boundary survey	III.F.1	3	4	3	3	3	3	3	2	3.00
Gates & fencing	III.F.2	3	4	4	5	3	4	4	5	4.00
Signage	III.F.3	3	4	4	3	4	4	4	5	3.88
Law enforcement presence	III.F.4	3	4	2	3	2	3	3	3	2.88
Resource Protection Average Score										3.44
Adjacent Property Concerns (III.G)										
Land Use										
Expanding Development	III.G.1.a	3	3	X	3	3	3	3	4	3.14
Ruck Dairy Property	III.G.1.b	3	3	X	3	3	4	3	4	3.29
Standard Sand Co.	III.G.1.c		3	X	3	3	X	3	3	3.00
Inholdings/additions	III.G.2	3	3	X		3	3	3	3	3.00

Public Access & Education (IV.1, IV.2, IV.3, IV.4, IV.5)											
Public Access											
Roads	IV.1.a	5	4	5	4	4	4	5	4		4.38
Parking	IV.1.b	5	4	5	4	4	4	4	4		4.25
Boat Access	IV.1.c	5	5	5	4	4	5	4	3		4.38
Environmental Education & Outreach											
Wildlife	IV.2.a	5	4	3	4	4	4	4	3		3.88
Invasive Species	IV.2.b	5	4	4	4	4	4	4	3		4.00
Habitat Management Activities	IV.2.c	5	4	2	4	4	4	4	3		3.75
Interpretive facilities and signs	IV.3	5	4	4	4	4	4	5	4		4.25
Recreational Opportunities	IV.4	5	5	4	4	5	5	5	4		4.63
Management of Visitor Impacts	IV.5	5	4	2	4	3	4	4	4		3.75
Public Access & Education Average Score											4.14
Management Resources (V.1, V.2, V.3, V.4)											
Maintenance											
Waste disposal	V.1.a	4	5	4	1	4	5	5	4		4.00
Sanitary facilities	V.1.b	4	5	4	4	4	5	5	4		4.38
Infrastructure											
Buildings	V.2.a	4	4	3	4	5	5	4	4		4.13
Equipment	V.2.b	4	4	2	4	4	5	4	2		3.63
Staff	V.3	4	2	2	2	3	4	4	2		2.88
Funding	V.4	4	2	1	2	3	3	3	2		2.50
Management Resources Average Score											3.58
Color Code: Excellent Above Average Below Average Poor Missing Vote Insufficient Information See Appendix A for detail											

3. Land Management Plan Review Details

3.1 Items Requiring Improvements in the Management Plan

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

1. Natural communities, specifically hydric hammock/bottomland forest/floodplain forest, sandhill, scrubby flatwoods, and marsh lake/sandhill upland lake received a below average score. This is an indication that the management plan does not sufficiently address current or desired condition and/or future management actions to protect or restore.

Managing Agency Response: This will be corrected in the next 10 year plan. The listed natural communities and 2017-FNAI surveys at LWRSF helped with these updated NC type classifications. The new surveys and shapefiles received by FFS contain updated current and historic NC types for all tracts at LWRSF.

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

Managing Agency Response: This will be corrected in the next 10 year plan. All communities will have a Rx burn frequency. Table 9 in the new 10 year plan at LWRSF will contain fire intervals by natural community type. Also, the next 10 year plan will contain fire intervals in the NC types section.

3. Restoration, specifically sandhill restoration on the Walk-in-the-Water Tract, received below average scores. This is an indication that the management plan does not sufficiently address restoration.

Managing Agency Response: This will be corrected in the next 10 year plan. All communities, including sandhills, will have activity needs required to reach the desired future condition. There are several sections for habitat restoration and management needs for sandhill in the next 10 year plan for LWRSF. A more detailed, prioritized, site-specific plan is being developed locally by FFS staff for restoration projects on WIW. Several small scale pilot restoration projects were completed during the last planning period and future work will build upon the recommendations of those projects and current research.

4. Hydrologic/geologic function, specifically roads/culverts and ditches, received a below average score. This is an indication that the management plan does not sufficiently address hydrologic and geologic function.

Managing Agency Response: While we will not include every culvert, ditch, low water crossing in the ten year plan we will include areas of concern that negatively impact the hydrologic systems. There will be several sections and maps in the next 10 year plan that include locations and functions of hydrology/water resources. Roads, culverts, and ditches will be shown on maps as well and described within the plan as well.

5. Resource protection, specifically boundary survey, received a below average score. This is an indication that the management plan does not sufficiently address resource protection.

Managing Agency Response: There are maps that show all the tract boundaries at LWRSF and locations to where they are based on shapefiles and parcels through land acquisitions by FFS. There are several sections of boundary surveys needed on Arbuckle, WIW, and Hesperides tracts. This is covered in the additional land needs section of the 10 year plan.

6. Adjacent property concerns, specifically discussion of potential impacts from the Standard Sand property, received a below average score. This is an indication that the management plan does not sufficiently address adjacent property concerns.

Managing Agency Response: Adjacent property concerns will be in the next 10 year plan. The section in the next 10 year plan that covers adjacent property concerns is called "adjacent conflicting uses".

3.2 Management Plan Review Checklist and Scores

Plan Review Item	Reference #	Anonymous Team Members								Average
		1	2	3	4	5	6	7	8	
Natural Communities (I.A)										
Mesic flatwoods	I.A.1	4	5	3	3	3	4	4	3	3.63
Scrub	I.A.2	3	4	5	3	3	3	3	3	3.38
Dry prairie	I.A.3	4	4		3	3	3	3	2	3.14
Hydric Hammock/Bottomland forest/floodplain forest	I.A.4	4	3	1	3	3	4	3	2	2.88
Dome Swamp	I.A.5	4	4	4	3	3	5	3	4	3.75
Wet prairie	I.A.7	4	4	4	3	3	4	3	3	3.50
Wet flatwoods	I.A.8	4	4	4	3	3	4	3	3	3.50
Floodplain swamp	I.A.11	4	4	3	3	3	3	3	3	3.25
Basin swamp	I.A.12	4	4	3	3	3	4	3	3	3.38
Sandhill	I.A.13	3	4	3	2	3	3	3	2	2.88
Scrubby flatwoods	I.A.14	3	2	3	2	3	4	3	3	2.88
Baygall	I.A.15	3	4	3	3	3	4	3	4	3.38
Xeric hammock	I.A.17	4	5	3	2	3	5	3	3	3.50
Depression marsh	I.A.18	4	4	3	4	3	5	3	3	3.63
Basin marsh	I.A.19	3	4	3	3	3	4	3	3	3.25
Shell mound	I.A.20	3	5	3	3	3	3	3	3	3.25
Marsh Lake/sandhill upland lake	I.A.21	3	4	3	1	3	4		2	2.86
Natural Communities Average Score										3.29
Listed species: Protection & Preservation (I.B)										
Animals	I.B.1		4	3		2	4	3	3	3.17
Scrub Jay	I.B.1.a	4	4	4	2	2	3	3	4	3.25
Plants	I.B.2		4	3	3	3	4	3	3	3.29
Listed Species Average Score										3.23
Natural Resources Survey/Management Resources (I.C)										
Listed species or their habitat monitoring	I.C.2	4	4	3	2	3	4	3	3	3.25
Other non-game species or their habitat monitoring	I.C.3	4	4	2	2	3	3	3	3	3.00
Fire effects monitoring	I.C.4	3	4	3	3	3	5	3	3	3.38
Other habitat management effects monitoring	I.C.5	3	4	3	3	3	4	3	3	3.25

Invasive species survey / monitoring	I.C.6	4	4	3	3	3	4	3	3	3.38
Cultural Resources (Archeological & Historic sites) (II.A, II.B)										
Cultural Res. Survey	II.A	5	4	4	4	3	4	3	3	3.75
Protection and preservation	II.B	5	4	4	4	3	5	3	3	3.88
Cultural Resources Average Score										3.81
Resource Management, Prescribed Fire (III.A)										
Area Being Burned (no. acres)	III.A.1	4	4	3	3	2	4	3	2	3.13
Frequency	III.A.2	4	4	3	2	2	3	3	2	2.88
Quality	III.A.3	4	4		1	1	4	3	3	2.86
Resource Management, Prescribed Fire Average Score										2.95
Restoration (III.B)										
Sandhill (Walk-in-the-Water Tract)	III.B.2	4	2	2	2	3	3	3	2	2.63
Cutthroat Flatwoods	III.B.3	3	4	3	4	3	3	3	3	3.25
Restoration Average Score										2.94
Forest Management (III.C)										
Timber Inventory / Assessment	III.C.1	4	4	4	4	3	4	4	4	3.88
Timber Harvesting	III.C.2	4	4	4	4	3	5	3	3	3.75
Reforestation/Afforestation	III.C.3	4	4	3	4	3	4	3	2	3.38
Site Preparation	III.C.4	4	4	3	4	3	4	4	3	3.63
Forest Management Average Score										3.66
Non-Native, Invasive & Problem Species (III.D)										
Prevention										
prevention - plants	III.D.1.a	5	4	2	4	3	4	3	3	3.50
prevention - animals	III.D.1.b	5	4	2	4	1	4	3	3	3.25
prevention - pests/pathogens	III.D.1.c	5	4	2	4	1	4	3	3	3.25
Control										
control - plants	III.D.2.a	4	4	4	5	3	5	3	3	3.88
control - animals	III.D.2.b	4	4	3	4	3	4	3	3	3.50
control - pest/pathogens	III.D.2.c	4	4	2	4	1	4	3	3	3.13
Non-Native, Invasive & Problem Species Average Score										3.42
Hydrologic/Geologic function, Hydro-Alteration (III.E.1)										
Roads/culverts	III.E.1.a	3	3	3	2	2	4	3	3	2.88
Ditches	III.E.1.b	3	2	2	2	2	4	3	3	2.63
Hydrologic/Geologic function, Hydro-Alteration Average Score										2.75
Ground Water Monitoring (III.E.2)										
Ground Water Monitoring Average Score										N/A
Surface Water Monitoring (III.E.3)										
Surface Water Monitoring Average Score										N/A
Resource Protection (III.F)										
Boundary survey	III.F.1	3	4	3	3	2	3	3	2	2.88
Gates & fencing	III.F.2	3	4	3	3	2	4	3	3	3.13

