

MANAGEMENT PLAN
WIREGRASS PRAIRIE PRESERVE

PREPARED BY:

COUNTY OF VOLUSIA,
DEPARTMENT OF GROWTH AND RESOURCE MANAGEMENT
DIVISION OF LAND ACQUISITION & MANAGEMENT

IN COOPERATION WITH:

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
DEPARTMENT OF OPERATIONS AND LAND RESOURCES
LAND MANAGEMENT

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INTRODUCTION

General Location and Size of Property

The Wiregrass Prairie Preserve (formerly known as the Menard property) is situated adjacent to Lake Ashby in south-central Volusia County. This property, encompassing approximately 1,401 acres, is located east of State Road 415 and approximately five miles south of the intersection with State Road 44 (Figure 1).

Acquisition History and Purposes

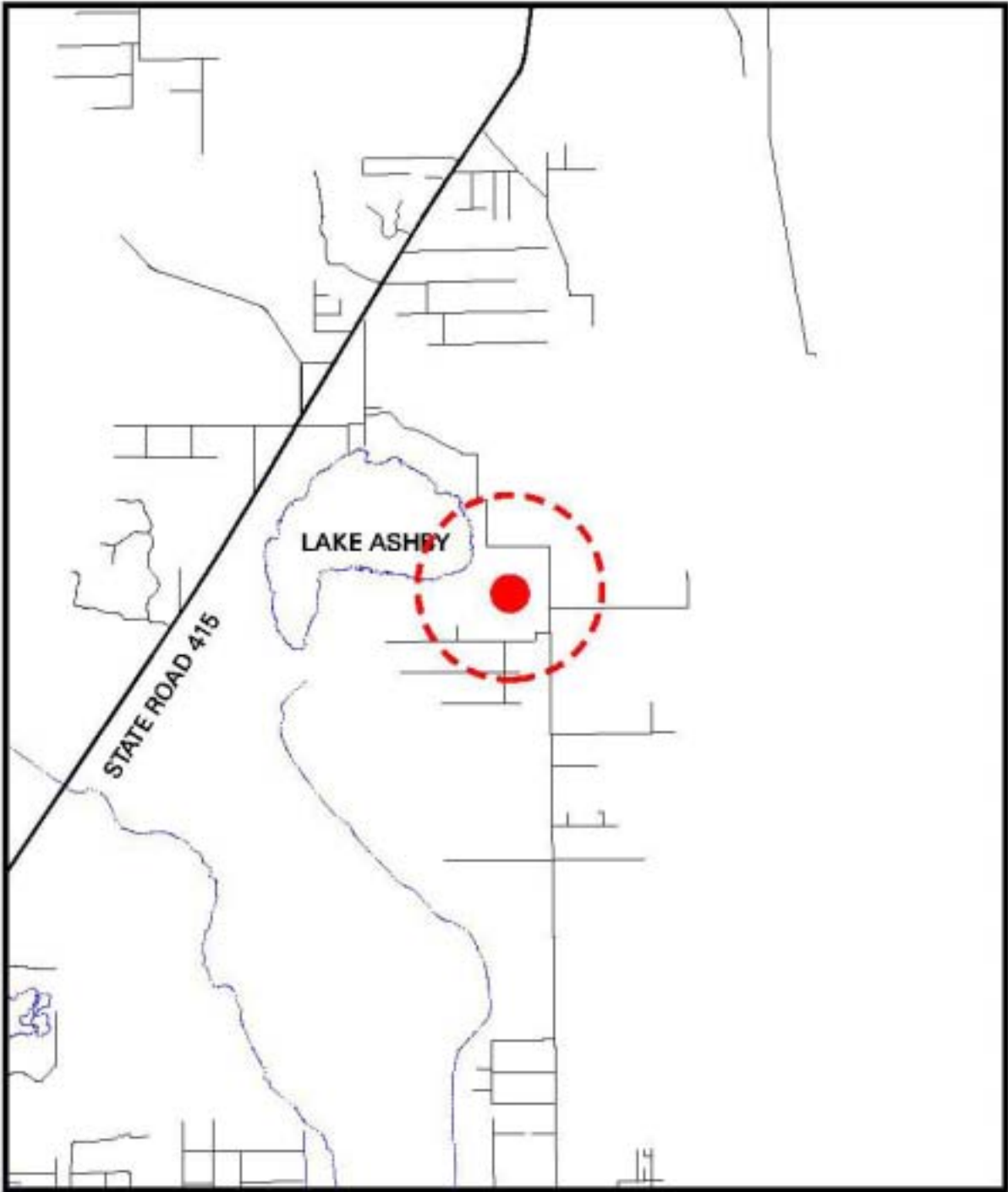
The St. Johns River Water Management District and the County of Volusia jointly acquired the property in 2002. Each of these entities owns an undivided interest (50%) in the property. Prior to acquisition by the District and County, the property had been held by the Menard family since the mid-1970's.

This property is partially situated within the Volusia Conservation Corridor (VCC), a *Florida Forever* project area of the State's Acquisition and Restoration Council (ARC). The VCC (Figure 2) has been designated as a "Group A" project by the ARC. "Group A" projects are those which receive the highest priority for acquisition and make the greatest contribution to achieving the goals of the *Florida Forever* program. This property is also within a "Priority Water Resource Caution Area" of the St. Johns River Water Management District.

Acquisition of the property provides both conservation and passive public use opportunities. Based upon preliminary investigations conducted by the District, potential use of the property may, at some future date, include establishment of a new potable water wellfield.

Management Responsibilities

The County, through an inter-local agreement with the District, is the lead manager of the property (Appendix C). This management plan provides general guidelines for resource management and recreational activities to be implemented on the property.



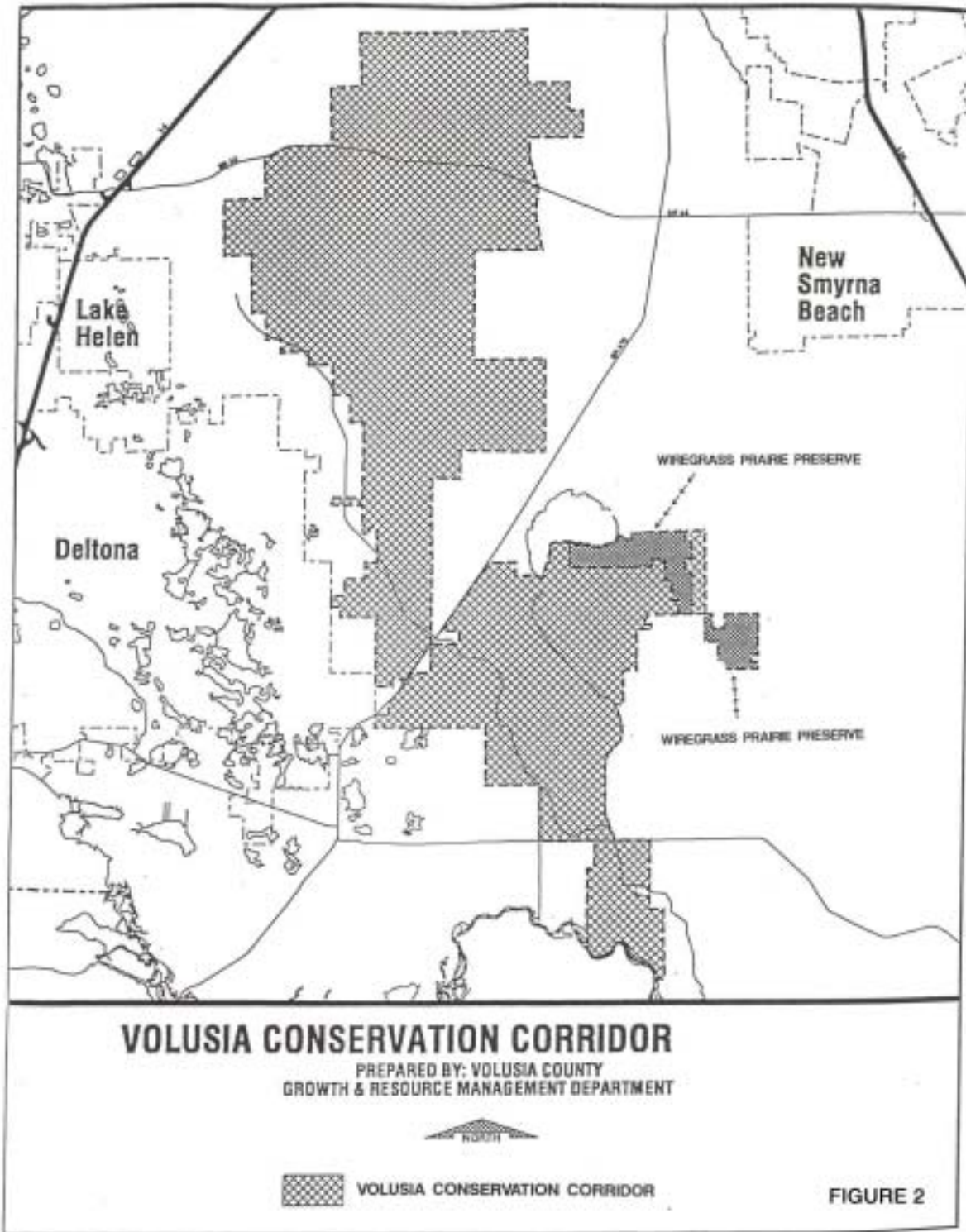
GENERAL LOCATION

Prepared by: Volusia County Growth Management Service Group



SCALE: 1" = 1 mile

FIGURE 1



Abstract of Property Features and Characteristics

This property is almost entirely within the St. Johns River Valley. However, a small portion of the property is situated at the extreme southern terminus of the Rima Ridge. Topographic relief across the property ranges between less than 15 feet to slightly over 35 feet. The property is dominated by nearly level, poorly drained soils.

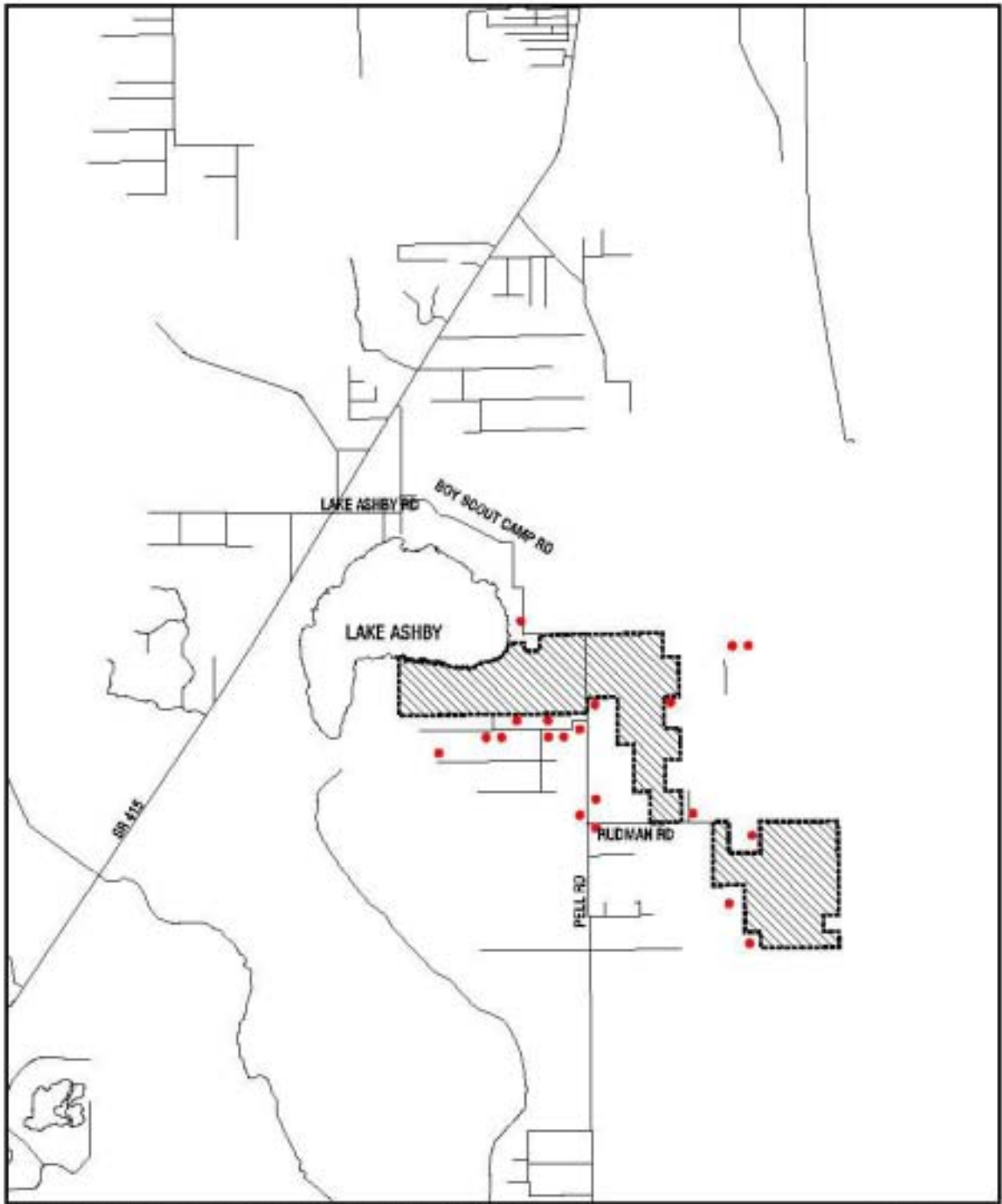
The natural landscape of the property is a mosaic of upland and wetland communities. Flatwoods (mesic and wet) and basin swamp communities are predominant. Collectively, these communities represent slightly less than three-quarters of the property. Other communities present include; dry prairie, strand swamp, dome swamp, and basin marsh. The communities of dry prairie and wet prairie have been identified as "imperiled". Additionally, Rugel's pawpaw (*Deeringothamnus rugelii*) and several other listed plants species may occur on the property.

This property is characterized by a diversity of high quality wildlife habitat, both upland and wetland. The potential richness of this property is indicated by the presence of several "biodiversity hotspots", as delineated by the Florida Fish and Wildlife Conservation Commission. Information provided by the Commission also reveals the presence of several "priority wetlands". These wetlands provide important habitat for several listed species including; American alligator (*Alligator mississippiensis*), bald eagle (*Haliaeetus leucocephalus*), Florida sandhill crane (*Grus canadensis pratensis*), and Florida black bear (*Ursus americanus floridanus*). The listed species of Sherman's fox squirrel (*Sciurus niger shermani*) and gopher tortoise (*Gopherus polyphemus*) have been observed on the property. Records of both the Commission and the Florida Natural Areas Inventory indicate the presence of bald eagle nests adjacent to the property.

Other than areas altered by an existing agricultural activity (cattle grazing), the property is essentially in a natural condition. Areas of pasture associated with this agricultural use represent an estimated one-tenth of the property. No structures, other than those associated with the cattle operations are located on the property.

Description of Adjacent Area

The general area surrounding the property is characterized by agricultural lands, forests, and scattered large lot single family dwellings (Figures 3 and 5). Lake Ashby Park, owned by the County, is situated on the northeastern shore of this waterbody. This public land, comprised of approximately 64 acres, provides a mixture of resource-based recreational opportunities including camping, trails, fishing dock, and canoe launch. The County also operates a small boat launch facility, consisting of approximately one acre, located on the northern shore of Lake Ashby.



ADJACENT RESIDENTIAL DEVELOPMENT

Prepared by: Volusia County Growth and Resource Management

● RESIDENTIAL DWELLING



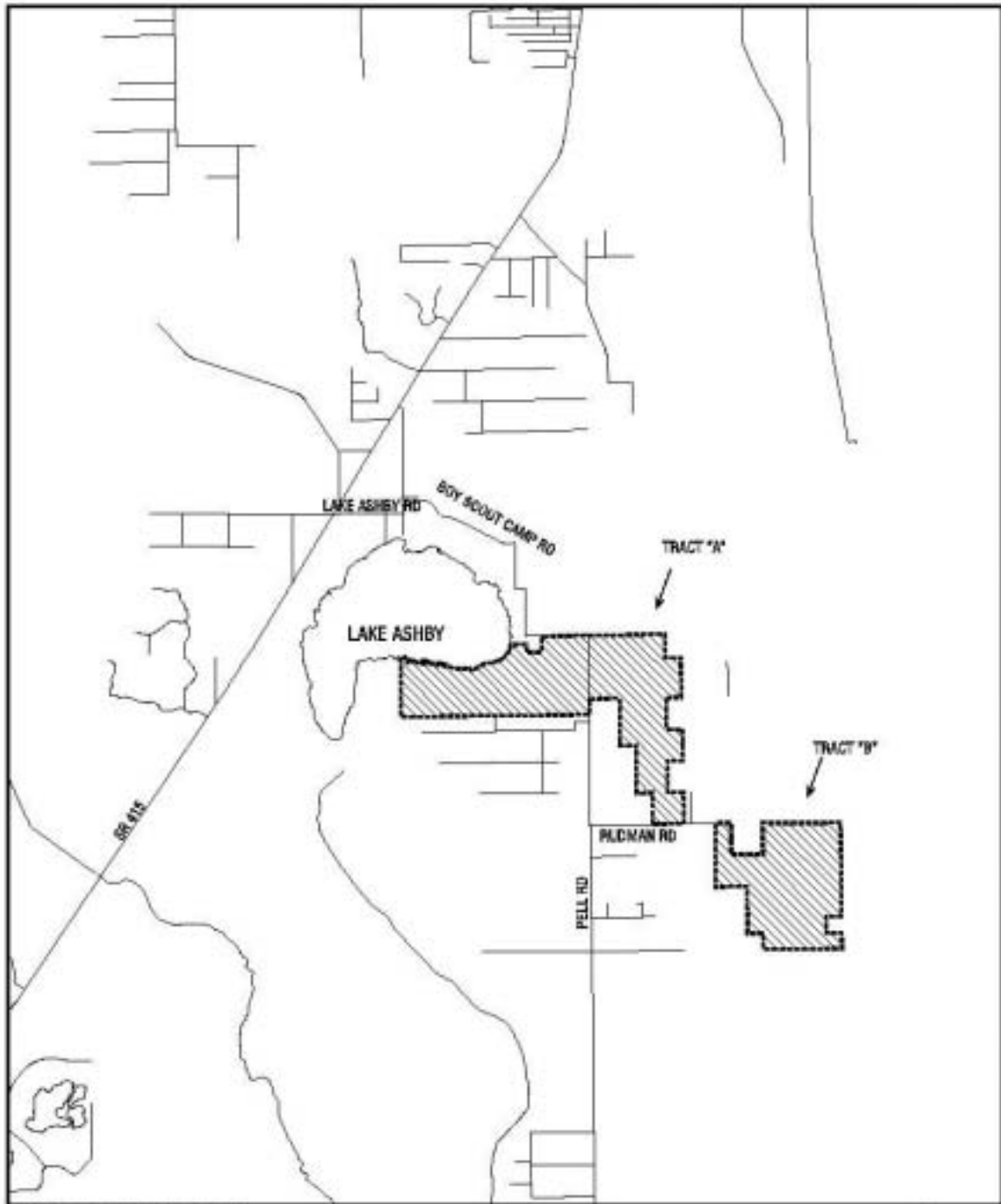
FIGURE 3

PROPERTY OVERVIEW

Property Boundaries

The property, consisting of 1,401 acres, is comprised of two separate areas that will be referred to throughout this document as Tract A and Tract B (Figure 4).

Tract A, encompassing approximately 900 acres, is situated east and west of Pell Road. This tract includes approximately one mile of the southern shore of Lake Ashby. Tract B, encompassing approximately 500 acres, is located approximately one-quarter of a mile southeast of Tract A on the southern side of Rudman Road.

