



**Flag Pond Preserve
Land Management Plan
Second Edition**

**Prepared by the Conservation
20/20 Conservation Lands
Section of Lee County's
Department of Parks and
Recreation**

**Approved by the Lee County Board
of County Commissioners:
December 6, 2016**

Acknowledgements

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Laura Greeno

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List of Acronyms

C20/20	Conservation 20/20
DHR	Division of Historical Resources
DRI	Development of Regional Impact
ESA	Environmental Site Assessment
FDACS	Florida Department of Agriculture and Consumer Services
FDEP	Florida Department of Environmental Protection
FFS	Florida Forest Service
FLEPPC	Florida Exotic Pest Plant Council
FLUCFCS	Florida Land Use, Cover and Forms Classification System
FNAI	Florida Natural Areas Inventory
FPP	Flag Pond Preserve
FWC	Florida Fish and Wildlife Conservation Commission
IRC	Institute for Regional Conservation
LCDCD	Lee County Department of Community Development
LCDCL	Lee County Division of County Lands
LCDP	Lee County Division of Planning
LSOM	Land Stewardship Operations Manual
LWCR	Lower West Coast Region
MDP	Master Development Plans
MU	management unit
NWI	National Wetlands Inventory
PARI	Piper Archaeological Research, Inc.
SFWMD	South Florida Water Management District
SMCSP	Six Mile Cypress Slough Preserve
STRAP	Section-Township-Range-Area-Block.Lot
SWFIA	Southwest Florida International Airport
USDA	United States Department of Agriculture
USACOE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service

Vision Statement

It is the vision of the sConservation Lands staff in the Lee County Department of Parks and Recreation and the Conservation 20/20 Program to restore Flag Pond Preserve to a productive, functional and viable ecosystem. The freshwater wetland communities will continue to provide valuable habitat and foraging opportunities for wildlife.

I. EXECUTIVE SUMMARY

Flag Pond Preserve (FPP) is north of Daniels Parkway, in Fort Myers, in central Lee County. The preserve's name is derived from a high density of alligator flag in the basin swamp. It is in Section 24, Township 45 South, Range 25 East, two miles east of I-75 and north of the entrance to Chamberlin Parkway. The 66.9 acre preserve, nomination 197, was acquired in 2003 through the Conservation 20/20 (C20/20) Program for \$388,820. The C20/20 Program was established in 1996 after Lee County voters approved a referendum that increased taxes by up to 0.5 mil for the purpose of purchasing and protecting environmentally sensitive lands.

Five different soil types occur at Flag Pond Preserve. A common relationship for all of these soil types is that their slopes range from 0-2%. All soil types are nearly level and poorly drained with moderate to rapid permeability at the surface. Covering nearly half of the preserve, the most common soil type is Pompano Fine Sand, Depressional, which is found in freshwater wetland areas containing cypress and other hardwood species scattered throughout. Anclote Sand, Depressional is found on approximately one-third of the site and is present in freshwater marshes/pond type communities within southern portions of the preserve.

There is a minimal change in natural elevations at FPP. Elevations in the abandoned agriculture field range from 22 feet to 23 feet above sea level with berms ranging from 23 feet to 24 feet. Elevations at the south end of the preserve are approximately 22 feet.

The preserve lies within the Six Mile Cypress Watershed, which covers a surface area of approximately 32.6 square-miles. Ditches and berms associated with agricultural activities that took place on-site and on adjacent property, have altered the sheetflow on the preserve.

The preserve contains four natural plant communities including basin swamp, abandoned field, mesic flatwoods and wet flatwoods. Flag Pond Preserve provides habitat for a variety of animal species including white ibis, great egret, Florida cottonmouth, and Florida apple snail.

Several human influences have impacted the preserve. Many of these influences can be attributed to farming, adjacent road building and developments. These disturbances have allowed invasive exotic plants to become established which disrupt the natural systems and impact the native species on the site. Developments to the north and east, Daniels Parkway, and the noise from the Southwest Florida International Airport are some of the major external influences on the preserve.

Ditches and berms associated with previous agriculture have affected the preserve and provided habitat for exotic species. Modifications to adjacent properties, particularly roads and development projects have further influenced FPP.

There are no public recreation amenities proposed for this preserve due primarily to the lack of feasible access, the close proximity to Six Mile Cypress Slough Preserve, and the fact that 75% of the preserve is classified as jurisdictional wetlands.

Work done to date at FPP involves treatment of invasive exotic vegetation and boundary sign installation.

The goal of this land management plan is to identify preserve resources, develop strategies to protect those resources and implement restoration activities to restore FPP to a productive, functional and viable ecosystem while ensuring that the preserve will be managed in accordance with Lee County Parks and Recreation's Land Stewardship Operations Manual. Restoration and management activities at FPP will focus on controlling invasive exotic plant and animal species. The Management Action Plan included in this document outlines restoration and management goals. This plan outlines these goals and strategies, explains how the goals will be accomplished, and provides a timetable for completion. This land stewardship plan will be revised in ten years (2027).

II. INTRODUCTION

Flag Pond Preserve (FPP) was acquired in February 2003 through Lee County's Conservation 20/20 (C20/20) Program. It is 66.9 acres in size and is located in Fort Myers along the north side of Daniels Parkway in central Lee County. The preserve contains four natural plant communities including basin swamp, abandoned field, mesic flatwoods and wet flatwoods. Ditches and berms, as well as invasive exotic plants have disturbed portions of the wetland and upland plant communities at FPP.

Review of historic aerial photography prior to 1970 shows no evidence of human influences, aside from a jeep trail adjacent to the eastern boundary of the preserve. In the early 1970s, Daniels Parkway was a dirt trail that ran along the southern preserve boundary and an approximate 18 acre farm field was created in the preserve's northeastern section. Ditches and berms associated with agriculture were constructed on site and on adjacent land for drainage. The agricultural field was maintained for cattle grazing operations that occurred between 1986 and 1993. The late 1990s through 2015 have brought significant changes to the property to the north and east with construction of golf courses, residential development and industrial complexes. The majority of uplands surrounding the preserve have been altered by development.

Land management activities for the site will include invasive exotic plant control. Brush reduction, prescribed burning and enhancing hydrologic features and wildlife habitat would typically be done in flatwoods and abandoned pasture communities, however due to lack of legal access for vehicles this work cannot be done at this time. There are no public recreation amenities proposed for this preserve due primarily to the lack of feasible access, the close proximity to Six Mile Cypress Slough Preserve, and the fact that 75% of the preserve is classified as jurisdictional wetlands.

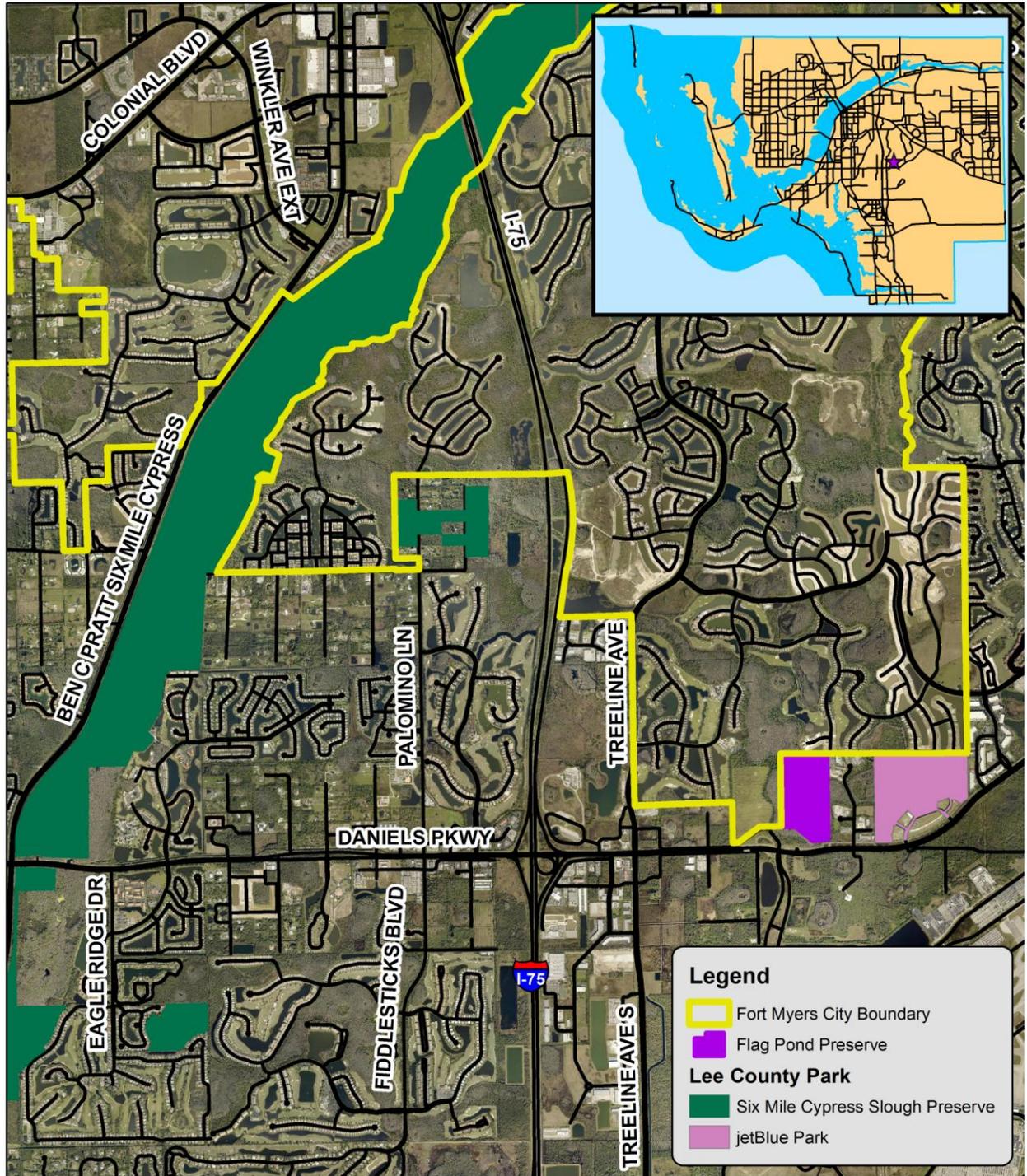
Work done to date on the preserve involved treatment of invasive exotic vegetation and boundary sign installation.

The purpose of this management plan is to define conservation goals for FPP that will address the above concerns. It will serve as a guide for the Lee County Department of Parks and Recreation to use best management practices to ensure proper management and protection of the preserve. A significant number of field surveys were conducted along with reviewing scientific literature and historical records to understand how the preserve functions in the ecosystem, which wildlife and plants are found within its boundaries and how it has been impacted by humans. This allows the plan to serve the purpose as a reference guide for anyone interested in learning more about the preserve and some of the land management efforts in Lee County.

III. LOCATION AND SITE DESCRIPTION

Flag Pond Preserve is located in central Lee County along Daniels Parkway, approximately two miles east of Interstate 75 and less than one mile north of Southwest Florida International Airport (SWFIA). FPP does not have an address listed by the Lee County Property Appraiser's office because the access is undetermined. It is in Section 24, Township 45 South, Range 25 East, and north of the entrance to Chamberlin Parkway (Figure 1). The site is bordered by Centex Homes and Arborwood DRI (Development of Regional Impact) to the north, Lee County Port Authority and Laurel Oak Development-Southwest Florida LLC to the south, undeveloped land to the west owned by Watermen at Daniels Parkway LLC, the eastern boundary is bordered by a business park and a conservation easement owned by Southwest Regional Commerce. Figure 2 identifies the boundaries of FPP on a 2016 aerial photograph.

Figure 1: Location Map



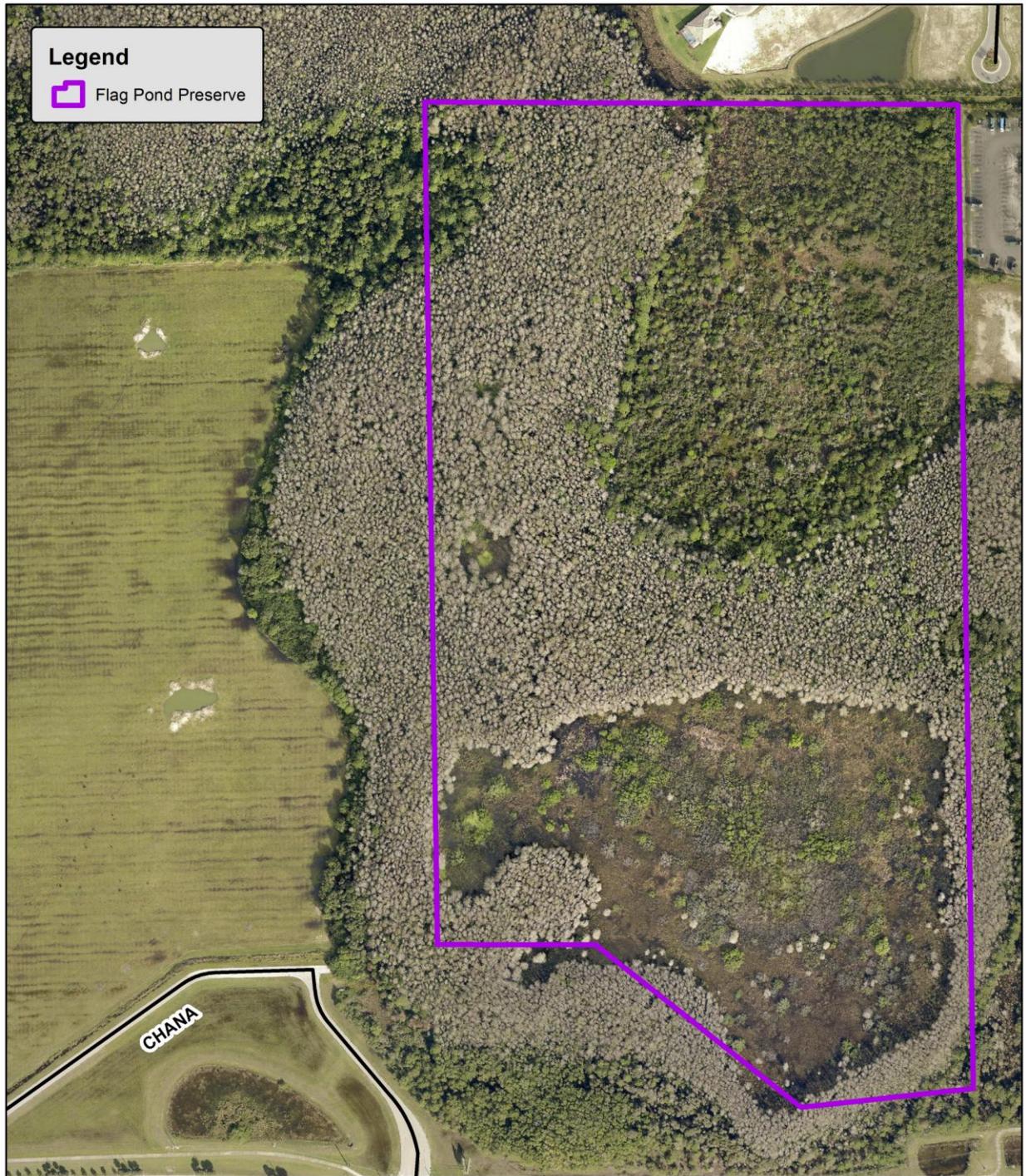
Flag Pond Preserve



This is not a survey. Land Stewardship Staff has prepared this map for informational and planning purposes.

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Figure 2: 2016 Aerial Photograph



Flag Pond Preserve



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IV. NATURAL RESOURCES DESCRIPTION

A. Physical Resources

i. Climate

General information on the climate of southwest Florida is located in the Land Stewardship Operations Manual's (LSOM) Land Stewardship Plan Development and Supplemental Information section.

ii. Geology

Specific information on the geologic features such as physiographic regions, formations and maps can be found in the LSOM's Land Stewardship Plan Development and Supplemental Information section.

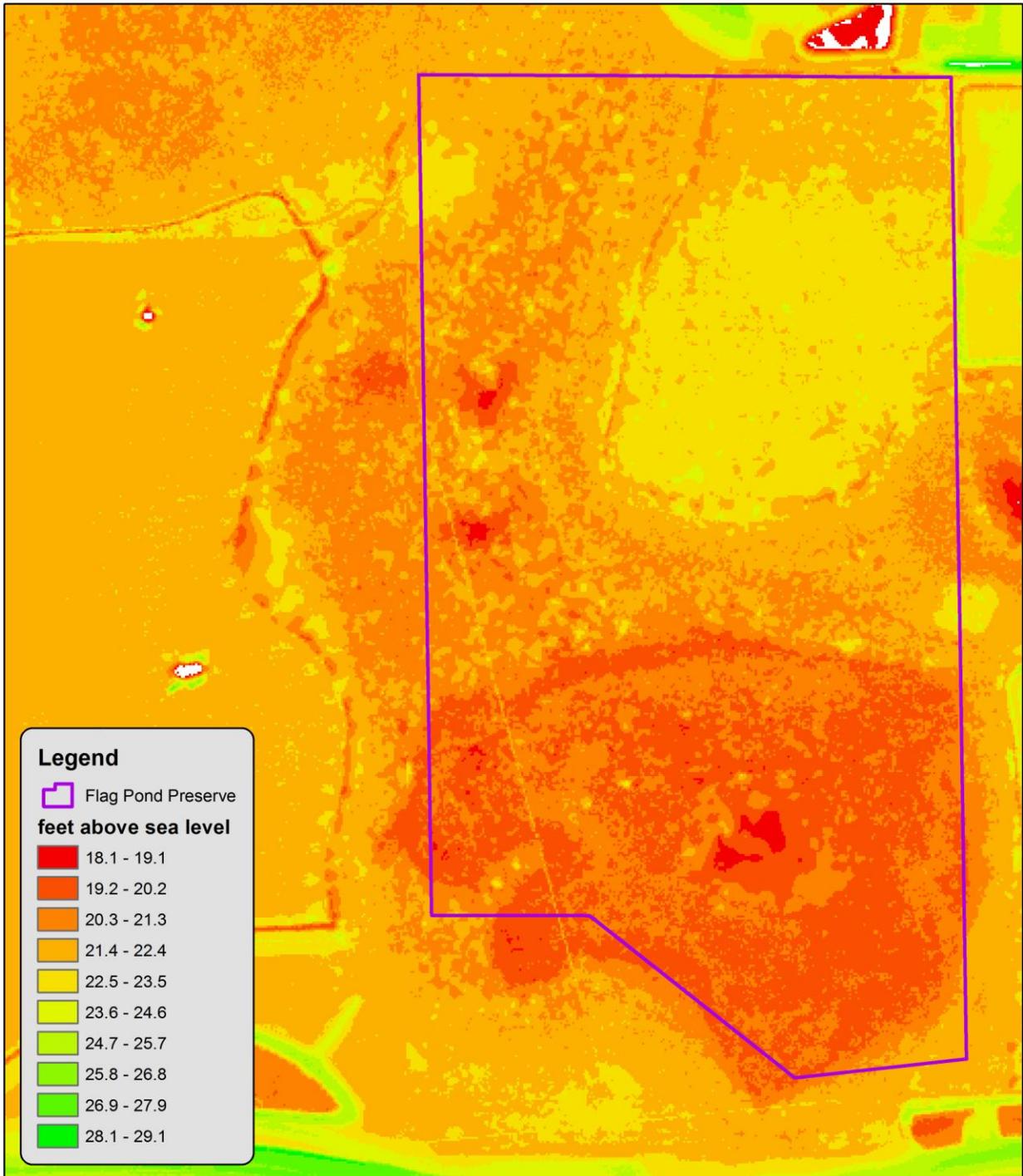
iii. Topography

There is a minimal change in natural elevations at FPP. Elevations in the abandoned agriculture field range from 22-23 feet above sea level with berms ranging from 23-24 feet. Elevations at the south end of the preserve are approximately 22 feet. The elevation of Daniels Parkway, adjacent to the south, ranges from 25-28 feet.

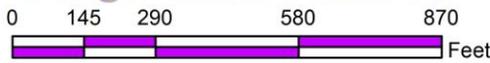
Man-made topographic features on the preserve include ditches and berms associated with historic agricultural activities located in the NE section and adjacent property. Row crop agriculture is first observed on the 1972 Lee County aerial along with the berms and ditches associated with the field.

The following topographic map (Figure 3) uses light detecting and ranging (LiDAR) data, which is an optical remote sensing technology that measures properties of scattered light to find range or other information of a distant target. This data was flown in 2007 and represents the published 5 foot digital elevation model. The change in color gradient visually demonstrates the relative flatness of FPP.

Figure 3: LiDar Map



Flag Pond Preserve



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iv. Soils

FPP contains five different soils (Figure 5 and Table 1). A common relationship for all of these soil types is that their slopes range from 0-2%. Slope is “the inclination of the land surface from the horizon.” Essentially, FPP is level.

Table 1: Summary of Soil Characteristics

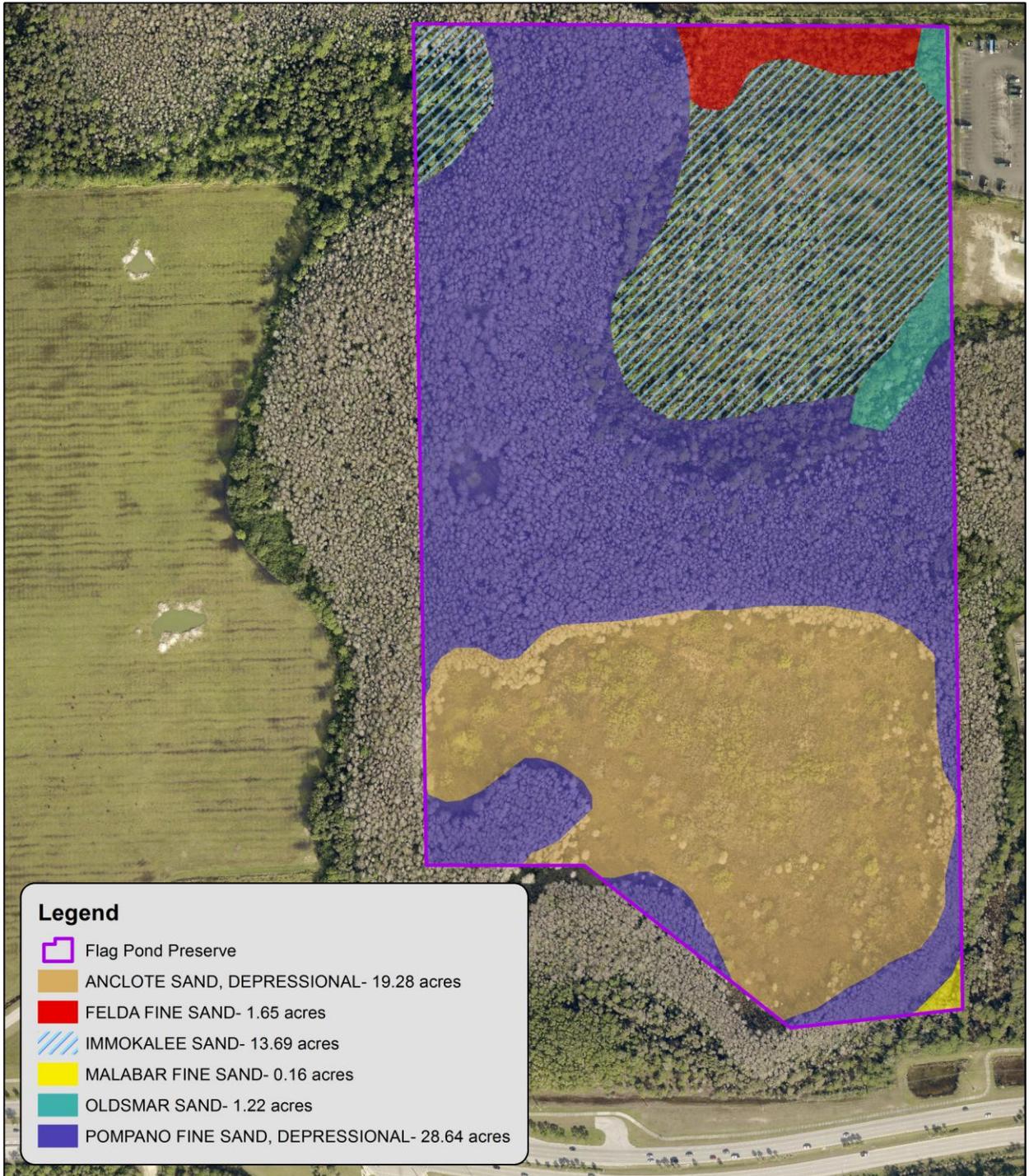
Soil Types	Map Symbol	Total Acres	% of Preserve	Habitats (Range Site)	Physical Attributes							Biological Attributes				Limitations for Recreational Paths & Trails
					Wetland Class (1)	Hydrologic Group (2)	Surface Permeability	Subsurface Permeability	Water Table within 10" of surface	Water Table below 10-40" of surface	% Organic Matter	Potential as habitat for wildlife in--				
												Openland	Woodland	Wetland	Rangeland	
Anclote Sand, Depressional	40	20.2	30.4	freshwater marshes/ponds	P	B/D *	rapid		> 6 months (ponded)		2-10%	very poor	very poor	good	--	Severe: ponding
Felda Fine Sand	12	1.6	2.4	slough	S	B/D	rapid	rapid	2-4 months	~ 6 months	1-4%	fair	poor	fair	--	Severe: wetness, too sandy
Immokalee Sand	28	12.8	19.2	south Florida flatwoods		B/D	rapid	rapid	1-3 months	2-6 months	1-2%	poor	poor	poor		Severe: wetness, too sandy
Oldsmar Sand	33	1.2	1.8	south Florida flatwoods		B/D	rapid	rapid	1-3 months	> 6 months	1-2%	fair	fair	poor	--	Severe: wetness, too sandy
Pompano Fine Sand, Depressional	27	30.8	46.2	freshwater marshes/ponds		B/D *	rapid		2-4 months (ponded 3 mon.)	> 5 months	1-5%	very poor	poor	good	--	Severe: ponding, too sandy

Color Key:

Wet
Wetter
Wettest

- (1) S - Slough (sheet flow): A broad nearly level, poorly defined drainage way that is subject to sheet-flow during the rainy season.
P - Ponding: Standing water on soils in closed depressions. The water can be removed only by percolation or evapotranspiration.
- (2) * Water table is above the surface of soil
B - Soils having a moderate infiltration rate (low to moderate runoff potential) when thoroughly wet.
D - Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet.