Signage	III.F.3	3	4	3	3	2	4	3	3	3.13
Law enforcement presence	III.F.4	3	4	3	3	2	3	3	4	3.13
Resource Protection Average Score										3.06
Adjacent Property Concerns (III.G)										
Land Use										
Expanding Development	III.G.1.a	3	4	2	4	2	3		3	3.00
Ruck Dairy Property	III.G.1.b	3	4	2	3	2	3		4	3.00
Standard Sand Co.	III.G.1.c		4	2	3	2	2		3	2.67
Inholdings/additions	III.G.2	3	4	3	3	2	3			3.00
Discussion of Potential Surplus Land Determination	III.G.3	3		5	4	4	4	5	3	4.00
Surplus Lands Identified?	III.G.4	3		5	4	4	4	3	3	3.71
Public Access & Education (IV.1, IV.2, IV.3, IV.4, IV.5)										
Public Access										
Roads	IV.1.a	4	4	3	4	3	4	3	3	3.50
Parking	IV.1.b	4	4	3	4	3	4	3	3	3.50
Boat Access	IV.1.c	4	5	3	4	3	4	3	3	3.63
Environmental Education & Outreach										
Wildlife	IV.2.a	4	4	3	4	3	4	3	3	3.50
Invasive Species	IV.2.b	4	4	3	4	3	4	3	3	3.50
Habitat Management Activities	IV.2.c	4	4	3	4	3	4	3	3	3.50
Interpretive facilities and signs	IV.3	4	4	3	4	3	4	3	3	3.50
Recreational Opportunities	IV.4	4	5	3	4	3	5	3	4	3.88
Management of Visitor Impacts	IV.5	4	4	3	4	3	4	4	3	3.63
Public Access & Education Average Score										3.57
Managed Area Uses (VI.A, VI.B)										
Existing Uses										
Primitive Camping	VI.A.1	5	4	5	2	3	4	5	5	4.13
Hiking	VI.A.2	5	4	5	4	4	4	5	5	4.50
Horseback Riding	VI.A.3	3	3	3	4	4	4	5	4	3.75
Environmental Education/Nature Appreciation	VI.A.4	5	5	5	4	4	4	5	5	4.63
Hunting	VI.A.5	5	4	5	4	4	4	5	5	4.50
Fishing	VI.A.6	5	4	4	4	3	4	5	5	4.25
Timber Management	VI.A.7	5	4	3	4	4	4	4	5	4.13
Cattle Grazing	VI.A.8		2	2	4	2	4	4	4	3.14
Citrus	VI.A.9	5	1	2	4	2	3	5	4	3.25
Canoe/Kayak	VI.A.10		5	5	4	4	4		5	4.50
Proposed Uses										
Color Code: Excellent Above Average Below Average Poor Missing Vote Insufficient Information See Appendix A for detail										

Appendix A: Scoring System Detail

Explanation of Consensus Commendations:

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

Explanation of Consensus Recommendations:

Subsection 259.036(2), F.S., specifically states that the managing entity shall consider the findings and recommendations of the land management review. We ask team members to provide general recommendations for improving the management or public access and use of the property. The teams discuss these recommendations and develop consensus recommendations as described above. We provide these recommendations to the managing agency to consider when finalizing the required ten-year management plan update. We encourage the manager to respond directly to these recommendations and include their responses in the final report when received in a timely manner.

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

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

Average scores are interpreted as follows:

Scores 4.0 to 5.0 are *Excellent*

Scores 3.0 to 3.99 are *Above Average*

Scores 2.0 to 2.99 are *Below Average*

Scores 1.0 to 1.99 are considered *Poor*

Name of Site: Lake Wales Ridge SF

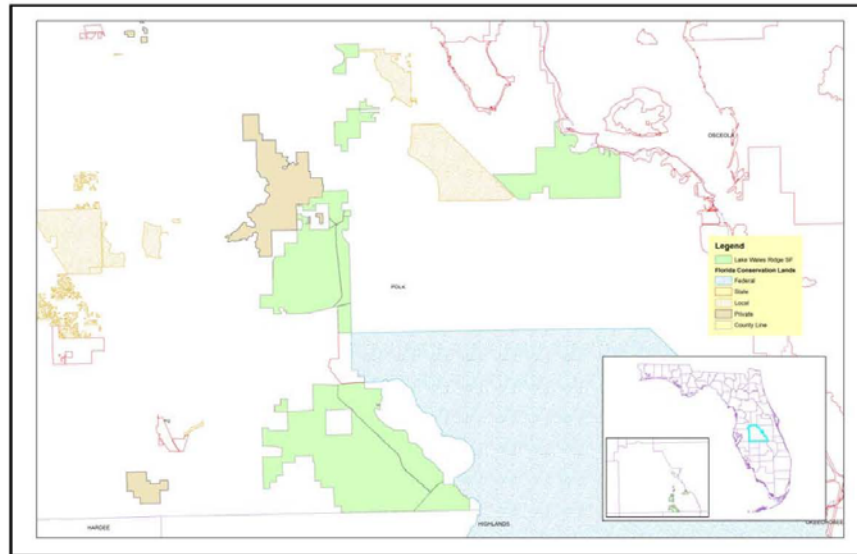
County: Polk

Managed by: Department of Agriculture and Consumer Services
Florida Forest Service

Acres: 26,563
Area Reviewed: Entire Site

Review Date: 03/12/12

Management Plan Approval Date: 12/8/06



Review Team Determination

Managed in accordance with
Acquisition purpose? Yes =6, No =0



Management practices, including public access,
in compliance with the management plan? Yes =6 No =0



Categories	Management Plan Review	Field Review
Natural Communities	0.81	3.69
Listed Species	0.69	2.34
Natural Resource Survey	0.76	3.23
Cultural Resources	1.00	3.60
Prescribed Fire	0.39	3.19
Restoration	0.86	3.43
Exotic Species	0.84	3.89
Hydrology	1.00	3.79
Groundwater Monitoring	0.50	1.67
Surface Water Monitoring	0.50	1.58
Resource Protection	0.88	3.21
Adjacent Property Concerns	0.59	2.73
Public Access & Education	0.98	4.06
Management Resources	N/A	3.42
Managed Area Uses	1.00	N/A
Buildings, Equipment, Staff & Funding	N/A	3.33

Consensus Commendations to the Managing Agency

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

1. The team commends the FFS staff for the ongoing successes in treating and monitoring exotic plant species on the forest. (VOTE: 5+, 0-)
★★★★★
2. The team commends the FFS for their efforts at offsite pine harvests and prescribed fire in the mesic and wet flatwoods. (VOTE: 5+, 0-)
★★★★★
3. The team commends the FFS for their very successful restoration efforts of floodplain marsh in the Otter Slough area. (VOTE: 5+, 0-)
★★★★★
4. The team commends the FFS staff for their public outreach efforts with the Save Our Hardwoods organization. (VOTE: 5+, 0-)
★★★★★
5. The team commends the FFS staff for their restoration of the scrubby flatwoods along the northern portion of the Arbuckle Tract. (VOTE: 5+, 0-)
★★★★★

Consensus Recommendations to the Managing Agency

The following recommendations resulted from a discussion and vote of review team members. The management plan must include responses to the recommendations identified below.

1. The team finds that the response by FFS to efforts on part by the Save Our Hardwoods organization to reduce burning on the forest has had the impact of restricting burning, limiting management in the xeric upland habitat, and consuming FFS staff time to conduct ongoing data collection and research (when the science is already sufficient to demonstrate the importance of fire to manage scrub and sandhill endemic species). Therefore, the team recommends that FFS withhold further actions until any such changes in long-term management is vetted through all state forest stakeholders and submit any resulting changes as a management plan amendment through DEP and ARC, as appropriate. (VOTE: 5+, 0-)
★★★★★

Managing Agency Response: FFS appreciates the opportunity to respond to this report recommendation from the land management review team. The LMR team unanimously agreed that the FFS management practices at LWRSF were in compliance with the management plan and that the state forest was being managed in accordance with the purpose of acquisition. In addition, the LMR report indicates that the collective "scores" for prescribed fire at LWRSF were all at an acceptable level.