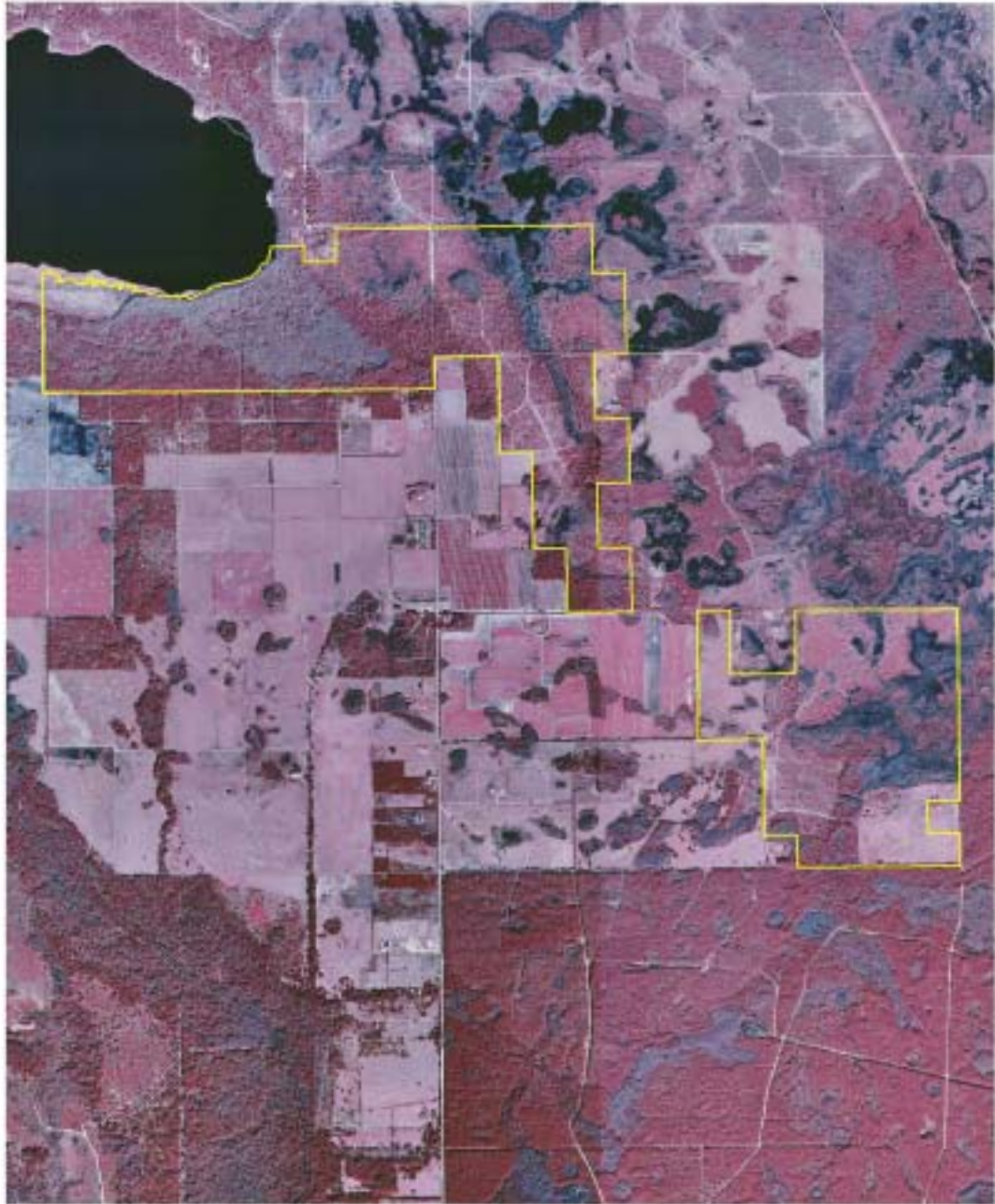


SITE LOCATION

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FIGURE 4



Wiregrass Prairie Preserve
Property Boundaries

FIGURE 5

Infrastructure and Services

The types and levels of existing public infrastructure are consistent with those of an agrarian or rural region.

Vehicular access to the property is via a combination of public and private routes of limited width and condition. Pell Road, an unpaved route, bisects Tract A. Other unpaved routes extending from Pell Road -- Lopez and Rudman roads -- provide access to Tracts A and B, respectively. Lopez and Rudman roads appear to be located within a dedicated public right-of-way of the antiquated Howe and Curriers plat. The relationship between the alignment of the traveled way for Pell Road through Tract A to the Howe and Curriers plat is less certain since several parallel paths for this route have evolved and are presently in use. With the exceptions of Pell and Lopez roads, the County has vacated all public right-of-way for roads within the Howe and Curriers plat that traverse the interior of the property.

The right-of-way for Pell Road, north of Osteen-Maytown Road, varies from between 30 to 60 feet in width. Pell Road as it traverses Tract A is not maintained by the County. County maintenance of this route presently terminates at the intersection with Rudman Road. Rudman Road parallels a portion of the southern boundary of Tract A and presently provides the sole means of vehicular access to Tract B. The dedicated public right-of-way for Rudman Road is fifteen (15) feet. Although passable, Rudman Road is a narrow one-lane route that is not presently maintained by the County. The County does not presently maintain Lopez Road, which traverses that portion of Tract A located east of Pell Road. The width of the dedicated public right-of-way for Lopez Road is 30 feet.

The portion of Tract A situated south of Lake Ashby may also be accessed from Ashby Way and Deer Park Circle. These private, unpaved residential streets are within the unrecorded subdivision of Lake Ashby Estates.

Fire protection and response is provided to this property by the County from the station located in Osteen. The Florida Division of Forestry maintains a tower site at the intersection of Pell and Rudman roads, adjacent to the property.

The Volusia County Sheriff's Office provides public safety and response to this property.

Historic and Existing Use(s) of Property

Prior to acquisition by the District and County, portions of the property were utilized for cattle grazing. This land use, which is to be considered as interim, has continued subsequent to the change in ownership. Areas of pasture associated with this agricultural use represent an estimated one-tenth of the property.

Cattle are presently being grazed on Tract A, south of Lopez Road. The user of this area appears to be an adjoining landowner. This use primarily relies upon native range, but also includes a small area of pasture. It is unclear when cattle grazing in this area began. It appears that the use may have begun through an informal arrangement between the neighbor and the previous landowner.

A second more active, cattle grazing operation is located on Tract B. This use includes both improved pasture and native rangeland and essentially encompasses all of Tract B, except for the large wetland found in the center of the area. The large area of improved pasture, located in the southeastern quadrant of the tract, consists of approximately 130 acres. The grazing of cattle on this tract has been performed under the auspices of the same operator since the mid-1970s. This use may have been established through a contractual agreement between the operator and the previous landowner. This operator is not the same as that grazing cattle on the aforementioned portion of Tract A.

Other than these agricultural activities, the property is essentially in a natural condition.

No structures, other than those associated with the cattle operations on Tract B, are located on the property. Structures found on Tract B include a holding pen and feeding stations.

Topography and Hydrography

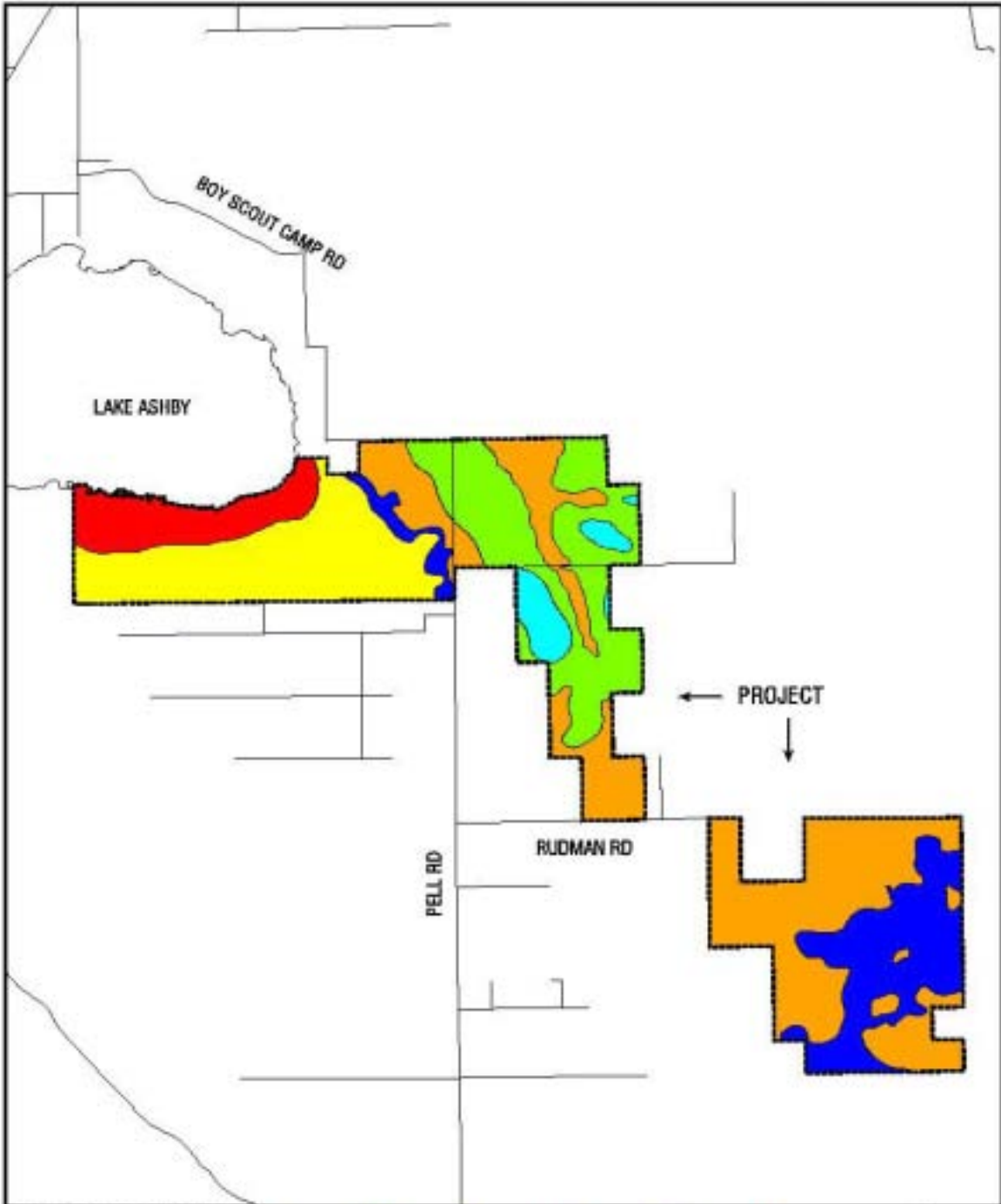
Topographic relief across the property ranges between less than 15 feet to slightly over 35 feet above sea level (Figure 6). The highest points on the property are found along a slight ridge, oriented from north to south, located in the eastern half of Tract A. In contrast to Tract A, the difference in elevation of Tract B is minimal. The elevation of Tract B is between 20 and 30 feet above sea level.

The property is situated at the convergence of two physiographic regions of the county, the St. Johns River Valley and the Rima Ridge. The eastern portion of Tract A, containing the higher elevations, is apparently situated at the extreme southern terminus of the Rima Ridge physiographic region. This region is a relict shoreline that is older than the Atlantic Coastal Ridge. The balance of the property is within the St. Johns River Valley physiographic region.

This property includes approximately one mile of the southern shoreline of Lake Ashby. This waterbody, comprised of approximately 888 acres, is the dominant surface water feature in the south-central portion of the county and is hydrologically linked to the St. Johns River. The water quality of this large waterbody is good. Based upon the presence of certain vegetation communities, watermarks within the adjoining vegetation communities, and casual observations, the water level of the lake seasonably varies by several feet. A portion of the wetlands bordering this waterbody may be sovereign land of the State.

Slightly over one-half of Tract A and slightly less than one-half of Tract B are located within the 100-year floodplain (Figures 7 and 8).

Drainage within the property, either through natural or man-made waterways, appears to be predominantly toward the St. Johns River. For example, the wetland area located along the shoreline of Lake Ashby is linked to the river through a network comprised of a series of wetlands, Deep Creek, and the Lake Ashby Canal. Drainage within portions of Tract A is apparently directed into Lake Ashby by a series of internal ditches. Tract B includes a sizable portion of the wetland known as Harris Bay. This wetland is hydrologically connected to the southern portion of Spruce Creek Swamp, which is situated about one mile to the east. Drainage of Harris Bay and the southern portion of Spruce Creek Swamp is toward the St. Johns River via Cow Creek. Both Harris Bay and Spruce Creek Swamp receive an infusion of water from the Samsula Canal, which terminates adjacent to the border of these wetland areas.



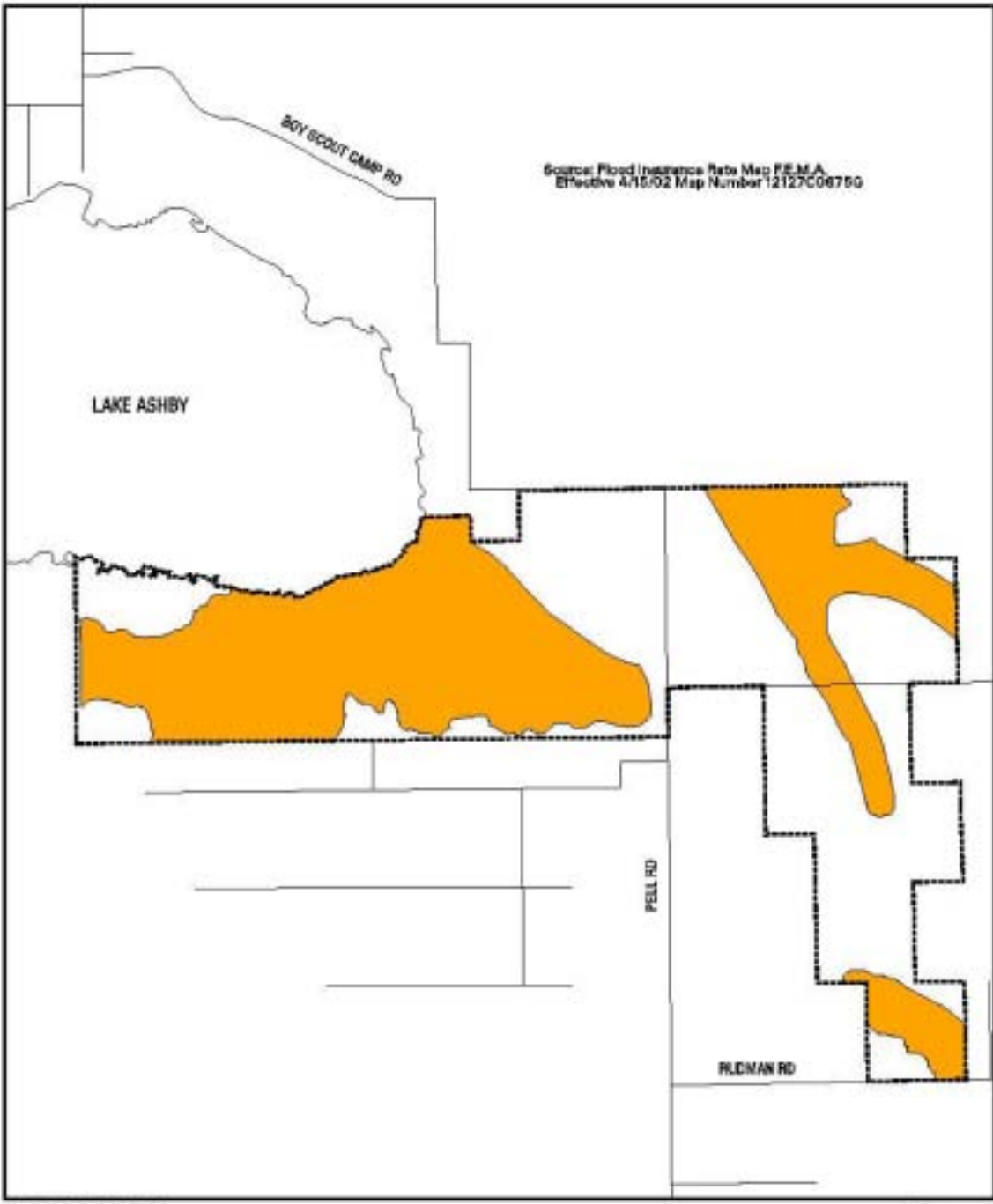
TOPOGRAPHY

10'-15' 15'-20' 20'-25' 25'-30' 30'-35' 35'-40'



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FIGURE 6

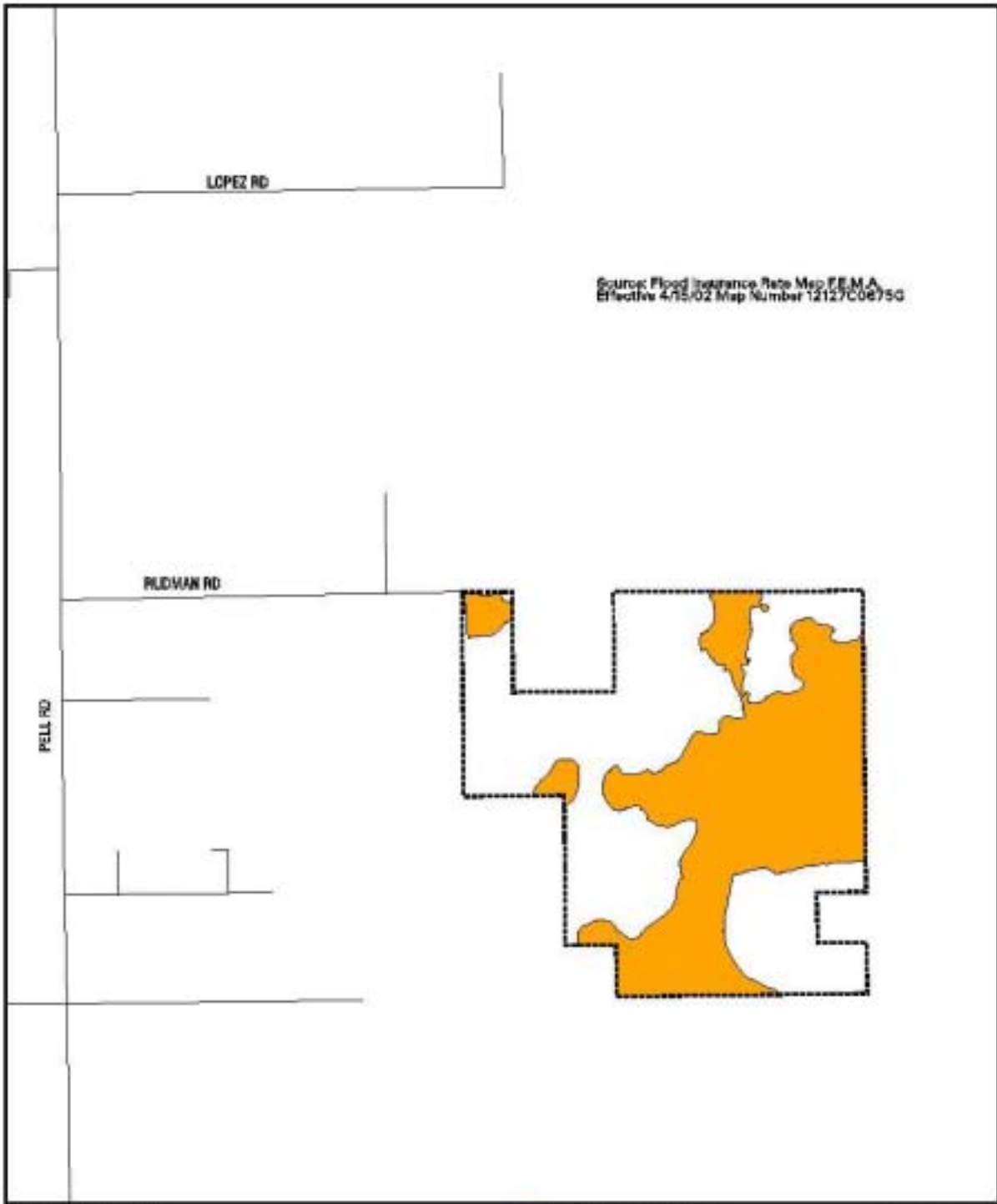


FLOODPLAIN
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■ GENERALIZED AREA OF
100 YEAR FLOODPLAIN



FIGURE 7



FLOODPLAIN

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■ GENERALIZED AREA OF
100 YEAR FLOODPLAIN



FIGURE 8

Soils

Numerous soils are present over the property. Notwithstanding the assortment of soils, it is noted that the property is dominated by nearly level, poorly drained soils. A brief description of each of the many soil series present is presented below. The individual soil type(s) within each series found on the property are also denoted in this itemization. As evidenced by this inventory and the accompanying Figures (9 and 10), hydric soils are predominant.

(a) Hydric Soils

Basinger fine sand, depressional --- This nearly level, poorly drained soil occurs in depressions and poorly defined drainageways. In most years, the water table is above the surface for several months.

Hontoon mucky peat --- This is a nearly level, very poorly drained organic soil. In most years, the water table is at or above the surface for six to nine months. The balance of the year the water table is typically within 10 inches of the surface.

