

Lake Proctor Wilderness Area

Land Management Plan

2020



**LAKE PROCTOR WILDERNESS AREA
LAND MANAGEMENT PLAN**

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LAND MANAGEMENT PLAN SUMMARY

Lake Proctor Wilderness Area

Acres: 475

Location: Geneva, Florida, Section 22, Township 20S, Range 32E

Dates of Acquisition: 1999

Key Resource Issues: This site, located in eastern Seminole County, contains a diverse collection of native plant communities. The sand pine scrub and sandhill communities, both found in Lake Proctor Wilderness Area, are two of the most endangered habitats in the state of Florida. These two imperiled plant communities are home to an array of wildlife including the state listed gopher tortoise and Sherman's fox squirrel. Also found throughout the property are numerous ephemeral wetlands which serve as important breeding grounds for several species of native amphibians. These high, dry habitats also provide important recharge zones that help to protect the Geneva Bubble, the local aquifer.

GENERAL DESCRIPTION:

- **Security** – There is a caretaker residence on-site near the entrance of the property. A law enforcement officer is usually the occupant.
- **Restoration** –Restoration on this site will focus on the use of prescribed fire to restore the flatwoods, sandhill, and sand pine scrub habitats. Other restoration methods that may be used include timber harvest of sand pines and mechanical treatment to reduce fuel structure and enhance the ability to prescribed burn safely.
- **Fire** –Prescribed burning on the property was initiated in 2004 and continues today. 10 zones have been burned at least once.
- **Invasive and Exotic Species** – There are a number of exotic invasive species on this property including cogongrass (*Imperata cylindrica.*), old world climbing fern (*Lygodium microphyllum*), coral ardisia (*Ardisia crenata*), and tuberous sword fern (*Nephrolepis cordifolia*).
- **Wildlife and Plants** – Several listed species have been recorded on site including Curtis's milkweed, gopher tortoise and sandhill crane. Other wildlife observed on site includes the eastern diamondback rattlesnake and wild turkey.

Key Land Use/Recreation Issues: This sites' variety of habitats and beautiful trail system provides opportunities for a variety of recreational uses including environmental education, hiking, biking, horseback riding and wildlife viewing.

- **Access** – The primary parking/access for the public is located at 920 State Road 46 in Geneva. There are also maintenance access points located east and west of the main entrance on SR 46 and a walk thru access on the east side of the site for the Jungle Road community.
- **Public recreation** – The property is open to the public for nature study, hiking, fishing, horseback riding, and non-motorized biking.

**Lake Proctor Wilderness Area
Geneva, Florida**

LAND MANAGEMENT PLAN

INTRODUCTION

This document provides guidelines for land management activities to be implemented within the Wilderness Area over the next ten years.