Over the past ten years, 38,342 acres have been burned by the FFS on Lake Wales Ridge State Forest. Growing season burns account for nearly 77% of all burns on the forest. Most recently, with the drought commencing in July of 2010, burning averages have fallen across the state impacting all agencies, and FFS is no exception.

A review of the burning data from this state forest shows very positive accomplishments in this critical area of management. In 2008, 7,332 acres of the Arbuckle Tract were burned -which accounts for more than half of the tract. In 2009, despite periods of drought conditions, 1,993 acres were burned on the Prairie Tract and Hesperides Tract. In 2010, much of the Walk-in-Water Tract was burned with a total burned of 2,804 acres. In 2011, despite a severe statewide drought that pulled a majority of the rangers from the district to fight fires statewide, district rangers burned 1,582 acres with 789 of those acres occurring on the Arbuckle Tract.

Regarding FFS response to recommendations of the Save our Hardwoods (SOH) organization concerning

prescribed fire; the FFS weighs alternative points of view on land management practices. In this case several local meetings were held, that included the Florida Fish and Wildlife Commission (FWC), at which the FFS ecology/forest management staff gathered information and then subsequently developed a study proposal to look at the positive/negative effects on threatened and endangered species where prescribed fire had been excluded. The study site was limited to 700 acres and our local staff took care to select specifically, as study sites, those units where it was projected that little or no management action, including burning, would be needed during the study period.

The need and methods for data collection and sampling of rare plants defined in the study are consistent with the goals established in the ten year management plan. While FFS, FWC, and other land managing stakeholders have all acknowledged an abundance of data on the benefits of fire in scrub habitat, the suggestion of conducting further research on fire exclusion and its impact on flora and fauna seemed very appropriate and timely – given ongoing draughts and public smoke and safety concerns related to fire in heavy fuels. This study clearly has merit and falls within the scope of the approved ten-year management plan.

Elsewhere in this report, the LMR team commends the FFS staff for their public outreach efforts with the SOH organization.

Therefore, at this point we would disagree that there is a need to delay the research study or to pursue a management plan amendment.

2. The team recommends that the FFS, in cooperation with FWC, develop and implement an imperiled wildlife monitoring program (including the Florida scrub jay). (VOTE: 5+, 0-)

★★★★★

Managing Agency Response: At this time FFS does not have the funding or personnel available to undertake an extensive imperiled wildlife monitoring program. However FFS invites the opportunity to have its ecologist work with FWC to implement an imperiled wildlife monitoring program within the current staffing and budget constraints.

3. The team recommends that the FFS revise its existing fire plan to include a detailed habitat-specific fire management strategy. (VOTE: 5+, 0-)

★★★★★

Managing Agency Response: The fire management plan is constantly evaluated and will be formally updated/adjusted in the ten year management plan update slated to occur in 2015-16. Fire return interval, habitat specificity and seasonal burnings are addressed in the fire management plan and will be re-evaluated during the ten year management plan update.

4. The team recommends that the FFS increase the prescribed fire return interval and widen the seasonality of burning in wet flatwoods that contain cutthroat grass. (VOTE: 5+, 0-)

★★★★★

Managing Agency Response: See #1 above

5. The team recommends that the FFS restore the district biologist position, which is essential to continuing the program of imperiled animal species monitoring and management in this unique habitat. (VOTE: 5+, 0-)

★★★★★

Managing Agency Response: FFS will continue to look for opportunities to return the district biologist position when statewide budget constraints have relaxed and allow the addition of new positions.

6. The team recommends that the FFS coordinate with local conservation organizations, such as the Florida Native Plant Society, to conduct vegetative inventories in unsampled areas, e.g. on the Prairie Tract. (VOTE: 5+, 0-)

★★★★★

Managing Agency Response: Efforts have already begun to inventory the Prairie Tract with the help of the Heartland Chapter of the Florida Native Plant Society. One survey has been completed in portions of the tract and more will be conducted in the future.

Field Review Checklist Findings

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

- Natural Communities, regarding mesic flatwoods, xeric hammock, depression marsh/wet prairie, baygall, bottomland forest/floodplain swamp, cypress dome swamp, wet flatwoods, blackwater stream and sandhill upland lake.
- Listed Species, regarding plant inventory, scrub ziziphus.
- Cultural Resources, regarding cultural resource survey and protection and preservation.
- Restoration of Ruderal Areas, regarding restoration of offsite pine dominated areas and otter slough.
- Forest Management, regarding timber inventory and timber harvesting.
- Non-Native, Invasive & Problem Species, regarding prevention and control of plants and animals.
- Hydrologic/Geologic function Hydro-Alteration, regarding roads/culverts, ditches, hydro-period alteration and water level alteration.
- Resource Protection, regarding boundary survey, gates & fencing and signage.
- Public Access & Education, regarding roads and parking.
- Environmental Education & Outreach regarding wildlife, invasive species, habitat management activities, interpretive facilities and signs, recreational opportunities and management of visitor impacts.
- Maintenance & Infrastructure, regarding sanitary facilities, buildings and equipment.

Items Requiring Improvement Actions in the Management Plan

The following items received low scores on the review team checklist, which indicates that the text noted in the Management Plan Review does not sufficiently address this issue (less than .5 score on average.).

Please note that overall good scores do not preclude specific recommendations by the review team requiring remediation. The management plan must include responses to the checklist items identified below:

1. Management of natural communities, specifically scrub and dry prairie, with documentation in the management plan.

Managing Agency Response: When the next management plan is updated in 2015-2016, we will ensure that these areas are improved/expanded while understanding that the management plan is conceptual and not a specific work plan.

2. Increased protection of listed species, specifically animal inventory, scrub jay, listed herps, tiger beetle, gopher tortoise, prairie specialist and Polygonella myriophylla, with documentation in the management plan.

Managing Agency Response: See response to #1 above.

3. Increased resource management activities related to prescribed fire, specifically area being burned (no. acres), frequency and quality, with documentation in the management plan.

Managing Agency Response: See response to #1 above. Additionally, state forest staff will be expanding and improving the separate fire management plan to address some of these issues.

4. Increased restoration of ruderal areas, specifically restoration of hardwood encroached sandhill and walk in water sandhill, with documentation in the management plan.

Managing Agency Response: See response to #1 above. Additionally, plans are underway to gather together a group of resource professionals and scientists to discuss restoration on the Walk-in-Water tract. After that meeting the LWRSF staff will work with Forest Management Bureau to develop a Walk-in-Water Tract-specific restoration plan due to the unique problems found on that tract.

5. Increased ground and surface water monitoring, specifically quality and quantity, with documentation in the management plan.

Managing Agency Response: Language will be added to the upcoming management plan to reflect tracking/monitoring the information available by agencies monitoring water on or near the forest. Currently there are USGS flow monitoring stations on Tiger Creek near the north end of the Walk-in-Water Tract and another on Livingston Creek on the Arbuckle Tract. Part of the consumptive use permit requires a quarterly report of all withdrawal amounts from the citrus grove on the Prairie Tract to the South Florida Water Management District.

6. Increased adjacent property concerns, specifically water pumping from groves and discussion of potential surplus land determination, with documentation in the management plan.

Managing Agency Response: See the response to #1 and #5.

Items Requiring Improvement Actions in the Field

The following items received low scores on the review team checklist, which indicates that management actions noted during the Field Review were not considered sufficient (less than 2.5 score on average). Please note that overall good scores do not preclude specific recommendations by the review team requiring remediation. The management plan must include responses to the checklist items identified below:

1. Increased management of natural communities, specifically sandhill, with documentation in the management plan.

Managing Agency Response: The restoration of sandhill on the property is a very large undertaking and will require a significant amount of time and funding. There have already been some very significant restoration efforts completed by state forest staff and more will be done in the future, as time and funding permit.

2. Increased protection of listed species, specifically animal inventory, scrub jay, listed herpes, tiger beetle, gopher tortoise and prairie specialist and plant inventory, Polygala lewtonii and Warea carterii and prairie specialist, with documentation in the management plan.

Managing Agency Response: The LWRSF Plant Ecologist monitors and inventories all federally-listed plants. For animals, insects, and herps, assistance will be requested from FWC and other research oriented organizations to increase monitoring of those species.

3. Increased natural resources survey/management resources, specifically listed species or habitat monitoring, with documentation in the management plan.

Managing Agency Response: See response to # 2 above.

4. Increased restoration of ruderal areas, specifically restoration of hardwood encroached sandhill and walk in water sandhill, with documentation in the management plan.

Managing Agency Response: See response to #1 above and #4 from the earlier Management Plan section.