Figure 4: Soils Map



Flag Pond Preserve



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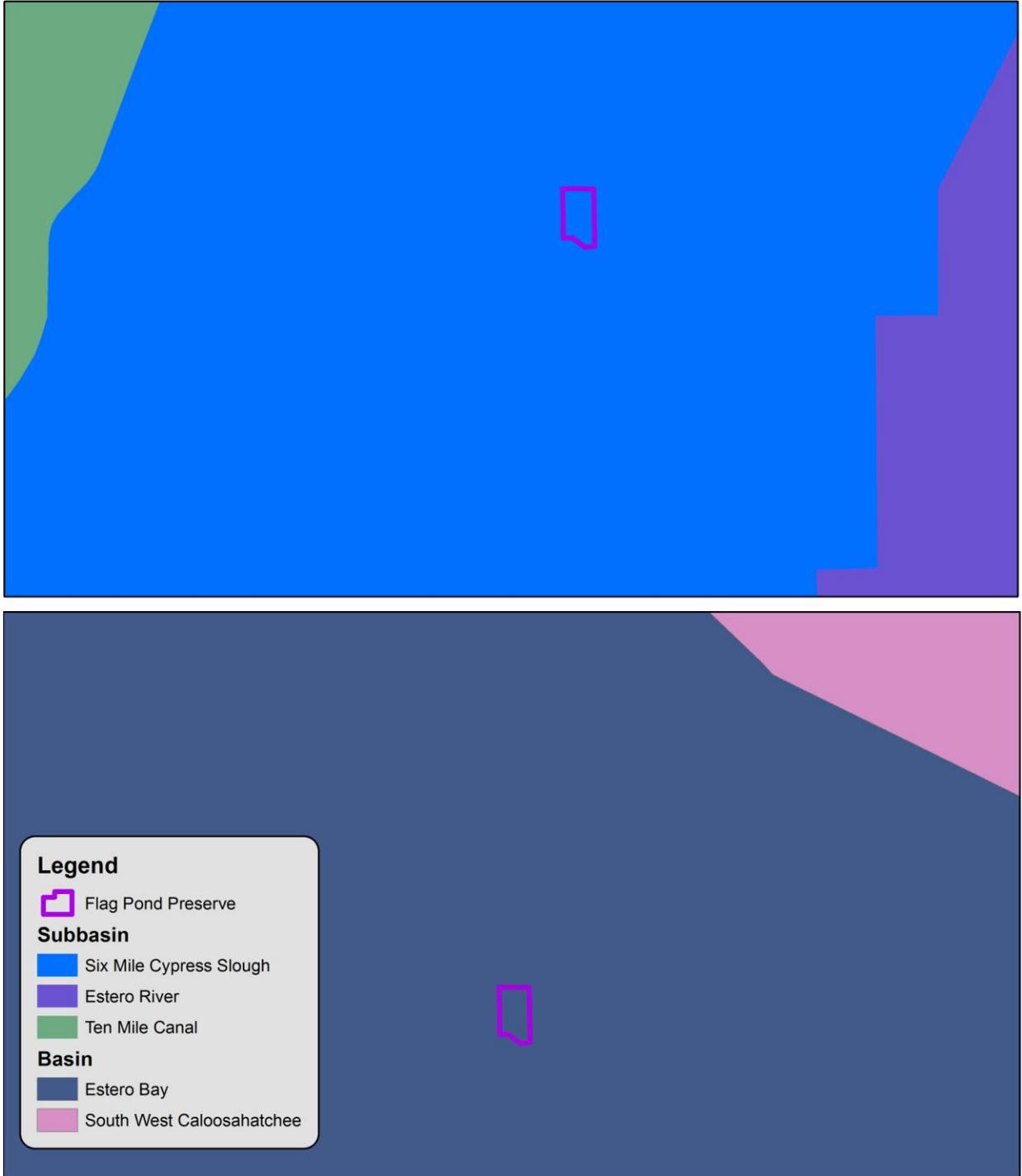
v. Hydrologic Components and Watershed

FPP is bordered to the north and east by development/golf courses, to the west by undeveloped land, and to the south by Daniels Parkway. The road and developments, along with the agricultural ditches and berms that exist on the site, can negatively impact the hydrologic features of the preserve. FPP is within the northwestern portion of the South Florida Water Management District's (SFWMD) Lower West Coast Region (LWCR) (SFWMD 2000). The preserve lies within the Six Mile Cypress Watershed which historically encompassed 57 square miles. Due to urbanization and hydrologic alterations, the surface area of the watershed was reduced to 32.6 square miles (Erwin 2006). Figure 5 illustrates portions of the Six Mile Cypress Watershed as well as surrounding watersheds. As impacts to the watershed continue, areas such as FPP will remain crucial for groundwater recharge.

Flag Pond Preserve is part of a larger system of basin swamps. Ditches and berms associated with the previous agricultural activities were installed sometime between 1966 and 1972 based on historic aerial photographs. There are two berms that begin at the southeastern end of the preserve that merge together and run north gradually shifting eastward on adjacent property. There is also a ditch/berm that follows the edge of the abandoned agricultural field. If legal access or a temporary agreement to cross private lands can ever be established staff recommends restoration of the ag field ditch. Although the cypress wetlands at the preserve have been and may continue to be hydrologically impacted by adjacent development (i.e. agriculture, roadways, residential communities, commercial parks) they still provide habitat and foraging opportunities for some wildlife species, including many species of wading birds.

In 1974 the United States Fish and Wildlife Service (USFWS) directed its Office of Biological Services to conduct an inventory of the nation's wetlands. Wetlands were identified on aerial photography by vegetation, visible water features and geography, and subsequently classified in general accordance with the Classification of Wetlands and Deep Water Habitats of the United States (Cowardin et al. 1979). More information about the different classifications can be found there, or in the LSOM's Land Stewardship Plan Development and Supplemental Information section. Based on the federal NWI evaluation, nearly 75% of FPP is classified as wetlands. Figure 6 identifies hydrological features associated with the preserve.

Figure 5: Watershed Map



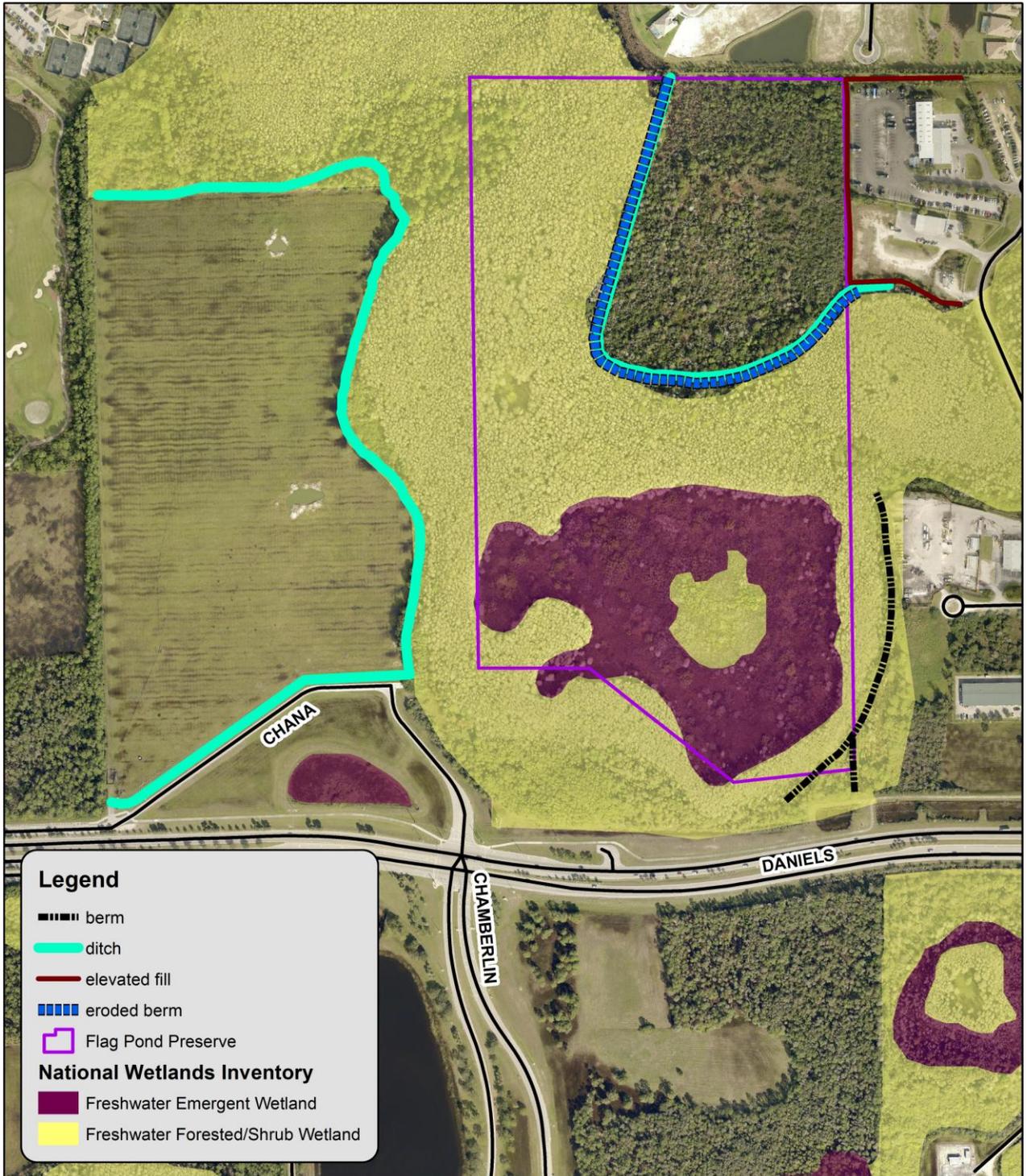
Flag Pond Preserve



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Figure 6: Hydrological Components Map



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B. Biological Resources

i. Ecosystem Function

Flag Pond Preserve is part of a larger system of basin swamps. Historically, the swamps on the preserve connected to wetlands to the north and south with a wide expanse of open lands for sheetflow to cross into the wetland systems. Today water is diverted into multiple retention ponds and drainage ditches before it reaches the chain of wetlands.

Forested wetlands are highly productive ecosystems. Healthy cypress communities capable of sustainable reproduction occur in depressions with a hydroperiod of approximately 250-290 days and maximum water levels of one to two feet (Duever et al. 1986). Cypress trees mainly occur in dome-like areas in the southern and western portions of the preserve. The cypress domes, or heads, are depressions in which the largest cypress trees occur in the center and get progressively smaller from the center out. The conditions for growth (long hydroperiod) are much better in the center as opposed to the edges due to more organic soils in the center. The larger cypress trees populate the lower areas with longer hydroperiods. In the areas where the water is too deep for cypress, treeless ponds occur within the domes, supporting a myriad of plants and wildlife.

Animals depend upon healthy cypress communities for nesting, breeding and feeding. The Florida cottonmouth (*Agkistrodon piscivorus conanti*) will climb upon mats of debris in the swamp ferns (*Blechnum serrulatum*) for sunning platforms. Yellow-crowned night herons (*Nyctanassa violacea*) build their nests in the trees and white ibis (*Eudocimus albus*) and great egrets (*Ardea alba*) roost in the canopy. To sustain the health of the cypress communities, water quality and quantity must be protected and improved.

Although the cypress wetlands at the preserve have been and may continue to be hydrologically impacted by adjacent development (i.e. roadways, berms, residential communities, commercial parks), they still provide habitat and foraging opportunities for wildlife including frogs, herons, white ibis and a variety of wading birds. As restoration occurs, these communities will provide more opportunities for additional species.

The abandoned agricultural fields in the north central portion of the preserve are succeeding towards a shrub community dominated by wax myrtle (*Myrica cerifera*) and, prior to recent invasive plant treatments, Brazilian pepper (*Schinus terebinthifolius*). This area provides foraging and nesting habitat for small bird species such as Carolina wrens (*Thryothorus ludovicianus*), northern cardinals (*Cardinalis cardinalis*) and white-eyed vireos (*Vireo griseus*).

ii. Natural Plant Communities

Flag Pond Preserve consists of four plant communities: abandoned field, basin swamp, wet and mesic flatwoods (Figure 7). These communities are defined using the Guide to the Natural Communities of Florida (2010) prepared by FNAI and the Florida Department of Natural Resources. The following are descriptions of the dominant plants and characteristic animals found within each community. A list of plant species identified during site inspections and field work can be found in Appendix A. This list will be updated seasonally as plants are identified in their inflorescence phase. Due to the presence of a ditch, plant community acreages do not add up to the total acreage of the preserve, and % coverage does not add to 100%.

Basin Swamp – 48.65 acres, 73% coverage at FPP

The basin swamp community at FPP is part of a larger wetland system that continues to the north and west of the preserve boundary. A basin swamp is generally characterized as a relatively large and irregularly shaped basin that is not associated with rivers, but is vegetated with hydrophytic trees and shrubs that can withstand an extended hydroperiod. Dominant plants include pond cypress and bald cypress. Other typical plants here include buttonbush, alligator flag and pickerelweed.

Animals found in the basin swamp include egrets, herons, turtles, fish, frogs, and alligators. Notable animal species at FPP include wood duck (*Aix sponsa*), green anole (*Anolis carolinensis*), yellow rat snake (*Elaphe obsoleta quadrivittata*) and Florida cottonmouth.

Basin swamps may act as a reservoir releasing groundwater as adjacent upland water tables drop during drought periods. The typical hydroperiod is approximately 200 to 300 days. If water levels must be artificially manipulated, somewhat deeper than normal water is not likely to do much harm. However, extended hydroperiods will limit tree growth and prevent reproduction. Shortened hydroperiods will permit invasion of mesophytic species and change the character of the understory or will allow a devastating fire to enter which would drastically alter the community.

Regular fire intervals are essential for the maintenance of cypress dominated basin swamps. Without fire, hardwood invasion and peat accumulation will eventually create a bottomland forest or bog. Typical fire intervals in basin swamps may be anywhere from 5 to 150 years. Cypress are very tolerant of light surface fires, but muck fires burning into the peat can kill the trees, lower the ground surface and transform a swamp into a pond or lake.

The basin swamp community at FPP is impacted by exotic plant coverage of less than 10% consisting primarily of aquatic soda apple (*Solanum tampicense*), also

known as wetland nightshade. This system is definitely showing hardwood and cabbage palm establishment along the outer edges and in shallower portions of the swamp. Due to development adjacent to the larger basin swamp system of which FPP is a small part of, the upland community transitions and seasonal sheetflow have been drastically altered.

Abandoned Field – 15.00 acres, 22.4% coverage at FPP

FNAI has recognized that not all lands contain natural plant communities due to human alterations to the land. The classification of abandoned field falls into their altered landcover types which were added to the 2010 FNAI update. This community generally contains early successional shrubs such as wax myrtle and other weedy species. At FPP this area was used for crops/cattle grazing through the early 1980s. Ground cover includes bahiagrass (*Paspalum notatum* var. *saurae*), West Indian meadowbeauty (*Rhexia cubensis*) and netted pawpaw (*Asimina reticulata*). The area between the fallow farm land and basin swamp includes a small drainage ditch and intermittent berm that has eroded away in several areas. Portions within or along this disturbed plant community are transitioning into mesic or wet flatwoods. Ideally this area would be managed with prescribed fire to keep wax myrtle from becoming the dominant overstory plant.

Animals that have been documented utilizing the abandoned field at the preserve include the common grackle (*Quiscalus quiscula*), dusky pygmy rattlesnake (*Sistrurus miliarius barbouri*) and gulf fritillary (*Agraulis vanillae*).

Mesic Flatwoods – 1.15 acres, 1.7% coverage at FPP

Mesic flatwoods occur on relatively flat, moderately to poorly drained soils. Standing water is common for brief periods during the rainy season. Mesic flatwoods are characterized as having an open canopy with widely spaced pine trees and a dense ground cover of herbs and shrubs. Typical plants growing in these communities at FPP include south Florida slash pine (*Pinus elliottii* var. *densa*), saw palmetto, chalky bluestem, and tall elephantsfoot (*Elephantopus elatus*).

Animals that have been documented utilizing mesic flatwoods at the preserve include the northern cardinal, eastern phoebe (*Sayornis phoebe*), and black racer (*Coluber constrictor priapus*).

Historically, natural fire probably burned in these communities every 1-8 years. Without frequent fires this mesic flatwoods will succeed into hardwood-dominated forests whose closed canopy will gradually eliminate the groundcover of herbs and shrubs.

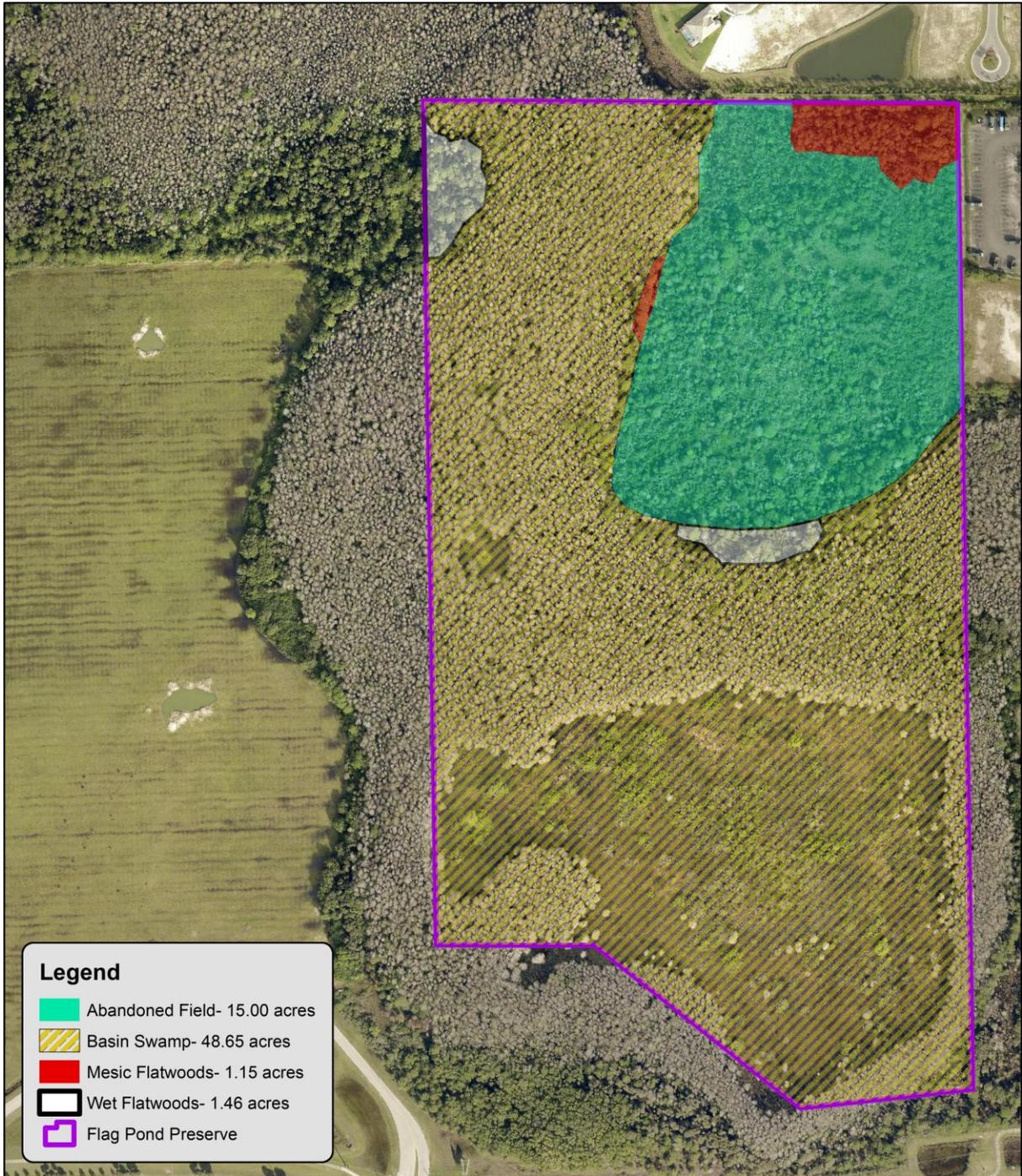
Wet Flatwoods – 1.46 acres, 2.2% coverage at FPP

Wet flatwoods occur on relatively flat, poorly drained terrain where water frequently stands on the surface for one or more months of the year. Many plants here are under the stress of water saturation during the wet season and under the stress of dehydration during the dry season (FNAI 2010). In addition to south Florida slash pines, some of the more common plants documented in this small community includes wax myrtle, Brazilian pepper, coastalplain St. John's-wort (*Hypericum brachyphyllum*), and toothpetal false reinorchid (*Habenaria floribunda*). Because FPP has undergone hydrological modifications, this category occurs on the south side of the ditch nearest to the basin swamp. It also occurs in the northwest corner of the preserve in what was previously wet prairie. Without fire every 1-3 years, pines can become established in wet prairie and begin to close off the canopy, consequently transitioning wet prairie into wet flatwoods. Palmetto becomes denser with lack of fire, which shades out forbs.