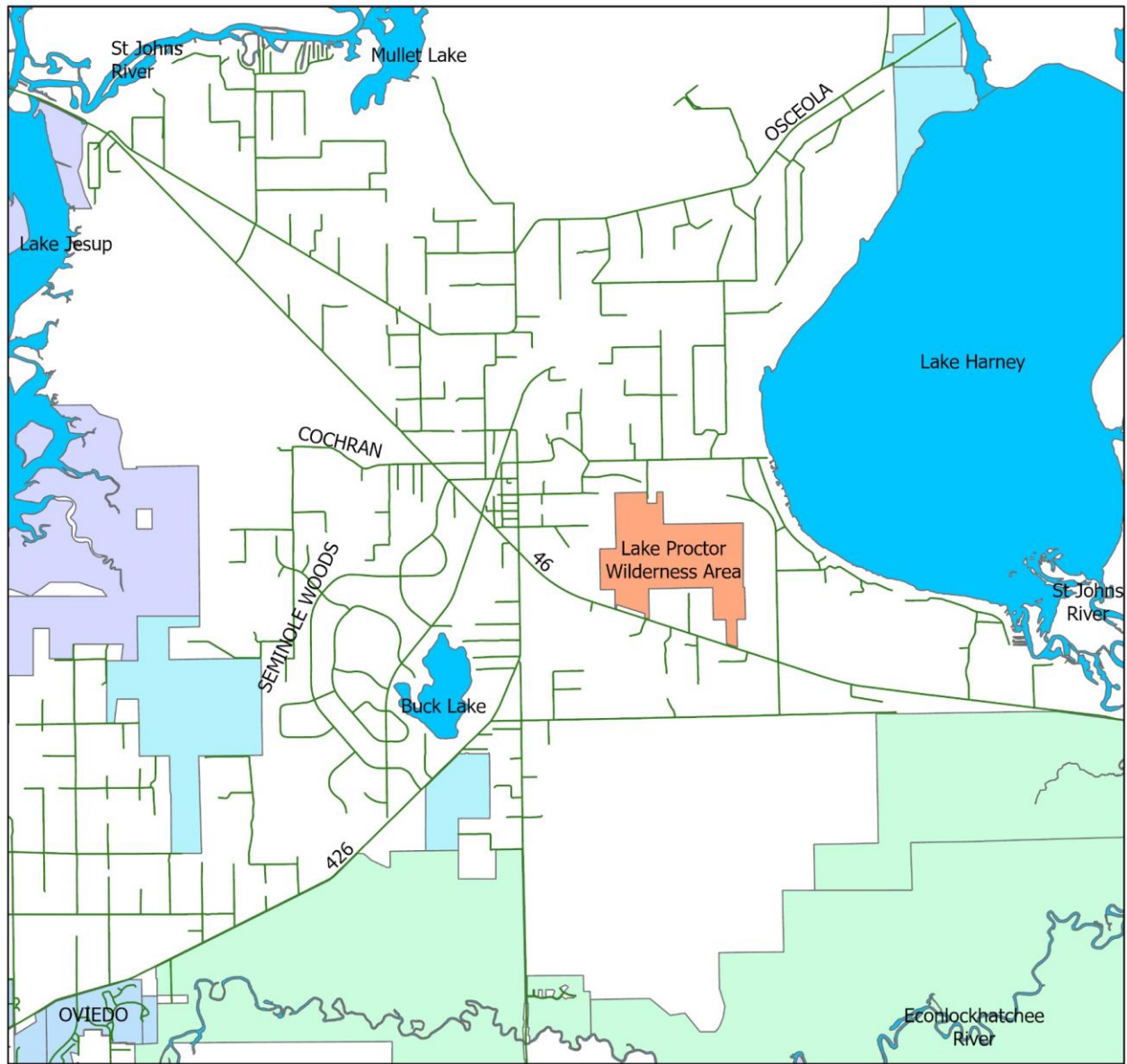
WILDERNESS AREA OVERVIEW

Regional Significance

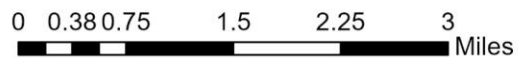
The Lake Proctor Wilderness Area (LPWA) is a 475-acre site located in Northeast Seminole County, east of the town of Geneva and west of Lake Harney. This site contains a diverse collection of native plant communities and wildlife. Traversing the property is a series of trails which take visitors through pine flatwoods, sandhill, and beautiful oak hammocks, and provide scenic views of Lake Proctor.

Acquisition History

This property was purchased in 1999 through the Seminole County Natural Lands Program, which was put in place in 1990 by the Citizens and Board of County Commissioners.



Lake Proctor Wilderness Area
 Figure 1: Location Map



Legend

- | | |
|-----------------------------------|------------------------------|
| Seminole County Preserved Lands | Water Bodies |
| FL Forest Service Preserved Lands | City Limits |
| SJRWMD Preserved Lands | Lake Proctor Wilderness Area |
| Streets | |



NATURAL RESOURCES OVERVIEW

Natural Communities

There are five distinct natural plant communities on this property. These are sand pine scrub, mesic flatwoods, wet flatwoods, sandhill and baygall. There are also two flatwoods lakes on the property, as well as wet prairie, depression marshes, and cypress domes. Plant communities and fire regimes are taken from FNAI, 2010.

Sand Pine Scrub

This habitat is found on sandy, well-drained soils of relic dune lines deposited by ancient tides. It is often characterized as a closed to open canopy forest of sand pines (*Pinus clausa*) with dense clumps or vast thickets of scrub oaks (and other shrubs dominating the understory). Other common plant species found in Sand Pine Scrub habitat include sand live oak (*Quercus geminata*), and rusty lyonia (*Lyonia ferruginea*). The central portion of Lake Proctor Wilderness Area, between the two transmission lines, is the best place to view this rare plant community.

This is a fire maintained plant community. Historically this habitat would sustain fire every 30 to 60 years under extreme windy, hot and dry conditions. These intense fires would burn the entire canopy and ground cover which would restart the process of succession from the ground up. Many threatened and endangered species of wildlife adapted to these periodic changes cannot survive in a mature system which results from lack of fire.

The scrub at LPWA is in good condition. Fire exclusion had resulted in overgrown hardwoods and sand pines, but mechanical treatment and prescribed fire has started to restore these areas.

Mesic Flatwoods

Mesic flatwoods habitat is characterized as an open canopy forest of pine trees with little to no understory but a dense ground cover of herbs and shrubs. Typical plant species found in mesic flatwoods are the slash pine (*Pinus elliottii*), longleaf pine (*Pinus palustris*), saw palmetto (*Serenoa repens*), wiregrass (*Aristida stricta*), and gallberry (*Ilex glabra*).