5. Increased monitoring in the area of non-native, invasive & problem species, specifically prevention – pests/pathogens, with documentation in the management plan.

Managing Agency Response: LWRSF has an outstanding non-native invasive control program with three employees dedicated to locating and controlling exotic plants on the forest. All sites and application/treatment data is kept in an Access database that can be used in ARCGIS for reporting/planning/presentations. The FFS Forest Health Section monitors other insect and disease issues and provides guidance for handling any issues that come up. Additional information will be added to the

next management plan to describe steps to attempt to prevent the introduction of exotic pests/plants/pathogens.

6. Increased ground and surface water monitoring, specifically quality and quantity, with documentation in the management plan.

Managing Agency Response: See response to #5 from the earlier Management Plan section

7. Increased adjacent property concerns, specifically dairy, with documentation in the management plan.

Managing Agency Response: The exotics team monitors the areas around the dairy for exotics and treat as necessary. While it is unlikely that the property will be up for sale any time soon, state forest staff will notify acquisition personnel if the property is up for sale. The "dairy property" is no longer an active dairy. Approximately 1/3 of the property is being managed as a grove and grove nursery and the remaining 2/3 was sold to a private owner who is maintaining it as a recreational/game property. There are a few cows still on the property but the numbers are minimal. Additionally, as part of the game/recreation management for the new owner they have been treating the exotic species on the property which has had a significant impact on the amount of exotics entering the state forest.

8. Discussion on the deficiencies in management resources, specifically staffing and funding, with documentation in the management plan.

Managing Agency Response: The Florida Forest Service prioritizes additional staff needs based upon our agency's statewide budget resources and priorities, and also upon legislative approval and appropriation. The Florida Forest Service will continue to request funds through the Service's Budgeting process on an as-needed basis.

Florida Forest Service Manager and Key Staff Present:

- Dave Butcher, Manager
- Corey Walk
- Jennifer Navarre

Exhibit V

Compliance with Local Comprehensive Plan(s)

(Will be inserted once received)

Exhibit W

State Forest Management Plan Advisory Group Summary

Management Plan Advisory Group Organizational Meeting Lake Wales Ridge State Forest

January 17, 2018

10:30 a.m.

Meeting Minutes

MPAG Members Present:

- | | |
|------------------|--|
| • Kawika Bailey | Florida Forest Service (FFS) |
| • Ayouna Riddick | South Florida Water Management District (SFWMD) |
| • Chris Matson | Division of Recreation and Parks, Department of Environmental Protection (DRP/DEP) |
| • Marian Ryan | Sierra Club (Local Conservation Organization) |
| • Cary Lightsey | Rancher/ Cattle Lessee (Local Private Property Owner) |
| • Melony Bell | Polk County Commissioner (Local Elected Official) |
| • Paul Sullivan | User Group Representative (Equestrians) |
| • Dwight Myers | Florida Fish and Wildlife Conservation Commission (FWC) |
| • Michelle Dent | Archbold Biological Station (Local Private Property Owner) |

MPAG Members Not Present:

- | | |
|------------------------|---|
| • Rose & Jim Kellerman | User Group Representative (Hikers) |
| • Edward Sheehan | Local Soil and Water Conservation District Representative |
| • Jennifer Myers | Florida Fish and Wildlife Conservation Commission (FWC) |
| • Cheryl Millett | The Nature Conservancy (Local Conservation Organization) |

Staff:

- Corey Walk, FFS
- Jean Ferrara, FFS
- Rick Britt, FFS
- Candice Knothe, FFS
- Nathan Bartosek, FFS
- Jennifer Heller, FFS
- Bill Korn, FFS
- Alan Davis, FFS

Guests:

- | | |
|-------------------|--|
| • Tom Palmer | North Atlantic Butterfly Assoc., Sierra Club |
| • Jacque Woodward | Ridge Audubon |
| • Debbie Thompson | Private Property Owner |
| • Nell Alexander | Private Property Owner |
| • Sandy Madden | Private Property Owner |
| • John Ferrara | Private Property Owner |

Meeting Start Time: 10:30 a.m.

- Mr. Korn opened the meeting and thanked Indian Lake Estates for the hospitality and usage of the facilities for the public meetings.

- Mr. Korn continued by explaining the purpose, statutory and management plan development process within which MPAG members are called upon to provide input into the draft land management plan. Mr. Korn reviewed which entities the management plan and advisory group members represent.
- Mr. Korn also explained the Sunshine Law's role in the MPAG public hearings and MPAG member appointment timeframe.
- Mr. Korn then asked Mr. Walk to provide an overview of how the meetings were advertised to the public.
- Mr. Walk stated the MPAG meeting was advertised through local newspaper (Polk County Democrat/The Ledger), FAW (FAR-FL Admin Weekly), FFS webpage, Board of County Commissioners (attended Polk BoCC mtg on 12/19/2017), and Forest kiosks.
- Mr. Korn provided a rundown of the various approvals the draft land management plan must go through both before and after the MPAG public hearings have occurred.
- Next, everyone in the room introduced themselves and explained what entity or organization they are with, and/or why they have interest in the meeting.
- Mr. Korn explained the notion of consensus and how it relates to the group's determinations. Also explained the fact that the FFS Director is the ultimate decider on any changes made to the draft plan.
- Mr. Korn explained that following a PowerPoint presentation at the public hearing, there would be a question/answer session and they were all welcome to ask questions. At the public hearing/public part of the meeting, Mr. Korn encouraged them to listen for the public's ideas/concerns. He advised that at the MPAG Workshop meeting to follow would be an opportunity to share their thoughts on what they'd heard from the public and their ideas on the draft management plan.
- The advisory group all agreed to designate Kawika Bailey as MPAG chair.
- The logistics of the facilities, bathrooms, etc. were laid out for the meeting attendees benefit.

Meeting End Time: 10:48 a.m.

Management Plan Advisory Group Public Hearing Lake Wales Ridge State Forest

January 17, 2018

11:00 a.m.

Meeting Minutes

MPAG Members Present:

- | | |
|------------------|--|
| • Kawika Bailey | Florida Forest Service (FFS) |
| • Ayouna Riddick | South Florida Water Management District (SFWMD) |
| • Chris Matson | Division of Recreation and Parks, Department of Environmental Protection (DRP/DEP) |
| • Marian Ryan | Sierra Club (Local Conservation Organization) |
| • Cary Lightsey | Rancher/ Cattle Lessee (Local Private Property Owner) |
| • Melony Bell | Polk County Commissioner (Local Elected Official) |
| • Paul Sullivan | User Group Representative (Equestrians) |
| • Dwight Myers | Florida Fish and Wildlife Conservation Commission (FWC) |
| • Michelle Dent | Archbold Biological Station (Local Private Property Owner) |
| • Cheryl Millett | The Nature Conservancy (Local Conservation Organization) |

MPAG Members Not Present:

- | | |
|------------------------|---|
| • Rose & Jim Kellerman | User Group Representative (Hikers) |
| • Edward Sheehan | Local Soil and Water Conservation District Representative |
| • Jennifer Myers | Florida Fish and Wildlife Conservation Commission (FWC) |

Staff:

- Corey Walk, FFS
- Jean Ferrara, FFS
- Rick Britt, FFS
- Candice Knothe, FFS
- Nathan Bartosek, FFS
- Jennifer Heller, FFS
- Bill Korn, FFS
- Alan Davis, FFS

Guests:

- | | |
|-------------------|--|
| • Tom Palmer | North Atlantic Butterfly Assoc., Sierra Club |
| • Jacque Woodward | Ridge Audubon |
| • Debbie Thompson | Private Property Owner |
| • Nell Alexander | Private Property Owner |
| • Sandy Madden | Private Property Owner |

Meeting Start Time: 11:00 a.m.

- Mr. Bailey, the MPAG Chairperson welcomed everyone to the public hearing on behalf of all the MPAG members.
- MPAG members introduced themselves.
- Mr. Korn continued the meeting and gave a general overview of the purpose of the public hearing.
- Mr. Korn stated that at this time four (4) speaker forms were filled out. One (1) was written only, and three (3) were for speakers. He encouraged all visitors to complete a speaker form, which he reminded everyone could be used also to provide FFS with written comments on the plan.
- Mr. Walk gave a PowerPoint presentation on the draft plan, including informative points on location, tracts and the goals and objectives to be accomplished on the forest during the next ten (10) years.
- Mr. Korn then invited FFS/FWC management staff up front and opened the floor to questions.
- Question - Ms. Millett asked how does FFS plan to burn 5,000 acres. Answered by Mr. Britt - Burning is based on staff availability, weather, etc.
- Question – Ms. Dent wanted to know what is the future plans for harvesting natural pine trees. Answered by Mr. Bartosek and Mr. Walk – Planted slash pine and some stands of natural South Florida slash pine may be harvested based on site characteristics for flatwoods restoration purposes. Stands of natural pine that are harvested are based on high trees per acre density and desired conditions to maintain through prescribed fire. Clear-cuts and pine thinning are considered for harvest for restoration on LWRSF.
- Question – Ms. Millett asked about trapping hogs on the state forest. Answered by Mr. Walk - he explained that LWRSF issues special use permits to hog trappers and mentioned hog numbers over the years from allowing hog trapping on all tracts.
- Question – Ms. Dent asked what we have done for surveys on RCW population. Mr. Myers stated that FWC doesn't do any RCW tracking.
- Question – Ms. Madden asked where and when hunting is allowed. Mr. Myers answered regarding the WMA's on the state forest as well as the hunts on the Prairie Tract for Operation Outdoor Freedom.
- Question – Ms. Millett asked about monitoring projects on the state forest. Ms. Knothe said results are available in the annual Plant Conservation Program report.
- Question – Ms. Thompson asked if storm-impacted native plants being restored. Ms. Knothe while some chainsaw cleanup work along roads/trails was done – generally that native plants are left to regenerate naturally.
- With no other questions, Mr. Korn confirmed from the Speaker Forms that there were three (3) people wishing to speak during the public hearing phase of the meeting.