Natural fire regimes for wet flatwoods range from every 3-10 years. Without a regular fire, wet flatwoods will succeed into hardwood-dominated forests whose closed canopy would gradually eliminate the groundcover herbs and shrubs. Lack of fire will allow pine needle drape and the height of flammable understory shrubs to increase, which will increase the probability of a catastrophic canopy fire.

Animals documented utilizing this plant community at FPP include red-shouldered hawk (*Buteo lineatus*), blue-gray gnatcatcher (*Poliophtila caerulea*), and Florida cricket frog (*Acris gryllus dorsalis*).

Figure 7: Plant Communities Map



Legend

- Abandoned Field- 15.00 acres
- Basin Swamp- 48.65 acres
- Mesic Flatwoods- 1.15 acres
- Wet Flatwoods- 1.46 acres
- Flag Pond Preserve



Flag Pond Preserve



This is not a survey. Land Stewardship Staff has prepared this map for informational and planning purposes.

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iii. Fauna

FPP is bordered to the north and east by development, the west by undeveloped land and the south by Daniels Parkway. The road and developments provide a challenge for large wildlife, excluding birds, to enter the preserve, although white-tailed deer have been seen on the adjacent undeveloped property to the west. These reasons likely influence the small number of wildlife species that have been observed when compared to other county preserves (Appendix B). Wildlife species were recorded during field work and site inspections. Future sightings through site inspections and possible Lee County Bird Patrol volunteers will continue to be recorded. Several exotic wildlife species have been documented at the preserve (Table 2). Of highest concern is the feral hog (*Sus scrofa*). A majority of the abandoned farm fields shows damage from the hogs and soil and vegetation damage is apparent in the understory of the cypress swamp.

Table 2: Exotic Wildlife at Flag Pond Preserve

<u>Scientific Name</u>	<u>Common Name</u>
<i>Osteopilus septentrionalis</i>	Cuban treefrog
<i>Anolis sagrei</i>	brown anole
<i>Sus scrofa</i>	feral hog

Wildlife management at FPP will focus on providing optimal habitat for native species. Once access is obtained to bring in a rollerchopper, mechanical work will be done in the abandoned agricultural field to improve habitat, and prescribed burning will occur. Until then, invasive exotic plant work by contracted hand crews will be the only management work done at FPP. FPP is part of a countywide thrice site inspection program for all Conservation 20/20 Preserves. These inspections allow staff to monitor for any impacts and/or changes to each preserve and include lists of all animal sightings and new plant species that are found. If, during these inspections, staff finds FNAI listed species, they will be reported using the appropriate forms.

iv. Designated Species

There are a variety of designated animal and plant species (Table 3) found at FPP. Although all native plant and animal species found at the preserve have some protection due to the preservation of this property, certain species need additional attention. For management purposes, all plants and animals listed by the United States Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FWC), Florida Department of Agriculture and

Consumer Services (FDACS), the Institute for Regional Conservation (IRC) and FNAI will be given special consideration.

Typically, designated species will benefit from proper management of the biological communities in which they occur. However, some species may require additional measures to ensure their protection. Practices likely to benefit wildlife and plants at FPP include exotic plant control, protecting water resources, prescribed fire, trash removal, wildlife monitoring, feral and exotic animal control, and enforcement of no littering, no weapons and no motorized vehicles regulations.

Table 3: Listed Species Found at FPP and Their Designated Status

Scientific Name	Common Name	USFWS	FWC	FNAI	FDACS	IRC	Occurrence
BIRDS							
<i>Aramus guarauna</i>	limpkin		SSC	G5/S3			confirmed
<i>Egretta caerulea</i>	little blue heron		SSC	G5/S4			confirmed
<i>Egretta tricolor</i>	tricolored heron		SSC	G5/S4			confirmed
<i>Egretta thula</i>	snowy egret		SSC	G5/S3			confirmed
<i>Eudocimus albus</i>	white ibis		SSC	G5/S4			confirmed
<i>Mycteria americana</i>	wood stork	T	T	G4/S2			confirmed
<i>Grus canadensis</i>	sandhill crane	T		G5/T2T3/S2S3			confirmed
<i>Elanoides forficatus</i>	swallow-tailed kite			G5/S2			confirmed
PLANTS							
Ferns and their allies							
<i>Woodwardia virginica</i>	Virginia chain fern					R	confirmed
<i>Nephrolepis biserrata</i>	giant sword fern				T	R	confirmed
<i>Osmunda regalis var. spectabilis</i>	royal fern				T	R	confirmed
<i>Campyloneurum phyllitidis</i>	long strap fern					R	confirmed
<i>Thelypteris interrupta</i>	hottentot fern					R	confirmed
Monocots							
<i>Sagittaria graminea var. graminea</i>	grassy arrowhead					R	confirmed
<i>Tillandsia balbisiana</i>	northern needle leaf				T		confirmed
<i>Tillandsia fasciculata var. densispica</i>	cardinal airplant				E		confirmed
<i>Tillandsia utriculata</i>	giant airplant				E		confirmed
<i>Rhynchospora chapmanii</i>	Chapman's beaksedge					I	confirmed
<i>Rhynchospora corniculata</i>	shortbristle horned beaksedge					I	confirmed
<i>Scleria reticularis</i>	netted nutrush					R	confirmed
<i>Scleria verticillata</i>	low nutrush					R	confirmed
<i>Eriocaulon decangulare</i>	tenangle pipewort					R	confirmed
<i>Lachnocaulon anceps</i>	whitehead bogbutton					R	confirmed
<i>Juncus marginatus</i>	shore rush					R	confirmed

Table 3: Listed Species Found at FPP and Their Designated Status

Scientific Name	Common Name	USFWS	FWC	FNAI	FDACS	IRC	Occurrence
<i>Juncus megacephalus</i>	bighead rush					R	confirmed
<i>Encyclia tampensis</i>	Florida butterfly orchid				CE		confirmed
<i>Andropogon glomeratus</i> var. <i>glaucoopsis</i>	purple bluestem					R	confirmed
<i>Andropogon virginicus</i>	chalky bluestem					R	confirmed
Dicots							
<i>Eryngium yuccifolium</i>	button rattlesnakemaster					R	confirmed
<i>Chaptalia tomentosa</i>	pineland daisy					R	confirmed
<i>Elephantopus elatus</i>	tall elephantsfoot					R	confirmed
<i>Solidago fistulosa</i>	pinebarren goldenrod					R	confirmed
<i>Hypericus brachyphyllum</i>	coastalplain St. John's wort					R	confirmed
<i>Hypericum fasciculatum</i>	peelbark St. John's wort					R	confirmed
<i>Caperonia castaneifolia</i>	chestnutleaf falsecroton					I	confirmed
<i>Stillingia aquatica</i>	corkwood					R	confirmed
<i>Galactia elliotii</i>	Elliot's milkpea					R	confirmed
<i>Proserpinaca pectinata</i>	combleaf mermaidweed					R	confirmed
<i>Utricularia foliosa</i>	leafy bladderwort					R	confirmed
<i>Utricularia purpurea</i>	eastern purple bladderwort					R	confirmed
<i>Lythrum alatum</i> var. <i>lanceolatum</i>	winged loosestrife					R	confirmed
<i>Rhexia cubensis</i>	West Indian meadowbeauty					I	confirmed
<i>Rhexia mariana</i>	pale meadowbeauty					R	confirmed
<i>Fraxinus caroliniana</i>	pop ash					R	confirmed
<i>Ludwigia maritima</i>	seaside primrosewillow					R	confirmed
<i>Polygonum hydropiperoides</i>	swamp smartweed					R	confirmed
<i>Diodia virginiana</i>	Virginia buttonweed					R	confirmed
<i>Lindernia grandiflora</i>	Savannah false pimpernel					I	confirmed

Key

<p>USFWS - U.S. Fish & Wildlife Service FWC - Florida Fish and Wildlife Conservation Commission FDACS - Florida Department of Agriculture and Consumer Services E – Endangered T – Threatened CE - Commercially Exploited SSC - Species of Special Concern IRC - The Institute for Regional Conservation CI - Critically Imperiled I – Imperiled R – Rare</p>	<p>FNAI - Florida Natural Areas Inventory G - Global rarity of the species S - State rarity of the species T - Subspecies of special population 1 - Critically imperiled 2 - Imperiled 3 - Rare, restricted or otherwise vulnerable to extinction 4 - Apparently secure 5 - Demonstrately secure</p>
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Wildlife Species

The following is a brief summary of each designated wildlife species explaining why they are in decline. Unless stated otherwise, the reasons for the species decline and the management recommendations were obtained from Hipes et al. (2001).

Limpkin

The limpkin (*Aramus guarauna*) is a large, long-billed, long-legged wader of swamps and marshes. Its bill is heavy and slightly decurved, allowing easy access to its preferred food, the Florida apple snail (*Pomacea paludosa*). Pollution, hydrological disruptions, and an increase in invasive plants threaten the health of the apple snail population and hence the limpkin. Limpkins are listed by the state as a species of special concern. Limpkins have been observed roosting in a cypress trees on the southeastern side of the basin swamp.

Little Blue Heron, Tricolored Heron, Snowy Egret

The little blue heron's (*Egretta caerulea*) and tricolored heron's (*Egretta tricolor*) decline are due to loss of freshwater wetlands and alteration of their natural hydroperiod. There is also some indication that pesticides and heavy metal contamination may affect herons. Like these herons, the snowy egret (*Egretta thula*) population is declining throughout its range, and has been since the 1950s. Scientists believe that the main reason for this decline is the loss and alteration of wetlands in which they forage. FPP provides foraging and roosting opportunities.

White Ibis

Similar to the herons listed above, the white ibis (*Eudocimus albus*) is declining throughout its range, primarily because of the reduction and degradation of wetlands and human disturbances to their rookeries. White ibis are often seen perched in trees on the western boundary and foraging in the cattle field to the west.

Wood Stork

Wood storks (*Mycteria americana*) are very sensitive to water levels in freshwater wetlands, as they require high concentrations of fish in fairly shallow water for foraging. Unnaturally high water levels during nesting seasons and extended droughts are both threats that wood storks face. FPP provides foraging and roosting opportunities.

Florida Sandhill Crane

Threats to Florida sandhill cranes include loss and degradation of wetlands, fire suppression, free ranging dogs and cats and entanglement in fencing (Rodgers et al. 1996). Cranes have been seen foraging in the abandoned agricultural field after the Brazilian pepper was removed.

Swallow-tailed Kite

Swallow-tailed kites (*Elanoides forficatus*) migrate to southwest Florida from South America in late February/early March for their nesting season that lasts through late July/early September. In the early 1900s, swallow-tailed kites were confirmed nesters in 21 states; today they are only found in seven southeastern states. Loss of nesting sites through development and conversion to agriculture are the major threats to this species. FPP has the right conditions for kite nesting opportunities and plenty of foraging areas.

Plant Species

In addition to designated wildlife, Flag Pond Preserve provides habitat for several listed plant species. There are at least six state listed plant species at FPP. The following is a brief summary of each designated plant species explaining why they are in decline, typical habitats where they are located and management recommendations.

Giant Sword Fern

Giant sword fern (*Nephrolepis biserrata*) is a Threatened species listed by FDACS and is found in swamps and hydric hammocks. It has been documented in several portions of FPP. In some areas of the preserve, this plant is mixed with exotic plant species. During exotic plant removal or other restoration activities, staff will survey the area before work commences to look for areas to avoid.

Royal Fern

Royal fern (*Osmunda regalis* var. *spectabilis*) is listed as Commercially Exploited by FDACS. A plant with this designation is considered to be threatened by commercial use. It has been identified in the cypress swamps at FPP.

Northern Needleleaf

The northern needleleaf (*Tillandsia balbisiana*) is another Threatened species listed by FDACS that is occasionally found in a variety of habitats including pinelands, hammocks and mangroves. It has been documented in several scattered areas of the preserve. Threats to this species include the exotic Mexican bromeliad weevil (*Metamasius callizana*) and habitat destruction (Save 2003).

Cardinal Airplant

Cardinal airplant (*Tillandsia fasciculata*) is an Endangered species listed by FDACS. Another name for this airplant is stiff-leaved wild pine. It is found in hammocks, cypress swamps, and pinelands and has been documented at FPP. Threats to this plant include illegal collecting, habitat destruction and the Mexican bromeliad weevil (*Metamasius callizona*) (Save 2004).

Giant Airplant

Giant airplant (*Tillandsia utriculata*) is another bromeliad considered to have been quite common in Florida before the arrival of the Mexican bromeliad weevil and is now listed as Endangered by FDACS. Another common name for this bromeliad is giant wild-pine. This species is typically found in hammocks and pinelands. In addition to the weevil, illegal collecting and habitat destruction threaten this species (Save 2003).

Florida Butterfly Orchid

Although locally abundant (Brown 2002), the Florida butterfly orchid (*Encyclia tampensis*) is designated as Commercially Exploited by the FDACS. Butterfly orchids can be found throughout the cypress swamps in the preserve.

The majority of the designated plant species (see Table 3) were provided by IRC, which is not a regulatory agency. IRC's designation was either obtained from their book (Gann 2002) or Internet website (<http://www.regionalconservation.org/ircs/database/search/QuickSearch.asp>). Scientists working for this Institute have conducted a tremendous amount of field work and research documenting plants occurring in conservation areas in the 10 southernmost counties of Florida. This initial floristic inventory allowed the IRC to rank plant species to indicate how rare/common these plants are in protected areas.

At FPP, a number of Rare, Imperiled and Critically Imperiled plants occur. Rare plants are defined as being either very rare and local throughout its range in south Florida (21-100 occurrences, or less than 10,000 individuals), or found locally in a restricted range. IRC only ranks those taxa as rare with fewer than 100,000 individuals. Imperiled plants are those that are imperiled in south Florida because of rarity (6-20 occurrences, or less than 3,000 individuals) or because of vulnerability to extinction due to some natural or human factor. IRC only ranks those taxa as imperiled that have fewer than 10,000 individuals. Critically Imperiled plants are defined as being either extreme rarity (5 or fewer occurrences, or fewer than 1,000 individuals), or because of extreme vulnerability to extinction due to some natural or human factor. IRC only ranks those taxa as critically imperiled with 10,000 or fewer individuals.

In their book, Rare Plants of South Florida: Their History, Conservation and Restoration (Gann 2002), the authors provide an entire chapter of

recommendations to help restore south Florida's rare plant diversity. Several of these recommendations, particularly those that protect plants on the preserve and relate to maintenance practices, will be followed. More information on the specifics techniques used will be discussed in the Management Action Plan. The following list highlights those recommendations by IRC that will be incorporated into the management of FPP:

- Restrict recreational activities such as off-road vehicle use and equestrian use to avoid impacts to rare plant populations.
- Ensure that park improvements and management activities do not needlessly threaten or destroy rare plant populations.
- Prevent illegal poaching of rare plants.
- Prosecute poachers to the fullest extent of the law.
- Implement an ongoing exotic pest plant control program.
- Educate exotic plant control crews about the rare plants to ensure they avoid non-target damage.
- Trap wild hogs, which can completely destroy the above ground vegetation and disturb all the soil in an area where they are feeding.
- Initiate prescribed fire in communities that are fire adapted since fire as a management tool is extremely critical for the protection of many rare plants.
- Divide the site so the entire area is not burned during the same year will also help protect these communities.

There are several land management and restoration activities at the preserve that will be undertaken to protect the designated wildlife and plant species. These activities (i.e. exotic plant control, hydrological enhancement, prescribed fire) will benefit and protect designated species for the long term.

If additional listed species are documented on the preserve they will be added to the lists in Appendices A or B. When any of the designated species' nests are discovered on the preserve, a map will be created, for staff use only, to assist with planning for restoration activities.

v. Biological Diversity

Biodiversity at Flag Pond Preserve would be increased if land management such as rollerchopping the shrubs in the abandoned field area or prescribed burning could have been conducted over the past 10 years. The presence of a large basin swamp and upland areas provides for greater diversity across the site. The plant communities range from mesic flatwoods to basin swamps, and include

disturbed fallow farm land that has succeeded into a shrubby area dominated by was myrtle. Protection of native plants across the landscape and throughout the wetlands will enhance the overall biodiversity of the FPP.

Many species of animals not only inhabit, but also frequently visit the site. Currently 147 plant species and 87 animal species (3 exotic) have been documented (Appendices A and B). Eleven of the 17 exotic plant species are on the Florida Exotic Pest Plant Council's 2015 List of Invasive Species (FLEPPC 2015).

The integrity and diversity of FPP must be protected and restored where possible. Land Management staff will perform the following actions in this regard:

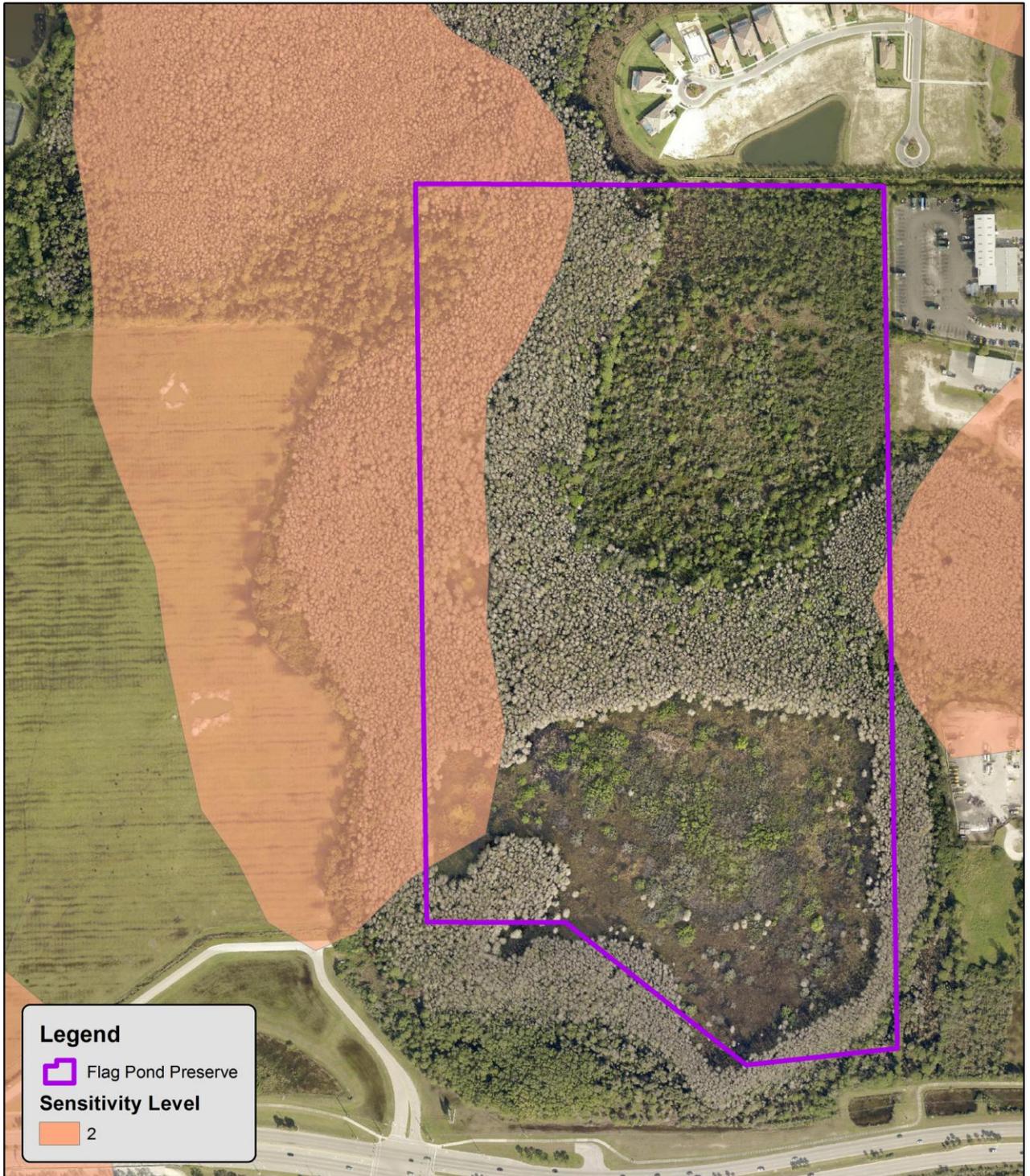
- Control of invasive exotic vegetation followed by annual maintenance to provide more suitable habitat for native aquatic and terrestrial species.
- Maintain boundaries with fencing and signs to eliminate illegal access to the preserve and protect fragile ecosystems.
- Acquire an ingress/egress easement to install a maintenance access point along the northeastern or northern side of the preserve.
- If feasible, remove or modify unnecessary ditches and berms.
- If feasible, implement a prescribed fire program to closely mimic the natural fire regimes for different plant communities to increase plant diversity and ensure the canopies remain open.
- Remove any debris and prevent future dumping on site.
- Conduct on-going species surveys utilizing volunteers and staff to catalog and monitor the diversity that is present.

C. Cultural Resources

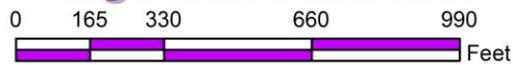
i. Archaeological Features

In 1987, Piper Archaeological Research, Inc. conducted an archaeological site inventory of Lee County. They created a site predictive model and archaeological sensitivity map for the county that highlighted potential areas likely to contain archaeological sites. The map shows the "Sensitivity Level 2" category areas of FPP (Figure 8). Because this designation suggests that there is a higher probability of these areas having unknown archaeological sites within them, these areas are to be subjected to a cultural resource assessment survey by a qualified professional archaeologist before any impacts or significant soil disturbances. General information on archeological features in Lee County can be found in the LSOM.

Figure 8: Archaeological Features Map



Flag Pond Preserve



This is not a survey. Land Stewardship Staff has prepared this map for informational and planning purposes.

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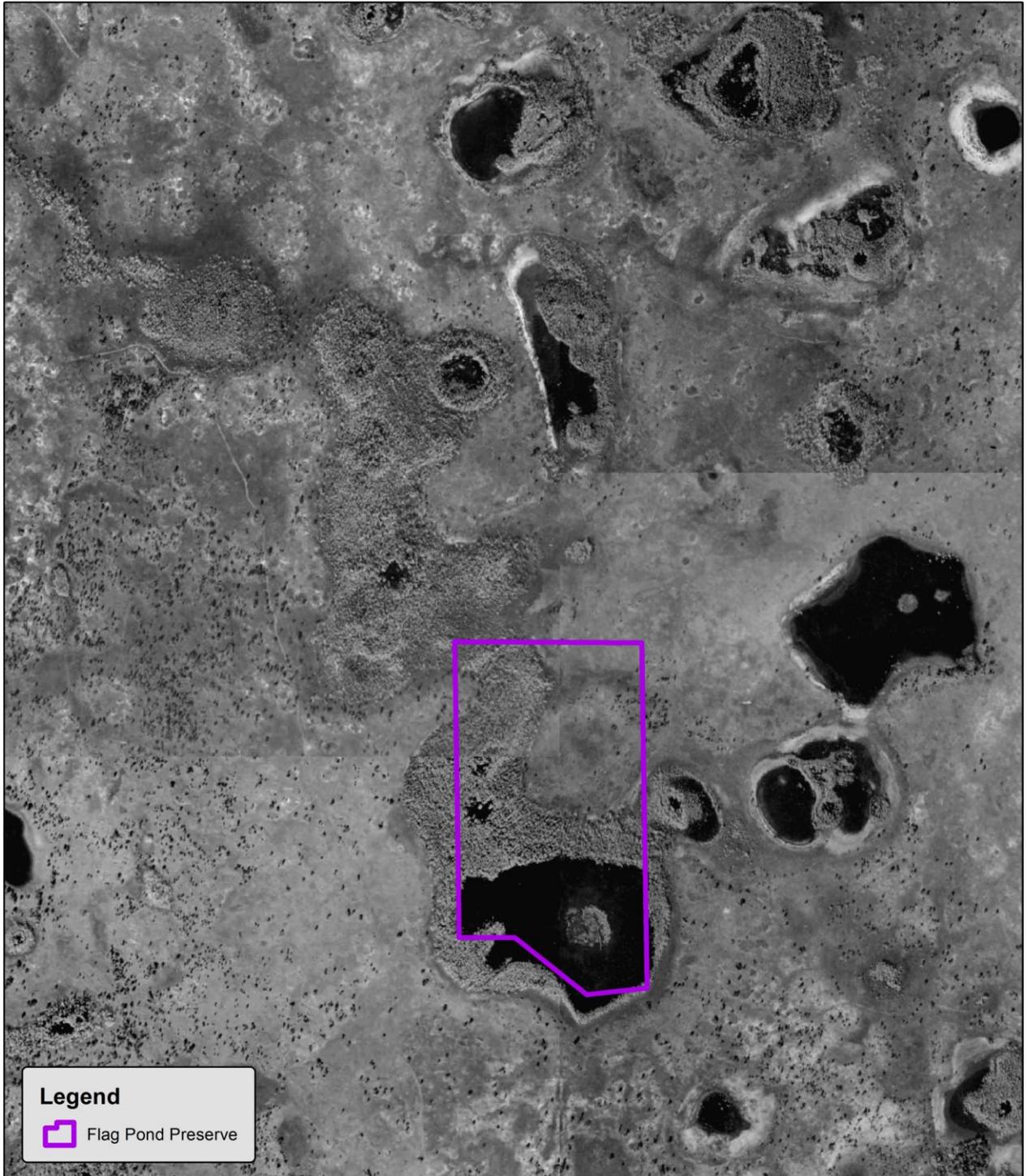
ii. Land Use History

Historical aerial photographs were used to determine land use changes on FPP and the surrounding area. Portions of the property have been directly impacted by agricultural activities, specifically row crop farming and cattle grazing. Surrounding land uses include agriculture, roadways, and commercial and residential development.