Malabar fine sand --- This nearly level, poorly drained sandy soil is located in broad, low flats. A high water table that, in most years, is within a depth of 10 inches for two to six months characterizes this soil.

Myakka fine sand, depressional --- This poorly drained sandy, flatwoods soil is generally found in depressional areas that are from one to one and a half feet lower than the surrounding area. This soil is typically ponded for a period from six to nine months in most years.

Myakka-St. Johns complex --- A mixture of nearly level, poorly drained soils that are always saturated during the wet season. The seasonal high water table is above the soil surface.

Pineda fine sand --- A nearly level, poorly drained soil on broad, low flats, in poorly defined drainageways, and in low areas bordering wetlands. This soil is characterized by a high water table that can be within a depth of 10 inches for one to six months. In some years, the water table may be above the soil surface from one week to six months.

Pomona fine sand, depressional --- Under natural conditions, the water table of this nearly level, poorly drained soil fluctuates from less than one foot above the surface to within a depth of 10 inches for a period from four to eight months during most years.

Pomona – St. Johns complex --- A mixture of nearly level, poorly drained soils that are typically covered with standing water for long periods.

Riviera fine sand --- This nearly level, poorly drained soil occurs in broad, low flats, which, under natural conditions, are saturated within 10 inches of the surface for two to six months in most years.

Samsula muck --- A very poorly drained, nearly level organic soil occurring in broad, low flats, small depressions, and wetlands. The water table is at or above the surface, except during long dry periods.

Scoggin sand --- This very poorly drained soil is typically covered with standing water for as much six months in most years. Ponding occurs during the rainy season.

St. Johns fine sand --- A nearly level, poorly drained soil formed in thick beds of sandy marine sediments. Typically, the seasonal high water table is within a depth of 10 inches.

Tequesta muck --- The water table of this nearly level, very poorly drained soil is within a depth of 10 inches for six to nine months in most years. During the rainy season, the water table may rise a foot or more above the surface.

Tomoka muck --- This is a very poorly drained soil formed in organic material. During the rainy season, the water table may be as much as two feet above the surface. The water table is at or above the surface for six to nine months in most years. Except during extended dry periods, the water table is seldom below a depth of 10 inches.

Winder fine sand --- The water table of this nearly level, poorly drained soil is at depth of 10 inches or less for two to six months in most years.

(b) Non-Hydric Soils

Cassia fine sand --- This nearly level to gently sloping, somewhat poorly drained soil occurs in slightly elevated positions.

Daytona sand, 0 to 5 percent slopes --- This moderately well drained, nearly level to gently sloping soil occurs on slightly elevated positions.

EauGallie fine sand --- This is a nearly level, poorly drained soil with a sandy surface layer over a loamy subsoil. The water table fluctuates from within 10 inches of the surface for one to four months in most years to a depth of as much as 40 inches for more than six months.

Farmton fine sand --- A nearly level, poorly drained sandy soil. The water table fluctuates from within 10 inches of the surface for one to three months in most years to a depth of as much as 40 inches for more than six months.

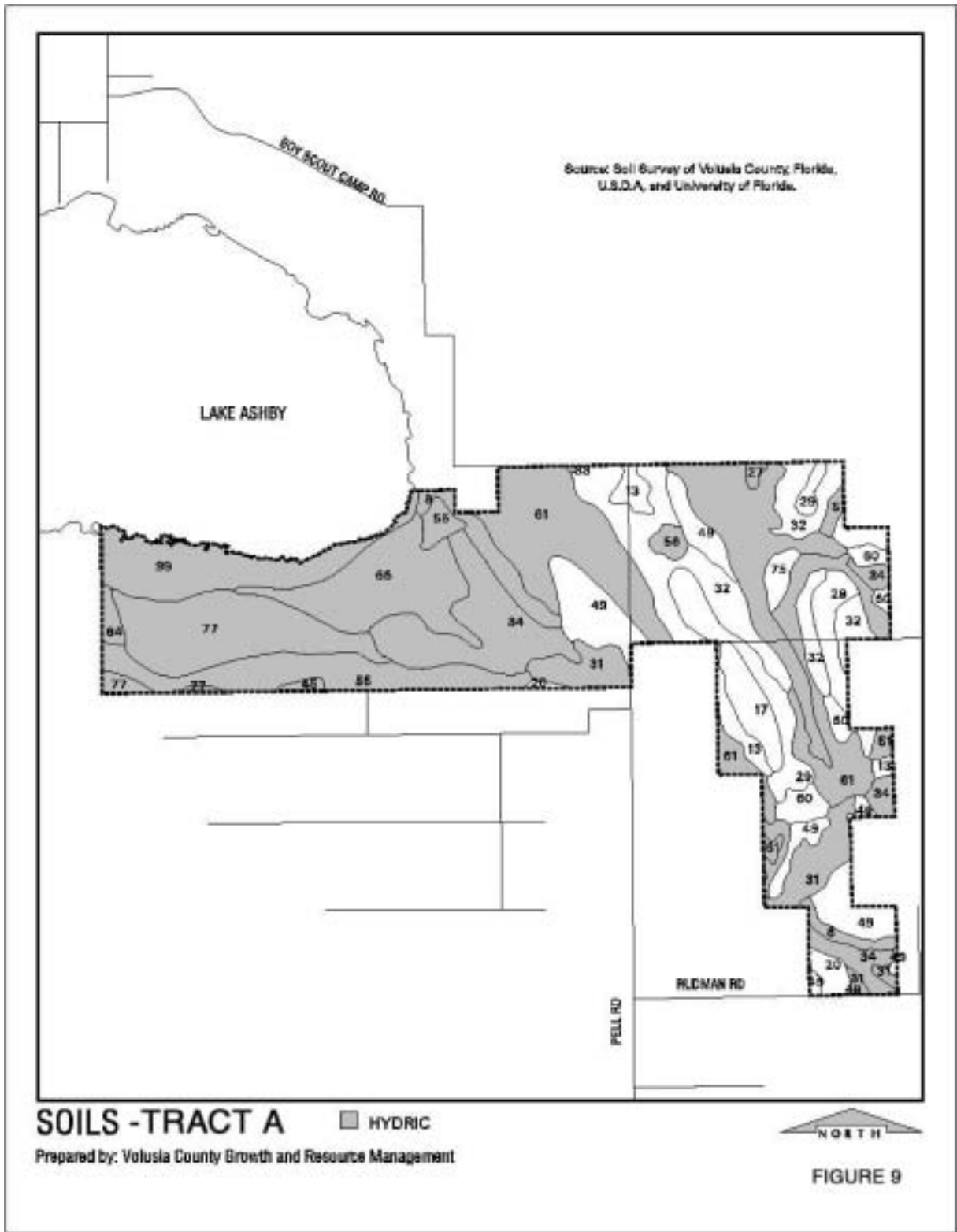
Immokalee sand --- A nearly level, poorly drained, moderately permeable to moderately rapid permeable soil.

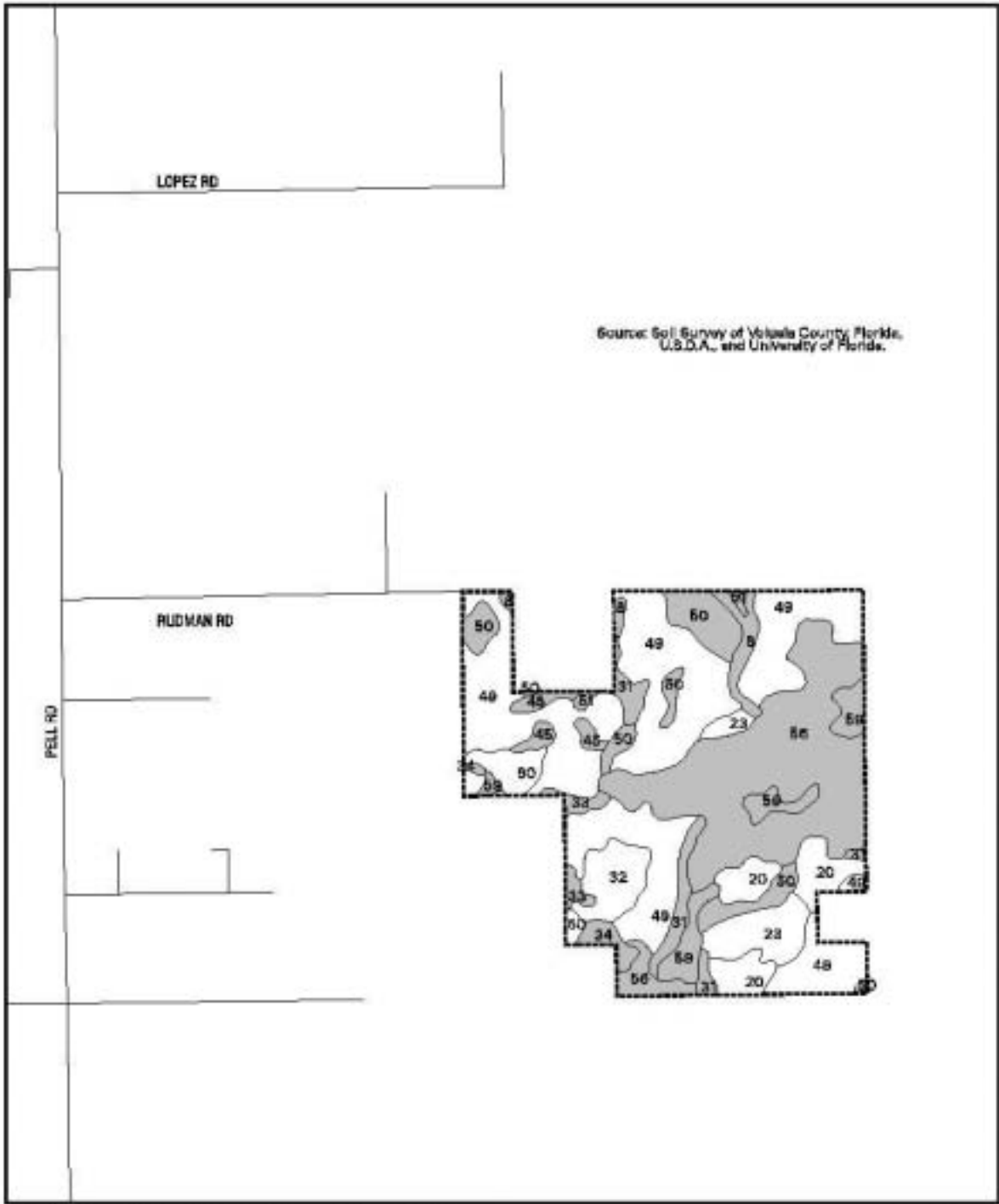
Myakka fine sand --- A nearly level, poorly drained sandy soil. Runoff is slow to very slow.

Pomona fine sand --- A nearly level, poorly drained soil with a seasonal high water table that is within 10 inches of the surface.

Smyrna fine sand --- This is a nearly level, poorly drained soil. In rainy seasons, the water table may briefly rise to the surface.

Wauchula fine sand --- A poorly drained, nearly level soil. The seasonal high water table is at or near the surface.





SOILS - TRACT B ■ HYDRIC
 Prepared by: Volusia County Growth and Resource Management



FIGURE 10

Soils Map Legend

<u>Soil</u>	<u>Soil Number</u>
Basinger fine sand, depressional	8
Cassia fine sand	13
Daytona sand, 0 to 5 percent slopes	17
EauGallie fine sand	20
Farmton fine sand	23
Hontoon mucky peat	27
Immokalee sand	29
Malabar fine sand	31
Myakka fine sand	32
Myakka fine sand, depressional	33
Myakka-St. Johns complex	34
Pineda fine sand	45
Pomona fine sand	49
Pomona fine sand, depressional	50
Pomona –St. Johns complex	51
Riviera fine sand	55
Samsula muck	56
Scoggin sand	59
Smyrna fine sand	60
St. Johns fine sand	61
Tequesta muck	64
Tomoka muck	66
Wauchula fine sand	75
Winder fine sand	77

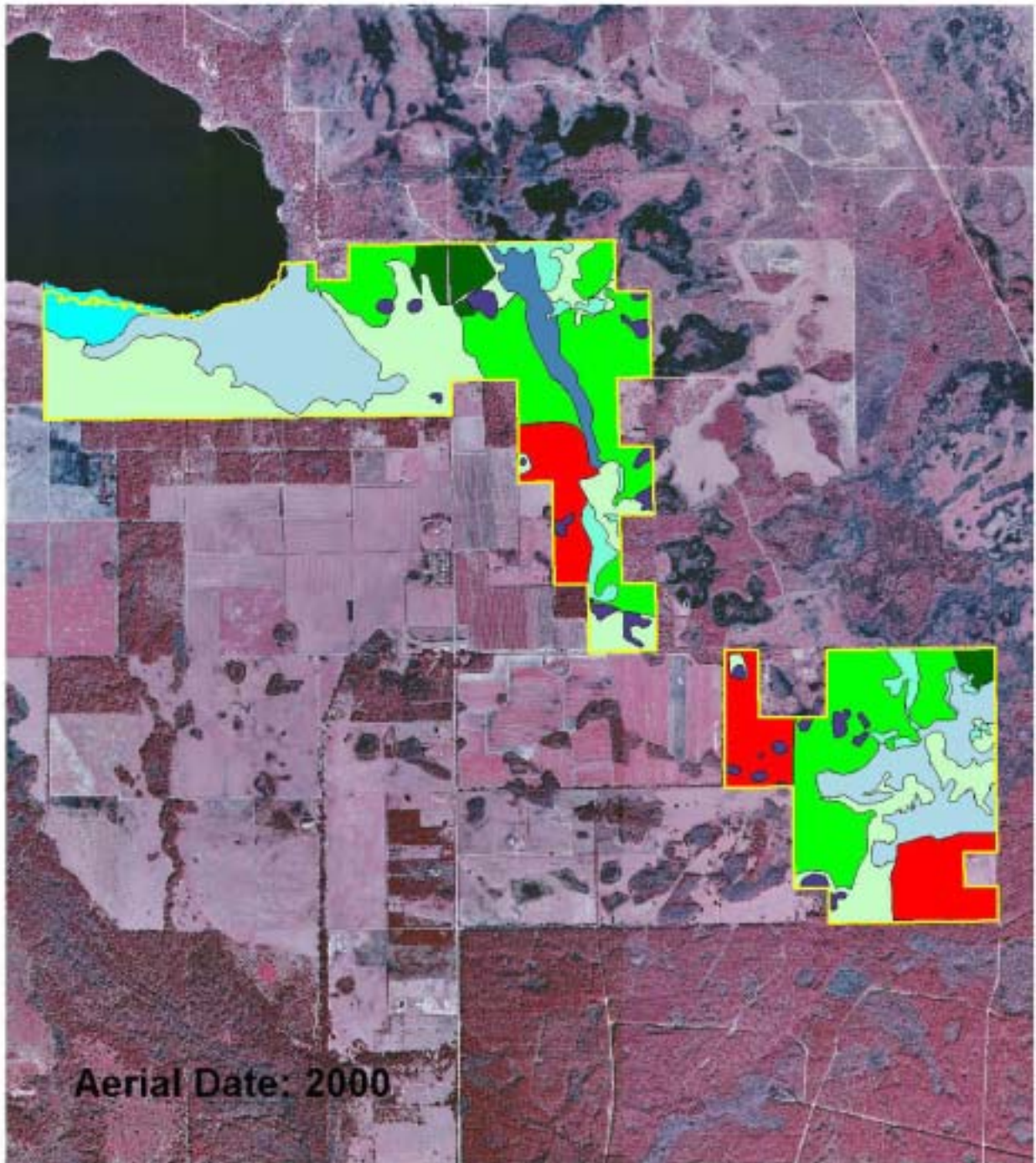
Natural Communities

The property is characterized by a diversity of habitats with flatwoods (wet and mesic) and basin swamp being predominant (Figure 11). Several wetland communities are also present. Although isolated wetland areas are found, other wetland areas of the property are components of larger systems extending to adjoining properties. Each of the natural communities present is generally described on the following pages.

In general, each of these natural communities is in fair to good condition. With the exception of isolated instances, exotic plant species are remarkably absent from the property. However, grazing by livestock has resulted in alteration of the natural vegetative cover in portions of the property. The impact of this use upon the natural cover varies across the property. Over one hundred acres, concentrated in Tract B, have been converted to improved pasture. This existing agricultural activity has also included the use of native range located in the central part of Tract A and the northern part of Tract B. The presence of livestock has influenced the composition and structure of the natural vegetative cover in these areas. Management of these areas of native rangeland may have included the use of periodic fire. Given the management objectives, the use of fire in these areas may not have coincided with the expected natural cycles. The portions of Tract A, north of Lopez Road and west of Pell Road, have not been impacted by this existing agricultural use. Significant portions of the property were burned during the outbreak of wildfires that occurred within the county during 1998. The impact of these fires has not fully been assessed. However, based upon standing stems within the flatwoods areas and evidence of soil disturbance within the strand swamp areas, it appears that the fires may have been locally intense.

Exhibit 1. Summary of Community Types

Community Type	Acres	Percentage
Mesic Flatwoods	370	26%
Wet Flatwoods	368	26%
Basin Swamp	269	19%
Agriculture	180	13%
Wet Prairie	54	4%
Strand Swamp	44	3%
Dome Swamp	43	3%
Dry Prairie	42	3%
Basin Marsh	31	2%
Total	1401	100%



**Wiregrass Prairie Preserve
Natural Communities
May 2003** **FIGURE 11**

MESIC FLATWOODS

General Description

This community (Figure 12 and Photo 1) occurs on nearly level, moderately to poorly drained terrain. The community is closely associated with two other communities found on the site, Wet Flatwoods and Dry Prairie.

Within the property this community is characterized by an overstory of slash pine (*Pinus elliotii*) with scattered longleaf pine (*Pinus palustris*). Typical understory and ground cover species include saw palmetto (*Serenoa repens*), wiregrass (*Aristida* spp.), shiny blueberry (*Vaccinium myrsinites*), tarflower (*Bejaria racemosa*) and fetterbush (*Lyonia lucida*).

Natural Fire Cycle

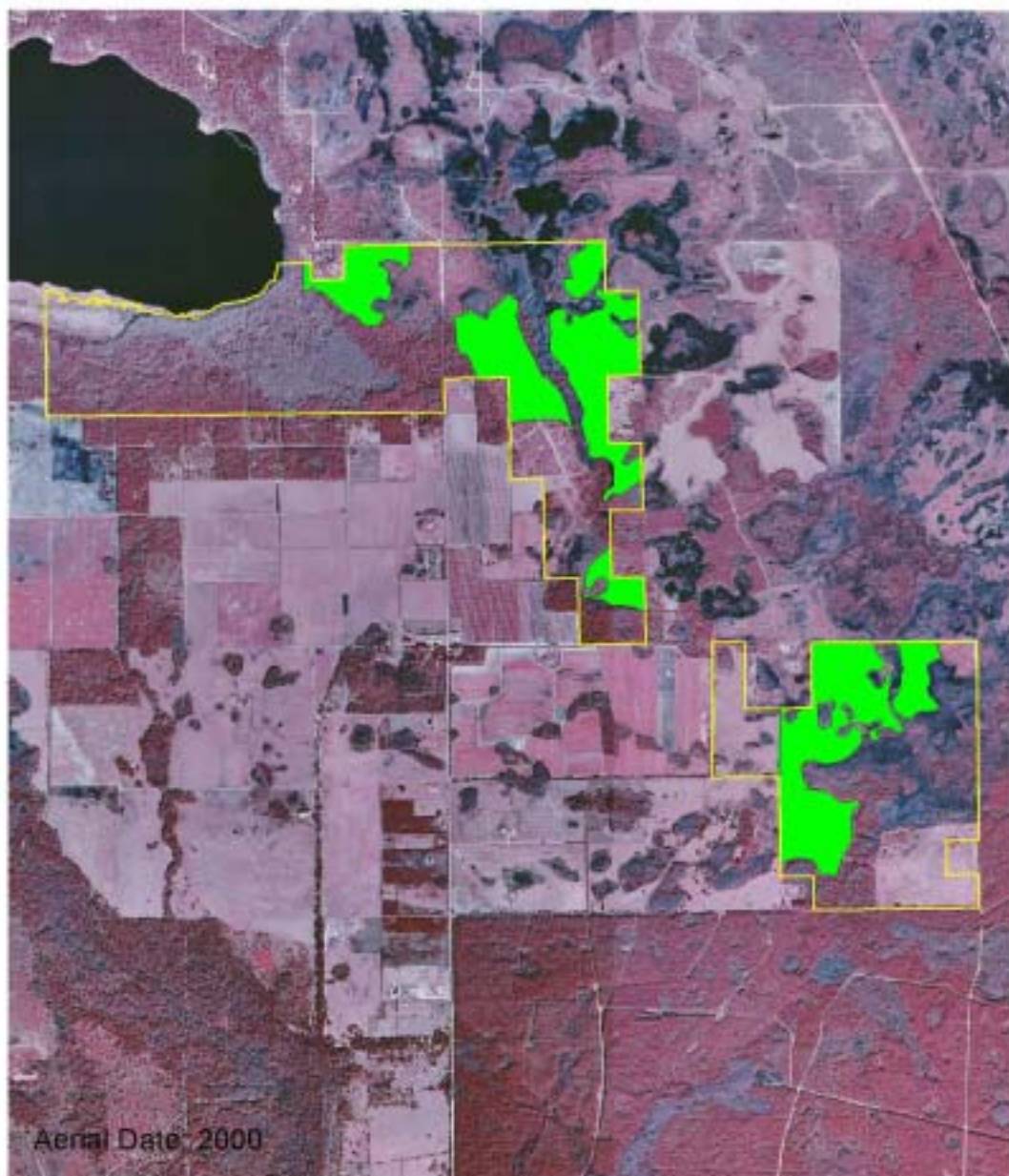
The interval between the occurrence of natural fires within this community is typically from one (1) to eight (8) years. As with other flatwoods communities, suppression of fire would promote succession to a hardwood community. However, fires that are either too frequent or too hot may result in the transformation of this community to Dry Prairie.