Fire plays a critical role in the physical development of pine flatwoods. Historically, this habitat has sustained fire every 2 to 4 years. Most plants and animals that utilize this habitat are adapted to periodic fire and many species depend on fire for their continued existence.

The mesic flatwoods at LPWA are in decent condition. The species component is still intact, however, portions of the mesic flatwoods have invasive species infestations, and more frequent prescribed fire is needed.

Wet flatwoods

Wet flatwoods habitat is characterized as a forest with minimal midstory and a groundcover of hydrophytic grasses, herbs, and low shrubs. The pine canopy is composed of pond pine (*P. serotina*), slash pine, and/or longleaf pine. The midstory can be scattered bay trees, wax myrtle (*Myrica cerifera*), gallberry, and cabbage palm. Herbs include wiregrass (*Aristida stricta* var.

beyrichiana), blue maidencane (*Amphicarpum muhlenbergianum*), and/or hydrophytic species such as coastalplain yellow-eyed grass (*Xyris ambigua*), Carolina redroot (*Lachnanthes caroliana*), beaksedges (*Rhynchospora chapmanii*, *R. latifolia*, *R. compressa*), among others.

The wet flatwoods at LPWA is currently in fair condition. While the species components are still intact, the groundcover is sparse in the wet flatwoods east of the main transmission line, most likely due to some sort of timber planting operations, or clearing for agriculture at some point. Timbering is necessary due to the thick canopy of pond pines, and then prescribed fire needs to be applied. The wet flatwoods surrounding the flatwoods lake is in better condition and has a more intact species assemblage, but the lack of fire has led to an overgrowth of hardwoods and other species. Prescribed fire will need to be applied to maintain this community.

Sandhill

This habitat is characterized as an open canopy forest of widely spaced longleaf pines (*P. palustris*) and scattered turkey oaks (*Quercus laevis*) with a groundcover dominated by wire grass (*Aristida stricta*). Sandhills occur on hilltops and slopes of gently rolling hills and their soils are composed of deep, marine-deposited, well drained yellowish sands. Other typical plants found in this community type include the gopher apple (*Licania michauxii*), deer berry (*Vaccinium stamineum*), and prickly pear cactus.

Frequent fire plays a key role in maintaining the open understory of this habitat. Restorative fire will improve and maintain this plant community as an important habitat for numerous wildlife species including the threatened gopher tortoise (*Gopherus polyphemus*) and sherman's fox squirrel (*Sciurus niger shermani*).

The sandhill is in poor condition, and while there are still remnant species, most of what was sandhill is currently better described as xeric hammock. However, due to planned restoration efforts over the next 10 years, it is still categorized as sandhill currently.

Baygall

Baygall are characterized as densely forested, peat filled seepage depressions often at the base of sandy slopes. A large example of this plant community type lies on the eastern side of Lake Proctor Wilderness Area. It stretches from north to south along the west side of the large transmission line. Dominant tree species include the Sweet bay (*Magnolia virginiana*), and Loblolly bay (*Gordonia lasianthus*) which make a canopy that provides shade for understory plant species such as the Button bush (*Cephalanthus occidentalis*) and Wax myrtle (*Myrica cerifera*).

This stretch of baygall along the transmission line was more likely mesic flatwoods at one point in time, based off historic aerials and the prevalence of saw palmetto in the understory. Reintroduction of fire may restore some the original condition of the natural community, but due to high fuel loading and the transmission lines on the boundary, mechanical treatment would be necessary.

Flatwoods Lake

This natural community extends almost 40 acres on the property. When water levels are low, hydrophytic herbaceous plants surround the open water zone that contains spatterdock (*Nuphar advena*). Further upslope, woody vegetation such as saw palmetto (*Serenoa repens*), and piedmont staggerbush (*Lyonia mariana*), pond pine (*Pinus serotina*) surround the lake. This is a fire dependent community and usually burns according to the surrounding mesic flatwoods fire regime of every 2 to 4 years. This keeps the woody shrubs from invading the herbaceous area around the lake.