Speakers:

- Ms. Woodard – from Ridge Audubon. Thanked everyone for the work on the state forest. And offered any help to protect the habitat.
- Mr. Palmer – Sierra Club and N. American Butterfly Assoc. Advised the need for specific butterfly and moth surveys. Offered to share a copy of bird surveys.
- Ms. Ryan – Friends of the Polk County Parks Foundation – Looking for more port-o-lets on the hiking trails and an additional 2-2 ½ mile trail on LWRSF.
- With no other speakers, Mr. Korn adjourned the public hearing.

Meeting End Time: 11:51 p.m.

Management Plan Advisory Group Workshop Meeting

Lake Wales Ridge State Forest

January 17, 2018

1:00 p.m.

Meeting Minutes

MPAG Members Present:

- | | |
|------------------|--|
| • Kawika Bailey | Florida Forest Service (FFS) |
| • Ayouna Riddick | South Florida Water Management District (SFWMD) |
| • Chris Matson | Division of Recreation and Parks, Department of Environmental Protection (DRP/DEP) |
| • Marian Ryan | Sierra Club (Local Conservation Organization) |
| • Cary Lightsey | Rancher/ Cattle Lessee (Local Private Property Owner) |
| • Melony Bell | Polk County Commissioner (Local Elected Official) |
| • Paul Sullivan | User Group Representative (Equestrians) |
| • Dwight Myers | Florida Fish and Wildlife Conservation Commission (FWC) |
| • Michelle Dent | Archbold Biological Station (Local Private Property Owner) |
| • Cheryl Millett | The Nature Conservancy (Local Conservation Organization) |

MPAG Members Not Present:

- | | |
|------------------------|---|
| • Rose & Jim Kellerman | User Group Representative (Hikers) |
| • Edward Sheehan | Local Soil and Water Conservation District Representative |
| • Jennifer Myers | Florida Fish and Wildlife Conservation Commission (FWC) |

Staff:

- Corey Walk, FFS
- Jean Ferrara, FFS
- Rick Britt, FFS
- Candice Knothe, FFS
- Nathan Bartosek, FFS
- Jennifer Heller, FFS
- Bill Korn, FFS
- Alan Davis, FFS

Guests:

- | | |
|-------------------|------------------------|
| • Debbie Thompson | Private Property Owner |
| • Nell Alexander | Private Property Owner |

Meeting Start Time: 1:05 p.m.

- Mr. Korn started the meeting by going over the meeting structure that would take place and specifics regarding staff and member responsibilities regarding the meeting minutes in the coming days/weeks.
- Mr. Korn declared a “page-by-page” process would be the way the group would be reviewing and commenting on the draft plan today. The notion of “consensus” was also once again discussed.
- Mr. Korn asked if any advisory group members had comments regarding statements made by the public during the previous hearing.
- Ms. Millett – questioned acres managed with prescribed fire (Past Accomplishments/pg. 11). Would like to see current fire frequency added.

- Mr. Matson – Goal (1) Sustainable Forest Management/Objective 4/pg. 14) – under performance measures – add a measurement for successful/survival rate or established. Mr. Walk answered, “it states number of acres planted with native pines.”
- Mr. Myers – Goal (2) Public Access and Recreation Opportunities/Objective 1/pg. 14) – Change words to “year-round” access/remove “during hunting season”. Mr. Sullivan voiced serious concerns with total public access during hunting seasons.
- Mr. Lightsey questioned the possibility of coyote control. He stated that game animal numbers have been down and he believes the work that ranchers have done employing coyote trappers has had a positive impact on game numbers.
- Mr. Korn asked that the group focus on the text/language at hand contained within this draft plan.
- Mr. Matson – Goal (4) Fire Management/Objective 3/Performance measures/pg. 17) – suggest % of project completed.
- Mr. Myers – Goal (2) Objective 5/Performance Measures (pg. 15) stated rules will be displayed in kiosks but copies of the brochure will no longer be available for distribution at kiosks; Mr. Walk answered that FFS updates kiosks on LWRSF with printed out dates from WMA brochures for display and updates the LWRSF website with hunt dates; hard copies of WMA brochures would be on the FWC website: www.myfwc.com.
- Mr. Matson – Goal (6) Non-Native Invasive Species Maintenance and Control/Objective 4/(pg. 18) – asked to change from hogs removed to number of sounders removed. Mr. Myers stated cannot measure sounders removed because you wouldn’t know if you got the entire family. Ms. Millet asked if the impact from hog damage could be measured. Mr. Myers stated it is something that could be reviewed.
- Mr. Matson – Goal (8) Hydrological Preservation and Restoration/Objective 3/(pg. 19) – asked if we could identify/monitor hydrology and/or water quality. Mr. Korn asked Mr. Matson to put his thoughts in writing to present. Mr. Matson later presented an objective to MPAG.
- Ms. Ryan – Goal (9) Capital Facilities and Infrastructure/Objective 1/(pg. 19) asked for an assessment of availability of port-o-lets on the trails. Mr. Walk answered with information regarding the where-about for current port-o-lets.
- Ms. Ryan asked about Adjacent Conflicting Uses – issue of private landowner dumping water on Bonnet Creek - thought the problem should be a law enforcement issue. Local FFS staff stated that situation was elevated to Tallahassee. Mr. Bailey confirmed that it too had be referred to the Water Management District.
- Mr. Myers – Planned Improvements (pg. 31) WIW Tract - install (1) check station on WIW. FWC removed check station. Suggest change to discuss/review the need for (1) check station on WIW. Also, he suggested adding that Arbuckle check station be updated or rebuilt.
- Ms. Millet would like better signage on WIW trails. Mr. Korn said this was operational level item and asked Mr. Walk to bring up in next Liaison Committee Mtg.
- Ms. Dent – Archaeological/Cultural Resources and Protection (2)/pg. 40) – Asked what was planted in sandhill on the WIW tract in two blocks? Mr. Bartosek answered - offsite slash pine.
- Mr. Myers – Wildlife Resources/Surveying and Monitoring/(pg. 57) - recommend use FWC guidelines to manage Scrub Jays. (FWC document). Add population trends. Lake Wales Ridge vs the state forest Mr. Myers – Other Rare Biota Surveys – add Florida bonneted bat surveys. Mr. Bailey asked if this was the place to address the concern for monitoring coyotes? Add to surveying and Monitoring. Mr. Palmer asked about surveying specific butterflies be included. Mr. Myers also suggested including adding the need to monitor for red-cockaded woodpeckers to this section. Everyone agreed these would be appropriate additions.
- Mr. Bailey – Public Access and Recreation V/(pg. 62)– language related to the need for additional port-o-lets requested by Ms. Ryan – agreed to add language in the plan for periodic evaluations.
- Mr. Korn –Suggested to add some language here that FFS will continue to monitor conflicts between hunters and casual users and to mitigate for any issues identified
- Ms. Millet - asked if there were any new trails planned. Mr. Walk stated none at this time.

- Ms. Ryan - asked what percentages are ecological burns vs seasonal burns. Agreed that FFS could pull those number together and add to the Exhibit section.
- Ms. Dent – G – Habitat Restoration/(pg. 79) – (WIW) – questioned if we are creating scrub habitat for the remnant jay population when it's gone or trying to expand habitat. She stated we should maintain habitat, not create. Would like to see acreage for core area of FSJ's. Agreed to include specific acreage numbers or map to describe the limited nature of this restoration.
- Mr. Matson – Sandhill Restoration on WIW (pg. 81) – would like added - re-establish longleaf pine and wiregrass and other diverse species as part of sandhill groundcover.
- Ms. Dent – under mechanical work – what is the time period for the subsequent burning to be completed. Mr. Bailey stated FFS can add as a guideline – 9 months.
- Mr. Korn gave a brief explanation of Table 7 – Natural Communities/Historical & Current Conditions.
- Mr. Korn asked the group if everyone, as a consensus, was generally good with the plan. All agreed with the exception of one (1) item (allowing general public access during hunt season) that one (1) member had issue with. He went around the table to each MPAG member and asked for their overall general comments and if they had any other issues. Each member stated they thought it was a good plan. They appreciated being invited to participate and liked the process.
- Mr. Korn stated that the FFS Director would be looking at this local level input next, and then the draft plan will go before the Acquisition and Restoration Council.
- Mr. Bailey thanked all his staff for all the work done.