Approximate Acreage

370 acres

Additional Considerations

The density and age distribution of the community varies across the property. Higher tree and shrub density is typically found in areas where fire has previously been excluded or minimized. Conversely, sparsely canopied areas are found in areas that have experienced a greater frequency of fire. The necessity for artificial regeneration of the more sparsely canopied areas should be evaluated.



Wiregrass Prairie Preserve
Mesic Flatwoods
May 2003

FIGURE 12



Photo 1. Typical condition of mesic flatwoods on Wiregrass Prairie Preserve 2003.

WET FLATWOODS

General Description

This community (Figure 13 and Photo 2) occurs on nearly level, poorly drained terrain. The community is closely associated with and may grade into Mesic Flatwoods, Wet Prairie, or Basin Swamp. Other natural communities closely related to Wet Flatwoods are Dome Swamp and Strand Swamp. However, in these later instances, the absence of an ecotone of Wet Prairie may indicate alteration of the area's hydrology.

Within the property this community is characterized by an overstory of slash pine (*Pinus elliotii*) with scattered pond pine (*Pinus serotina*). Understory and ground cover species present include gallberry (*Ilex galbra*), shiny blueberry (*Vaccinium myrsinites*), saw palmetto (*Serenoa repens*) and various sedges.

Natural Fire Cycle

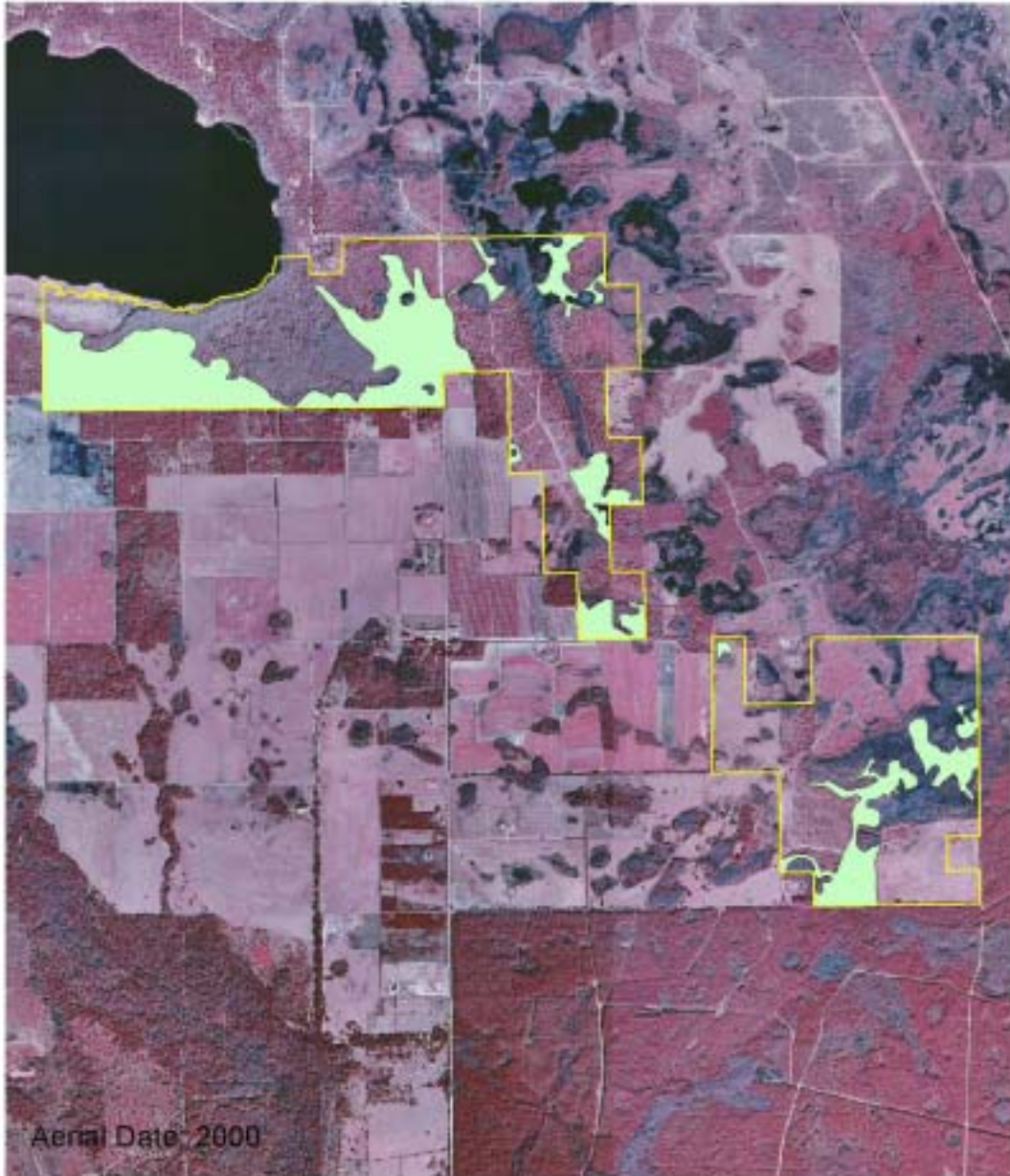
The natural fire cycle of this community is typically from three (3) to ten (10) years. As with other flatwoods communities, suppression of fire will promote succession to a hardwood community.

Approximate Acreage

368 acres

Additional Considerations

The density, age distribution, and species composition of stands of this community varies across the property. Higher density is typically found in areas where fire has previously been excluded or minimized, such as south and southeast of Lake Ashby. The species composition in this area also includes bald-cypress and red maple. Conversely, sparsely canopied areas of slash pine and pond pine are found in areas that have experienced a greater frequency of fire. The necessity for artificial regeneration of the more sparsely canopied areas should be evaluated.



Wiregrass Prairie Preserve
Wet Flatwoods
May 2003

FIGURE 13



Photo 2. Typical condition of wet flatwoods on Wiregrass Prairie Preserve 2003.

BASIN SWAMP

General Description

This community generally occurs as irregularly shaped areas that are dominated by plants that are tolerant of an extended hydroperiod. Other closely associated communities include Wet Flatwoods and Strand Swamp. (Figure 14 and Photo 3).

Within the property, this community is dominated by southern bald-cypress (*Taxodium distichum*), and hardwood species such as red maple (*Acer rubrum*), and sweetgum (*Liquidambar styraciflua*). Widely scattered slash pine (*Pinus elliotii*) is also present. Other species present include Carolina willow (*Salix caroliniana*), and Common buttonbush (*Cephalanthus occidentalis*).

Natural Fire Cycle

The interval between fires in this community may extend for over one hundred (100) years.

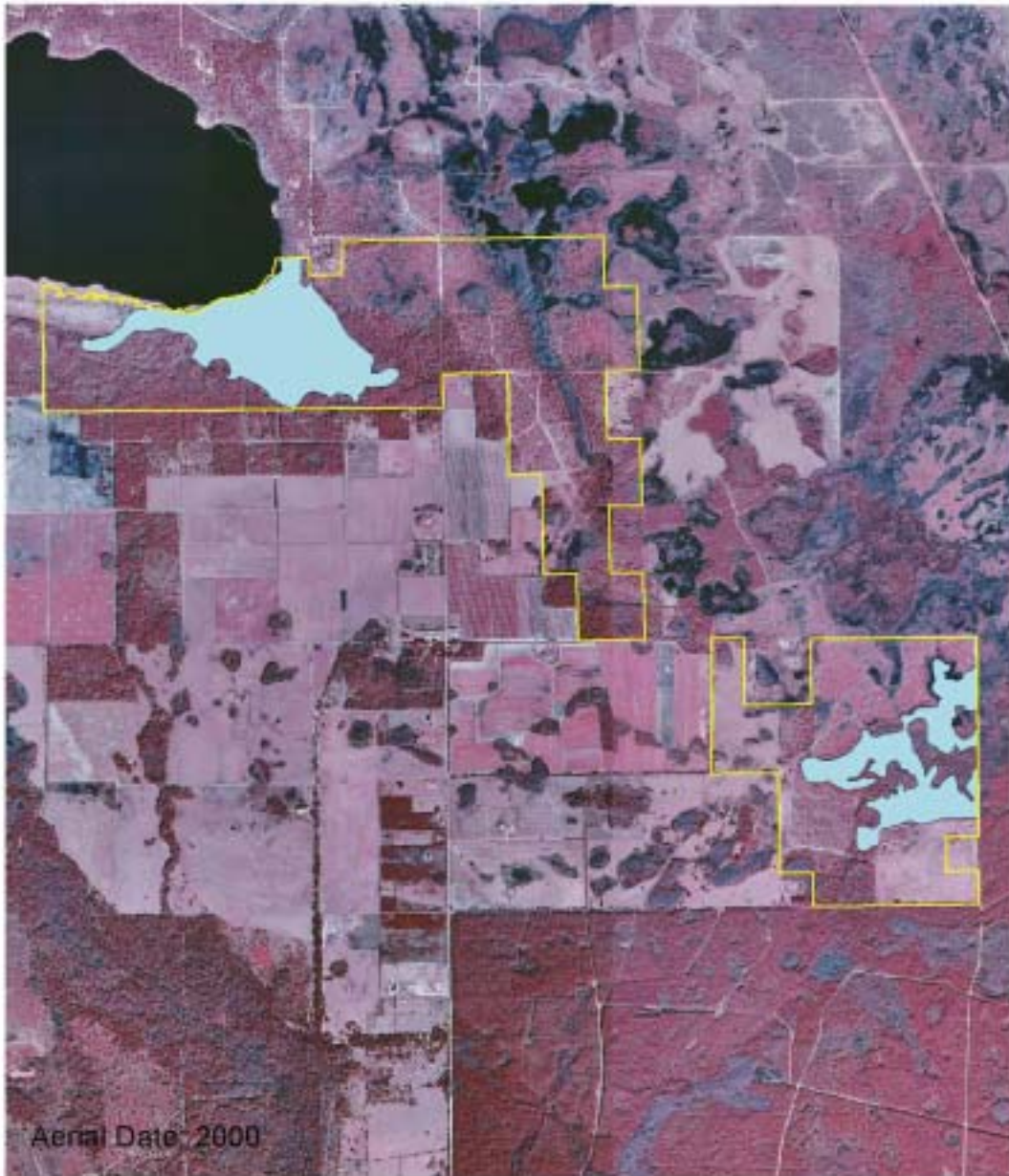
Approximate Acreage

269 acres

Additional Considerations

Examples of this very rare community are found adjacent to the shore of Lake Ashby and within Harris Bay, located in the southeastern portion of the property.

The frequency, length, and severity of the hydroperiod exert a dominant influence on this community. The water level of Lake Ashby may periodically rise several feet, resulting in significant inundation of the Basin Swamp adjacent to the waterbody. In contrast, the hydroperiod of the Basin Swamp represented by Harris Bay may be influenced by the water levels in Spruce Creek Swamp. Because each of the Basin Swamp communities are sited at the periphery of the property and are a components of larger systems extending off-site, the ability to manage the hydroperiods within each community may be limited. As a result, the continued viability of this community will depend, in large part, upon external influences.



Wiregrass Prairie Preserve
Basin Swamp
May 2003

FIGURE 14



Photo 3. Interior view of basin swamp, near to Lake Ashby

WET PRAIRIE

General Description

A treeless plain with a sparse to dense ground cover of grasses and herbs (Figures 15 and Photo 4). This seasonally inundated community is found on low, nearly flat, poorly drained terrain. This community is closely associated and often grades into Wet Flatwoods, Mesic Flatwoods, or Dry Prairie.

This community is found across the property, with the largest example being sited adjacent to the northeastern property boundary of Tract A.

Species present include wiregrass (*Aristida* spp.), St. John's wort (*Hypericum* spp.), yellow-eyed grass (*Xyris* spp.) and various sedges.

Natural Fire Cycle

Typically, the natural fire cycle is from two (2) to four (4) years. The integrity of areas experiencing longer fire intervals may be subject to deterioration through invasion by wax myrtle (*Myrica cerifera*).

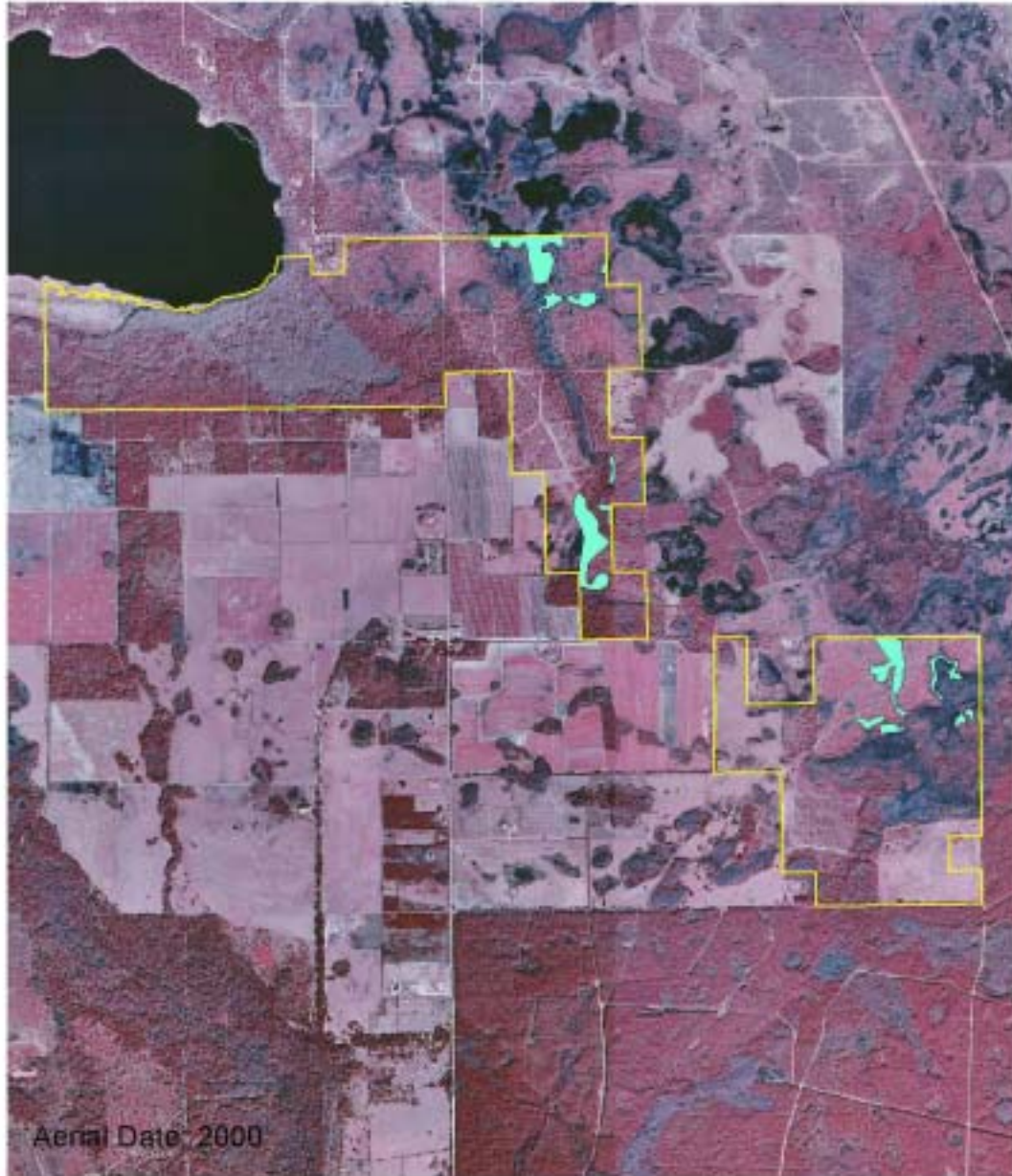
Approximate Acreage

54 acres

Additional Considerations

This community has been designated as "Imperiled" at the State level.

The portion of this community located in the northeastern quadrant of Tract A may be of comparably recent creation. Historical information suggests this area may have previously been a Strand Swamp or Bay Swamp. The conversion of this community may be attributed to one or more intensive wildfires or previous harvesting.



Wiregrass Prairie Preserve
Wet Prairie
May 2003

FIGURE 15



Photo 4. Wet prairie adjacent to northern property boundary of Tract A, east of Pell Road.

STRAND SWAMP

General Description

This community is a shallow, forested, elongated depression. (Figures 16 and Photo 5).

Southern bald-cypress (*Taxodium distichum*) is the dominant tree species present. Slash pine (*Pinus elliottii*) and other species of the adjacent communities are impinging upon portions of the edge of this community. Other species present include wax myrtle (*Myrica cerifera*), Carolina willow (*Salix caroliniana*), buttonbush (*Cephalanthus occidentalis*) and royal fern (*Osmunda regalis*).

Natural Fire Cycle

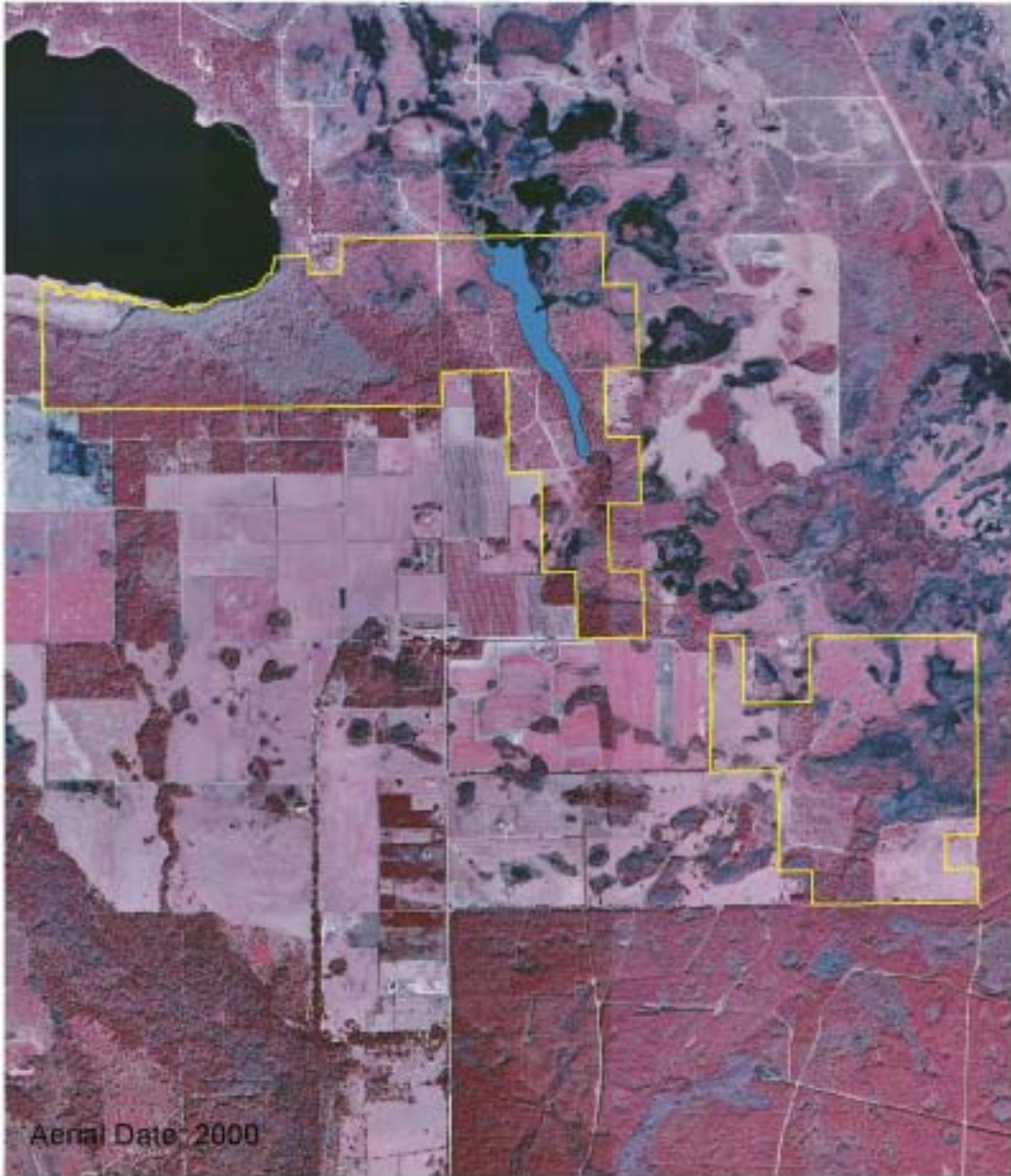
The natural fire cycle of this community is from thirty (30) to two-hundred (200) years. The community is typically tolerant of low intensity surface fires. However, intense, long duration fires can result in destruction of the community.