According to interpretation of aerial photography (Figures 9-24), FPP remained undisturbed until approximately 1968, with only a jeep trail adjacent to the eastern boundary. Additional activities were derived from either historical aerial photography from 1966 until 2015 or from the Phase I Environmental Site Assessment (ESA) report (GFA International 2003). Row crop farming took place on the site between 1970 and 1972, and was abandoned by 1986. Along with agriculture came alterations to the landscape including installation of ditches and berms which are still present today. Through natural succession, the agricultural field has recovered with wax myrtle and numerous species of native grasses. Exotic vegetation occurred in this field at greater than 30% of all vegetation cover. Exotic plant species found in this area include Brazilian pepper, caesarweed (*Urena lobata*), and Peruvian primrose willow (*Ludwigia peruviana*). Cattle grazing appears to have taken place sometime between 1986-1993 on FPP. In 1990, what appears to be a cow well is visible along the northern boundary.

Since agricultural uses of the preserve were abandoned in the 1990s, there have been few direct disturbances to the preserve, other than exotic plant and animal infestations. Urban development continues to move into areas adjacent to FPP and most of the property surrounding the preserve today is either in the process of being developed or is protected under a conservation easement. Changes adjacent to the preserve include the construction of Daniels Parkway around 1970 close to the southern boundary. To the south, across Daniels Parkway, the Southwest Florida International Airport opened in May 1983. Around 1990, Rickenbacker Parkway was constructed to the east of FPP. In 1996, Daniels Parkway widening has been completed. By 1999 part of the industrial park to the east has been cleared and building construction started adjacent to the northeast boundary of FPP. The 2006 aerial shows the first large scale clearing for the Arborwood DRI to the west, which by 2008 brought clearing and golf course construction to the western half of the north boundary. Through 2016 no new clearing or construction has occurred adjacent to the boundary of FPP, but construction of roads and structures has greatly expanded in the Arborwood DRI to the north.

Figure 9: 1953 Aerial Photograph



Legend

 Flag Pond Preserve



Flag Pond Preserve



This is not a survey.
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for informational and planning purposes.

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Figure 10: 1968 Aerial Photograph



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 Flag Pond Preserve



Flag Pond Preserve



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Figure 11: 1972 Aerial Photograph



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Flag Pond Preserve



Flag Pond Preserve



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Figure 12: 1975 Aerial Photograph



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 Flag Pond Preserve



Flag Pond Preserve



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Figure 13: 1979 Aerial Photograph



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 Flag Pond Preserve



Flag Pond Preserve



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Figure 14: 1986 Aerial Photograph



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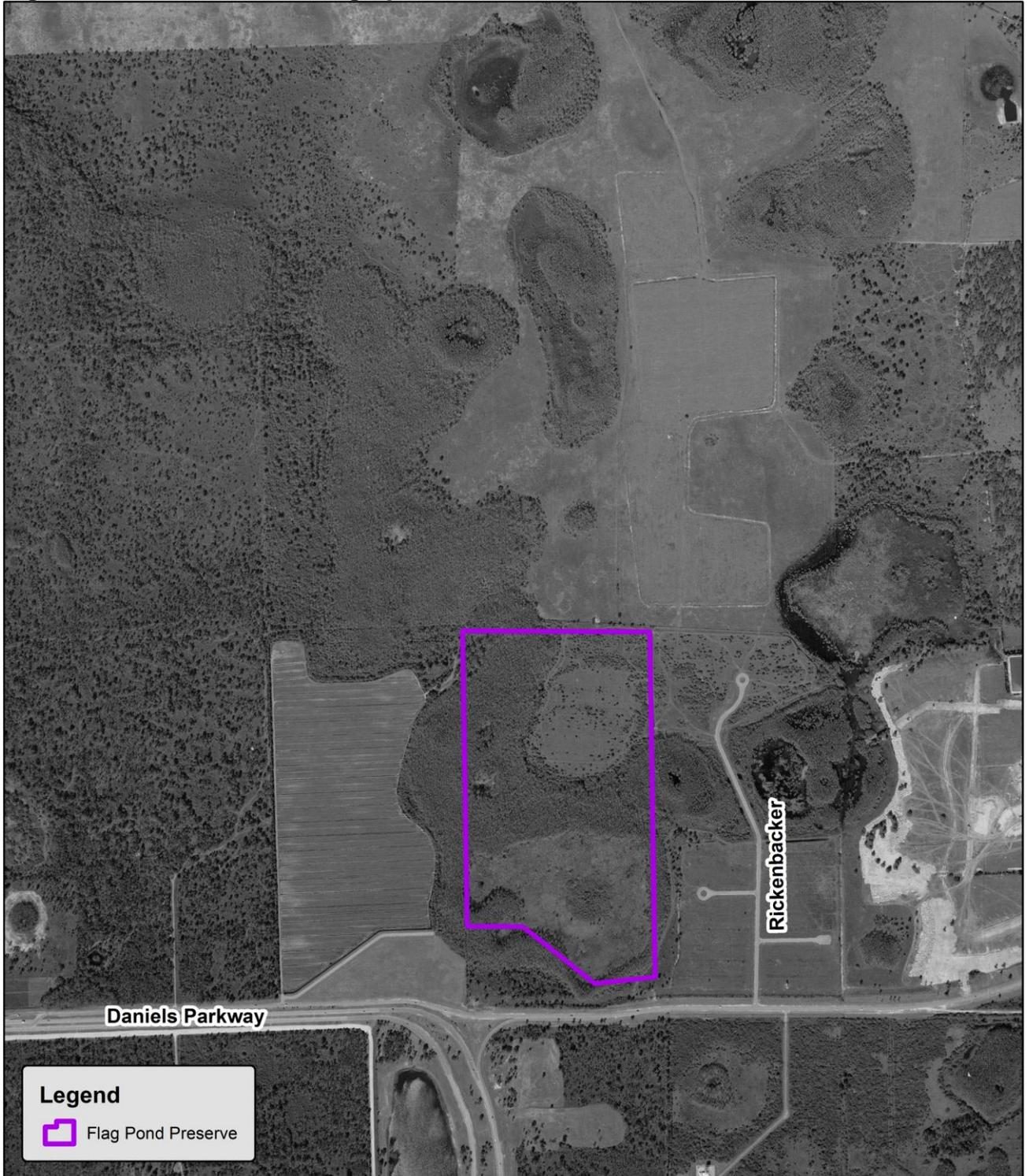
Flag Pond Preserve



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Figure 15: 1990 Aerial Photograph



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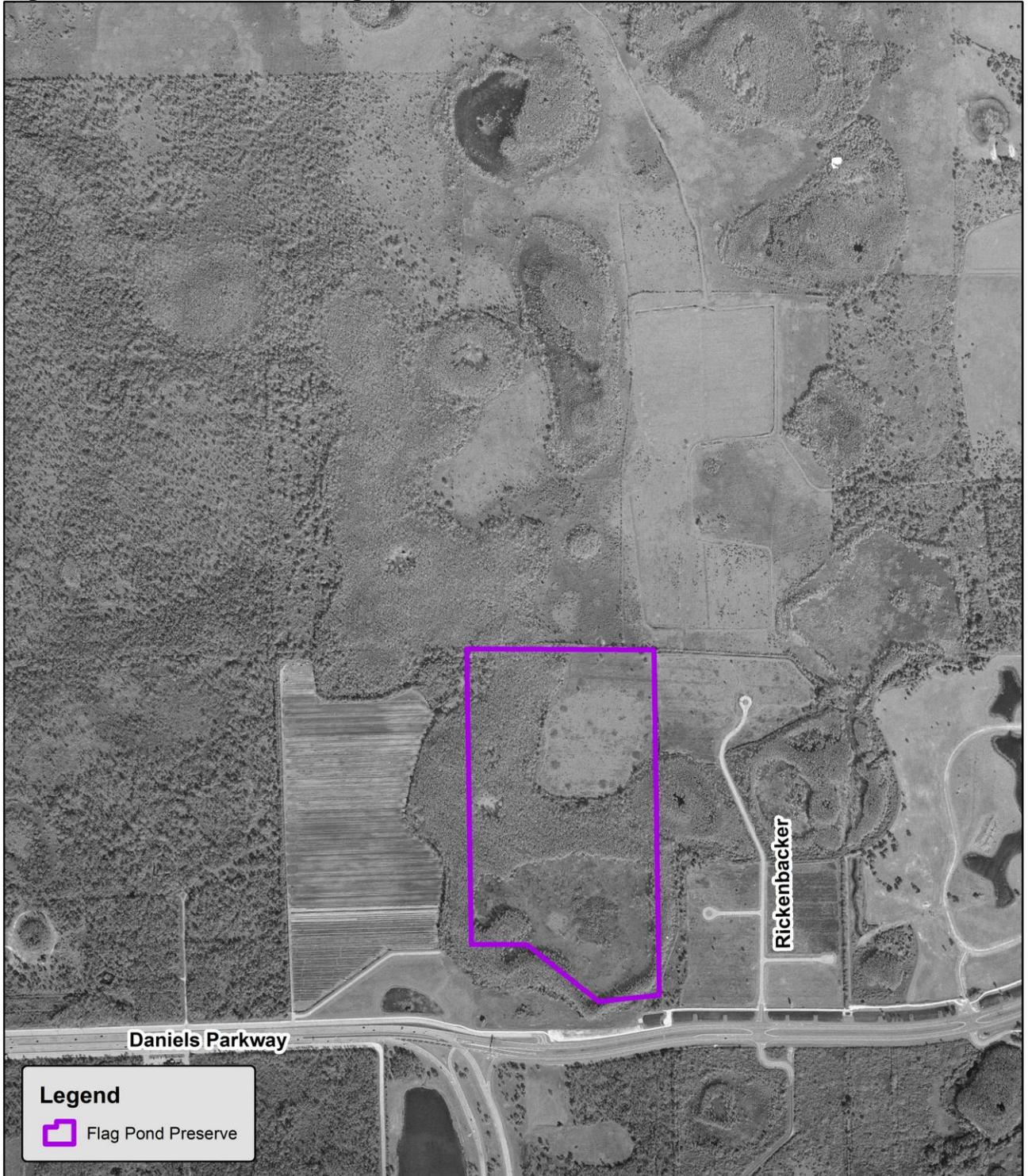
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Figure 16: 1996 Aerial Photograph



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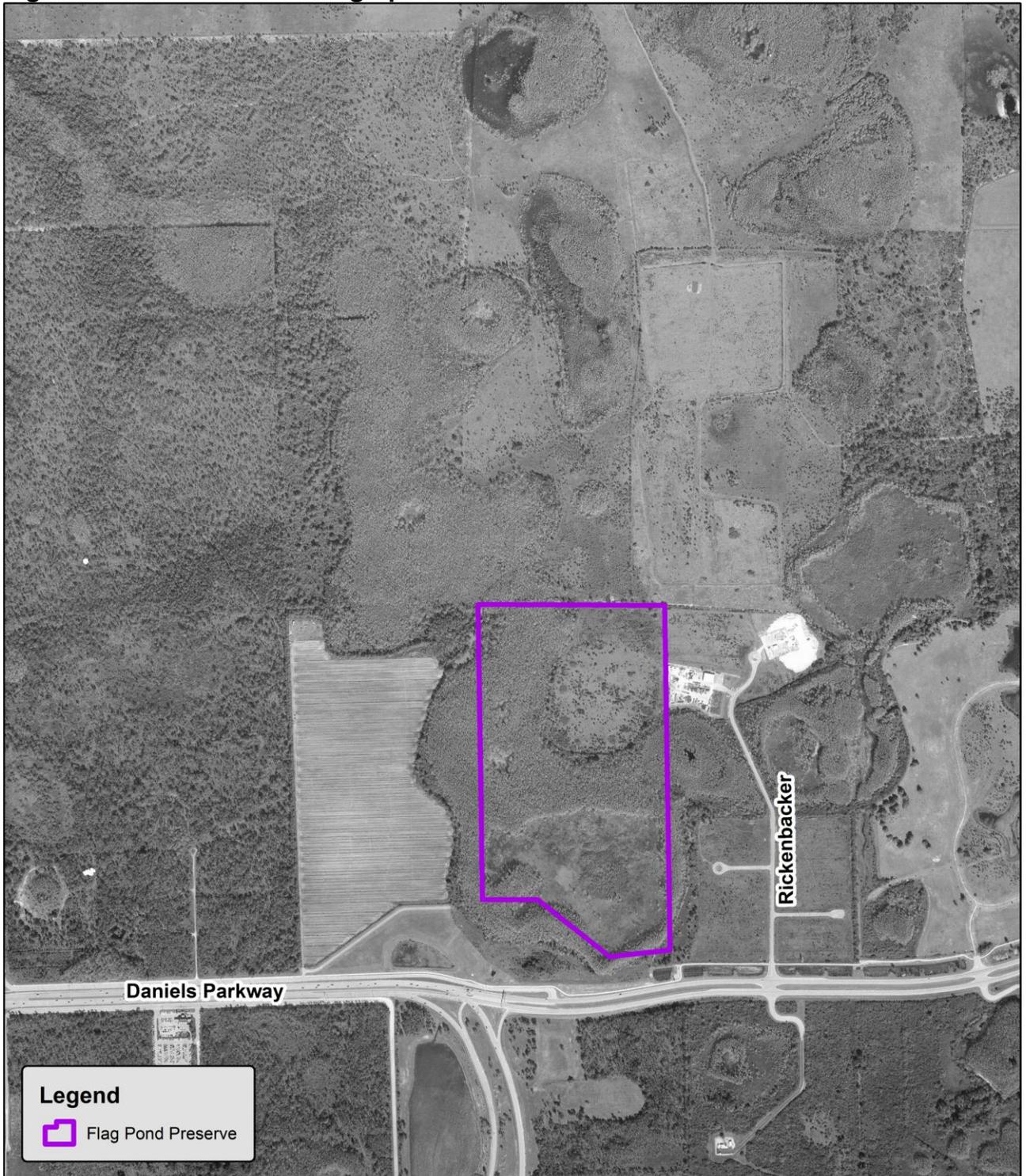
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Figure 17: 1999 Aerial Photograph



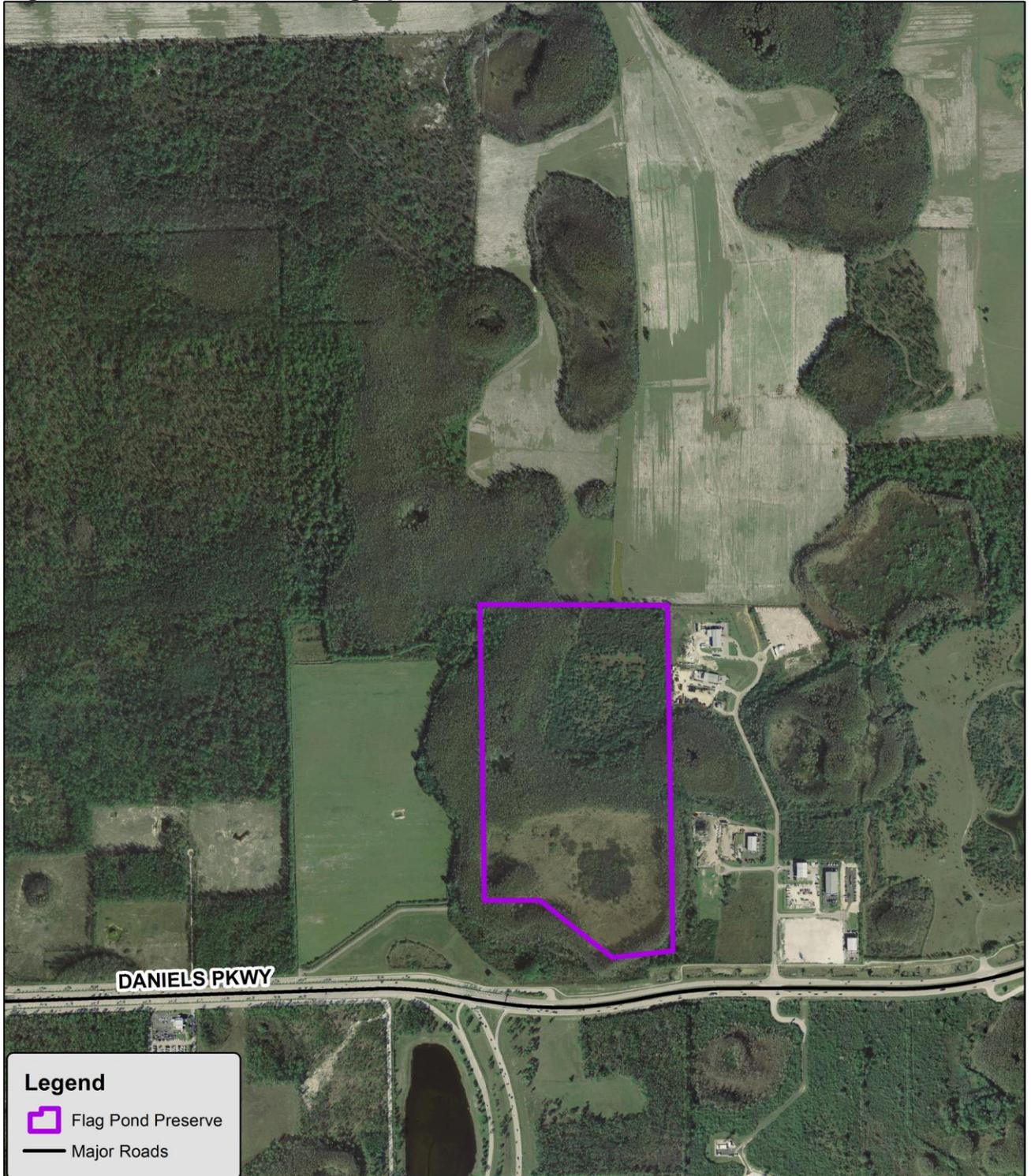
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Figure 18: 2005 Aerial Photograph



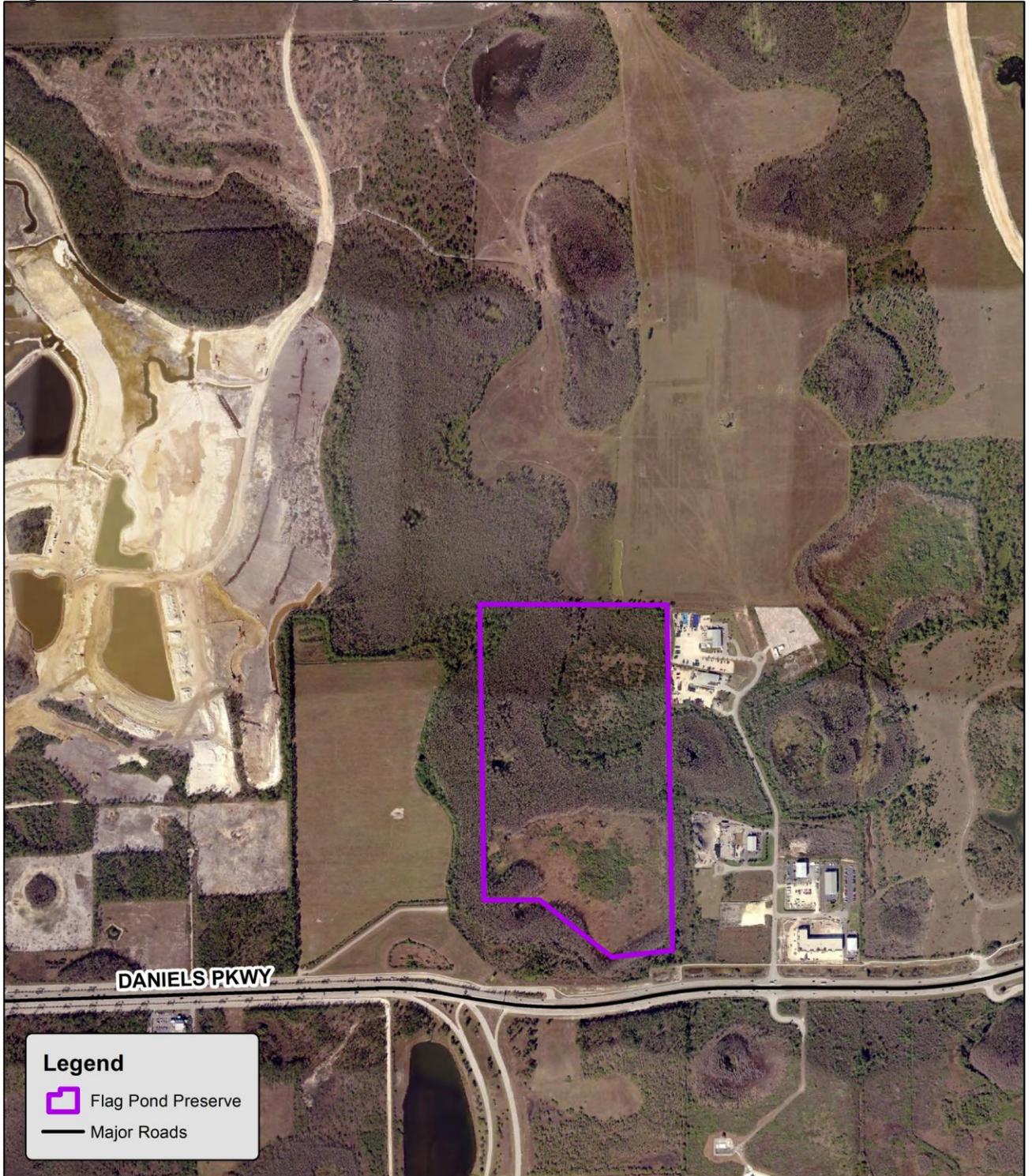
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Figure 19: 2006 Aerial Photograph



Flag Pond Preserve



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Figure 20: 2008 Aerial Photograph