Meeting End Time: 3:47 p.m.

Exhibit X

State Forest Summary Budget

Lake Wales Ridge State Forest Budget Summary

	LAKE WALES RIDGE STATE FOREST MGT. ONLY 15-16 EXPENDITURES	Percentages Based on Total Dollar Amount of Expenditures	LWRSF Assessed Needed Funding Based Upon LMUAC Resource Management
Resource Management	\$ 126,662	25.30%	\$ 152,712.95
Exotic Species Control	\$ 15,601	3.50%	\$ 25,946.38
Prescribed Burning	\$ 34,842	4.70%	\$ -
Cultural Resources Management	\$ 446	0.10%	\$ 741.33
Timber Management	\$ 35,658	8.00%	\$ 59,306.00
Hydrological Management	\$ 3,120	0.70%	\$ 5,189.28
	\$ -		\$ -
<u>OTHER RESOURCE MANAGEMENT</u>	\$ 36,996	8.30%	\$ 61,529.98
Listed Species Management	\$ -		\$ -
Forest Pest and Disease	\$ -		\$ -
Plant Conservation Program	\$ -		\$ -
State Forest Research Projects	\$ -		\$ -
Boundary Surveys for State Forests	\$ -		\$ -
Other Activities Also Include: Liaison Community Meetings / Boundary Line Maintenance / Forest Inventories and Various Other Activities / Wildfire Suppression on State Forests	\$ -		\$ -
			\$ -
Administration	\$ 35,658	8.00%	\$ 59,306.00
Central Office Headquarters	\$ 35,658	8.00%	\$ 59,306.00
District/Regions	\$ -		\$ -
Units/Projects	\$ -		\$ -
	\$ -		\$ -
Support	\$ 143,970	32.30%	\$ 143,075.73
Land Management Planning	\$ 8,915	2.00%	\$ 14,826.50
Land Management Reviews	\$ 1,783	0.40%	\$ 2,965.30
Training/Staff Development	\$ 37,887	8.50%	\$ 63,012.63
Vehicle Purchase	\$ 3,566	0.80%	\$ 5,930.60
Vehicle Operations and Maintenance	\$ 57,945	13.00%	\$ -
	\$ -		\$ -
OTHER SUPPORT	\$ 33,875	7.60%	\$ 56,340.70
State Forest Land Acquisition Support			\$ -
Other Support Activities Also Include:	\$ -		\$ -
Computer Maintenance / Radio Maintenance / Technical Support / Management of Apiary and Cattle Leases / State Forest Leases, Lease Amendments, Easements and Other Various Activities	\$ -		\$ -
			\$ -
Capital Improvements	\$ 98,060	22.00%	\$ 163,091.50
New Facility Construction	\$ 22,732	5.10%	\$ 37,807.58
Facility Maintenance	\$ 75,328	16.90%	\$ 125,283.93
			\$ -
Visitor Services/Recreation	\$ 55,270	12.80%	\$ 91,924.30
Information/Education	\$ 13,818	3.10%	\$ 22,981.08
Operations	\$ 41,453	9.30%	\$ 68,943.23
			\$ -
Law Enforcement	\$ -	0.00%	\$ -
Total	\$ 445,729	100.00%	\$ 741,325

Exhibit Y

Arthropod Control Plans on LWRSF
Responses from Polk County, Florida



ADAM H. PUTNAM
COMMISSIONER

Florida Department of Agriculture and Consumer Services
Division of Agricultural Environmental Services

ARTHROPOD MANAGEMENT PLAN - PUBLIC LANDS

Section 388.4111, F.S.
Telephone: (850) 617-7995

Return to:
Mosquito Control Program
3125 Conner Blvd, Bldg 6,
Tallahassee, Florida 32399-1650

For use in documenting an Arthropod Control Plan for lands designated by the State of Florida or any political subdivision thereof as being environmentally sensitive and biologically highly productive therein. Fill this form out if control work is necessary or planned.

Name of Designated Land: LAKE WALES RIDGE STATE FOREST (LWRSF)

Is Control Work Necessary: ☒ Yes ☐ No

Location: Polk County (located along County Rd 630 East, Walk In Water Rd, Boy Scout Rd, State Rd 60, Lake Arbuckle Rd, Old Avon Park Rd and State Road 64)

Land Management Agency: FLORIDA FOREST SERVICE

Are Arthropod Surveillance Activities Necessary? ☒ Yes ☐ No
If "Yes", please explain:

Mosquito breeding occurs in and around the forest in water bodies and wetland areas as well as by rains throughout the year. Surveillance is required to determine the species and population of juvenile and adult mosquitoes. This will allow for determining the proper treatment, which involves pesticide selection and timing of year for treatments.

Identify problem species and relative population trends in order to direct and evaluate control problems before any control measures are taken.

Which Surveillance Techniques Are Proposed?
Please Check All That Apply:

☐ Landing Rate Counts	☒ Light Traps	☐ Sentinel Chickens
☐ Citizen Complaints	☒ Larval Dips	☐ Other

If "Other", please explain:

Arthropod Species for Which Control is Proposed:

Aedes Spp., *Culex Spp.*, *Psorophora Spp.*, *Culiseta Spp.*, *Mansonia Spp.*, *Anopheles Spp.*

Proposed Larval Control:

Proposed larval monitoring procedure: LIGHT TRAPS, LARVAL DIPS

Are posttreatment counts being obtained: ☒ Yes ☐ No

Biological Control of Larvae:

Might predacious fish be stocked: ☐ Yes ☒ No

Other biological controls that might be used: NONE

Material to be Used for Larvaciding Applications:

(Please Check All That Apply:)

☒ Bti

☒ Bs

☐ Methoprene

☐ Non-Petroleum Surface Film

☐ Other, please specify:

Please specify the following for each larvacide:

Chemical or Common name: VectoBac 12AS, VectoIex

☒ Ground ☐ Aerial

☒ Rate of application: Bti: 0.4 oz/10 gallons per acre: Bs: 5-20 lbs /acre

Method of application: Ground spraying – hand pump, airblast, mist blower, backpack sprayer

Proposed Adult Mosquito Control:

Aerial adulticiding ☐ Yes ☒ No

Ground adulticiding ☐ Yes ☒ No

Please specify the following for each adulticide: NONE

Chemical or common name:

Rate of application:

Method of application:

Proposed Modifications for Public Health Emergency Control: Arthropod control agency may request special exception to this plan during a threat to public or animal health declared by State Health Officer or Commissioner of Agriculture.

Due to recent clarification from the Zika Virus and affected mosquitoes in the state of Florida, there has been a public health emergency declared.

Proposed Notification Procedure for Control Activities:

Contact LWRSF HQ Phone – 863-589-0528 or 863-589-0545; Also email Lands Manager for ground larviciding.

If only after surveillance shows necessary need. Target areas only in proximity to urban interface (i.e. along major roads). No spraying within interior of LWRSF and always notify FFS staff at LWRSF prior to treatments.

Records:

Are records being kept in accordance with Chapter 388, F.S.:

☒ Yes ☐ No

Records Location:

Polk County Mosquito

& LWRSF

How long are records maintained: 3 years

Vegetation Modifications:

What trimming or altering of vegetation to conduct surveillance or treatment is proposed? NONE

Proposed Land Modifications:

Is any land modification, i.e., rotary ditching, proposed: NONE

Include proposed operational schedules for water fluctuations: NONE

List any periodic restrictions, as applicable, for example peak fish spawning times.

Proposed Modification of Aquatic Vegetation: NONE

Land Manager Comments:

Please see attached protocol for treatments of mosquitoes adjacent to or within state forest boundaries. An annual report of arthropod control activity at Lake Wales Ridge State Forest should be submitted to the Florida Forest Service Land Manager by December 31. Attached are also maps for reference that display state forest boundaries and major roads.