Approximate Acreage

44 acres

Additional Considerations

The integrity of this community may have been diminished by previous drainage practices. Based upon the amount of wax myrtle (*Myrica cerifera*) present and soil condition, it appears that intensive wildfire may have occurred in at least a portion of this community.



Wiregrass Prairie Preserve
Strand Swamp
May 2003

FIGURE 16



Photo 5. Strand Swamp, east of Pell Rd. within Tract A of Wiregrass Prairie Preserve.

DOME SWAMP

General Description

This widely scattered community is typically present as small, isolated occurrences intermingled among the Mesic Flatwoods and Wet Flatwoods. (Figures 17 and Photo 6).

The overstory within this community is dominated by southern bald-cypress (*Taxodium distichum*). Other species present include red maple (*Acer rubrum*), dahoon holly (*Ilex cassine*), Virginia willow (*Itea virginica*), chain fern (*Woodwardia* sp.) and cinnamon fern (*Osmunda cinnamomea*).

Natural Fire Cycle

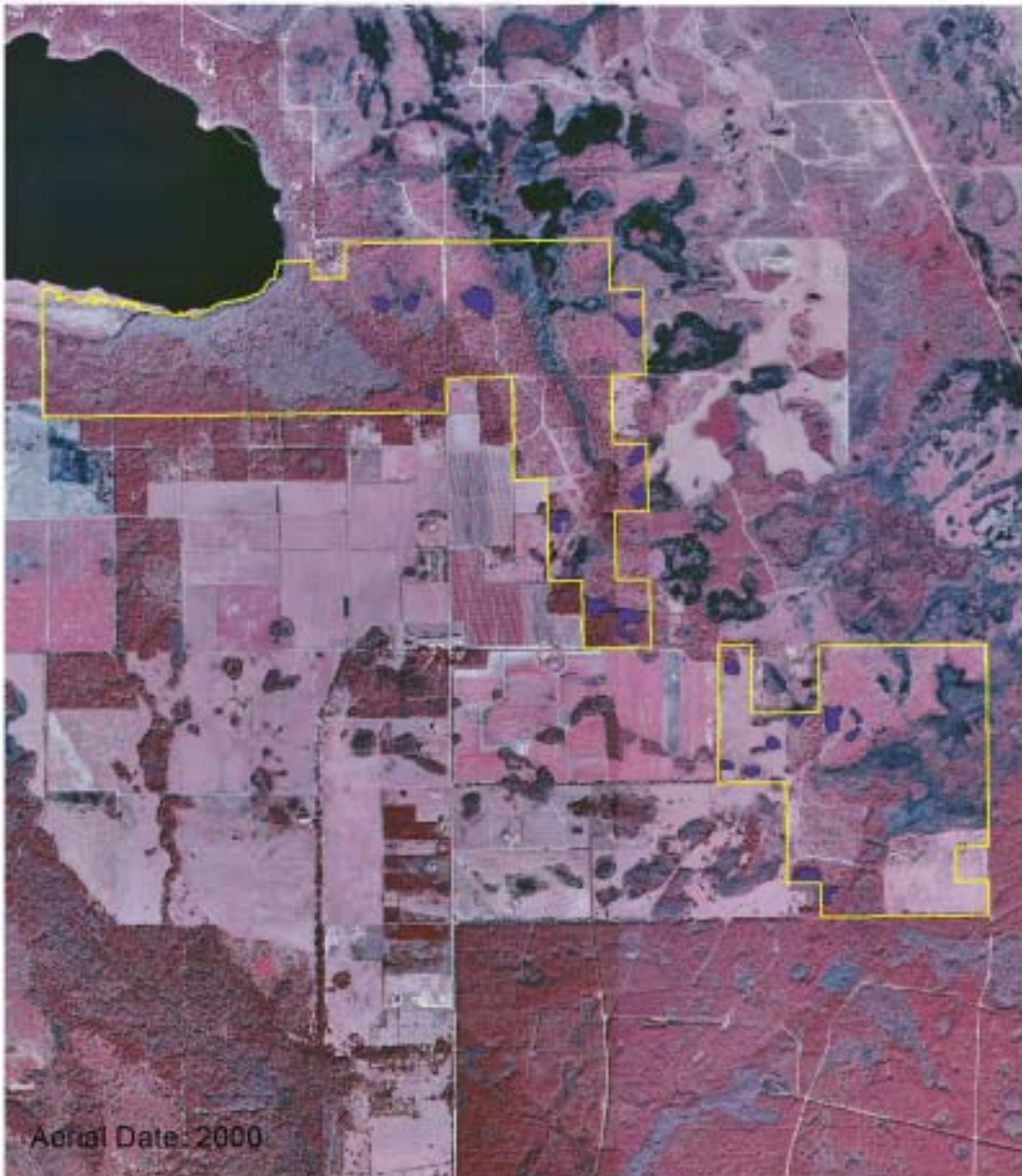
Fires within the surrounding community typically impinge upon the margins of the dome swamp. However, fire occurrence within the interior of the dome swamp is less frequent, typically from thirty (30) to over one hundred (100) years between events.

Approximate Acreage

43 acres

Additional Considerations

Given the pattern of occurrence, consideration may be given to managing this community in a manner consistent with that accorded the adjoining community.



Wiregrass Prairie Preserve
Dome Swamp
May 2003

FIGURE 17



Photo 6. Typical Dome Swamp (background) within dry prairie on Wiregrass Prairie Preserve.

DRY PRAIRIE

General Description

A nearly treeless plain found on nearly level, moderately drained terrain. Many of the plants and animals associated with this community also typify those of Mesic Flatwoods. A major distinction between these closely allied communities is the presence and abundance of a pine overstory. (Figures 18 and Photo 7).

Species present include wiregrass (*Aristida* spp.), saw palmetto (*Serenoa repens*), shiny blueberry (*Vaccinium myrsinites*), and pawpaw (*Asimina* sp.).

Natural Fire Cycle

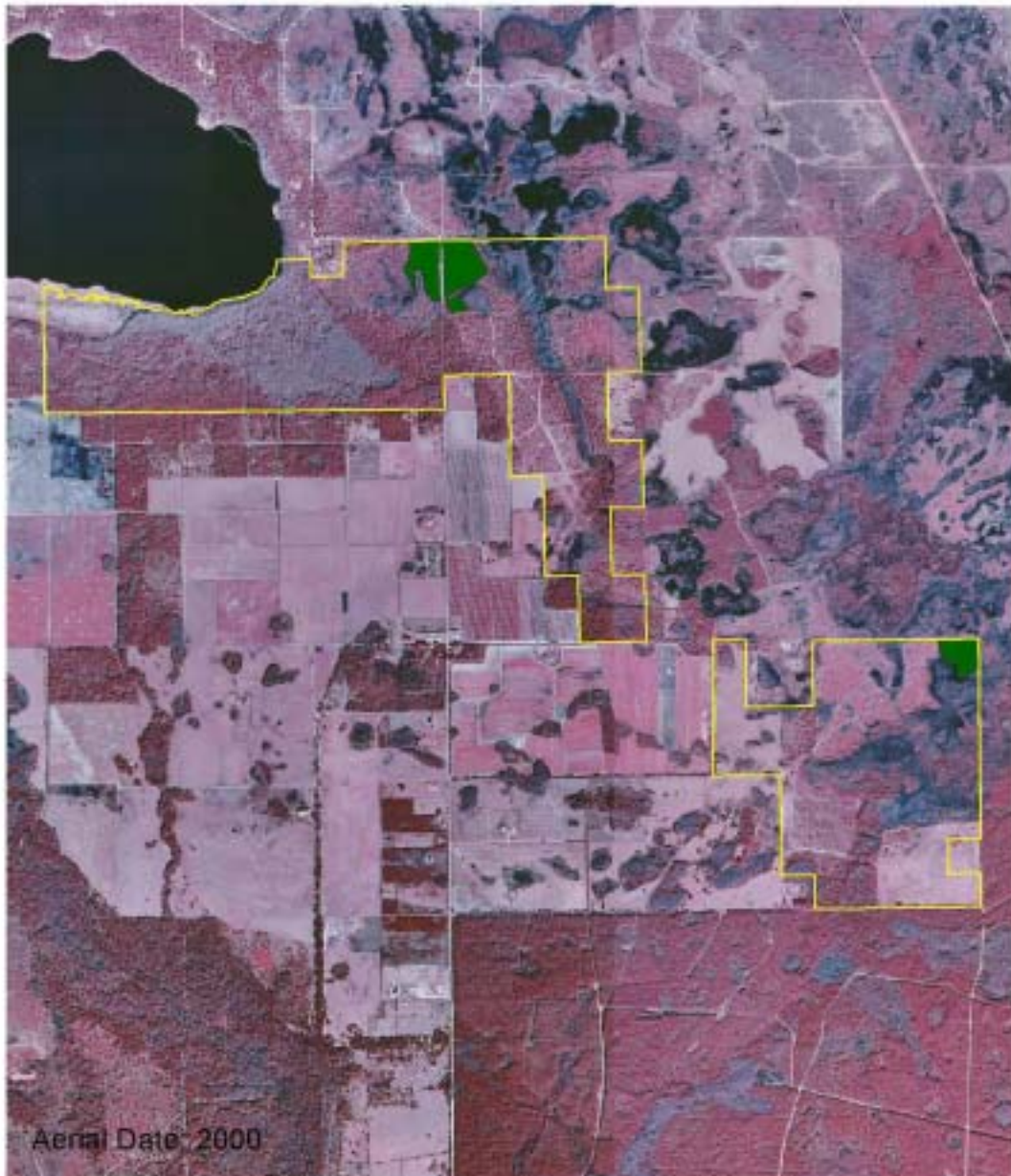
The interval between the occurrence of natural fires within the dry prairie community is very abbreviated, typically from one (1) to four (4) years. This high frequency of fire may serve to suppress the establishment of tree canopy within the community.

Approximate Acreage

42 acres

Additional Considerations

This community has been designated as "Imperiled", at both the State and Global levels.



Aerial Date: 2000

Wiregrass Prairie Preserve
Dry Prairie
May 2003

FIGURE 18



Photo 7. Typical Dry Prairie on Wiregrass Prairie Preserve.

BASIN MARSH

General Description

This is an herbaceous or scrubby wetland that is often associated with Wet Prairie and Lake communities. (Figures 19 and Photo 8).

This community is found along the immediate shoreline of Lake Ashby. Representative species present include; Alligatorweed (*Alternanthera philoxeroides*), Parrot feather (*Myriophyllum aquaticum*), Taro (*Colocasia esculenta.*), Common water hyacinth (*Eichhornia crassipes*), Carolina willow (*Salix caroliniana*), and Cattail (*Typha spp.*).

Natural Fire Cycle

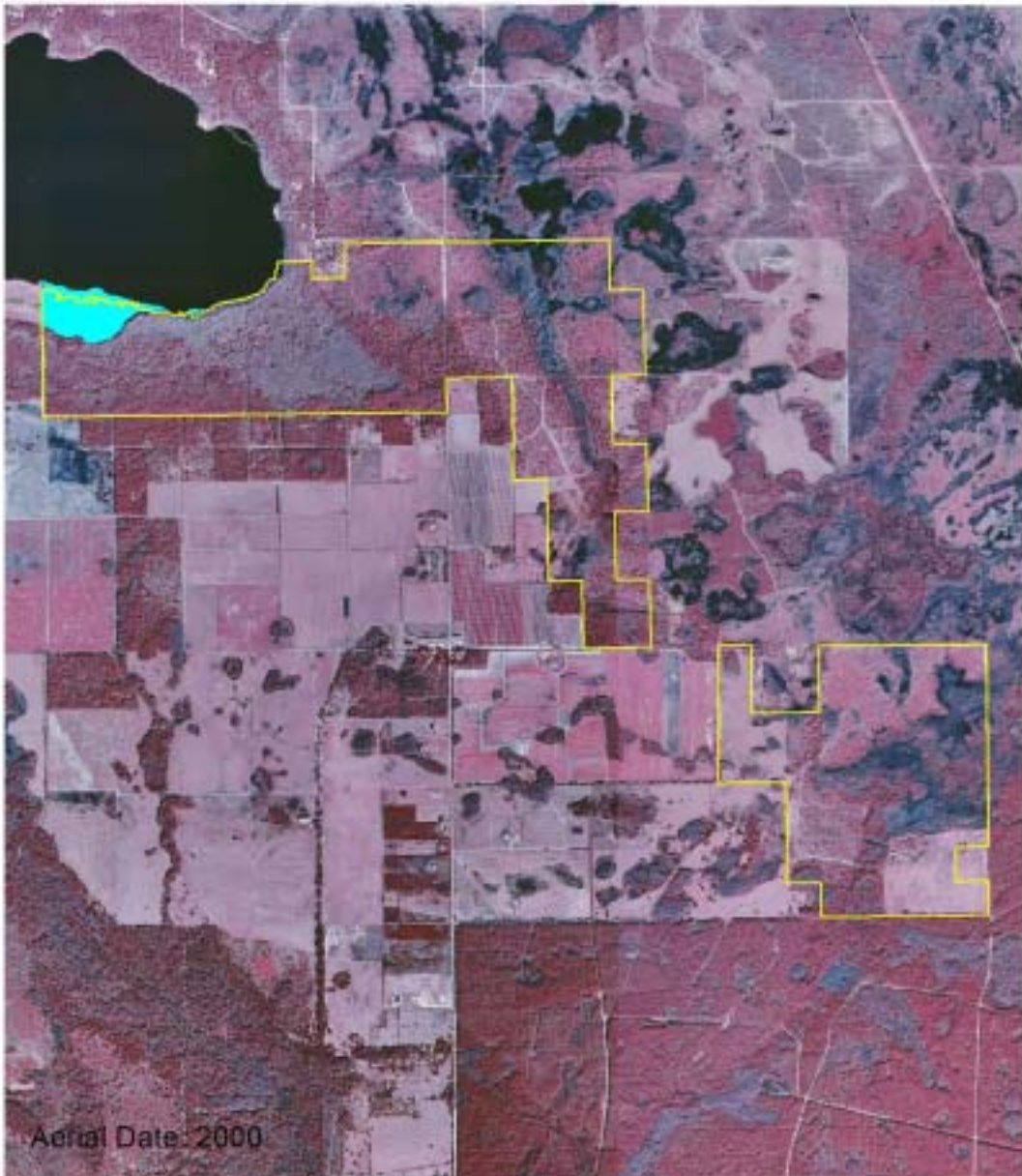
Fires naturally occur within this community from one (1) to ten (10) years apart. A higher frequency would result in a community dominated by herbaceous species, whereas, a longer interval between fires typically results in a greater occurrence of shrubby species.

Approximate Acreage

31 acres

Additional Considerations

The area located at the shoreline of Lake Ashby is likely permanently flooded. Non-native species such as Alligatorweed, Parrot feather, Taro, and Common water hyacinth are found in this area. The Exotic Pest Plant Council (EEPC) classifies the hyacinth as an invasive species that is disrupting native plant communities. Alligatorweed has been classified by the EEPC as a species that has shown a potential to disrupt native communities. Although a native species, cattail is extremely invasive. The Florida Fish and Wildlife Conservation Commission has begun a program of cattail eradication for Lake Ashby. As a result, the cattails in this area are typically dead or in declining condition. As part of this program, the Commission will be replanting the affected areas with other native species. The County's Division of Mosquito Control, in cooperation with the Florida Department of Environmental Protection, is implementing a program for the control of hyacinth within Lake Ashby.



Wiregrass Prairie Preserve
Basin Marsh
May 2003

FIGURE 19



Photo 8. Small basin marsh area adjacent to Lake Ashby and basin swamp.

SWAMP LAKE

General Description

Lake Ashby, a permanent open waterbody of moderate depth, is representative of this lacustrine community. The seasonal water level within the lake varies by several feet, inundating the adjacent communities of Basin Marsh and Basin Swamp. (Photo 9).

Approximate Acreage

888 acres. The property includes approximately one mile of shoreline of this waterbody.

Additional Considerations

The water quality within the lake can be significantly influenced by use(s) of adjoining properties. Water quality within Lake Ashby is presently good.

An extensive area of cattail (*Typha latifolia*) is located adjacent to the southern shoreline of the lake. Although a native species, cattail is extremely invasive. This area of cattail vegetation not only parallels the shoreline of this property, but also extends to adjacent areas.



Photo 9. Lake Ashby shoreline and littoral zone.

Listed Species of Plants

One or more species of listed plants may occur on the property. For example, Rugel's pawpaw (*Deeringothamnus rugelii*) could be expected on the property. Occurrences of this endangered species, which is endemic to Volusia County, have been documented on adjacent properties. The soils, current uses, and past events characterizing portions of the property are typically that associated with the habitat for this species.