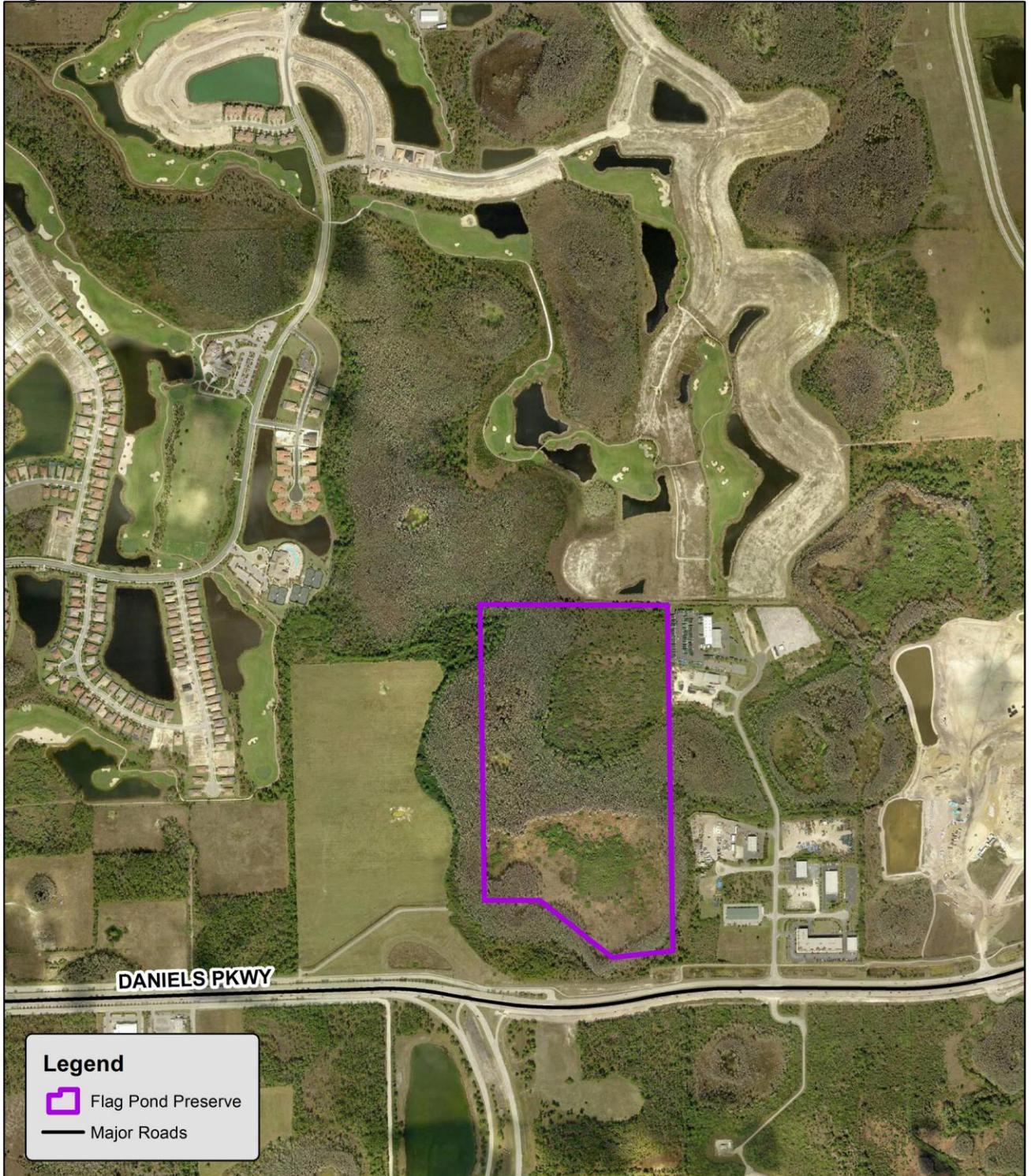
Flag Pond Preserve



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Figure 21: 2011 Aerial Photograph



Legend

-  Flag Pond Preserve
-  Major Roads



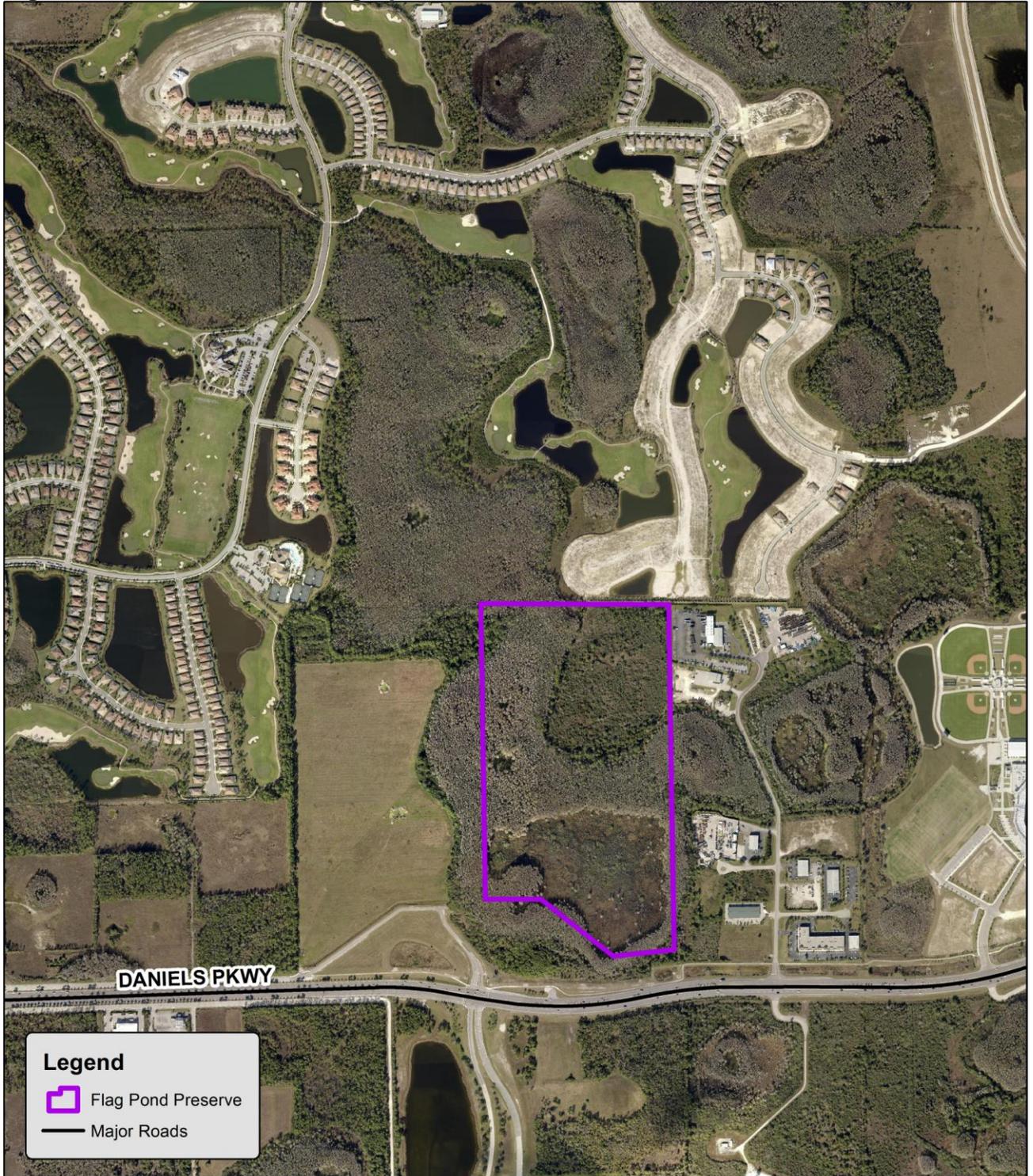
Flag Pond Preserve



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Figure 22: 2013 Aerial Photograph



Legend

-  Flag Pond Preserve
-  Major Roads



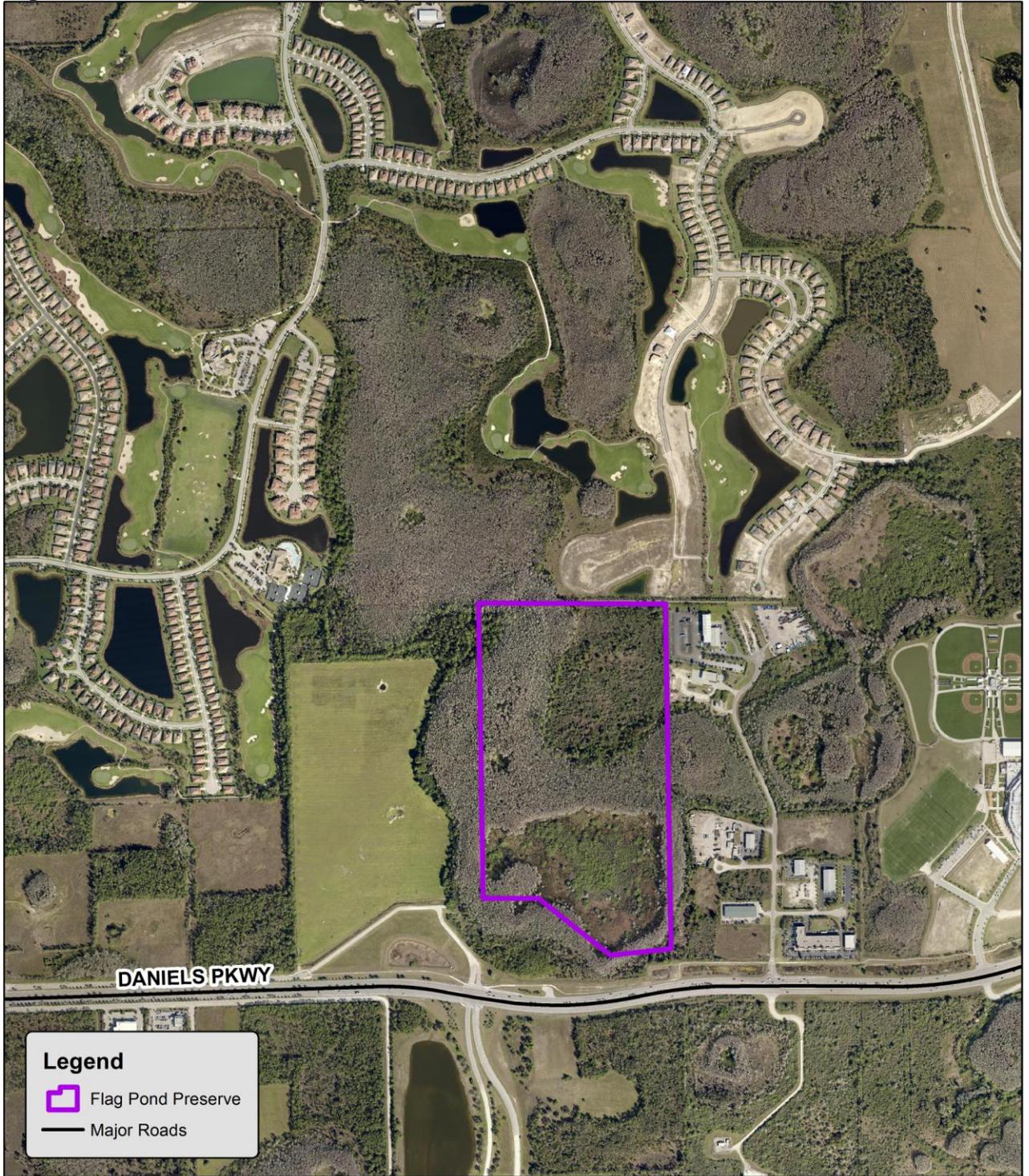
Flag Pond Preserve



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Figure 23: 2014 Aerial Photograph



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-  Flag Pond Preserve
-  Major Roads



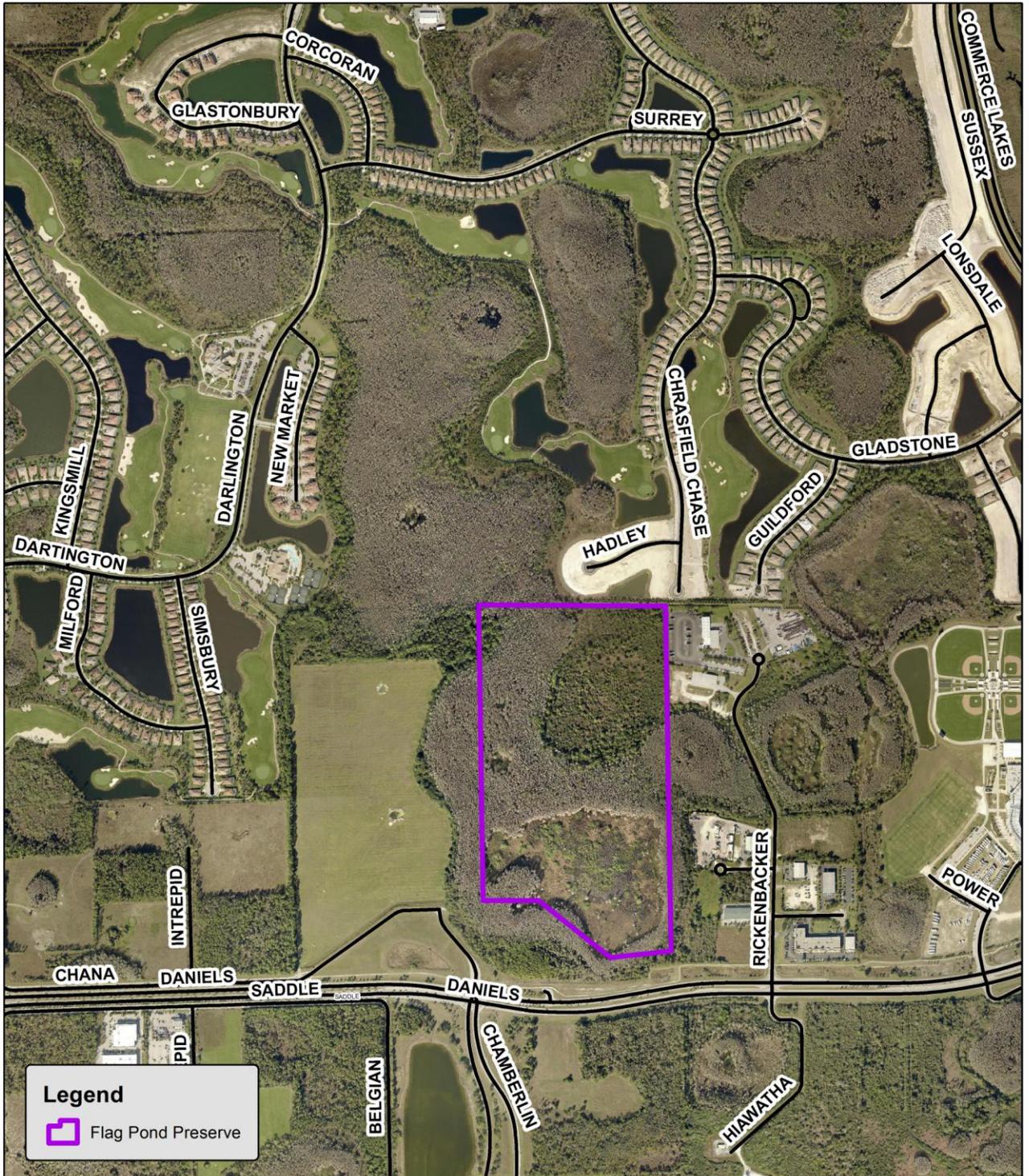
Flag Pond Preserve



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Figure 24: 2015 Aerial Photograph



Flag Pond Preserve



This is not a survey. Land Stewardship Staff has prepared this map for informational and planning purposes.

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iii. Public Interest

Flag Pond Preserve was purchased for its environmentally sensitive lands and groundwater recharge value. The preserve is an important part of improving water quality flowing into Mullock Creek and eventually Estero Bay. Potential contaminants in the water are allowed to filter out within the preserve before it flows in a southerly direction into the bay. Staff has received a few requests over the years for information on how to access the site after individuals visit the Conservation 20/20 website.

V. FACTORS INFLUENCING MANAGEMENT

A. Natural Trends and Disturbances

Natural trends and disturbances influencing native communities and management at FPP may include hurricanes, wildfires, occasional freezes and the cycling of wet and dry seasons. Implementation of the Management Action Plan will take all of these factors and their influence on projects at the FPP into consideration. For example, a tropical storm or hurricane could damage large amounts of vegetation. It may be necessary to remove or mulch downed vegetation following a hurricane if the debris increases the chance of negative impacts to wildlife habitat or public safety from a wildfire.

Wildfires caused by lightning strikes are natural occurrences in Florida. The Florida Forest Service (FFS) – Caloosahatchee District - and Lee County Department of Parks and Recreation staff have developed a wildland firefighting protocol for County preserves. The FFS did not receive a map of FPP since there isn't appropriate legal access to the fire prone plant communities.

Invasive exotic plants are an on-going disturbance to natural areas. Treatment of invasive plants at FPP is influenced by water levels, which are generally lowest in February and March. The LSOM's exotic plant prescription form will be used to define the conditions for control activities. Only herbicides approved for aquatic application will be used for treatment of vegetation in standing water or where flooding may occur.

B. Internal Influences

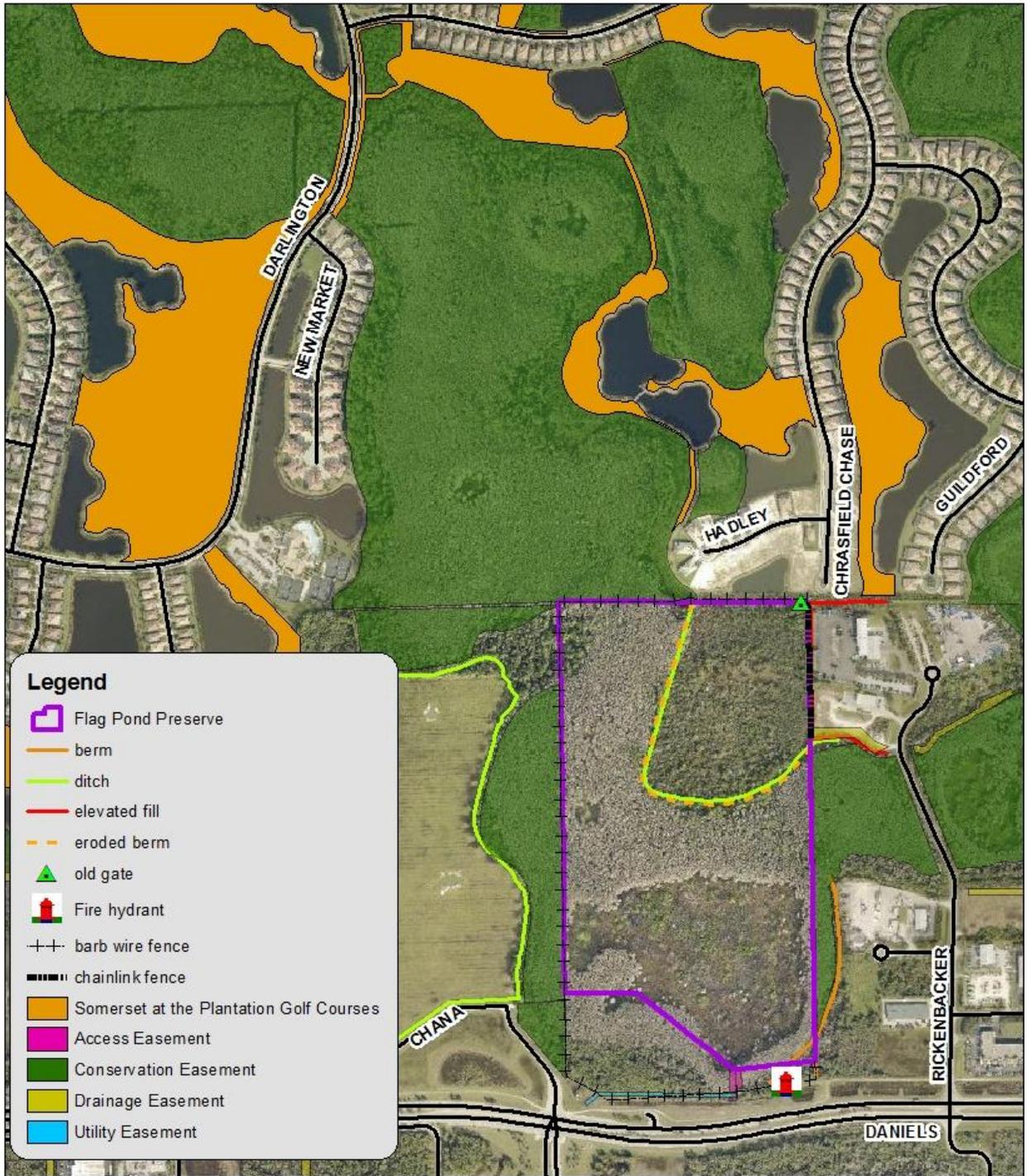
Several human influences have impacted FPP, many of which can be attributed to farming, adjacent road building and developments. These disturbances allowed invasive exotic plants to be introduced and become established, which has disrupted the natural systems and impacted the native species on FPP.

As stated in the Land Use History section, nearly 18 acres of the preserve were cleared for row crop farming. Associated with this farming is a ditch and berm that runs along the edge of the area adjacent to the basin swamp. There is also a pile of limestone rock that was left in the northeastern area of FPP. Brazilian pepper had invaded the abandoned farm fields and the edges of the basin swamp but has since been treated and killed.

Exotic animals can also have a detrimental affect on native species. For example, feral hogs consume ground-nesting bird eggs and disturb soil and sensitive vegetation during rooting activities, which can provide optimal substrate for invasive exotic plant growth. A range of removal methods will be considered for problematic invasive exotic animals found on the preserve.

Other internal influences include an elevated berm in the southeast corner of the preserve aligned northeast/southwest. The berm was installed in the 1970s and rings the outer edge of the cypress swamp outside the preserve boundary. This berm blocks the sheetflow to the southeast. Figure 25 shows both the internal and external influences at FPP.

Figure 25: Influences Map



Flag Pond Preserve



This is not a survey.
Land Stewardship Staff has prepared this map
for informational and planning purposes.

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C. External Influences

Flag Pond Preserve is surrounded to the east and north by developments. To the east is the Southwest Regional Commerce and Trade Center, which is made up of a series of industrial parcels. New businesses continue to be constructed in this business park on both sides of Rickenbacker Parkway, which affects the sheetflow of water on FPP. The cypress swamps in this area (total of 22.7 acres) are under a conservation easement held by Lee County. The cypress swamps on the property directly to the west of FPP (total of 15.4 acres) are also under a conservation easement held by SFWMD.

Directly to the north of the preserve is the Arborwood DRI (Development of Regional Impact). This development is approximately 2,500 acres in size and is approved to construct 6,500 residential units. It includes three Master Development Plans (MDPs): Somerset at the Plantation, Bridgetown at the Plantation and Botanica Lakes. Somerset at the Plantation is directly to the north of the preserve and includes 524 acres with 264 single family homes, golf courses a town center and required conservation areas.

In December 2006, C20/20 staff was informed about a proposed development adjacent to the southern boundary of FPP, Laurel Oak Business Park. The development proposed four commercial buildings, parking lots, and an entrance from Daniels Parkway. To date, this development has not progressed, but staff will continue to follow this project to track any anticipated improvements and/or potential impacts within Lee County's 60 foot ingress/egress easement at the south end of the preserve.

Daniels Parkway is a major road that borders the south side of the preserve. This road was upgraded to four lanes in the late 1990s with a 50 foot wide median. This road blocks sheetflow to the south and the path for larger mammals to safely cross to the preserve from remaining conservation lands and natural areas east of I-75. Panthers are regularly documented crossing Daniels Parkway.

Noise is evident from the aircraft that utilize the Southwest Florida International Airport (SWFIA) and vehicular traffic along Daniels Parkway. The Lee County Port Authority manages the airport and some of the lands directly south of the preserve. Figure 25 shows both the internal and external influences at FPP.