Arthropod Control Agency Comments:

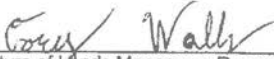
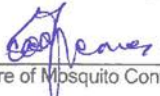
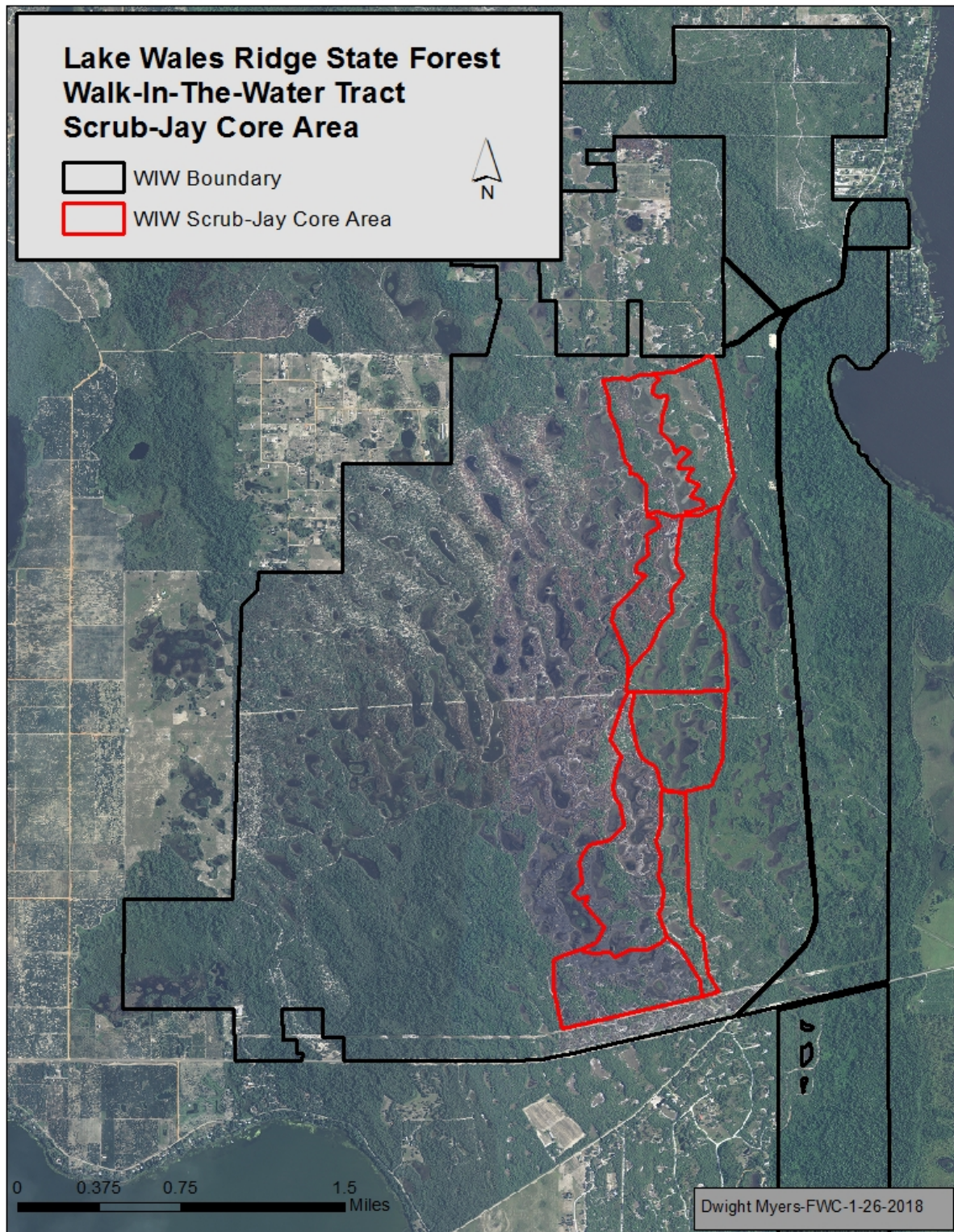
	12/12/16
Signature of Lands Manager or Representative	Date
	1/23/17
Signature of Mosquito Control Director / Manager	Date

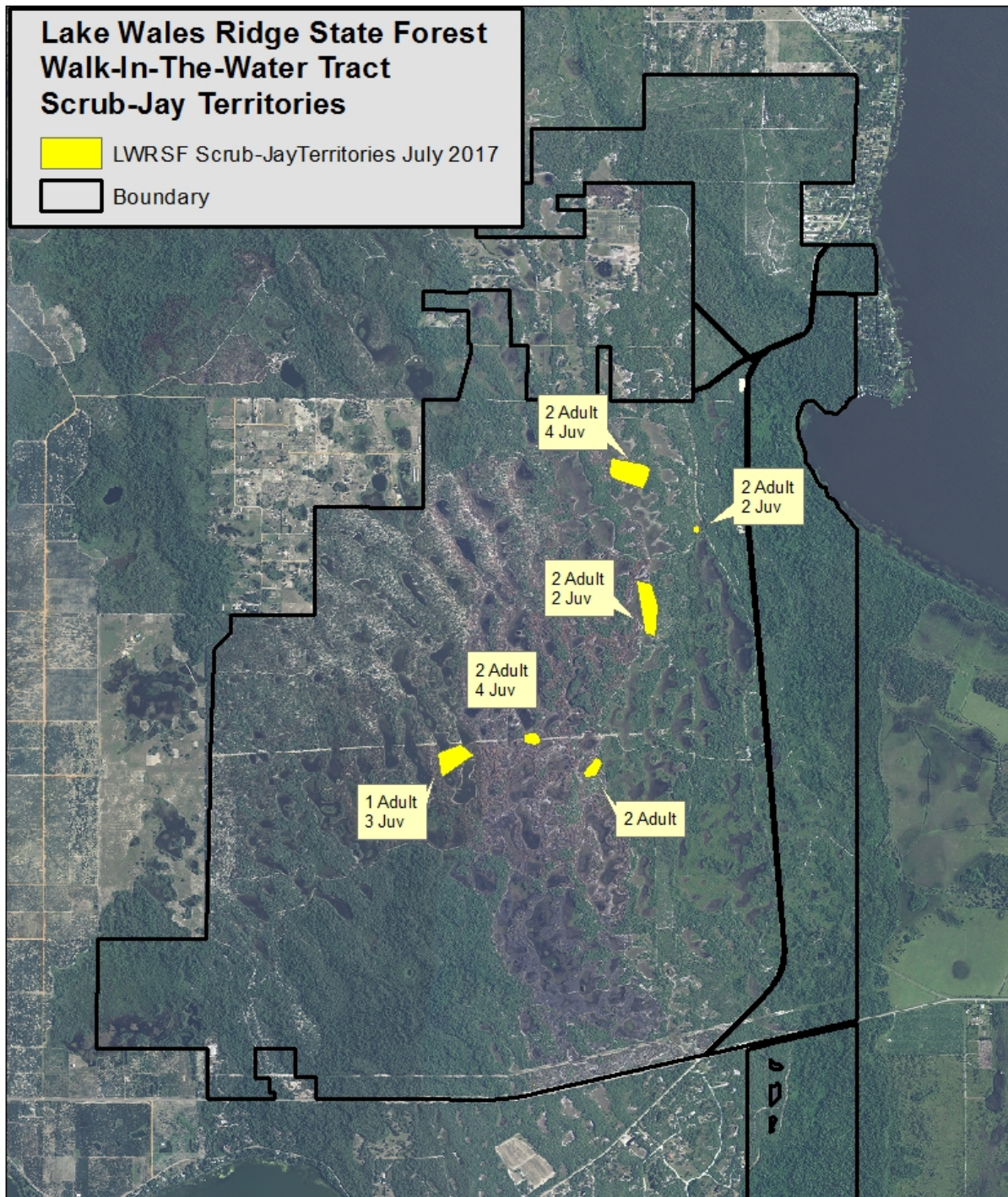
Exhibit Z

Florida Scrub-jay Location Maps / FWC Recommendations for Florida Scrub-jay Habitat Enhancement