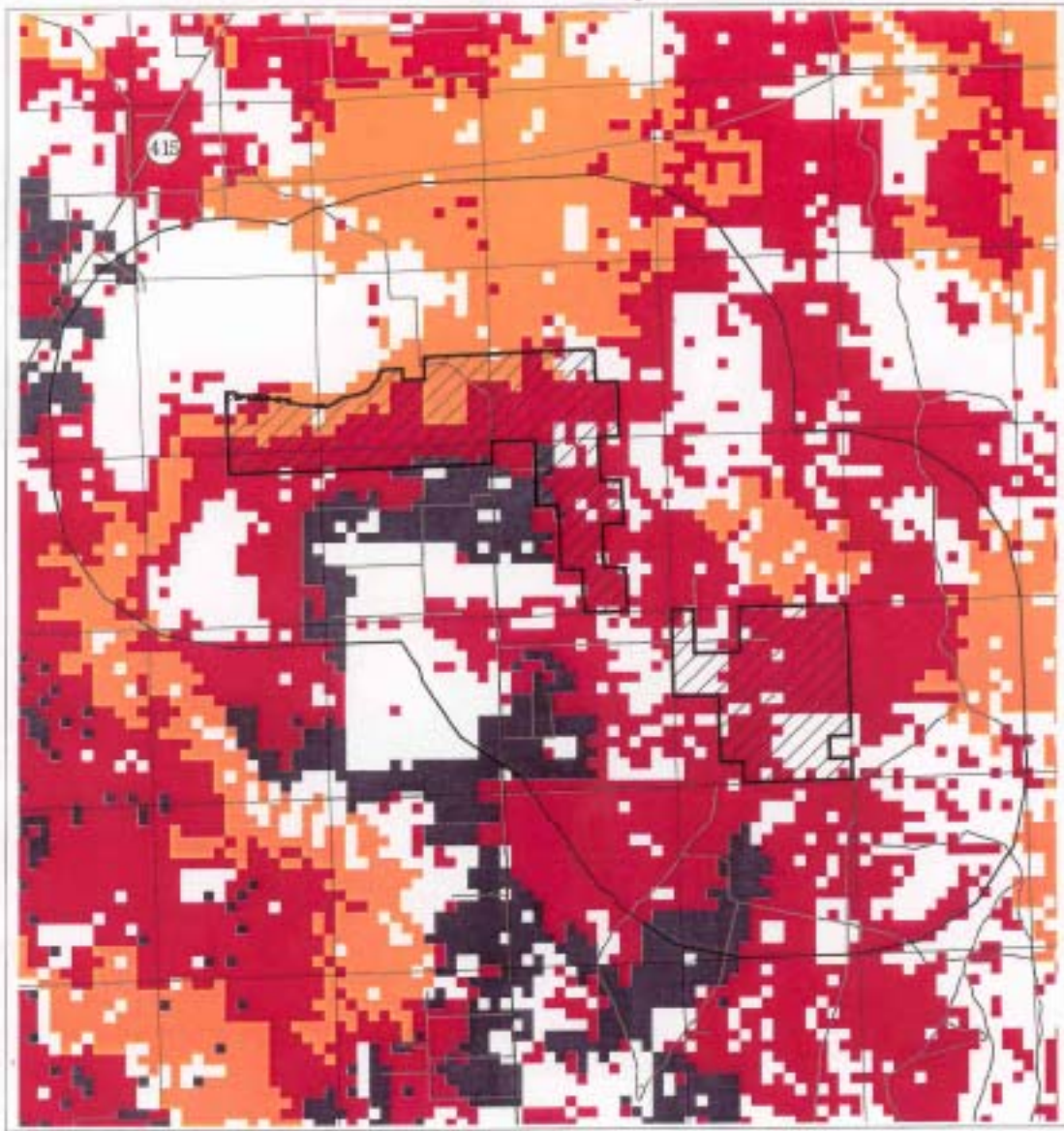
Wildlife

This property is characterized by a diversity of high quality wildlife habitat, both upland and wetland. Some examples of wildlife which may be found on the property include; wild turkey (*Meleagris gallopavo*), white-tailed deer (*Odocoileus virginianus*), bobcat (*Lynx rufus*), raccoon (*Procyon lotor*), box turtle (*Terrapene carolina*), snapping turtle (*Chelydra serpentina*), cottontail rabbit (*Sylvilagus floridanus*), oak toad (*Bufo quercicus*), southern black racer (*Coluber constrictor priapus*), eastern diamondback rattlesnake (*Crotalus adamanteus*), pygmy rattlesnake (*Sistrurus miliarius*), northern bobwhite (*Colinus virginianus*), Florida burrowing owl (*Athene cunicularia floridana*), and barred owl (*Strix varia*). Sherman's fox squirrel (*Sciurus niger shermani*) and gopher tortoise (*Gopherus polyphemus*), both listed species, have been observed on the property.

The potential richness of this property is indicated by the presence of several "biodiversity hotspots", as delineated by the Florida Fish and Wildlife Conservation Commission (Figure 20). Information provided by the Commission also reveals the presence of several "priority wetlands" on the property (Figure 21). These wetlands provide important habitat for several listed species including; American alligator (*Alligator mississippiensis*), bald eagle (*Haliaeetus leucocephalus*), Florida sandhill crane (*Grus canadensis pratensis*), and Florida black bear (*Ursus americanus floridanus*). Records of both the Commission and the Florida Natural Areas Inventory indicate the probable presence of a bald eagle nest adjacent to the property (Figure 22).

Lake Ashby Parcels Volusia County

Biodiversity Hot Spot



Legend

- 3-4 species
- 5-6 species
- 7+ species



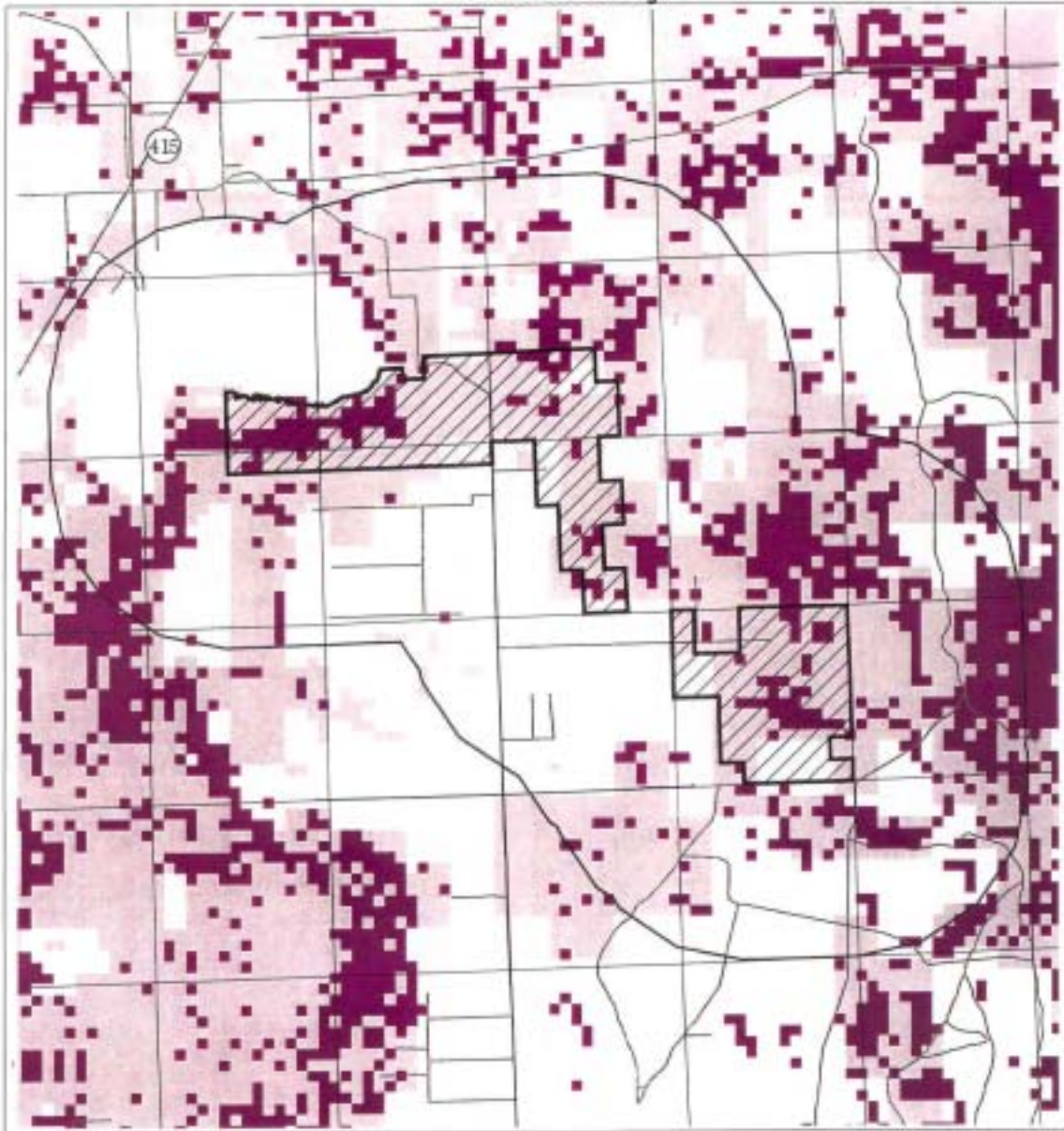
0.5 0 0.5 1 Miles

FIGURE 20

February 25, 2003

Lake Ashby Parcels Volusia County

Priority Wetlands



Legend

	1-3 Upland Species
	4-6 Upland Species
	1-3 Wetland Species
	4-6 Wetland Species
	7-9 Wetland Species
	10-11 Wetland Species



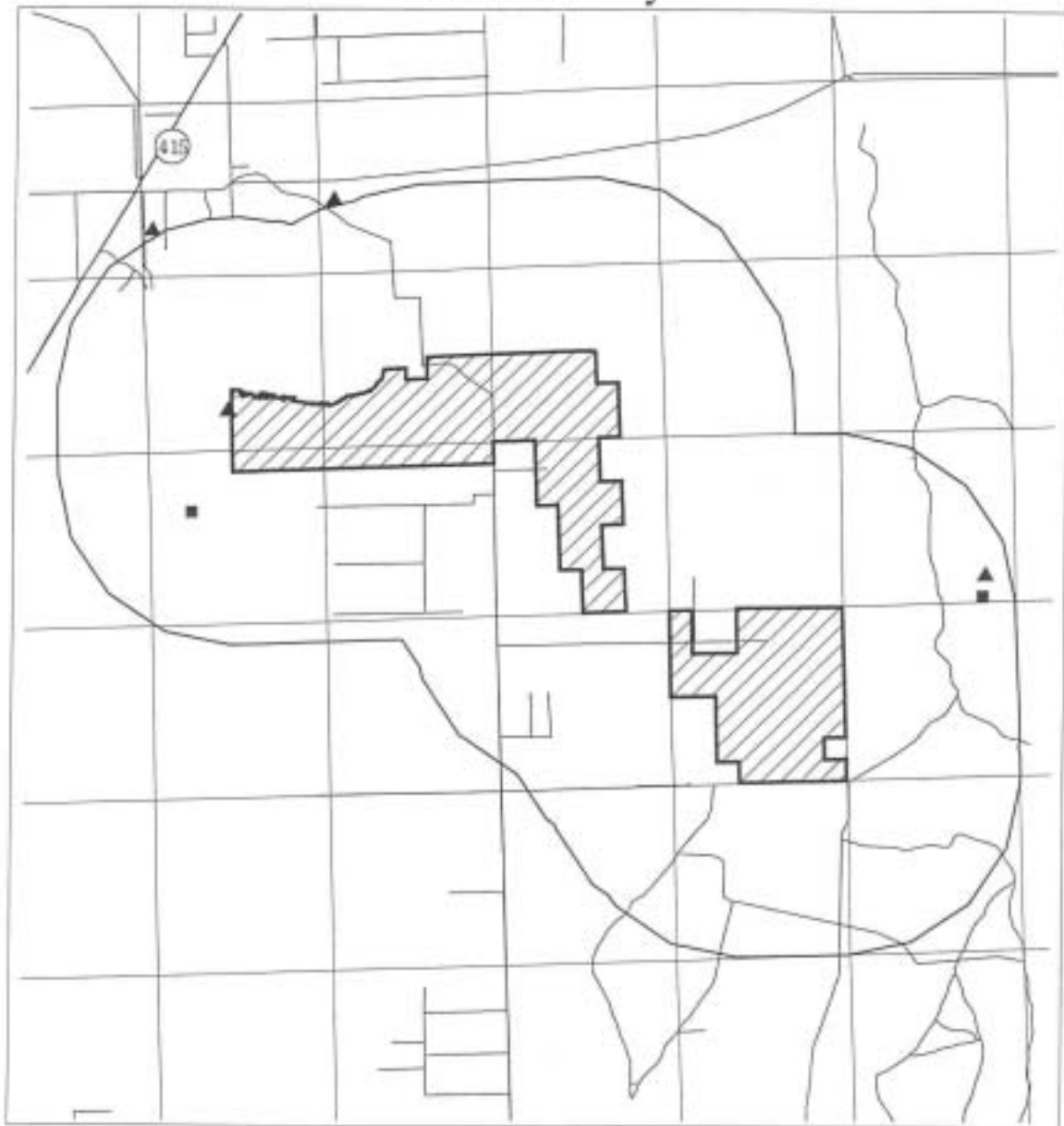
0.5 0 0.5 1 Miles

FIGURE 21

February 25, 2003

Lake Ashby Parcels Volusia County

Listed Species



Legend

-  Project Area
-  Roads
-  Occurrence Records (FNAI)
-  Eagle Nest



0.5 0 0.5 1 Miles

FIGURE 22

February 25, 2003

Cultural Resources

Neither County records nor the Florida Master Site File indicate the presence of any archaeological or cultural sites on the property.

It appears that the basin swamp between the uplands on the property and the open water of Lake Ashby diminishes the likelihood of any undiscovered archaeological sites on the property. Additionally, Tract B of the property is located in an area of low probability of archaeological site occurrence.

County Ordinance provides the procedures for the protection of any archaeological or cultural sites that may be subsequently discovered on the property.

LAND MANAGEMENT GOALS

Implement methods of management that protect and enhance ecosystem integrity, function, and biodiversity.

Recognize the ecological role and importance of fire. Incorporate prescribed burning, where appropriate, as part of the management regimen for County conservation lands. To the extent possible, fire maintained native ecosystems shall be burned at the appropriate interval, intensity and season to maintain these ecosystems. The timing of prescribed burns may be adjusted for fuel reduction, site safety, or other issues. Mechanical methods may be employed, where appropriate, in lieu of the use of fire.

Forest management techniques should be used to promote conditions favoring the natural, historical, species composition and structure. However, the County's stewardship of conservation lands may include the use of even-aged forest management practices.

Substantially encourage forest management practices that complement habitat enhancement.

Provide appropriate strategies for the management and enhancement of wildlife habitat and populations for both listed and non-listed species.

Protect significant water resources such as streams, creeks, natural drainageways, and floodplains.

Restoration and Enhancement

To the extent reasonably practical, altered lands should be returned, over the years, to natural habitats compatible with the existing conditions of the area, except for historical or other significant cultural features.

Eliminate or reduce populations of invasive and exotic or nuisance species so as to promote the restoration of these areas to the previous natural condition or to a natural ecosystem that is best suited to the existing conditions of the area.

Historical, Cultural, and Archaeological

Promote the protection of identified cultural, historical, and archaeological resources.

Recreation, Public access, and Education

Provide appropriate public trails and resource based recreational opportunities such as, but not limited to, backcountry camping, nature observation, hunting and fishing.

Uses shall be compatible with a site's natural resources and overall management regimen.

Provide opportunities for educational and research use of managed lands. These activities may include providing structured, interdisciplinary environmental education programs to the public and the preparation and dissemination of informative and interpretive materials.

Management and Land Use Coordination

Where applicable, maintain and promote coordination of management activities with appropriate public agencies, including County and other governmental agencies.

Consider adjoining land uses and infrastructure (existing and proposed) as part of the management and use of conservation lands.

Operational and Administrative

Identify and implement compatible sources of monetary support, such as, but not limited to, a share of the Volusia Forever funds, concessions, sale of forest products, user and mitigation fees, agricultural and other leases, and other revenue enhancements for the long-term management of the County's conservation lands.

Prepare specific management plans for County managed and, as appropriate, jointly managed conservation areas. Each management plan shall be periodically reviewed and, if needed, revised to acknowledge changing conditions, effects of implemented management practices, changes in budgetary or operational situations, or other issues or concerns.

RESOURCE PROTECTION AND MANAGEMENT

Management Issues and Strategies

Security

The property has been surveyed and the perimeter has been posted and marked. However, internal property lines (e.g., where the property is bisected by Pell Road) are generally not clearly posted or marked.

Historically, individuals have apparently availed themselves of the comparably unfettered access to that portion of Tract A located to the east and west of Pell Road, north of Lopez Road. This use may have included hunting. This activity may have diminished to an unknown extent since the existing cattle operator began oversight of this portion of the property. No problems of vandalism or malicious acts have been noted as occurring on the portions of the property that have been activity managed for cattle operations.

A significant portion of the boundary of Tract A, south of Lopez Road, has been fenced. This fencing has been installed primarily in conjunction with a pre-existing grazing activity. However, a breach in the fencing presently exists along the western boundary of this portion of Tract A. This gap permits cattle to freely cross from the adjoining property onto Tract A. The balance of the perimeter of Tract A is largely unfenced. With exceptions of the interior of the wetland areas and a portion of the improved pasture located in the southeastern corner, fencing is located along the perimeter of Tract B. A portion of this fencing, extending south from the eastern terminus of Rudman Road, appears to encroach upon the property. The improved pasture located in the extreme southeastern corner of this tract encompasses approximately ten (10) acres that is not owned by the County and District. The boundary between this private land and the County and District's property is not presently fenced. The existing cattle operator located on Tract B presently holds a lease with this adjoining property owner.

Gates have been installed, again primarily in conjunction with existing grazing activity, at several locations on the property. However, other points of vehicular access are not presently controlled. These potential entries primarily extend onto Tract A from Pell Road.

An additional benefit that may be derived from a cattle and/or hunting leasee would be the maintenance of a regular presence on the property.

Strategies

- Ensure that gates are placed at appropriate entrance points to control use of, and guide access to the property.
- Ensure that boundaries are appropriately fenced to control use of, and guide access to the property.
- Coordinate with the Volusia County Sheriff's Office for patrolling of the property, as appropriate.
- Ensure that County staff conducts site visits, as appropriate.

Restoration

This property will be managed in such a manner as to promote conditions favoring the natural, historical, species composition and structure. As evidenced by historical aerial photographs, the type of vegetative cover that characterized the property approximately 60 years ago is comparable to the present day. However, notable differences exist in the density and extent of the coverage of the communities. These differences may be attributed to changes in the fire regime and certain cultural/management activities, including the changes in natural drainage patterns brought about by the installation of ditches and agricultural pursuits, such as grazing of cattle. The extent of vegetative coverage of Tract A closely corresponds to that of earlier times. However, the present area of canopy coverage within this tract exceeds that of historical conditions. The present canopy of Tract B, like Tract A, appears to generally be greater than that of earlier times. Additionally, because large areas of Tract B have been converted to improved pasture, the present area of natural vegetative coverage within this tract is less than that of earlier times.

Strategies

- Develop and implement a detailed restoration plan for the property.
- Consider reverting existing pasture areas to natural communities upon cessation of cattle grazing operations.

Fire Management

Natural communities, flatwoods and prairies, dependent upon regularly occurring fires, dominate the property. The natural frequency of fire within these communities range from approximately every one (1) to eight (8) years. The natural interval of fire within the other communities of the property is significantly greater, in some cases over 100 years.

The property has been extensively burned during previous wildfire events, notably the Crane Swamp fire of the early 1980's and the countywide firestorm of 1998. Both of these events, Crane Swamp and the 1998 firestorm, were exceptionally intense and resulted in significant alteration of the coverage and types of natural communities found on the property.

A program of prescribed burning is currently being implemented over a portion of the property. The existing cattle operator of Tract B has identified several burn units, exclusive of the improved pasture and basin swamp areas. Each of these units is burned, typically in the winter, every other year. However, the burns conducted in 2002 were undertaken in the early summer. The fire lines within this tract are generally disked twice yearly. Prescribed burning of Tract A has not occurred.

It is intended that this property be restored and primarily managed using a program of prescribed burning. The rural and agricultural character of the surrounding area should not unnecessarily constrain the judicious use of fire. However, where and when necessary, mechanical maintenance (e.g., mowing, roller chopping) and grazing management will be used in lieu of prescribed burning.

The occurrence of wildfires should, to the extent possible, be considered when drafting the prescribed burning program for the property. If appropriate, certain natural wildfires (i.e, that which does not present a threat to the safety or health of the public, does not

endanger other properties or structures, or is not destructive of the resources) may be considered as compatible with the burning program's prescription for the property.

Strategies

- Develop and implement a comprehensive program of prescribed burning for site. This program may be included in the restoration plan to be developed for the property.

Forest Management

Flatwoods (mesic and wet) are among the natural communities found on the property. Stewardship of the property by the prior owners has not apparently included the use of active or intensive silvicultural practices. Subsequently, the present structure of the flatwood communities is primarily the result of natural processes and the occasional use of fire. Accordingly, the density, age distribution, and composition of these communities vary across the property. The communities of wet and dry prairies are also characterized by a sparse overstory of pine.

Maintenance of the health and viability of these communities will require periodic prescribed fire. Other innovative harvesting techniques, including, but not limited to, selective thinning may be utilized to promote and facilitate regeneration of the preferred tree species. Areas of low density (e.g., the prairie communities) will be primarily managed to encourage natural regeneration. However, regeneration, irrespective of a natural community, may be accomplished through both natural and/or artificial means.

The remaining forested communities on the property (i.e., dome swamp, basin swamp) will be passively managed. Minimal, infrequent silvicultural activities will be undertaken in these communities. It is anticipated that these low intensity activities will typically be conducted in response to events that pose a danger to the long-term health of the community.

Trees removed as part of a harvesting operation will be offered and sold on the open market.

A goal of the forest management practices will be to maintain the density of pines within a community at a level consistent with known historic conditions. The range of basal area applicable to each community will be reflected in the comprehensive forest management plan to be developed for the property.

Strategies

- Develop and implement a comprehensive forest management program addressing harvesting, regeneration, and other appropriate silvicultural activities for site. This program may be included in the restoration plan to be developed for the property.