D. Legal Obligations and Constraints

i. Permitting

Land management activities at Flag Pond Preserve may involve obtaining permits from several regulatory agencies. Any proposed hydrologic improvements to the site may require obtaining permits from the Florida Department of Environmental Protection (FDEP), the U.S. Army Corps of Engineers (USACOE) and SFWMD. Hydrological and/or habitat restoration projects requiring heavy equipment or tree removal will require notification to the Lee County Department of Community Development (LCDCD).

ii. Other Legal Constraints

Legal access to the FPP is through an Ingress/Egress Easement on the south side of the parcel from Daniels Parkway (Appendix C). The easement consists of two 30 foot wide easements, one of which extends to the right of way (mowed grass) of Daniels Parkway (refer to Figure 25). Unfortunately, because it runs directly into a wetland ecosystem, this does not provide viable or suitable access to upland areas of the preserve. During November 2006, Land Management staff met with a Lee County Division of County Lands (LCDCL) acquisition agent to evaluate plausible access options for legal access to the northeastern upland areas of FPP. LCDCL agreed at that time to request an Ingress/Egress Easement through one of the industrial properties east of the preserve off Rickenbacker Parkway for future land management activities. To date no opportunities have been presented for access.

iii. Relationship to Other Plans

The Lee Plan, Lee County's comprehensive plan, is written to depict Lee County as it will appear in the year 2020. Several themes have been identified as having "great importance as Lee County approaches the planning horizon" (LCDCD 2016). The entire Lee Plan can be found online:

<http://www.leegov.com/dcd/Documents/Planning/LeePlan/Leeplan.pdf>

The sections of the Lee Plan which may pertain to Conservation 20/20 Preserves have been identified in the LSOM.

E. Management Constraints

The principle management constraints for FPP include lack of access for equipment onto the site, the brief dry season for conducting land management activities and increasing urbanization pressures adjacent to the site. Although C20/20 has a management fund, it is inadequate to fulfill the restoration activities for this and the other preserves. Efforts to obtain additional funding through

grants and/or monies budgeted for mitigation of public infrastructure projects will be pursued. These funds will be used to supplement the operations budget to meet the restoration goals in a timely manner.

FPP is part of a larger system of basin swamps. Basin swamp plant communities have a hydroperiod of approximately 250-290 days with water levels ranging from one to two feet. The remaining plant communities at FPP are typically the driest between January through April so most management activities will be conducted during these months. Staff and contractors must walk the site and use hand crews to treat exotics. No access exists onto the upland communities for vehicle access.

Perimeter fencing exists around most of the property and it is in poor shape. To install any new fencing permission would be needed from the adjacent land owners for access and work would have a very limited timeframe for completion due to water levels on-site. Fortunately FPP is in an urbanized area along a busy road which seems to deter off-road vehicles from attempting to enter the site.

If staff were to gain access onto the site to conduct prescribed burning, smoke management would be difficult. With Daniels Parkway and the airport to the south, a large development to the north and the industrial park to the east wind direction parameters would be very narrow.

To the east of the preserve is the Southwest Regional Commerce and Trade Center. New businesses continue to be constructed in this business park. There is a proposed commercial development, Laurel Oak Business Park, adjacent to the southwestern boundary.

F. Public Access and Resource-Based Recreation

No public recreational amenities are proposed at FPP. In accordance with the LSOM, FPP is classified as a Category 4 Resource Protection & Restoration Preserve. As with all designated Category 4 preserves, “if there is a public interest, staff may provide guided field trips when there are no safety concerns and it is compatible with protecting the animals and plant communities found at the specific preserve.” Many issues have been taken into consideration in determining resource based activities, including but not limited to, acreage of the site, presence of similar facilities nearby, communities present, presence of listed species and/or sensitive areas such as wetlands.

FPP is approximately 67 acres and is surrounded primarily by residential and commercial development. FPP contains mainly wetland soils and communities making it unsuitable for resource based recreational opportunities. With 75% of the site classified as wetlands, permitting and construction of a parking area and public amenities (once legal access was obtained) would be costly. The

Preserve's dominant native plant community consists of basin swamp, which greatly limits public use due to its sensitivity. The opportunities for trails and any other public use facilities is determined based on the soil types, acreage of the site, resolution for a legal viable access, listed species utilization and hydrologic components at the site. Restoration activities are prioritized over public recreation at this time, particularly since resource based recreational opportunities are present nearby.

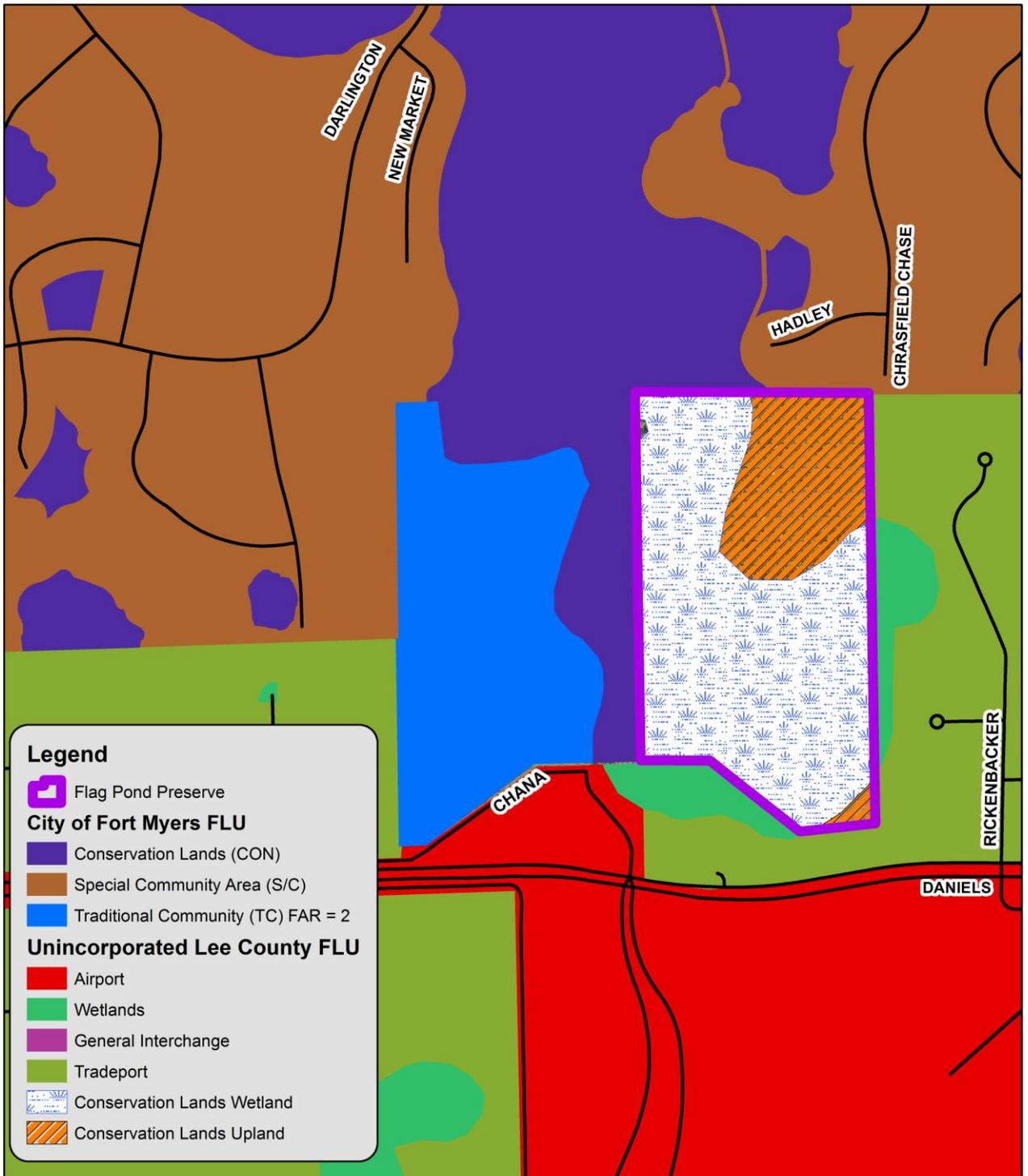
Resource based recreational opportunities occur at Lee County managed facilities such as the Six Mile Cypress Slough Preserve, Wild Turkey Strand Preserve, Ten Mile Canal Linear Park, Lakes Regional Park, Three Oaks Park, Buckingham Community Park, and Barkingham Dog Park. All of these facilities are within 5-8 miles driving distance of FPP.

G. Acquisition

FPP is located off Daniels Parkway north of the entrance to Chamberlin Parkway. It was purchased through the C20/20 Program in 2003 for \$388,820 after being nominated to the C20/20 program in May of 2001 by David Isley for Gerard A. McHale, Jr. Trustee. At time of purchase the two STRAP (Section-Township-Range-Area-Block.Lot) numbers for the Preserve were 24-45-25-00-00001.0010 and .0050 with an undetermined address. On August 8, 2008 these STRAP numbers were combined and the new STRAP is 24-45-25-00-00001.0010 with an undetermined address.

Currently, the future land use for the 66.9-acre Preserve is "Conservation Lands Wetland" and "Conservation Lands Upland" (Figure 26). The Preserve is zoned as "Light Industrial," "Moderate Commercial," and "Agriculture" (Figure 27). Land Management staff will work with the LCDP to change to these designations to "Environmentally Critical." The legal description for this parcel is located in Appendix D.

Figure 26: Future Land Use Map



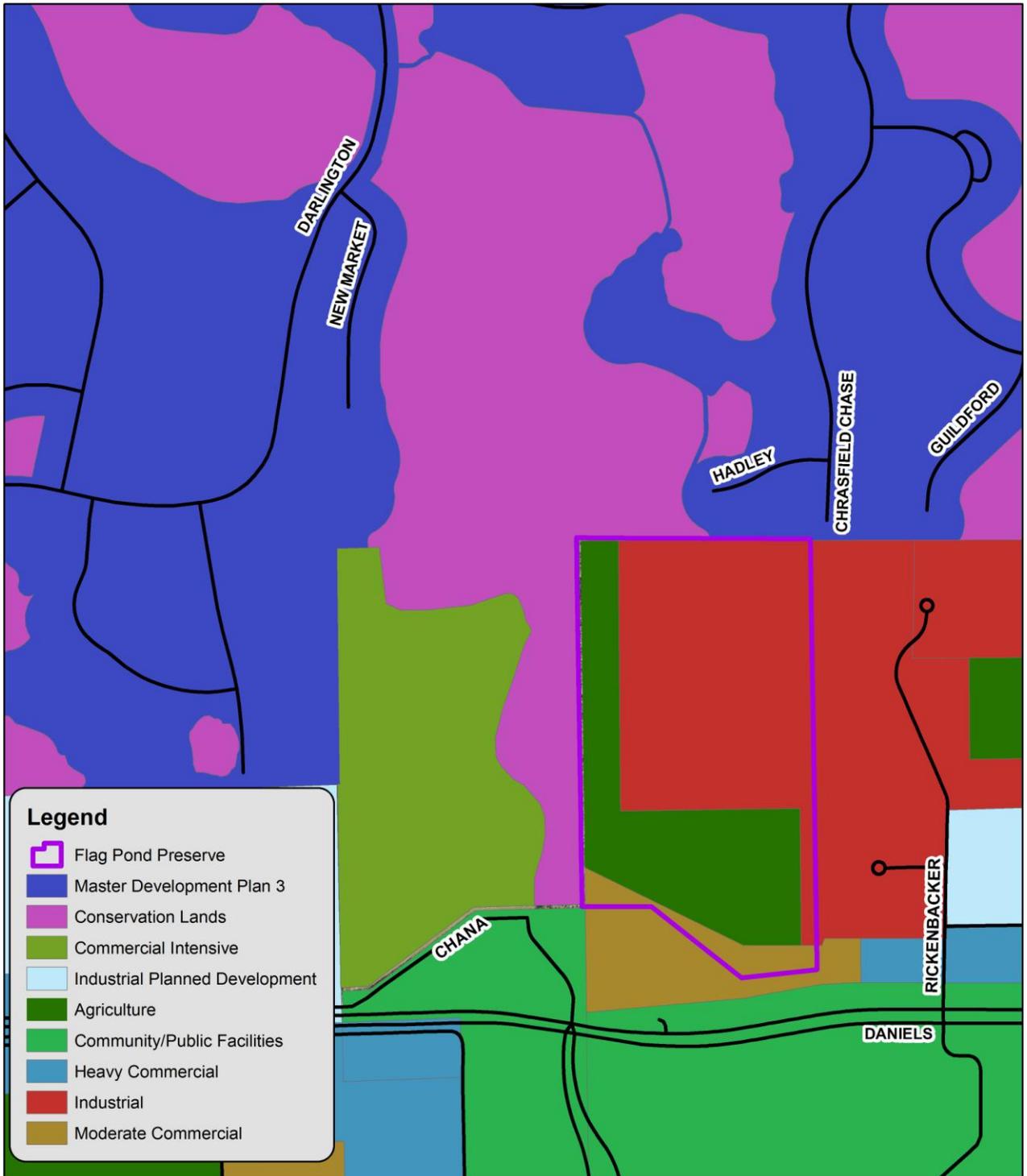
Flag Pond Preserve



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Figure 27: Zoning Map



Flag Pond Preserve



This is not a survey. Land Stewardship Staff has prepared this map for informational and planning purposes.

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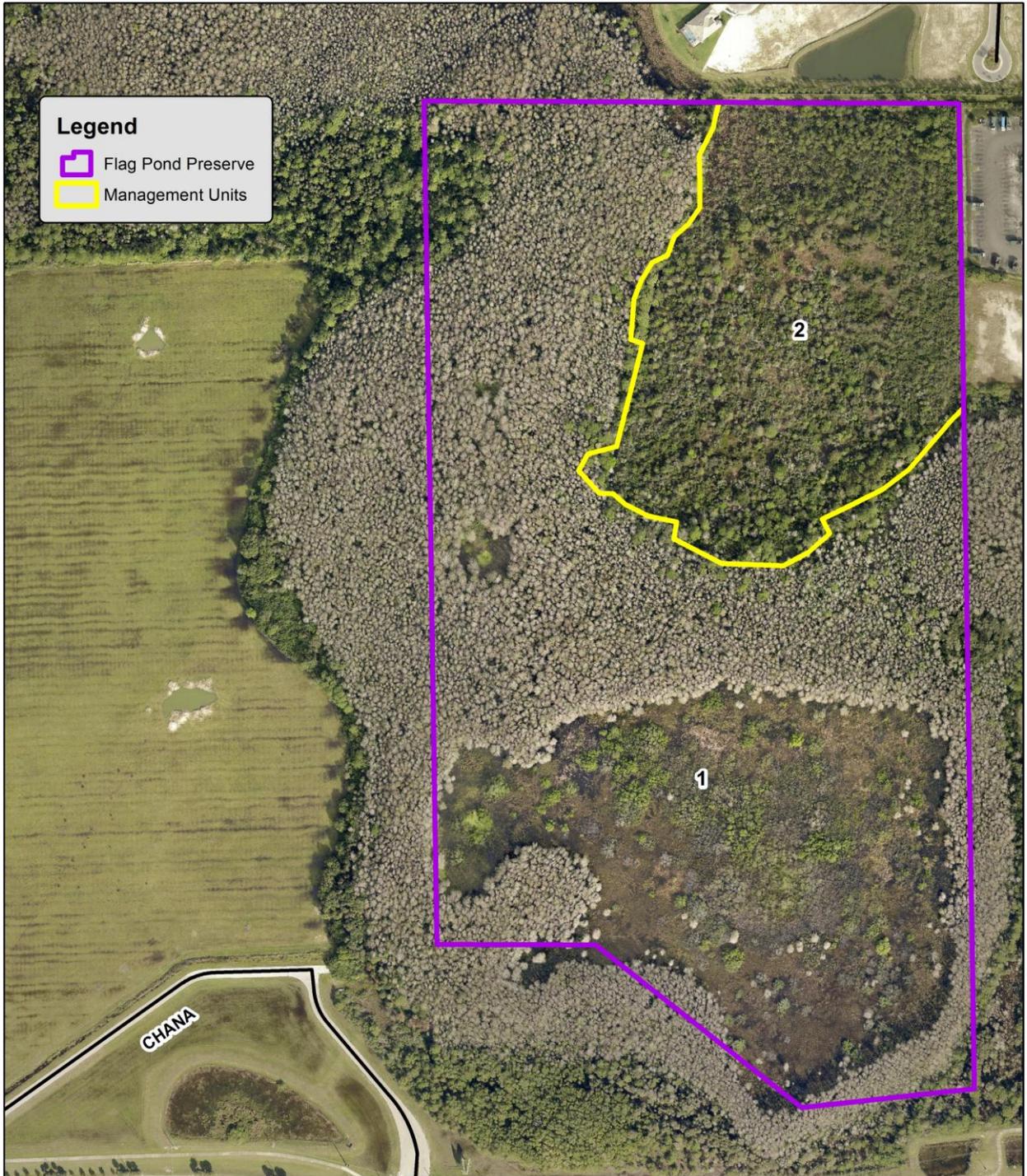
VI. Management Action Plan

A. Management Unit Descriptions

Flag Pond Preserve has been divided into two management units (MU) to better organize and achieve management goals. Figure 28 delineates the management units that were created based primarily upon upland and wetland plant communities.

- Management Unit 1 – 49.4 acres
MU 1 is primarily wetland plant communities in the western and southern portions of the preserve. This includes basin swamp and a small former wet prairie community that, due to lack of fire has transitioned to more of a mesic flatwoods community (northwest corner of the unit). MU 1 is bordered to the south and west by privately owned lands; portions of the western property have a conservation easement, the north by the residential Arborwood DRI, and the east by MU 2, commercial development, and another conservation easement. This unit has received two intensive invasive exotic treatments and exotics coverage is under 25%, primarily due to the presence of aquatic soda apple (*Solanum tampicense*). This plant is proving hard to eradicate because the majority of the plant grows underwater, it is extremely thorny to wade through to treat, and water levels are high in the infected areas for the majority of the year. Management activities in this unit will continue to focus on exotic plant control and boundary protection.
- Management Unit 2 – 17.4 acres
MU 2 is located in the northeastern portion of the preserve. Plant communities in this unit consist of mesic and wet flatwoods and fallow farm land that is transitioning into a shrubby mix of scattered saw palmetto and tall wax myrtle. The ditch and its associated berm from previous agricultural operations stretch along the western and southern border of this unit. In addition, it is bordered to the west and south by MU 1, the north by the residential Arborwood DRI, and the east by commercial development. Brazilian pepper was present in greater than 30% of the cover in this unit initially, but two thorough treatments have knocked the coverage to less than 10%. Management activities here will focus on exotic plant control and boundary protection. If access can be obtained the rock pile will be removed, prescribed burning will be initiated and hydrologic enhancement may occur.

Figure 28: Management Unit Map



Legend

-  Flag Pond Preserve
-  Management Units



Flag Pond Preserve



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B. Goals and Strategies

While the following are our long-term goals for the preserve, funding is currently not available to conduct all of these activities. Grants and/or monies budgeted for mitigation of governmental infrastructure projects will be used to supplement our operations budget to meet our goals in a timely manner.

Natural Resource Management

- ✓ Exotic plant control and maintenance
- ✓ Hydrologic enhancement
- ✓ Prescribed fire management
- ✓ Monitor and protect listed species
- ✓ Exotic and feral animal removal

Overall Protection

- ✓ Fencing and management access
- ✓ Debris removal and prevention of dumping
- ✓ Boundary and Preserve sign installation
- ✓ Change zoning categories

The following is a description of how each of these goals will be carried out, the success criteria used to measure each goal and a projected timetable outlining when and where each activity will take place.

Natural Resource Management

Exotic plant control and maintenance

The most current FLEPPC List of Invasive Species will be consulted in determining the invasive exotic plants to be controlled in each management unit. The goal is to remove or control these exotic species, followed with treatments of resprouts and new seedlings as needed. This goal will bring the entire preserve to a maintenance level, defined as less than 5% invasive exotic plant coverage. The most persistent invasive exotic plant on the site is aquatic soda apple ().

Prior to each invasive exotic plant control project at FPP that is performed by contractors, a Prescription Form (located in the LSOM) will be filled out by the contractor(s), reviewed & approved by the Conservation Lands staff. Final project information will be entered into the GIS database.

- Wetlands with light to moderate exotic species infestations:

Hand crews will either hand pull, basal bark, girdle, foliar, or cut-stump treat the exotics with the appropriate herbicide during the dry season. Follow-up treatments will be conducted on an annual basis and may

eventually decrease to every two years. Uplands with light to moderate exotic species infestations:

In areas where invasive exotics are sporadic and below 50% of the vegetation cover, handwork will be utilized for control. Specific methodology will depend on stem size, plant type and season, but general methodologies will be one of the following. The stem/trunk will be cut near ground and the stump sprayed with appropriate herbicide, the trunk will be basal bark sprayed or a foliar application will be applied to the entire plant. Hand pulling will be utilized when possible and with appropriate species to minimize herbicide use.

Hydrologic enhancement

Hydrologic enhancement efforts for FPP may include removal of some of the berms/ditch systems surrounding the fallow farm land to improve historic sheetflow into the basin swamp community. Several “breaks” along the berm/ditch have naturally occurred over time due to erosion. Land management staff recommends additional “plugging” along this disturbed area where large native plants have not become established. In essence, the “unplugged” areas will become small ephemeral ponds for wildlife usage during the wet season. The “plugged” locations will act as bridges for staff to cross over when conducting prescribed fire and other management activities. Hydrologic restoration work will only be feasible if adequate legal access is obtained to bring equipment onto the site.

Prescribed fire management

Prescribed fire will be implemented to closely mimic the natural fire regimes for the different plant communities to increase plant diversity, to ensure the canopies remain open and to reduce encroachment of cabbage palms and shrubs into the cypress dome. The timing of prescribed burning will be influenced by seasonal rain, listed species requirements and wind patterns. Burning at this site is dependent upon obtaining adequate legal access to bring equipment onto the site.

Monitor and protect listed species

As discussed in the Designated Species section, there are several listed species that have been documented on the preserve including limpkin, wood stork, giant sword fern, and royal fern. These species will benefit from exotic plant control. During management activities, efforts will be made to minimize negative impacts to listed species.

FPP is part of a countywide tri-annual site inspection program conducted for all Conservation 20/20 Preserves. The site inspection spreadsheet is available on

the LCPR's computer server ("S" drive). These inspections allow staff to monitor for impacts and/or changes on the site and to update lists of animal sightings and plant species that are found. If, during these inspections, staff finds FNAI listed species not previously documented, they will be reported using the appropriate forms.

Exotic and feral animal removal

Only three exotic animal species have been recorded on FPP. The exotic animal species Land Management staff is primarily concerned with is the feral hog. Due to lack of access for hog trapping, this site has not been placed on the list of sites for our contracted hog trapper to work.

Although not noted at FPP, this preserve, like other C20/20 preserves, does not contain nor will it support feral cat colonies. FWC's Feral and Free Ranging Cats policy is *"To protect native wildlife from predation, disease, and other impacts presented by feral and free-ranging cats"* (FWC 2003). Any feral cats will be trapped and taken to Lee County Animal Services. C20/20 staff will continue to work with the Animal Services staff to prevent establishment of feral cat colonies adjacent to preserves.

Overall Protection

Fencing and management access

As discussed in the Other Legal Constraints section, Land Management staff has met with a LCDCL acquisition agent to request an Ingress/Egress Easement through one of the industrial properties east of the Preserve for future land management activities. If obtained, staff will coordinate the installation of an appropriate gate along the existing chain link fence owned by the commercial property owner. Some of the limestone rock (onsite) may be required to create a "ramp" from the elevated filled commercial property down to the lower upland topographic levels on the Preserve. Most of the Preserve's perimeter is already fenced (refer to Figure 25). To date, there are no illegal access issues, therefore staff is not proposing to install additional fencing or replace any unless it becomes necessary in the future.

Debris removal and prevent dumping

FPP has a pile of limestone rock and concrete debris near the northeast boundary. The unused material will need to be loaded and hauled away via dump truck if access can be granted from adjacent property owners. The limestone rock may be used on other C20/20 preserves. Since the preserve is not directly adjacent to Daniels Parkway, very little trash ever accumulates. During site inspections, small objects that are encountered will be removed. Conservation 20/20 Rangers will also assist with removing small items when they

are on patrol at the preserve. Land Management staff recognizes that new debris may be dumped in the Preserve periodically and depending on the nature of this debris it will be dealt with accordingly.