**Lake Wales Ridge State Forest
Walk-In-The-Water Tract
Scrub-Jay Territories**

-  LWRSF Scrub-Jay Territories July 2017
-  Boundary



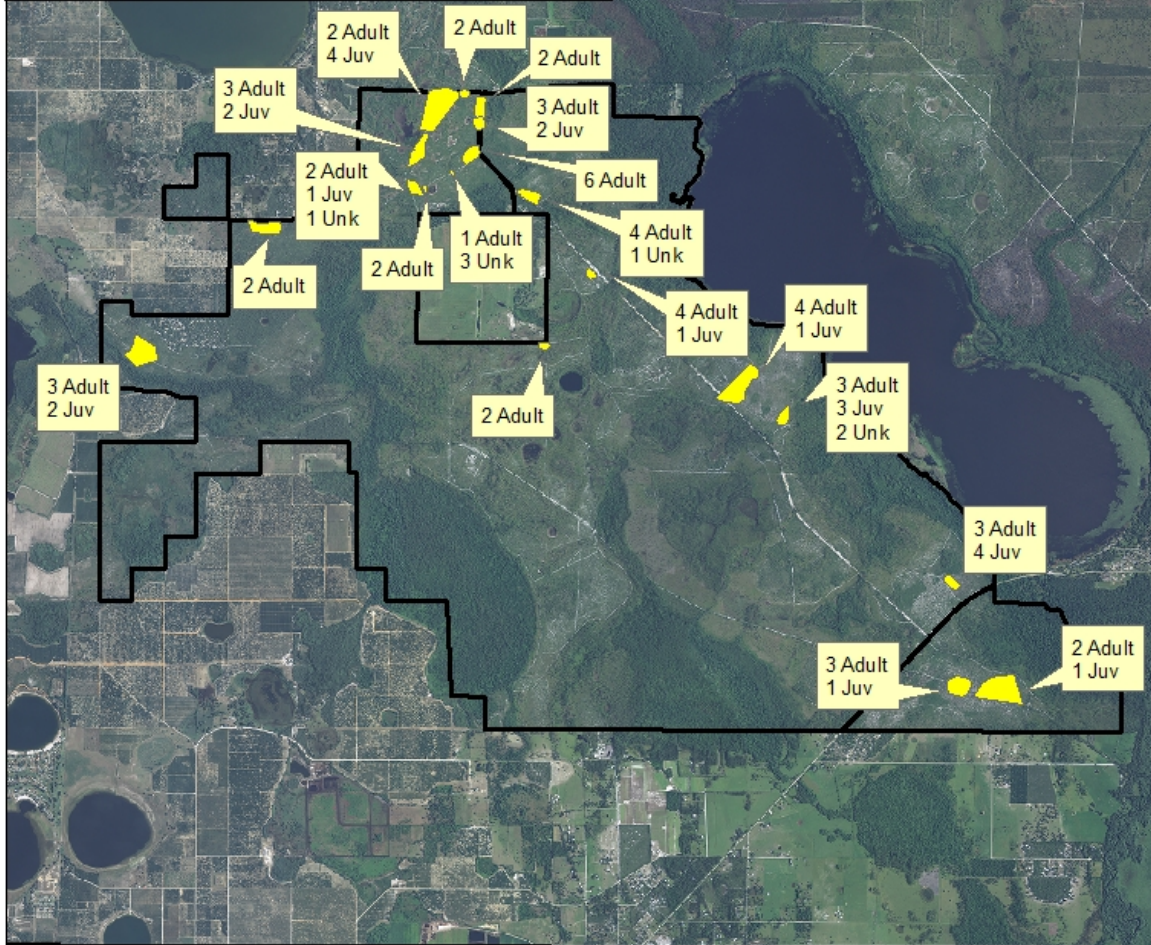
0 0.375 0.75 1.5
Miles



Dwight Myers FWC 1-29-18

Lake Wales Ridge State Forest Arbuckle Tract Scrub-Jay Territories

 LWRSF Scrub-Jay Territories July 2017
 Boundary



0 0.75 1.5 3 Miles



Dwight Myers FWC 1-29-18

Florida Fish and Wildlife Conservation Commission Recommendations for
Florida Scrub-jay Habitat Enhancement at Walk-in-the-Water WMA
January 2013

Introduction

The Walk-in-the-Water Wildlife Management Area (WIW; 6,034 acres) is part of the Lake Wales Ridge State Forest (LWRSF) in Polk County. The Florida Forest Service (FFS) is the lead managing agency and the Florida Fish and Wildlife Conservation Commission (FWC) serves as a cooperating agency. FFS manages the property and conducts the controlled burns while FWC manages public hunts and provides wildlife technical assistance as needed.

The purpose of this document is to provide FFS with project ideas for potential third-party grant funding for scrub-jay habitat enhancement. It is not intended to serve as all or part of a scrub-jay management plan for WIW, but rather to recommend habitat management actions similar to those taken by the FWC in recent years at the Lake Wales Ridge Wildlife and Environmental Area (WEA) to reverse similar documented scrub-jay population declines.

Resource Assessment

WIW contains a mix of natural communities, including highly degraded southern ridge, or “scrubby” sandhills. Bahiagrass is prominent in the groundcover across a large area due to actions taken by the previous landowner. Depression marsh swales occur across the area and contribute to the unique character of the site.

Scrub-jays occurred on WIW during statewide surveys conducted in 1992-93. The previous landowner mechanically treated the entire site, which may have artificially created conditions that scrub-jays prefer, such as bare patches and short, patchy vegetation dominated by oak species. By 2002, the FFS identified over 20 scrub-jay families on the property. Over time, the habitat has succeeded to a scrubby condition that contains remnants of southern ridge sandhills as well as scattered xeric hammocks. Most areas contain tall shrub and canopy heights, which as consequently decreased the long-term suitability of the site for scrub-jays. Currently, scrub-jays persist mainly along pond edges where habitat structure remains suitable and allows increased visibility to detect potential predators. The habitat surrounding the ponds is sub-optimal for scrub-jays and the population appears to be declining.

The FWC monitored scrub-jays on WIW in July/August 2012 and recorded at least 5 scrub-jay groups in the middle/northern portion of the current scrub-jay area (see map).

Habitat Management Recommendations

Scrub-jays on WIW currently occur on a small portion of the area. Because scrub-jays occur in a highly disturbed southern ridge sandhill and not in true scrub or scrubby flatwoods, attempts at restoration to historic southern ridge sandhill conditions would likely result in extirpation of scrub-jays from the area. To prevent this, the FWC recommends the establishment of a Scrub-jay Core Area (SCA) on WIW, consistent with discussions that took place between FFS and FWC during an

August 2012 restoration meeting. The purpose of this core area would be to identify a priority area in which to focus habitat enhancement to support scrub-jays, regardless of historic natural community type. This core area should contain enough potential habitat to support > 20 family groups, which would increase the stability of the WIW sub-population. Outside of this core area, restoration could focus on achieving desired conditions in southern ridge sandhills and would not consider the specific habitat needs of scrub-jays. FWC is currently working on this concept and will provide additional details to FFS at a future date.

The FWC recommends the following considerations for occupied and potential scrub-jay habitats at WIW:

- Apply prescribed fire roughly every 6-10 years or as needed to maintain the average oak shrub height under 6 feet tall (with an emphasis on growing season burns). It is acceptable to have a few taller patches (e.g., 7-10 feet tall) making up a small percentage of each scrub-jay territory. Due to the unusual conditions of the site, average oak shrub height may need to be specifically tailored outside this height class to allow for adequate mast production. The FWC can assist with this.
- Patchy burns are acceptable, especially given the current size of management units (MUs) on WIW. However, initial burns may need to be more aggressive to ensure that the tall oaks are top-killed.
- Mechanically treat fireline perimeters before a burn to improve ignition conditions. This could be accomplished with mowing or by 'walking down' with a bulldozer.
- The eastern portion of MU C1S was mechanically treated and burned as part of a previous restoration project. Scrub-jays currently use this habitat and it represents suitable scrub-jay habitat on WIW.
 - FWC can provide additional examples of successful scrub-jay habitat restoration on and off the Lake Wales Ridge where prior conditions were similar to those found at WIW.
- For more specific vegetative conditions that support scrub-jays, see FWC's Scrub-Jay Habitat Management Guidelines (note: these may need to be adapted to the unique circumstances of WIW).

A frequent problem on WIW appears to be that prescribed fire does not result in enough oak mortality to reduce the oak overstory. The prescribed fires have not reduced the height of the oak canopy by top-killing the oaks. Although MUs encompassing most of the potential scrub-jay habitat on WIW have been burned in the past 5-7 years, habitat conditions for scrub-jays continue to decline.

Potential Project Areas

The FWC has identified six potential enhancement areas on WIW for inclusion in the SCA. These areas were selected to provide the greatest effect toward facilitating the expansion of the

scrub-jay population to the numbers recorded in the early 2000s. These areas would 1) increase the amount of potential habitat available to current scrub-jay groups and 2) improve connectivity between currently occupied scrub-jay habitat. A major factor in these areas is the dominance and size of oaks, and to a lesser extent pines. The FWC recommends that aggressive treatment be applied to reduce the height of the oak overstory. This could consist of a hot, growing season burn in some areas, but may require mechanical treatment before burning to be effective. The FWC recommends a target mature oak density of $\leq 1/\text{acre}$ and pine density of $\leq 1/\text{acre}$ in this SCA.

The selected enhancement areas are shown on the map below. Please note that the acreage values are gross acreages; the included wetlands should be excluded from the actual treatment acreage of each enhancement area. Habitat enhancement in Units A – D would benefit two scrub-jay groups each, and enhancement of Unit E would benefit one group. Unit A (52 acres) is the highest priority, with Units B (64 acres) and C (76 acres) as second highest priority, followed by Unit D (99 acres) and then Unit E (123 acres). FWC recommends initiating treatment to enhance suitability of scrub-jay habitat immediately in any one of these units, whether through a grant or in-house operations. Once initial overstory reduction is completed, FFS will need to stagger subsequent management actions in units A-E to promote a mosaic of habitat conditions that ensures suitable habitat for resident scrub-jay families.

Other Considerations

Other uses of WIW include hiking and hunting. Actions taken by FFS to implement these FWC recommendations would impact a relatively small percentage ($<6\%$) of WIW. The remainder of WIW contains an abundance of oak and pine stands that serve to provide cover, aesthetics, and shade that is highly valued by a variety of stakeholders. In addition, it would be acceptable and consistent with these recommendations to strategically leave larger oaks in the enhancement areas where hiking trails occur, as long as the average large oak density within scrub-jay habitat is $\leq 1/\text{acre}$.