Water Resources

There are no waterbodies or natural watercourses located on the property. However, the property includes approximately one mile of the shoreline of Lake Ashby. The water quality of this large waterbody is good. With the possible exceptions of passive

recreational uses (e.g., trails, boat and canoe landing), the portion of the property adjoining this waterbody will not be disturbed.

Several drainage ditches, of varying capacities, traverse the property. It appears that the waters transported by one or more of the ditches may exit the property. A destination of these off-site waters may include Lake Ashby. The ditches and drainage patterns of the property will be evaluated and mitigated, if necessary, as part of a subsequent restoration study.

This property is also within a "Priority Water Resource Caution Area" of the St. Johns River Water Management District. Based upon preliminary investigations conducted by the District, potential use of the property may, at some future date, include establishment of a new potable water wellfield.

Strategies

- Follow appropriate Silvicultural Best Management Practices as part of management and use of site.
- Evaluate and correct, if necessary, the existing internal ditch system as part of the forthcoming restoration plan for the site.
- To the extent possible, parking areas are to be designed and constructed using pervious materials.
- Participate, as appropriate, with the St. Johns River Water Management District and others during any future studies of the feasibility of using this property as a potential site for a potable water wellfield. Participation in a feasibility study, or otherwise considering the potential for use of all or part of the property as a potable water wellfield, does not imply support or agreement by the County of the use of all or part of the property for this purpose.

Listed Species

This property is characterized by a diversity of high quality wildlife habitat, both upland and wetland. Additionally, one or more species of listed plants may occur on the property.

Detailed surveys of the wildlife and vegetative resources of the property have not been undertaken. Completion and evaluation of these inventories are essential tasks in identifying and implementing appropriate long-term management practices to conserve any listed species located on the property.

Strategies

- Conduct detailed surveys of the plant and wildlife resources of the property.
- Establish and periodically update listings of plant and wildlife species found on the property.
- Develop and adapt, as appropriate, management practices necessary to protect listed species (plant and wildlife) found on the property.

Exotic and Nuisance Species of Plant and Wildlife

The resource value of the property has not been significantly diminished by the presence of exotic or nuisance species. Outside of the Basin Marsh community, exotic plant species are remarkably absent from the property. Where present, these species are generally isolated occurrences and are typically found on previously disturbed sites or are associated with an existing land use. For example, instances of Camphortree (*Cinnamomum camphora*) and Caesarweed (*Urena lobata*) are found along an existing roadbed in the Basin Swamp community adjacent to Lake Ashby. The Florida Pest Plant Council classifies both of these exotic species as invasive. Occurrences of tropical soda apple (*Solanum viarum*), strawberry guava (*Psidium cattleianum*), Japanese climbing fern (*Lygodium japonicum*) and Brazilian pepper (*Schinus terebinthifolius*) have been found on the property.

An extensive area of cattail (*Typha latifolia*) is located adjacent to the southern shoreline of Lake Ashby. Although a native species, cattail is extremely invasive. The Florida Fish and Wildlife Conservation Commission has begun a program of cattail eradication for Lake Ashby. As a result the cattails in this area are typically dead or in declining condition. As part of this program, the Commission will be replanting the affected areas with other native species. The County's Division of Mosquito Control, in cooperation with the Florida Department of Environmental Protection, is implementing a program for the control of hyacinth within Lake Ashby.

Feral hogs (*Sus scrofa*) and golden apple snail (*Pomacea canaliculata*) have been identified on site. Other nuisance and non-native species of wildlife have not been noted on the property.

Strategies

- Support the cattail and hyacinth eradication efforts of the State and County.
- Use prescribed burning or other appropriate means (mechanical or chemical) to control existing occurrences of exotic and invasive species.
- Include re-vegetating areas with appropriate native species as part of the control program.
- Establish programs for monitoring and control, as necessary, of exotic and nuisance species (plant and animal) on the property. These programs may be included in the restoration plan to be developed for the property.

Imperiled Natural Communities

A couple of natural communities which have been identified as "imperiled", dry prairie and wet prairie, are found on the property. Maintenance of the viability of these rare communities is an essential concern to be addressed as part of the management of this site.

Strategies

- Ensure that management practices support and maintain the integrity and viability of imperiled communities on the property.

Cultural Resources

Neither County records nor the Florida Master Site File indicate the presence of any archaeological or cultural sites on the property. Additionally, the likelihood of any undiscovered sites being located on the property is low.

Strategies

- If a site is discovered, conduct a survey for other archaeological or cultural resources that may occur in the vicinity or, as appropriate, elsewhere on the property.
- As part of signage placed on the property, include provisions stating that all archaeological and cultural sites are protected and are not to be disturbed or removed.
- Should archaeological or cultural sites be subsequently discovered on the property, take action to protect and/or reduce disturbance consistent with County Ordinance and other applicable State or Federal regulations.

LAND USE MANAGEMENT

Management Issues and Strategies

Public Access

As noted elsewhere in this Plan, vehicular access to the property is a combination of public and private routes of limited width and condition. The intensity and quantity of uses proposed for the property are compatible with these constraints.

Strategies

- Provide reasonable and controlled access to the public.
- Provide appropriate locales for parking and other uses to facilitate public access to the property. To the extent possible, parking areas are to be located in areas requiring minimal site alteration.

Public Recreation

The property's diversity and quality of resources present challenging opportunities for recreational development. The relationship and compatibility of recreational uses with one another, the other uses of the property, and that of adjoining properties are considerations when evaluating and designing recreational opportunities.

A mixture of resource-based recreational opportunities will be provided on the property. The conceptual layout of these uses is presented by Figures 24 and 25. These uses, which are intended to provide quality recreational experiences for the user, include;

multiple use trails – a network of primitive trails incorporating a variety of habitats. These trails will typically be constructed at grade, however, limited use of boardwalk structures may be necessary. It is anticipated that hikers will be the primary users of the trails, however, other users such as bicyclists and horseback riders will be accommodated.

wilderness camping – sites for individual and group camping activities. The campsite for individual use may include a fire ring, picnic table, and designated tent site. Individual campsites to be located adjacent to Lake Ashby may include the construction of platforms and other elevated structures. Group camping may include a communal fire ring, picnic area (with or without shelter) and designated camping sites.

wildlife observation – platforms and viewing areas, accessible by trails, will be established at appropriate locales, such as at the shore of Lake Ashby and interface of communities, across the property.

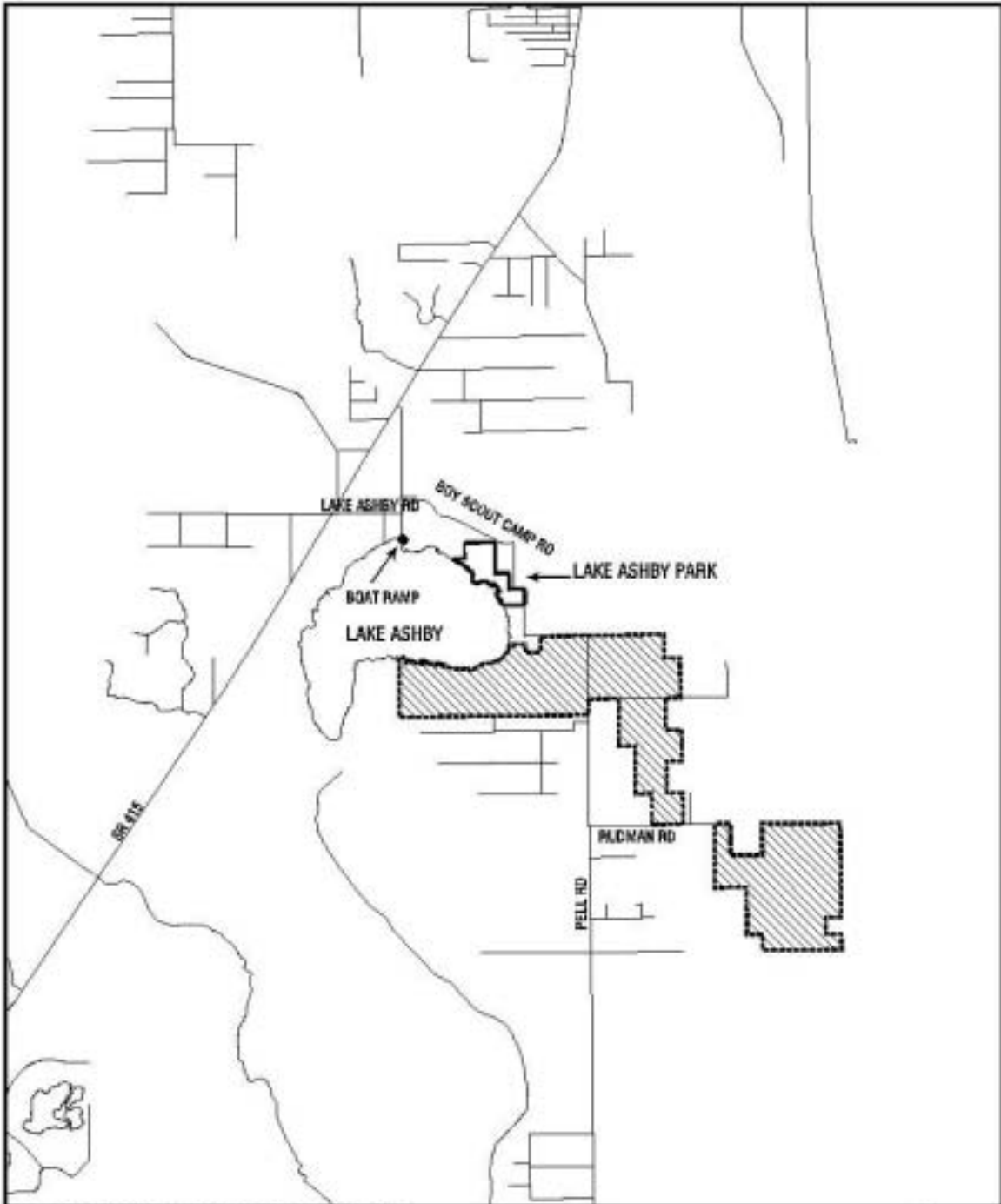
boat landing – a small dock to be located on Lake Ashby at the site of an abandoned structure will provide an alternative means of access to the site for existing watercraft users of the lake. No facilities for the launching of watercraft will be provided at this locale.

These uses will be supported by appropriate placement of off-street parking areas.

Cattle grazing and limited public hunting are two additional uses that may be considered for the property. Ensuring compatibility between these and recreational uses may be particularly challenging. In order to minimize potential conflicts between uses, the conceptual recreation plan for Tract B (Figure 25) preliminarily identifies certain areas of the property for exclusive use by cattle grazing and recreational uses.

Strategies

- Construct facilities in phases. Determinants of phasing will include, but may not be limited to, public demand, compatibility with management practices, and availability of supporting (financial and personnel) resources.
- Monitor public demand and use patterns. Relocate, remove, or add facilities, as may be appropriate.
- Given environmental and access considerations, there will be no parking provided on the property adjacent to the proposed boat landing. Rather, this facility is intended to serve as a destination point for visitors from the County's adjacent park sites (Lake Ashby Park and Lake Ashby boat ramp).
- Trails and camping areas are to be sited in areas of minimal resource impact. To the maximum extent possible, roads, fire lines, and other similarly altered features will be incorporated into the trails system.
- Design and place recreational facilities in a manner that promotes compatibility with other uses and natural resources of property.
- Ensure that any potential issues of compatibility between the prospective cattle and hunting use(s) of the property with recreational uses are satisfactorily addressed during negotiation of a formal agreement or lease for these prospective uses.
- Coordinate access to the trails network and other recreational uses of the property with adjacent County parks.
- Coordinate, as may be appropriate, the design and construction of trails so as to complement efforts to establish a comprehensive, countywide, network of recreational trails.

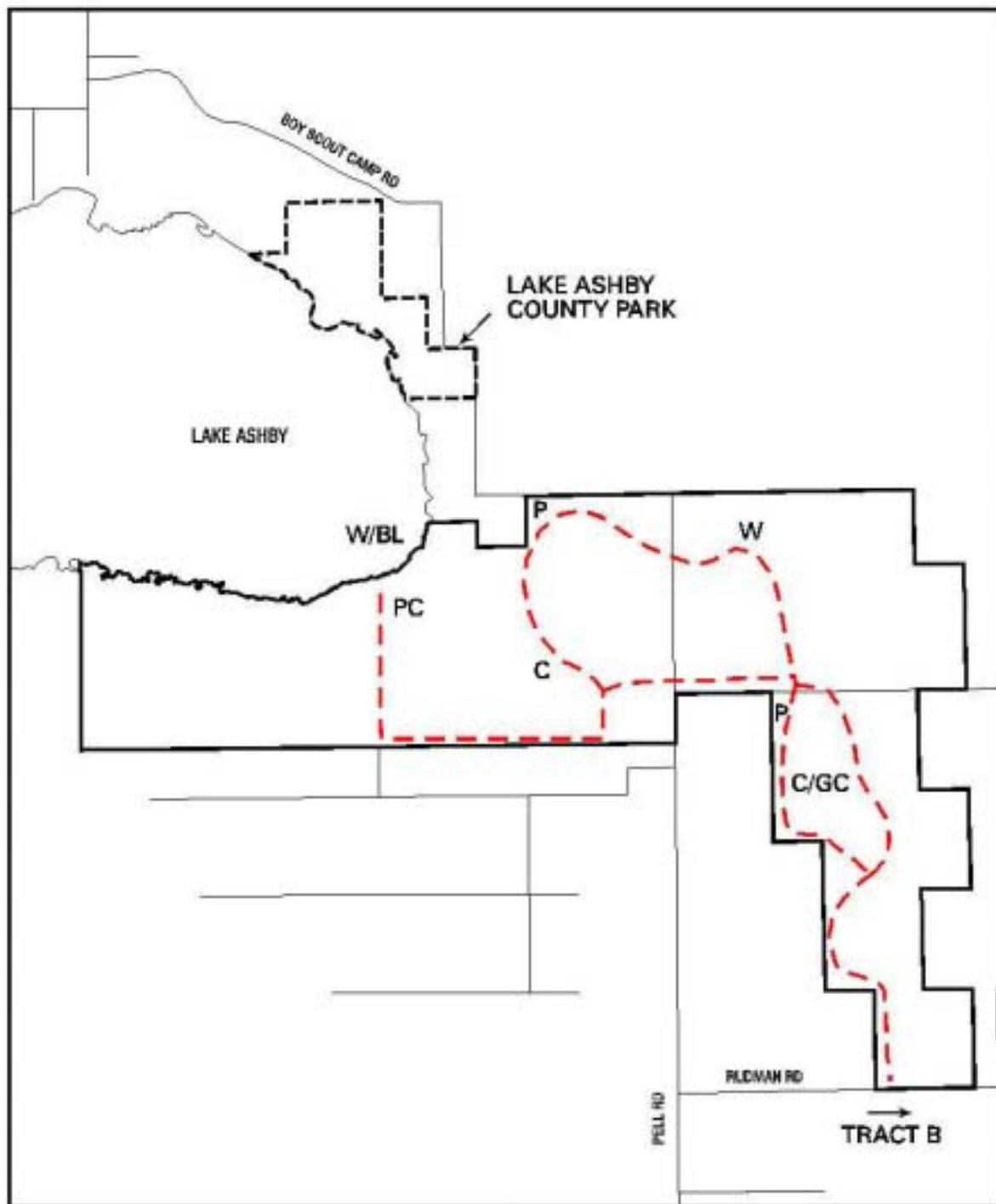


ADJACENT PUBLIC LANDS

Prepared by: Volusia County Growth and Resource Management



FIGURE 23



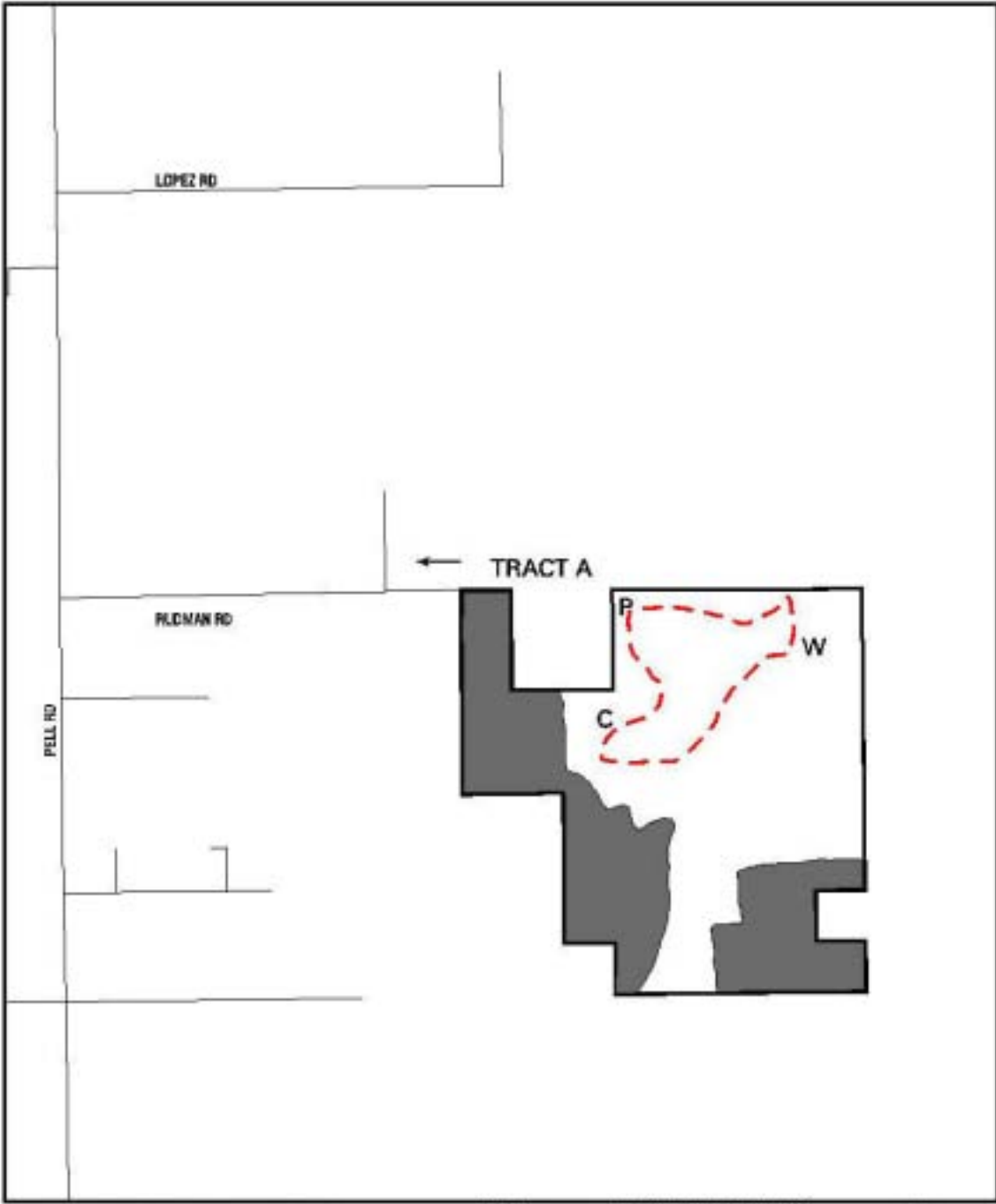
**CONCEPTUAL RECREATION PLAN
TRACT A**

Prepared by: Volusia County Growth and Resorts Management

- TRAIL
- GC-GROUP CAMPING (PRIMITIVE)
- BL-BOAT LANDING
- C-PRIMITIVE CAMPING
- W-WILDLIFE OBSERVATION
- P-PARKING
- PC-PLATFORM CAMPING (PRIMITIVE)



FIGURE 24



**CONCEPTUAL RECREATION AND
LAND USE PLAN - TRACT B**

Prepared by: Volusia County Growth and Resource Management

- - - TRAIL
- AREA OF POTENTIAL CATTLE LEASE
- W - WILDLIFE OBSERVATION
- C - PRIMITIVE CAMPING
- P - PARKING



FIGURE 25

Environmental Education

The diversity of the natural resources characterizing this property and the complementary recreational uses provide outstanding educational opportunities.

The staff of the County's Division of Land Acquisition and Management includes a naturalist position. This position was developed to, among other tasks, organize and conduct educational and volunteer programs on conservation lands.

Strategies

- Organize and conduct educational programs and tours on the property.
- Prepare brochures and other written educational material for public distribution describing the resources of the site, management practices, and regulations and requirements for use.
- Place explanatory and educational signage at appropriate locales on the property such as along trails, adjacent to outstanding habitat, adjacent to areas of prescribed burns, etc.