Boundary and Preserve sign installation

Boundary signs have been installed to further protect and delineate the preserve. Missing or damaged signs will be replaced as water levels allow. C20/20 Rangers or staff will check for boundary signs during the patrols and replace missing ones as water levels allow safe access. Boundary signs will be placed every 500 feet along the property boundary. A sign has been installed at the property boundary along Daniels Parkway to inform the public of the preserve's name, authorized and unauthorized activities, and contact information.

Change zoning categories

Staff will coordinate with LCDP staff to update the zoning designation of FPP. The zoning categories will be changed to "Environmentally Critical" from "Light Industrial", "Moderate Commercial" and "Agriculture."

C. Management Work to Date

In 2006 C20/20 staff met with a LCDCL acquisition agent to evaluate plausible access options for legal access to the northeastern upland area of FPP. At that time LCDCL staff agreed to request an Ingress/Egress easement through one of the industrial properties east of FPP off Rickenbacker Parkway for future land management activities on the site.

On August 8, 2008 the previous STRAP numbers were combined into one number for the preserve.

In 2011 a contracted crew conducted invasive exotic plant herbicide treatments across the site. In 2014 another contracted sweep and treatment was conducted. These treatments greatly decreased the Brazilian pepper coverage and killed several large melaleuca and java plum trees along the south fenceline. Unfortunately this site is surrounded by seed source for melaleuca and java plum. Sheetflow from a widespread area passes across FPP and this brings opportunity for transport of a wide variety of invasive exotic seeds.

The lack of legal access for vehicles onto FPP has hindered implementation of prescribed burning, removal of the large rocks piled in the northeast corner, and hydrologic restoration of ditches. Lee County staff will continue to explore access options.

VII. PROJECTED TIMETABLE FOR IMPLEMENTATION

Management Activity	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Natural Resource Management											
Fire											
Perform prescribed fire		Dependent upon vehicle access									
Hydrologic Components											
Hydrologic enhancement along ditch/berm		Dependent upon vehicle access									
Maintenance (On-going/Annual)											
Exotic plant control	Dry season		Dry season		Dry season		Dry season		Dry season		Dry season
Exotic animal monitor &/or removal	Monitoring on-going	→	→	→	→	→	→	→	→	→	→
Fire break mow/disk		Dependent upon vehicle access									
Overall Protection											
Secure ingress/egress access easement for vehicle access	Attempts on-going	→	→	→	→	→	→	→	→	→	→
Replace missing boundary signs	On-going	→	→	→	→	→	→	→	→	→	→
Change zoning categories			X								

→ = project continues

Timetable is based on obtaining necessary funding for numerous land management projects.

VIII. FINANCIAL CONSIDERATIONS

The Conservation 20/20 Program is funded by the county's general fund in accordance with ordinance 06-26 (as amended). This annual allocation funds restoration, maintenance of the preserves, and C20/20 staff costs. Funds not used in the annual allocation rolls over to the following year for maintenance and restoration.

Other possible funding sources for exotic plant treatments and restoration projects may be requested through grants from agencies such as SFWMD, FDEP, FWC, and USFWS or include additional opportunities. Projected cost and funding sources are listed in Appendix E.

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X. APPENDICES

Appendix A: Plant Species List

Appendix B: Wildlife Species List

Appendix C: Access Easement

Appendix D: Legal Description

Appendix E: Projected Costs and Funding Sources

Appendix A: Plant Species List

Appendix A: Plant Species List for Flag Pond Preserve

Common and scientific names for this list were obtained from Wunderlin, 2003.

Scientific Name	Common Name	Native Status	EPPC	FDACS	IRC	FNAI
Family: Blechnaceae (midsorus fern)						
<i>Blechnum serrulatum</i>	swamp fern	native				
<i>Pteridium aquilinum</i>	bracken fern	native				
<i>Woodwardia virginica</i>	Virginia chain fern	native			R	
Family: Nephrolepidaceae (sword fern)						
<i>Nephrolepis biserrata</i>	giant sword fern	native		T	R	
<i>Nephrolepis exaltata</i>	wild Boston fern	native				
Family: Osmundaceae (royal fern)						
<i>Osmunda regalis</i> var. <i>spectabilis</i>	royal fern	native		T	R	
Family: Polypodiaceae (polypody)						
<i>Campyloneurum phyllitidis</i>	long strap fern	native			R	
<i>Pleopeltis polypodioides</i>	resurrection fern	native				
<i>Phlebodium aureum</i>	golden polypody	native				
Family: Psilotaceae (whisk-fern)						
<i>Psilotum nudum</i>	whisk-fern	native				
Family: Salviniaceae (floating fern)						
<i>Salvinia minima</i>	water spangles	exotic				
Family: Thelypteridaceae (marsh fern)						
<i>Thelypteris interrupta</i>	hottentot fern	native			R	
Family: Vittariaceae (shoestring fern)						
<i>Vittaria lineata</i>	shoestring fern	native				
Family: Cupressaceae (cedar)						
<i>Taxodium ascendens</i>	pond-cypress	native				
<i>Taxodium distichum</i>	bald-cypress	native				
Family: Pinaceae (pine)						
<i>Pinus elliotii</i> var. <i>densa</i>	south Florida slash pine	native				
Family: Alismataceae (water plantain)						
<i>Sagittaria graminea</i> var. <i>graminea</i>	grassy arrowhead	native			R	
<i>Sagittaria latifolia</i>	broadleaf arrowhead	native				
Family: Araceae (arum)						
<i>Lemna aequinoctialis</i>	lesser duckweed	native				
<i>Pistia stratiotes</i>	water lettuce	exotic	I			
Family: Arecaceae (palm)						
<i>Sabal palmetto</i>	cabbage palm	native				
<i>Serenoa repens</i>	saw palmetto	native				
Family: Bromeliaceae (pineapple)						
<i>Tillandsia balbisiana</i>	northern needleleaf	native		T		
<i>Tillandsia fasciculata</i> var. <i>densispica</i>	cardinal airplant	native		E		
<i>Tillandsia paucifolia</i>	potbelly airplant	native				
<i>Tillandsia recurvata</i>	ballmoss	native				
<i>Tillandsia setacea</i>	southern needleleaf	native				
<i>Tillandsia usneoides</i>	Spanish moss	native				
<i>Tillandsia utriculata</i>	giant airplant	native		E		
Family: Commelinaceae (spiderwort)						
<i>Commelina communis</i>	asiatic dayflower	exotic				

Appendix A: Plant Species List for Flag Pond Preserve

Common and scientific names for this list were obtained from Wunderlin, 2003.

Scientific Name	Common Name	Native Status	EPPC	FDACS	IRC	FNAI
Family: Cyperaceae (sedge)						
<i>Cladium jamaicense</i>	Jamaica swamp sawgrass	native				
<i>Cyperus haspan</i>	haspan flatsedge	native				
<i>Eleocharis cellulosa</i>	gulf coast spikerush	native				
<i>Eleocharis interstincta</i>	knotted spikerush	native				
<i>Fuirena scirpoidea</i>	southern umbrellasedge	native				
<i>Rhynchospora chapmanii</i>	Chapman's beaksedge	native			I	
<i>Rhynchospora colorata</i>	starrush whitetop	native				
<i>Rhynchospora corniculata</i>	shortbristle horned beaksedge	native			I	
<i>Scleria lacustris</i>	Wright's nutrush	exotic				
<i>Scleria reticularis</i>	netted nutrush	native			R	
<i>Scleria verticillata</i>	low nutrush	native			R	
Family Dioscoreaceae (yam)						
<i>Dioscorea bulbifera</i>	air-potato	exotic	I			
Family: Eriocaulaceae (pipewort)						
<i>Eriocaulon decangulare</i>	tenangle pipewort	native			R	
<i>Lachnocaulon anceps</i>	whitehead bogbutton	native			R	
Family: Juncaceae (rush)						
<i>Juncus marginatus</i>	shore rush	native			R	
<i>Juncus megarcephalus</i>	bighead rush	native			R	
Family: Marantaceae (arrowroot)						
<i>Thalia geniculata</i>	alligatorflag	native				
Family: Orchidaceae (orchid)						
<i>Habenaria floribunda</i>	toothpetal false reinorchid	native				
<i>Encyclia tampensis</i>	Florida butterfly orchid	native		CE		
<i>Eulophia alta</i>	wild coco	native				
Family: Poaceae (grass)						
<i>Andropogon glomeratus</i> var. <i>glaucopsis</i>	purple bluestem	native			R	
<i>Andropogon glomeratus</i> var. <i>pumilus</i>	purple bluestem	native				
<i>Andropogon virginicus</i> var. <i>glaucus</i>	chalky bluestem	native			R	
<i>Andropogon virginicus</i> var. <i>virginicus</i>	broomsedge bluestem	native				
<i>Eustachys glauca</i>	saltmarsh fingergrass	native				
<i>Panicum hemitomon</i>	maidencane	native				
<i>Panicum repens</i>	torpedograss	exotic	I			
<i>Panicum rigidulum</i>	redtop panicum	native				
<i>Paspalum notatum</i> var. <i>saurae</i>	Bahiagrass	exotic				
<i>Spartina bakeri</i>	sand cordgrass	native				
<i>Urochloa mutica</i>	paragrass	exotic	I			
Family: Pontederiaceae (pickerelweed)						
<i>Pontederia cordata</i>	pickerelweed	native				
Family: Smilacaceae (smilax)						
<i>Smilax auriculata</i>	earleaf greenbrier	native				
<i>Smilax laurifolia</i>	laurel greenbrier	native				
Family: Typhaceae (cattail)						
<i>Typha domingensis</i>	southern cattail	native				
Family: Acanthaceae (acanthus)						
<i>Ruellia tweediana</i>	Britton's wild petunia	exotic	I			
Family: Anacardiaceae (cashew)						
<i>Rhus copallinum</i>	winged sumac	native				
<i>Schinus terebinthifolius</i>	Brazilian pepper	exotic	I			

Appendix A: Plant Species List for Flag Pond Preserve

Common and scientific names for this list were obtained from Wunderlin, 2003.

Scientific Name	Common Name	Native Status	EPPC	FDACS	IRC	FNAI
Family: Annonaceae (custard-apple)						
<i>Asimina reticulata</i>	netted pawpaw	native				
Family: Apiaceae (carrot)						
<i>Eryngium yuccifolium</i>	button rattlesnakemaster	native			R	
<i>Oxypolis filiformis</i> subs. <i>filiformis</i>	water cowbane	native				
Family: Apocynaceae (dogbane)						
<i>Sarcostemma clausum</i>	white twinevine	native				
Family: Aquifoliaceae (holly)						
<i>Ilex cassine</i>	dahoon holly	native				
<i>Ilex glabra</i>	gallberry	native				
Family: Araliaceae (ginseng)						
<i>Centella asiatica</i>	spadeleaf	native				
Family: Asteraceae (aster)						
<i>Baccharis halimifolia</i>	groundsel tree	native				
<i>Baccharis glomeruliflora</i>	silverling	native				
<i>Bidens alba</i>	beggerticks	native				
<i>Chaptalia tomentosa</i>	pineland daisy	native			R	
<i>Coreopsis leavenworthii</i>	Leavenworth's tickseed	native				
<i>Elephantopus elatus</i>	tall elephantsfoot	native			R	
<i>Eupatorium capillifolium</i>	dogfennel	native				
<i>Euthamia caroliniana</i>	slender flattop goldenrod	native				
<i>Mikania scandens</i>	climbing hempvine	native				
<i>Pluchea rosea</i>	rosy camphorweed	native				
<i>Pterocaulon pycnostachyum</i>	blackroot	native				
<i>Solidago fistulosa</i>	pinebarren goldenrod	native			R	
<i>Symphotrichum carolinianum</i>	climbing aster	native				
Family: Campanulaceae (bellflower)						
<i>Lobelia glandulosa</i>	glade lobelia	native				
Family: Ceratophyllaceae (hornwort)						
<i>Ceratophyllum demersum</i>	coontail	native				
Family: Clusiaceae (mangosteen)						
<i>Hypericum brachyphyllum</i>	coastalplain St. John's-wort	native			R	
<i>Hypericum cistifolium</i>	roundpod St. John's-wort	native				
<i>Hypericum fasciculatum</i>	peelbark St. John's wort	native			R	
<i>Hypericum hypericoides</i>	St. Andrew's-cross	native				
Family: Cucurbitaceae (gourd)						
<i>Melothria pendula</i>	creeping cucumber	native				
Family: Convolvulaceae (morning-glory)						
<i>Ipomoea sagittata</i>	saltmarsh morning-glory	native				
Family: Ericaceae (heath)						
<i>Lyonia fruticosa</i>	coastalplain staggerbush	native				
<i>Vaccinium myrsinites</i>	shiny blueberry	native				
Family: Euphorbiaceae (spurge)						
<i>Caperonia castaneifolia</i>	chestnutleaf falsecroton	native			I	
<i>Stillingia aquatica</i>	corkwood	native			R	
Family: Fabaceae (pea)						
<i>Acacia auriculiformis</i>	earleaf acacia	exotic	I			
<i>Centrosema virginianum</i>	spurred butterfly pea	native				
<i>Chamaecrista fasciculata</i>	partridge pea	native				
<i>Galactia elliotii</i>	Elliot's milkpea	native			R	

Appendix A: Plant Species List for Flag Pond Preserve

Common and scientific names for this list were obtained from Wunderlin, 2003.

Scientific Name	Common Name	Native Status	EPPC	FDACS	IRC	FNAI
Family: Fagaceae (beech)						
<i>Quercus laurifolia</i>	laurel oak	native				
<i>Quercus virginiana</i>	live oak	native				
Family: Gentianaceae (gentian)						
<i>Sabatia stellaris</i>	rose-of-plymouth	native				
Family: Haloragaceae (watermilfoil)						
<i>Proserpinaca pectinata</i>	combleaf mermaidweed	native			R	
Family: Lamiaceae (mint)						
<i>Callicarpa americana</i>	American beautyberry	native				
<i>Hyptis alata</i>	musky mint	native				
Family: Lauraceae (laurel)						
<i>Persea palustris</i>	swamp bay	native				
Family: Lentibulariaceae (bladderwort)						
<i>Utricularia foliosa</i>	leafy bladderwort	native			R	
<i>Utricularia purpurea</i>	eastern purple bladderwort	native			R	
Family: Lythraceae (loosestrife)						
<i>Lythrum alatum</i> var. <i>lanceolatum</i>	winged loosestrife	native			R	
Family: Malvaceae (mallow)						
<i>Urena lobata</i>	caesarweed	exotic	II			
Family: Melastomaceae (melastome)						
<i>Rhexia cubensis</i>	West Indian meadowbeauty	native			I	
<i>Rhexia mariana</i>	pale meadowbeauty	native			R	
Family: Menyanthaceae (bogbean)						
<i>Nymphoides aquatica</i>	big floatingheart	native				
Family: Moraceae (mulberry)						
<i>Ficus aurea</i>	strangler fig	native				
Family: Myricaceae (bayberry)						
<i>Myrica cerifera</i>	wax myrtle	native				
Family: Myrsinaceae (myrsine)						
<i>Rapanea punctata</i>	myrsine	native				
Family: Myrtaceae (myrtle)						
<i>Melaleuca quinquenervia</i>	punktree	exotic	I			
<i>Syzygium cumini</i>	Java plum	exotic	I			
Family: Nymphaeaceae (waterlily)						
<i>Nymphaea odorata</i>	American white waterlily	native				
Family: Oleaceae (olive)						
<i>Fraxinus caroliniana</i>	pop ash	native			R	
Family: Onagraceae (eveningprimrose)						
<i>Ludwigia maritima</i>	seaside primrosewillow	native			R	
<i>Ludwigia octovalvis</i>	Mexican primrosewillow	native				
<i>Ludwigia peruviana</i>	Peruvian primrosewillow	exotic				
<i>Ludwigia repens</i>	creeping primrosewillow	native				
Family: Passifloraceae (passionflower)						
<i>Passiflora suberosa</i>	corkystem passionflower	native				
Family: Phytolaccaceae (pokeweed)						
<i>Phytolacca americana</i>	American pokeweed	native				
Family: Polygalaceae (milkwort)						
<i>Polygala grandiflora</i>	showy milkwort	native				
Family: Polygonaceae (buckwheat)						
<i>Polygonum hydropiperoides</i>	swamp smartweed	native			R	
Family: Rubiaceae (madder)						

Appendix A: Plant Species List for Flag Pond Preserve

Common and scientific names for this list were obtained from Wunderlin, 2003.

Scientific Name	Common Name	Native Status	EPPC	FDACS	IRC	FNAI
<i>Cephalanthus occidentalis</i>	buttonbush	native				
<i>Diodia virginiana</i>	Virginia buttonweed	native			R	
<i>Spermacoce verticillata</i>	shrubby false buttonweed	exotic				
Family: Salicaceae (willow)						
<i>Salix caroliniana</i>	Carolina willow	native				
Family: Sapotaceae (sapodilla)						
<i>Sideroxylon reclinatum</i>	Florida bully	native				
Family: Solanaceae (nightshade)						
<i>Solanum tampicense</i>	aquatic soda apple	exotic	I			
Family: Turneraceae (turnera)						
<i>Piriqueta cistoides</i>	pitted stripeseed	native				
Family: Urticaceae (nettle)						
<i>Boehmeria cylindrica</i>	false nettle	native				
Family: Veronicaceae (speedwell)						
<i>Bacopa caroliniana</i>	lemon bacopa	native				
<i>Bacopa monnieri</i>	herb-of-grace	native				
<i>Lindernia grandiflora</i>	Savannah false pimpernel	native			I	
Family: Vitaceae (grape)						
<i>Parthenocissus quinquefolia</i>	Virginia creeper	native				
<i>Vitis rotundifolia</i>	muscadine	native				

Key

Florida EPPC Status

I = species that are invading and disrupting native plant communities

II = species that have shown a potential to disrupt native plant communities

FDACS (Florida Department of Agriculture and Consumer Services)

E = Endangered

T = Threatened

CE = Commercially Exploited

IRC (Institute for Regional Conservation)

CI = Critically Imperiled

I = Imperiled

R = Rare

FNAI (Florida Natural Areas Inventory)

G= Global Status

T= Threatened

CE= Commercially Exploited

1= Critically imperiled 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.

2= Imperiled 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.

3= Either very rare and local throughout its range (21-200 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.

4= Apparently secure

5= Demonstrably secure

Appendix B: Wildlife Species List

Appendix B: Wildlife Species List for Flag Pond Preserve

Scientific Name	Common Name	Designated Status		
		FWC	FWS	FNAI
MAMMALS				
Family: Sciuridae (squirrels and their allies)				
<i>Sciurus carolinensis</i>	eastern gray squirrel			
Family: Felidae (cats)				
<i>Lynx rufus</i>	bobcat			
Family: Suidae (old world swine)				
<i>Sus scrofa</i>	feral hog *			
BIRDS				
Family: Anatidae (swans, geese and ducks)				
Subfamily: Anatinae				
<i>Aix sponsa</i>	wood duck			
Family: Ciconiidae (storks)				
<i>Mycteria americana</i>	wood stork	T	T	G4/S2
Family: Anhingidae (anhingas)				
<i>Anhinga anhinga</i>	anhinga			
Family: Ardeidae (herons, egrets, bitterns)				
<i>Botaurus lentiginosus</i>	American bittern			
<i>Ardea herodias</i>	great blue heron			
<i>Ardea alba</i>	great egret			G5/S4
<i>Egretta thula</i>	snowy egret	SSC		G5/S3
<i>Egretta caerulea</i>	little blue heron	SSC		G5/S4
<i>Egretta tricolor</i>	tricolored heron	SSC		G5/S4
<i>Bubulcus ibis</i>	cattle egret			
<i>Butorides virescens</i>	green heron			
<i>Nyctanassa violacea</i>	yellow-crowned night heron			G5/S3
Family: Threskiornithidae (ibises and spoonbills)				
Subfamily: Threshiornithinae				
<i>Eudocimus albus</i>	white ibis	SSC		G5/S4
<i>Plegadis falcinellus</i>	glossy ibis			G5/S3
Family: Cathartidae (new world vultures)				
<i>Coragyps atratus</i>	black vulture			
<i>Cathartes aura</i>	turkey vulture			
Family: Pandionidae (ospreys)				
<i>Pandion haliaetus</i>	osprey			
Family: Accipitridae (hawks, kites, accipiters, harriers, eagles)				
<i>Elanoides forficatus</i>	swallow-tailed kite			G5/S2
<i>Circus cyaneus</i>	northern harrier			
<i>Buteo lineatus</i>	red-shouldered hawk			
Family: Aramidae (limpkins)				
<i>Aramus guarauna</i>	limpkin	SSC		G5/S3
Family: Gruidae (cranes)				
Subfamily: Gruinae				
<i>Grus canadensis pratensis</i>	Florida sandhill crane	T		G5T2T3/S2S3
Family: Charadriidae (plovers)				
Subfamily: Charadriinae				
<i>Charadrius vociferus</i>	killdeer			
Family: Columbidae (pigeons and doves)				
<i>Zenaida macroura</i>	mourning dove			
Family: Strigidae (true owls)				
<i>Strix varia</i>	barred owl			
Family: Tytonidae (barn owls)				
<i>Tyto alba</i>	barn owl			
Family: Alcedinidae (kingfishers)				
<i>Ceryle alcyon</i>	belted kingfisher			
Family: Picidae (woodpeckers)				

Appendix B: Wildlife Species List for Flag Pond Preserve

Scientific Name	Common Name	Designated Status		
		FWC	FWS	FNAI
Subfamily: Picinae				
<i>Melanerpes carolinus</i>	red-bellied woodpecker			
<i>Sphyrapicus varius</i>	yellow-bellied sapsucker			
<i>Picoides pubescens</i>	downy woodpecker			
<i>Dryocopus pileatus</i>	pileated woodpecker			
Family: Tyrannidae (tyrant flycatchers)				
Subfamily: Fluvicolinae				
<i>Contopus virens</i>	eastern wood-pewee			
<i>Sayornis phoebe</i>	eastern phoebe			
Family: Vireonidae (vireos)				
<i>Vireo griseus</i>	white-eyed vireo			
<i>Vireo solitarius</i>	blue-headed vireo			
Family: Corvidae (crows, jays, etc.)				
<i>Cyanocitta cristata</i>	blue jay			
<i>Corvus brachyrhynchos</i>	American crow			
<i>Corvus ossifragus</i>	fish crow			
Family: Hirundinidae (swallows)				
Subfamily: Hirundinidae				
<i>Tachycineta bicolor</i>	tree swallow			
Family: Paridae (chickadees and titmice)				
<i>Baeolophus bicolor</i>	tufted titmouse			
Family: Troglodytidae (wrens)				
<i>Troglodytes aedon</i>	house wren			
<i>Thryothorus ludovicianus</i>	Carolina wren			
Family: Polioptilidae				
<i>Poliophtila caerulea</i>	blue-gray gnatcatcher			
Family: Regulidae (kinglets)				
<i>Regulus calendula</i>	ruby-crowned kinglet			
Family: Turdidae (thrushes)				
<i>Turdus migratorius</i>	American robin			
Family: Mimidae (mockingbirds and thrashers)				
<i>Dumetella carolinensis</i>	gray catbird			
<i>Toxostoma rufum</i>	brown thrasher			
<i>Mimus polyglottos</i>	northern mockingbird			
Family: Parulidae (wood-warblers)				
<i>Vermivora pinus</i>	blue-winged warbler			
<i>Mniotilta varia</i>	black-and-white warbler			
<i>Geothlypis tristis</i>	common yellowthroat			
<i>Parula americana</i>	northern parula			
<i>Dendroica palmarum</i>	palm warbler			
<i>Dendroica pinus</i>	pine warbler			
<i>Dendroica coronata</i>	yellow-rumped warbler			
Family: Cardinalidae (cardinals, some grosbeaks, new world buntings, etc.)				
<i>Cardinalis cardinalis</i>	northern cardinal			
Family: Icteridae (blackbirds, orioles, etc.)				
<i>Agelaius phoeniceus</i>	red-winged blackbird			
<i>Quiscalus quiscula</i>	common grackle			
<i>Quiscalus major</i>	boat-tailed grackle			
REPTILES				
Family: Kinosternidae (musk and mud turtles)				
<i>Sternotherus odoratus</i>	common musk turtle			
<i>Kinosternon baurii</i>	striped mud turtle			
Family: Polychridae (anoles)				
<i>Anolis carolinensis</i>	green anole			
<i>Anolis sagrei</i>	brown anole *			

Appendix B: Wildlife Species List for Flag Pond Preserve

Scientific Name	Common Name	Designated Status		
		FWC	FWS	FNAI
Family: Colubridae (harmless egg-laying snakes)				
<i>Coluber constrictor priapus</i>	southern black racer			
<i>Scotophis alleghaniensis</i>	eastern rat snake			
Family: Crotalidae (pitvipers)				
<i>Agkistrodon piscivorus conanti</i>	Florida cottonmouth			
<i>Sistrurus miliarius barbouri</i>	dusky pygmy rattlesnake			
AMPHIBIANS				
Family: Bufonidae (toads)				
<i>Anaxyrus quercicus</i>	oak toad			
<i>Anaxyrus terrestris</i>	southern toad			
Family: Hylidae (treefrogs and their allies)				
<i>Acris gryllus dorsalis</i>	Florida cricket frog			
<i>Hyla cinerea</i>	green treefrog			
<i>Hyla squirella</i>	squirrel treefrog			
<i>Osteopilus septentrionalis</i>	Cuban treefrog *			
<i>Pseudacris nigrita</i>	chorus frog			
<i>Pseudacris ocularis</i>	little grass frog			
Family: Microhylidae (narrowmouth toads)				
<i>Gastrophryne carolinensis</i>	eastern narrowmouth toad			
Family: Ranidae (true frogs)				
<i>Lithobates grylio</i>	pig frog			
<i>Lithobates sphenoccephalus sphenoccephalus</i>	Florida leopard frog			
INSECTS				
Family: Papilionidae (swallowtails)				
<i>Papilio cresphontes</i>	giant swallowtail			
Family: Nymphalidae (brushfoots)				
Subfamily: Heliconiinae (longwings)				
<i>Agraulis vanillae</i>	gulf fritillary			
Subfamily: Nymphalinae (brushfoots)				
<i>Anartia jatrophae</i>	white peacock			
ARACHNIDS				
Family: Araneidae (orb weavers)				
<i>Gasteracantha elipsoides</i>	crablike spiny orb weaver			
<i>Nephila clavipes</i>	golden-silk spider			
GASTROPODS				
Family: Ampullariidae (apple snails)				
<i>Pomacea paludosa</i>	Florida apple snail			

KEY:

FWC = Florida Fish & Wildlife Conservation Commission

FWS = U.S. Fish & Wildlife Service

E - Endangered

T - Threatened

SSC - Species of Special Concern

FNAI = Florida Natural Areas Inventory

G - Global rarity of the species

S - State rarity of the species

T - Subspecies of special population

1 - Critically imperiled

2 - Imperiled

3 - Rare, restricted or otherwise vulnerable to extinction

4 - Apparently secure

5 - Demonstrably secure

Appendix B: Wildlife Species List for Flag Pond Preserve

Scientific Name	Common Name	Designated Status		
		FWC	FWS	FNAI

* = Non-native

Appendix C: Access Easement



4

INSTR # 5720131
Official Records BK 03851 PG 4434
RECORDED 02/21/2003 04:24:38 PM
CHARLIE GREEN, CLERK OF COURT
LEE COUNTY
RECORDING FEE 19.50
DEPUTY CLERK G Sherwood

This Instrument Prepared By
GORDON R. DUNCAN, ESQ.
Post Office Box 249
Fort Myers, FL 33902

ACCESS EASEMENT

GERARD A. McHALE, JR., Successor Trustee, for a valuable consideration hereby grants and conveys to LEE COUNTY, a Political Subdivision of the State of Florida, its successors and/or assigns, an access easement for ingress and egress over and across the lands described in Exhibit "A" attached. Exhibit "A" includes a graphic depiction of the easement hereby granted.

The easement hereby granted shall not at any time be for the benefit of any person or entity who is not the fee simple owner of a portion of the lands described in Exhibit "B".

IN WITNESS WHEREOF, GERARD A. McHALE, JR., as Successor Trustee under that certain Agreement dated March 30, 1976, has set his hand and seal in his capacity as Successor Trustee.

Witness #1

Sign Susanne Kantor
Print SUSANNE KANTOR

Gerard A. McHale, Jr.
GERARD A. McHALE, JR., Successor Trustee
Under that certain Agreement Dated
March 30, 1976

Witness #2

Sign Carolyn M. Huletta
Print

STATE OF FLORIDA
COUNTY OF LEE

The foregoing instrument was acknowledged before me, this 17th day of Feb., 2003, by GERARD A. McHALE, JR., Successor Trustee under that certain Agreement dated March 30, 1976, who is personally known to me and who did take an oath.

Carolyn M. Huletta
Notary Public

My Commission Expires:  Carolyn M Huletta
My Commission CC917740
Expires April 15, 2004

METRON
SURVEYING & MAPPING, LLC
LAND SURVEYORS • PLANNERS

LEGAL DESCRIPTION OF AN EASEMENT LYING IN
SECTION 24, TOWNSHIP 45 SOUTH, RANGE 25 EAST,
LEE COUNTY, FLORIDA
(30' INGRESS/EGRESS EASEMENT)

A 30' FOOT WIDE INGRESS/EGRESS EASEMENT SITUATED IN THE STATE OF FLORIDA, COUNTY OF LEE, LYING IN SECTION 24, TOWNSHIP 45 SOUTH, RANGE 25 EAST, OVER AREAS AND THROUGH SAID PARCEL BEING FURTHER BOUND AND DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SECTION 24, TOWNSHIP 45 SOUTH, RANGE 25 EAST; THENCE S.00°52'16"E. ALONG THE WEST LINE OF SAID SECTION 24 FOR A DISTANCE OF 2050.84 FEET; THENCE S.89°52'39"E. FOR A DISTANCE OF 384.92 FEET; THENCE S.51°41'20"E. FOR A DISTANCE OF 638.24; THENCE N.83°45'34"E FOR A DISTANCE OF 2.64 FEET TO THE POINT OF BEGINNING OF SAID 30' INGRESS/EGRESS EASEMENT; THENCE N.83°45'34"E. FOR A DISTANCE OF 30.14 FEET; THENCE S.00°40'47"E. FOR A DISTANCE OF 99.76 FEET TO THE NORTHERLY RIGHT OF WAY LINE OF DANIELS ROAD AND TO A POINT ON A NON-TANGENT CURVE TO THE RIGHT WITH AN ARC LENGTH OF 30.05 FEET AND A DELTA OF 01°08'34". CONTINUE ALONG SAID CURVE AND ALONG SAID NORTHERLY RIGHT OF WAY OF DANIELS ROAD FOR A DISTANCE OF 30.05 FEET; THENCE N.00°40'47"W FOR A DISTANCE OF 98.52 FEET TO THE POINT OF BEGINNING OF SAID EASEMENT.

THE SIDELINES OF SAID EASEMENT FROM SAID POINT OF BEGINNING TO SAID POINT OF BEGINNING ARE TO PROVIDE A CONTINUOUS WIDTH OF 30.00 FEET, (AS MEASURED ON A PERPENDICULAR)

BEARINGS BASED ON THE NORTH SECTION LINE OF SECTION 24, TOWNSHIP 45, RANGE 25 EAST, AS BEARING S.89°42'31"E.

SAID EASEMENT SUBJECT TO ALL EASEMENT, RIGHT-OF-WAY AND RESTRICTION OF RECORD.

METRON SURVEYING & MAPPING, LLC
FLORIDA CERTIFICATE OF AUTHORIZATION LB# 7071



TIMOTHY LEE MANN
PROFESSIONAL SURVEYOR AND MAPPER
FLORIDA CERTIFICATE NO. 5838

SHEET 1 OF 2

3067SKb1.doc

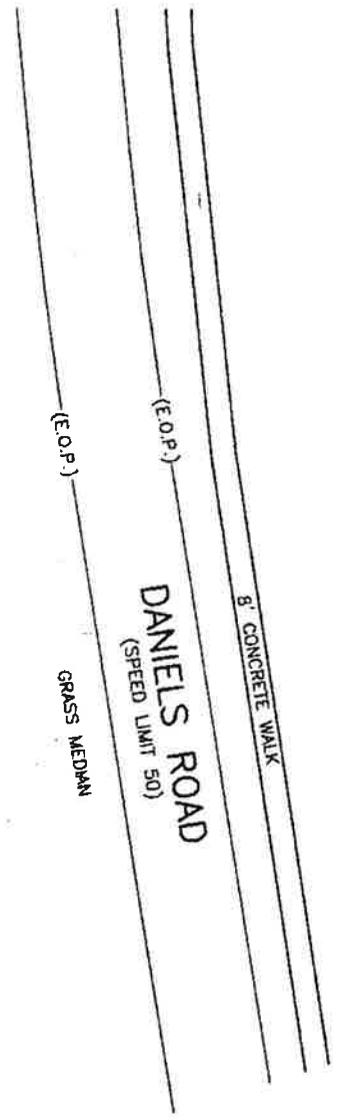
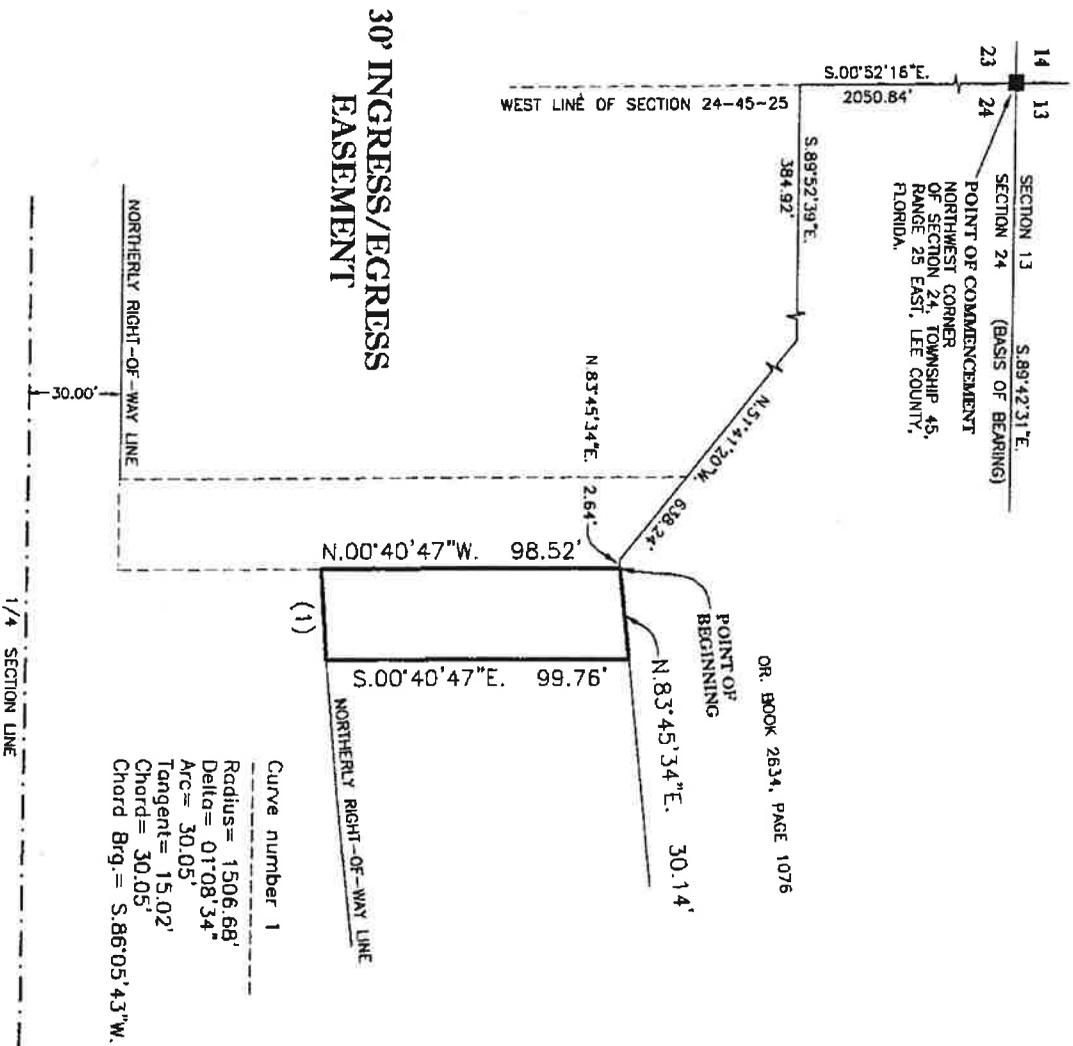
EXHIBIT "B"

DESCRIPTION:

ALL THAT PORTION OF LAND LYING IN SECTION 24, TOWNSHIP 45 SOUTH, RANGE 25 EAST, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGIN AT A 5"X5" CONCRETE MONUMENT MARKING THE NORTHWEST CORNER OF SAID SECTION 24...; THENCE S.89°42'31"E. ALONG THE NORTHERLY LINE OF SAID SECTION 24... FOR A DISTANCE OF 1298.74 FEET TO A 4"X4" CONCRETE MONUMENT STAMPED 'B.W.L.B'; THENCE DEPARTING FROM SAID MONUMENT, S.00°53'47"E. FOR A DISTANCE OF 2394.93 FEET; THENCE S.83°45'34"W. FOR 421.80 FEET; THENCE N.51°41'20"W. FOR A DISTANCE OF 638.24 FEET; THENCE N.89°52'39"W. FOR A DISTANCE OF 384.92 FEET TO THE WESTERLY SECTION LINE OF SAID SECTION 24...; THENCE N.00°52'16"W. ALONG THE WESTERLY SECTION LINE FOR A DISTANCE OF 2050.84 FEET TO THE POINT OF BEGINNING.

SKETCH TO ACCOMPANY DESCRIPTION



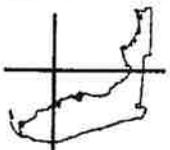
*** THIS IS NOT A SURVEY ***

BY: 
TIMOTHY LEE MANN
PROFESSIONAL SURVEYOR AND MAPPER
FLORIDA CERTIFICATE NO. LS# 5838

DATE SIGNED: Feb 11, 03

NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A
FLORIDA LICENSED SURVEYOR AND MAPPER.

SKETCH OF DESCRIPTION



METRON
SURVEYING & MAPPING LLC
LAND SURVEYORS PLANNERS
LB# 7071

5245 RAMSEY WAY, SUITE #2
FORT WENES, FLORIDA 33607
PHONE: (239) 275-6575
FAX: (239) 275-9457
www.metronfl.com

FILE NAME:	30675skb.DWG	FIELD BOOK/PAGE:	N/A	PROJECT NO.:	3067	SHEET:	2 OF 2
SKETCH DATE:	2-11-03	DRAWN BY:	SM	SCALE:	1" = 60'	CHECKED BY:	TLM
				(S-1-R)	24-45-25		

* SEE SHEET 1 OF 2 FOR LEGAL DESCRIPTION *



4

INSTR # 5720132
Official Records BK 03851 PG 4438
RECORDED 02/21/2003 04:24:38 PM
CHARLIE GREEN, CLERK OF COURT
LEE COUNTY
RECORDING FEE 19.50
DEPUTY CLERK G Sherwood

This Instrument Prepared By
GORDON R. DUNCAN, ESQ.
Post Office Box 249
Fort Myers, FL 33902

ACCESS EASEMENT

GERARD A. McHALE, JR., Successor Trustee, for a valuable consideration hereby grants and conveys to LEE COUNTY, a Political Subdivision of the State of Florida, its successors and/or assigns, an access easement for ingress and egress over and across the lands described in Exhibit "A" attached. Exhibit "A" includes a graphic depiction of the easement hereby granted.

The easement hereby granted shall not at any time be for the benefit of any person or entity who is not the fee simple owner of a portion of the lands described in Exhibit "B".

IN WITNESS WHEREOF, GERARD A. McHALE, JR., as Successor Trustee under that certain Agreement dated May 1, 1981, has set his hand and seal in his capacity as Successor Trustee.

Witness #1

Sign Susanne Kantor
Print SUSANNE KANTOR

Gerard A. McHale, Jr.
GERARD A. McHALE, JR., Successor Trustee
Under that certain Agreement Dated
May 1, 1981

Witness #2

Sign Carolyn M. Hulette
Print

STATE OF FLORIDA
COUNTY OF LEE

The foregoing instrument was acknowledged before me, this 17th day of Feb, 2003, by GERARD A. McHALE, JR., Successor Trustee under that certain Agreement dated May 1, 1981, who is personally known to me and who has taken an oath.

Carolyn M. Hulette
Notary Public

My Commission Expires April 15, 2004
Carolyn M Hulette
My Commission CC917740
Expires April 15, 2004

METRON

SURVEYING & MAPPING, LLC

LAND SURVEYORS • PLANNERS

LEGAL DESCRIPTION OF AN EASEMENT LYING IN
SECTION 24, TOWNSHIP 45 SOUTH, RANGE 25 EAST,
LEE COUNTY, FLORIDA
(30' INGRESS/EGRESS EASEMENT)

A 30' FOOT WIDE INGRESS/EGRESS EASEMENT SITUATED IN THE STATE OF FLORIDA, COUNTY OF LEE, LYING IN SECTION 24, TOWNSHIP 45 SOUTH, RANGE 25 EAST, OVER AREAS AND THROUGH SAID PARCEL BEING FURTHER BOUND AND DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SECTION 24, TOWNSHIP 45 SOUTH, RANGE 25 EAST; THENCE S.00°52'16"E. ALONG THE WEST LINE OF SAID SECTION 24 FOR A DISTANCE OF 2050.84 FEET; THENCE S.89°52'39"E. FOR A DISTANCE OF 384.92 FEET; THENCE S.51°41'20"E. FOR A DISTANCE OF 603.02 TO THE POINT OF BEGINNING OF SAID 30' INGRESS/EGRESS EASEMENT; THENCE S.51°41'20"E. FOR A DISTANCE OF 35.22 FEET; THENCE N.83°45'34"E. FOR A DISTANCE OF 2.64 FEET; THENCE S.00°40'47"E. FOR A DISTANCE OF 165.61 FEET; THENCE N.89°52'39"W. ALONG THE NORTHERLY RIGHT OF WAY LINE OF DANIELS ROAD FOR A DISTANCE OF 30 FEET; THENCE N.00°40'47"W. FOR A DISTANCE OF 187.09 FEET TO THE POINT OF BEGINNING OF SAID EASEMENT.

THE SIDELINES OF SAID EASEMENT FROM SAID POINT OF BEGINNING TO SAID POINT OF BEGINNING ARE TO PROVIDE A CONTINUOUS WIDTH OF 30.00 FEET, (AS MEASURED ON A PERPENDICULAR)

BEARINGS BASED ON THE NORTH SECTION LINE OF SECTION 24, TOWNSHIP 45, RANGE 25 EAST, AS BEARING S.89°42'31"E.

SAID EASEMENT SUBJECT TO ALL EASEMENT, RIGHT-OF-WAY AND RESTRICTION OF RECORD.

METRON SURVEYING & MAPPING, LLC
FLORIDA CERTIFICATE OF AUTHORIZATION LB# 7071



TIMOTHY LEE MANN
PROFESSIONAL SURVEYOR AND MAPPER
FLORIDA CERTIFICATE NO. 5838

SHEET 1 OF 2

3067SKa1.doc

EXHIBIT "B"

DESCRIPTION:

ALL THAT PORTION OF LAND LYING IN SECTION 24, TOWNSHIP 45 SOUTH, RANGE 25 EAST, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGIN AT A 5"X5" CONCRETE MONUMENT MARKING THE NORTHWEST CORNER OF SAID SECTION 24...; THENCE S.89°42'31"E. ALONG THE NORTHERLY LINE OF SAID SECTION 24... FOR A DISTANCE OF 1298.74 FEET TO A 4"X4" CONCRETE MONUMENT STAMPED 'B.W.L.B'; THENCE DEPARTING FROM SAID MONUMENT, S.00°53'47"E. FOR A DISTANCE OF 2394.93 FEET; THENCE S.83°45'34"W. FOR 421.80 FEET; THENCE N.51°41'20"W. FOR A DISTANCE OF 638.24 FEET; THENCE N.89°52'39"W. FOR A DISTANCE OF 384.92 FEET TO THE WESTERLY SECTION LINE OF SAID SECTION 24...; THENCE N.00°52'16"W. ALONG THE WESTERLY SECTION LINE FOR A DISTANCE OF 2050.84 FEET TO THE POINT OF BEGINNING.

Appendix D: Legal Description

DESCRIPTION:

ALL THAT PORTION OF LAND LYING IN SECTION 24, TOWNSHIP 45 SOUTH, RANGE 25 EAST, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGIN AT A 5"X5" CONCRETE MONUMENT MARKING THE NORTHWEST CORNER OF SAID SECTION 24...; THENCE S.89°42'31"E. ALONG THE NORTHERLY LINE OF SAID SECTION 24... FOR A DISTANCE OF 1298.74 FEET TO A 4"X4" CONCRETE MONUMENT STAMPED 'B.W.L.B'; THENCE DEPARTING FROM SAID MONUMENT, S.00°53'47"E. FOR A DISTANCE OF 2394.93 FEET; THENCE S.83°45'34"W. FOR 421.80 FEET; THENCE N.51°41'20"W. FOR A DISTANCE OF 638.24 FEET; THENCE N.89°52'39"W. FOR A DISTANCE OF 384.92 FEET TO THE WESTERLY SECTION LINE OF SAID SECTION 24...; THENCE N.00°52'16"W. ALONG THE WESTERLY SECTION LINE FOR A DISTANCE OF 2050.84 FEET TO THE POINT OF BEGINNING.

CONTAINING 66.92 ACRES MORE OR LESS.

Appendix E: Projected Costs and Funding Sources

Expended Costs 2013-2017

Natural Resource Management		
<u>Item</u>	<u>Funding Source</u>	<u>Costs</u>
Exotic plant treatments Contracted	C20/20	\$39,414.00
Total		\$39,414.00
Overall Protection		
<u>Item</u>	<u>Funding Source</u>	<u>Costs</u>
Boundary signs	C20/20	\$217.00
Preserve sign	C20/20	\$115.00
Management Plan writing (1st & 2nd edition)	C20/20	\$4,200.00
Total		\$4,532.00

Total Expended Cost To Date \$43,946.00

Projected Costs 2017-2027

Natural Resource Management		
<u>Item</u>	<u>Funding Source</u>	<u>Costs</u>
Variable Costs		
Contracted Exotic Plant Treatments	C20/20	\$7,000.00
Contracted Hydrological Restoration	C20/20, grants	\$80,000.00*
Prescribed Burns (In House)	C20/20	\$3,000.00*
Overall Protection		
<u>Item</u>	<u>Funding Source</u>	<u>Costs</u>
Annual Costs		
Fence Maintenance (In House)	C20/20	\$100.00
Boundary Sign Replacement	C20/20	\$50.00
Variable Costs		
Fence Replacement	C20/20	\$20,000.00*
Total Projected Annual Maintenance Cost		\$150.00
Total Projected Variable Maintenance and Restoration Project Cost		\$141,000.00

* dependent upon establishing vehicle access

Prescribed burning would occur every 4 years (\$3,000 x2)

Exotic plant treatments are every other year (\$7,000 x 5)