Leases and Cooperative Agreements

In accordance with the inter-local agreement between the St. Johns River Water Management District and the County of Volusia, the County has assumed responsibility for the resource and recreation management of the property (Appendix C).

Prior to acquisition by the District and County, portions of this property were being used for cattle grazing and production. This use, which has continued subsequent to the change in ownership, was apparently conducted as an informal arrangement between the prior owner and the cattle operator(s). The limited grazing of livestock is a potentially beneficial use that should be considered for the property. However, this use should be established through the appropriate procedures and the negotiation of a formal agreement with a prospective user.

Public hunting, through formal agreement with the Florida Fish and Wildlife Conservation Commission or private parties, is also a potentially beneficial use that should be considered for the property.

Both the prospective cattle grazing and hunting uses of the property are viewed as interim uses that are subject to periodic review and approval. Either of these uses, if established, are not considered permanent. Ensuring compatibility between these and recreational uses may be particularly challenging. In order to minimize potential conflicts between uses, the conceptual recreation plan for Tract B (Figure 25) preliminarily identifies certain areas of the property for exclusive use by cattle grazing and recreational uses.

Agreements for use of the property would, among other items, address financial, management issues and responsibilities of the affected parties. These agreements must also address mechanisms to ensure the compatibility of the use (e.g., hunting and cattle grazing) with other uses of the property.

Agreement	Agency/Individual	Length	Expires
Management Agreement	St. Johns River Water Management District and County of Volusia	10 years 20 year auto renewal	2013
Cattle Grazing	T.B.D.	T.B.D.	T.B.D.
Hunting	T.B.D.	T.B.D.	T.B.D.

T.B.D. = To Be Determined (if use is to be allowed)

Strategies

- Maintain the existing resource management agreement between the County and the District.
- Consider negotiating an agreement with the appropriate party(ies) for the grazing of cattle on the property.
- Consider negotiating an agreement with the Florida Fish and Wildlife Conservation Commission or private parties, as appropriate, for limited public hunting on the property.
- Ensure that any potential issues of compatibility between the prospective cattle and hunting use(s) of the property with recreational uses are satisfactorily addressed during negotiation of a formal agreement/lease for these prospective uses.
- All revenue generated from use (i.e., leases) of the property will be devoted to the future management and use of the property.

ADMINISTRATION AND IMPLEMENTATION

In accordance with the inter-local agreement between the St. Johns River Water Management District and the County of Volusia, the County has assumed responsibility for the resource and recreation management of the property (Appendix C). This property will be managed by the County in accordance with the provisions of this agreement.

Additionally, the County may consult with the District when evaluating or implementing certain management (resource and recreational) activities and uses.

Development and use of the site will be in accordance with the applicable Federal, State, or County rules and regulations.

Implementation schedules and estimated costs for resource and land management are presented below as Exhibits 2 through 4. These schedules and estimated costs are intended to serve as general guidelines and estimates for budgetary and work allocation purposes. As such, items are subject to change as may be warranted by future opportunities and constraints.

All revenue generated from management (i.e., sale of products) and use (i.e., leases) of the property will be devoted to the future management and use of the property.

EXHIBIT 2.

IMPLEMENTATION SCHEDULE FOR RESOURCE MANAGEMENT

ANTICIPATED START DATE	TASK	LEAD AGENCY	COOPERATOR*	COMPLETION DATE
July 2003	Secure Boundaries (fence and gates)	Volusia	SJRWMD	Jan 2004
July 2003	Develop Restoration Plan	Volusia	SJRWMD	Jan 2004
July 2003	Develop Prescribed Burn Plan	Volusia	SJRWMD FDOF	Jan 2004
July 2003	Develop Forest Management Plan	Volusia	SJRWMD	Jan 2004
Jan 2004	Evaluate existing internal ditch system	Volusia	SJRWMD	Jan 2006
July 2003	Conduct Surveys for Listed Species	Volusia	FNAI FWWC Others	Continual
July 2003	Monitor for Exotic & Nuisance Species	Volusia		Continual
July 2003	Monitor Imperiled Natural Communities	Volusia		Continual
TBD	Survey Archeological Resources	Volusia		TBD

* SJRWMD – St. Johns River Water Management District
 FDOF – Florida Division of Forestry
 FNAI – Florida Natural Areas Inventory
 FWWC – Fish and Wildlife Conservation Commission

EXHIBIT 3.

IMPLEMENTATION SCHEDULE FOR LAND USE MANAGEMENT

ANTICIPATED START DATE	TASK	LEAD AGENCY	COOPERATOR*	COMPLETION DATE
Oct 2003	Construct Off-Street Parking	Volusia		Sep 2004
Oct 2003	Construct Hiking Trails	Volusia		Sep 2004
Dec 2003	Construct Camping (ind.)	Volusia		Sep 2004
Oct 2004	Construct Camping (group)	Volusia		Oct 2006
Oct 2005	Construct Wildlife Platforms	Volusia		Oct 2006
Oct 2004	Construct Boat Landing	Volusia		Jun 2005
Oct 2003	Install on and off site signage	Volusia	FDOT	Dec 2003
Aug 2003	Negotiate Cattle and Hunting Lease(s)	Volusia	SJRWMD Leasee(s)	Dec 2003
Aug 2003	Develop educational programs	Volusia		Jun 2004

* SJRWMD -- St. Johns River Water Management District
 FDOT – Florida Department of Transportation (signage on State Road 415)

EXHIBIT 4.

ESTIMATED COSTS OF RESOURCE MANAGEMENT* and
LAND USE MANAGEMENT ACTIVITIES

Prescribed fire - \$12-\$20/ acre

Planting - \$30-\$70/ acre

Fencing - \$150-\$200/ 100 ft.

Gates - \$500/ gate

Trials - \$100-\$1000/ mile

Parking - \$1000-\$2500/ lot

Primitive camping - \$100-\$500/ space

Wildlife observation platforms - \$15K-\$20K/ platform

Boardwalk - \$75-\$100 / ft.

Group camping – \$50K-\$150K/ site

* Restoration activities and associated costs are not included in this itemization. These activities and costs will be included in the separate restoration plan to be developed at a later date.

REFERENCES

Federal Emergency Management Agency. *Flood Insurance Rate Maps*. Map number 12127C0675G, effective 4/15/02

Florida Department of State / Division of Historical Resources. Correspondence, February, 2003.

Florida Fish and Wildlife Conservation Commission. Correspondence, February, 2003.

Florida Natural Areas Inventory. Correspondence, March, 2003.

Florida Natural Areas Inventory and Florida Department of Natural Resources. *Guide to the Natural Communities of Florida*, 1990.

United States Department of Agriculture / Soil Conservation Service and University of Florida / Institute of Food and Agricultural Sciences. *Soil Survey of Volusia County, Florida*, 1977.

United States Department of the Interior / Geological Survey. *Lake Ashby, Fla.* Quadrangle, 1966 (revised 1988).

APPENDICES

APPENDIX A

PLANT AND WILDLIFE LISTINGS

Wiregrass Prairie Preserve
Observed Plants
May 2003

Listed	Scientific Name	Common Name	Family
	<i>Acer rubrum</i>	Red Maple	Aceraceae
	<i>Yucca filamentosa</i>	Adam's Needle	Agavaceae
	<i>Sagittaria latifolia</i>	Duck Potato	Alismataceae
	<i>Toxicodendron radicans</i>	Poison Ivy	Anacardiaceae
	<i>Asimina</i> spp.	Paw Paw	Annonaceae
	<i>Centella asiatica</i>	Asian Coin Wort	Apiaceae
	<i>Hydrocotyle</i> spp.	Dollarweed	Apiaceae
	<i>Ilex cassine</i>	Dahoon Holly	Aquifoliaceae
	<i>Ilex glabra</i>	Gallberry	Aquifoliaceae
	<i>Peltandra virginica</i>	Arrow Arum	Araceae
	<i>Serenoa repens</i>	Saw Palmetto	Arecaceae
	<i>Aster reticulatus</i>	White Topped Aster	Asteraceae
	<i>Erigeron vernus</i>	Fleabane	Asteraceae
	<i>Lygodesmia aphylla</i>	Roserush	Asteraceae
	<i>Pterocaulon virgatum</i>	Blackroot	Asteraceae
	<i>Cirsium horridulum</i>	Cow Thistle	Asteraceae
	<i>Linaria canadensis</i>	Blue Toad Flax	Beronicaceae
	<i>Woodwardia areolata</i>	Netted Chain Fern	Blechnaceae
	<i>Tillandsia</i> spp.	Spanish Moss	Bromeliaceae
	<i>Opuntia humifusa</i>	Prickly Pear	Cactaceae
	<i>Sambucus canadensis</i>	Elderberry	Caprifoliaceae
	<i>Hypericum tetrapetalum</i>	St. Peter's Wort	Clusiaceae
	<i>Juniperus virginiana</i>	Eastern Red Cedar	Cupressaceae
	<i>Carex</i> spp.	Carex	Cyperaceae
	<i>Pteridium aquilinum</i>	Bracken Fern	Dennstaedtiaceae
	<i>Drosera capillaris</i>	Sundew	Droseraceae
	<i>Diospyros virginiana</i>	Persimmon	Ebenaceae
	<i>Befaria racemosa</i>	Tarflower	Ericaceae
	<i>Lyonia lucida</i>	Fetterbush	Ericaceae
	<i>Lyonia mariana</i>	Staggerbush	Ericaceae
	<i>Vaccinium myrsinites</i>	Shiny Blueberry	Ericaceae
	<i>Vaccinium stamineum</i>	Deerberry	Ericaceae
	<i>Eriocaulon</i> spp.	Hat Pins	Eriocaulaceae
	<i>Lachnocaulon</i> spp.	Bog Buttons	Eriocaulaceae
	<i>Cnidioscolus stimulosus</i>	Tread Softly	Euphorbiaceae
	<i>Schrankia microphylla</i>	Sensitive Briar	Fabaceae
	<i>Quercus laurifolia</i>	Laurel Oak	Fagaceae
	<i>Quercus nigra</i>	Water Oak	Fagaceae
	<i>Quercus virginiana</i>	Live Oak	Fagaceae
	<i>Sabatia grandiflora</i>	Sabatia	Gentianaceae
	<i>Myriophyllum</i> sp.	Parrot's Feather	Haloragaceae
	<i>Hypericum</i> spp.	St. Johns Wort	Hypericaceae
	<i>Hypoxis juncea</i>	Yellow Star Grass	Hypoxidaceae
	<i>Juncus effusus</i>	Soft Rush	Juncaceae
	<i>Piloblephis rigida</i>	Pennyroyal	Lamiaceae
	<i>Salvia lyrata</i>	Lyre Leaf Sage	Lamiaceae
	<i>Cinnamomum camphora</i>	Camphor Tree	Lauraceae
X	<i>Pinguicula caerulea</i>	Blue butterwort	Lentibulariaceae
X	<i>Pinguicula lutea</i>	Butterwort	Lentibulariaceae
	<i>Utricularia inflata</i>	Floating Bladderwort	Lentibulariaceae

Wiregrass Prairie Preserve
Observed Plants
May 2003 –cont.

Listed	Scientific Name	Common Name	Family
	<i>Gelsemium sempervirens</i>	Carolina Jessamine	Loganiaceae
	<i>Polypremum procumbens</i>	Rustweed	Loganiaceae
	<i>Urena lobata</i>	Caesar Weed	Malvaceae
	<i>Myrica cerifera</i>	Wax Myrtle	Myricaceae
	<i>Nuphar luteum</i>	Spatter-dock	Nymphaeaceae
	<i>Ludwigia repens</i>	Red Ludwigia	Onagraceae
X	<i>Osmunda cinnamomea</i>	Cinnamon Fern	Osmundaceae
X	<i>Osmunda regalis</i>	Royal Fern	Osmundaceae
	<i>Phytolacca americana</i>	Pokeweed	Phytolaccaceae
	<i>Pinus clausa</i>	Sand Pine	Pinaceae
	<i>Pinus elliotii</i>	Slash Pine	Pinaceae
	<i>Pinus palustris</i>	Longleaf Pine	Pinaceae
	<i>Pinus serotina</i>	Pond Pine	Pinaceae
	<i>Andropogon</i> spp.	Broomsedge	Poaceae
	<i>Andropogon virginicus</i>	Chalky Blue Stem	Poaceae
	<i>Aristida beyrichiana</i>	Wiregrass	Poaceae
	<i>Spartina bakeri</i>	Cordgrass	Poaceae
	<i>Polygala nana</i>	Wild Batchelor's Button	Polygalaceae
	<i>Rubrus betulifolius</i>	Blackberry	Rosaceae
X	<i>Sarracenia minor</i>	Hooded Pitcher Plant	Sarraceniaceae
	<i>Saururus cernuus</i>	Lizard's-tail	Saururaceae
	<i>Bacopa carolinia</i>	Lemon Bacopa	Scrophulariaceae
	<i>Micranthemum</i> spp.	Baby tears	Scrophulariaceae
	<i>Smilax</i> spp.	Smilax	Smilacaceae
	<i>Solanum viarum</i>	Tropical Soda Apple	Solanaceae
	<i>Sphagnum</i> sp.	Sphagnum Moss	Sphagnaceae
	<i>Taxodium ascendens</i>	Pond Cypress	Taxodiaceae
	<i>Taxodium distichum</i>	Bald Cypress	Taxodiaceae
	<i>Gordonia lasianthus</i>	Loblolly Bay	Theaceae
	<i>Typha</i> sp.	Cattail	Typhaceae
	<i>Boehmeria cylindrica</i>	False Nettle	Urticaceae
	<i>Callicarpa americana</i>	Beautyberry	Verbenaceae
	<i>Parthenocissus quinquefolia</i>	Virginia Creeper	Vitaceae
	<i>Vitis</i> spp.	Grape	Vitaceae
	<i>Xyris</i> spp.	Yellow-eyed Grass	Xyridaceae

Wiregrass Prairie Preserve
Observed Animals
May 2003

Listed	Scientific Name	Common Name	Family
*	<i>Sciurus niger shermani</i>	Sherman's fox squirrel	Sciuridae
	<i>Meleagris gallopavo osceola</i>	Florida wild turkey	Phasianidae
	<i>Odocoileus virginianus</i>	White-tailed deer	Cervidae
	<i>Sciurus carolinensis</i>	Eastern gray squirrel	Sciuridae
*	<i>Gopherus polyphemus</i>	Gopher tortoise	Tesudinidae
	<i>Canis latrans</i>	Coyote	Canidae

APPENDIX B

ADJACENT PROPERTY OWNERS

Adjoining Property Owners – Tract A
May 2003

Name and Address	Tax Parcel Number(s)
Johnathan Lukas, Trustee 100 Lake Mills Island Point Chuluota, FL 32766	8223-01-01-0010 8224-02-00-0200
Robert & Glinda Dinkelacker 283 High Street Ovideo, FL 32765	8224-02-00-0180
Claude & Reba Jackson 291 E. Constance Road DeBary, FL 32713	8224-02-00-0160
Vera Ambeault 814 Ashby Way Osteen, FL 32764	8224-02-00-0140
Henry Richer 201 S. Lake Triplett Drive Casselberry, FL 32707	8224-02-00-0120
Gertrude Lukas, Trustee 100 Lake Mills Island Point Chuluota, FL 32766	8224-02-00-0100
Dale & Elizabeth Baugh P.O. Box 662 Osteen, FL 32764	8224-02-00-0080
James, Carmen, & Warren Jenkins Riner Vieno 2805 S. Oak Avenue Sanford, FL 32773	8224-02-00-0060
Virginia Dennis P.O. Box 401 Geneva, FL 32732	8224-02-00-0040
Ronald & Ann Molohon P. O. Box 833 Osteen, FL 32764	8224-02-00-0020
William & Ruth Christmas P. O. Box 456 Osteen, FL 32764	8224-02-00-0220
Kathy Martini, Trustee L.C. Kerber, Trustee W.B. Koester 3194 Dartmouth Drive Cincinnati, OH 45211	8319-01-02-0040
GJPS Lukas, Inc. 100 Lake Mills Island Chuluota, FL 32766	8319-01-03-0050
Paul Pickett P. O. Box 1032 New Smyrna Beach, FL 32170	8319-01-03-0030 8319-01-03-0120

Adjoining Property Owners – Tract A (Continued)

Name and Address	Tax Parcel Number(s)
Saddle Creek Farms P. O. Box 214106 South Daytona, FL 32121	8330-00-00-0017 8330-00-00-0018 8330-00-00-0019
Joyce Rudnicki P. O. Box 560071 Montverde, FL 34756	8319-01-04-0102
YRRAL Real Estate Company & Emilio Cirelli 354 Pine Woods Road Ormond Beach, FL 32174	8319-01-04-0101
William & Elizabeth DeNauro P. O. Box 221 Oak Hill, FL 32759	8317-01-03-0010 8318-01-04-0036 8318-01-04-0100 8319-01-01-0107 8319-01-01-0109 8319-01-01-0037
Marco & Jacquelin Agustini 16 Silver Hill Lane Voorhees, NJ 08043	8319-01-04-0040
Arthur & Gertrud Levy Bruce Weldon Carrera 4B #32-43 Isague, Colombia, South America	8319-01-01-0102
Milton & Mary Jo McMillon P. O. Box 237 Orange City, FL 32774	8319-01-01-0100 8319-01-01-0105 8319-01-01-0031
Eunice Ayles c/o Janet E. Sheiner, Executrix 319 N. Seven Isles Drive Ft. Lauderdale, FL 33301	8319-01-01-0108
Milton & Wanda Lashley P. O. Box 897 Lake Mary, FL 32746	8319-01-01-0041
David & Debra Knight P. O. Box 381 Osteen, FL 32764	8319-01-01-0040
Nancy Spears 2500 Paige Avenue New Smyrna Beach, FL 32168	8318-01-04-0034
Dennis Box c/o Yancey & Associates P. O. Box 8579 Warner Robbins, GA 31095	8318-01-04-0033

Adjoining Property Owners – Tract A (Continued)

Name and Address	Tax Parcel Number(s)
Charles Hosmer Morse Foundation P. O. Box 40 Winter Park, FL 32790	8318-01-01-0010 8318-01-02-0010 8213-00-00-0010
Neal & Charlotte Parker 11011 Erie Road Parrish, FL 34219	8213-01-04-0050
Neal M. Parker c/o C.M. Parker 11011 Erie Road Parrish, FL 34219	8213-01-03-0020

Adjoining Property Owners – Tract B
May 2003

Name and Address	Tax Parcel Number(s)
Joseph Freidell P.O. Box 94 Oak Hill, FL 32759	8329-01-03-0101
Miami Corporation 410 N. Michigan Avenue Chicago, IL 60611	8332-00-00-0010 8328-00-00-0010 8333-00-00-0010
John Veino 772 Eagle Point Drive St. Augustine, FL 32092	8329-00-00-0010
Daniel Veino 1699 Prideaux Road Osteen, FL 32764	8329-00-00-0015
Matthew Veino 1800 Prideaux Road Osteen, FL 32764	8329-00-00-0020 8330-00-00-0060
Saddle Creek Farms, Inc. P.O. Box 214106 South Daytona, FL 32121	8330-00-00-0300 8330-00-00-0015 8330-00-00-0012
Wm. & Elizabeth DeNauro P.O. Box 221 Oak Hill, FL 32759	8319-01-04-0110
Comerica Bank & Trust, Trustee c/o Industry Consulting Group P. O. Box 810490 Dallas, TX 75381	8320-01-03-0083
Alfred L. Snell, Trustee 1340 W. Johns Blvd. Raymore, MO 64083	8320-01-03-0082 8320-01-03-0114
Sal & Ella Porto 3612 Northern Independence, MO 64052	8320-01-03-0100
Ian Depol 1839 Rudman Road Osteen, FL 32764	8329-01-02-0040
Johnnie Mathis P. O. Box 1027 Osteen, FL 32764	8329-01-02-0030
Charles Hosmer Morse Foundation P. O. Box 40 Winter Park, FL 32790	8320-01-01-0010 8321-01-04-0120
Stanley & Ross Knighton 900 Greenbrier Drive Anniston, AL 36207	8329-01-04-0120

APPENDIX C

COOPERATIVE MANAGEMENT AGREEMENT

APPENDIX D

RESTORATION PLAN

(TO BE APPENDED AFTER COMPLETION)

APPENDIX D

USE LEASE(S)

(TO BE APPENDED, AS APPROPRIATE)