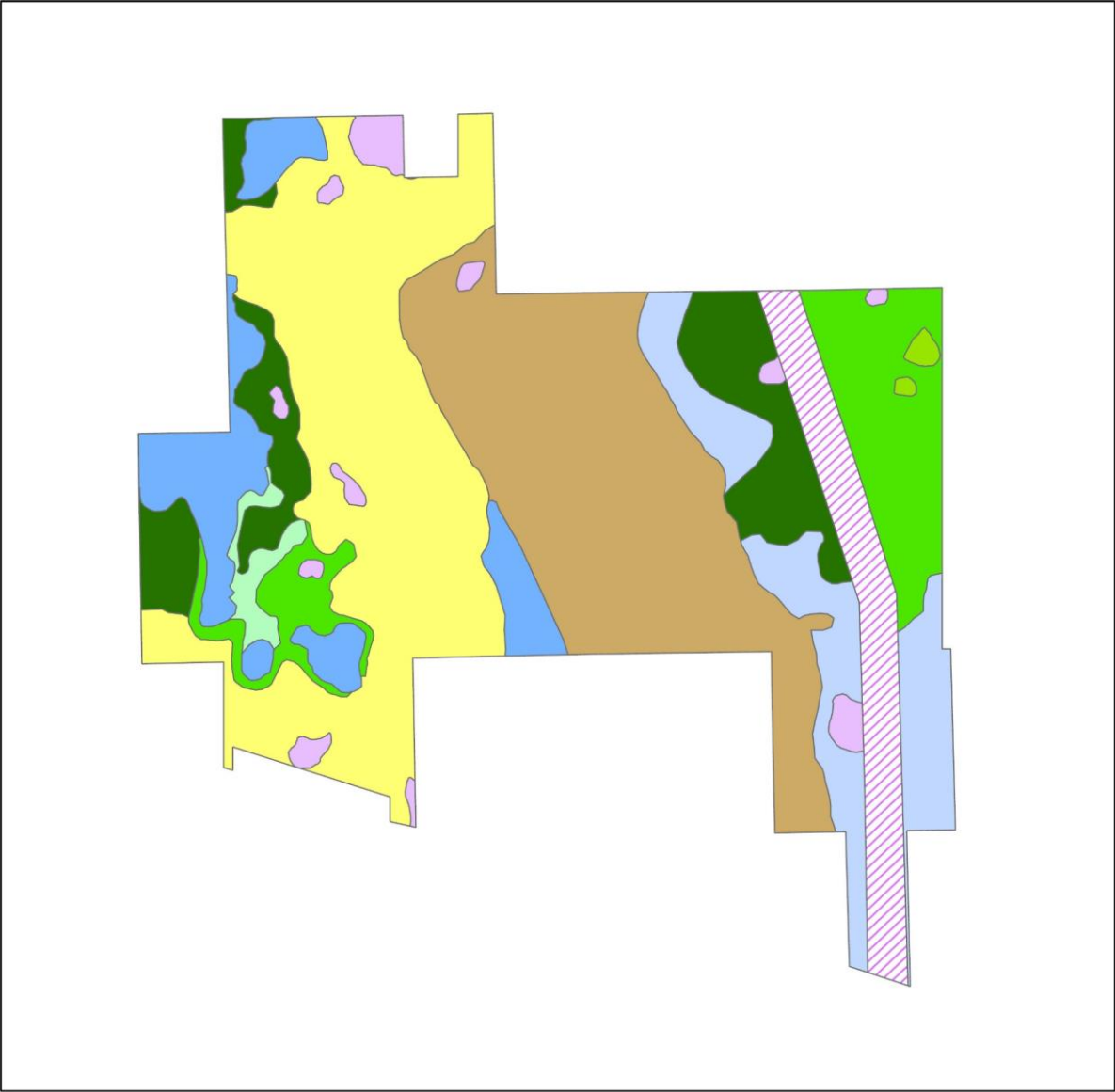
The flatwoods lake is in good condition at LPWA, and is relatively undisturbed. More frequent fire in the surrounding communities would be beneficial.

Table 1. Approximate acreage for each plant community and percent uplands and wetlands.

Community Type	Acres
Baygall	45.3
Depression Marsh	10.9
Dome Swamp	1.5
Flatwoods Lake	37.9
Mesic Flatwoods	44.9
Sandhill	131.6
Scrub	118.9
Utility Corridor	33.5
Wet Flatwoods	45.7
Wet Prairie	5.7
<hr/>	
Percent Wetlands	21
Percent Uplands	79

Wildlife

A wide array of wildlife species have been recorded at Lake Proctor Wilderness Area. These include the cotton rat (*Sigmodon hispidus*), cotton mouse (*Peromyscus gossypinus*), barred owl (*Strix varia*), raccoon (*Procyon lotor*), red-tailed hawk (*Buteo jamaicensis*), and white-tailed deer (*Odocoileus virginianus*). Numerous reptile and amphibian species found throughout the property include the pinewoods treefrog (*Hyla femoralis*), southeastern five-lined skinks (*Eumeces inexpectatus*), Florida pine snake (*Pituophis melanoleucus*), and Florida box turtle (*Terrapene carolina bauri*).



Lake Proctor Wilderness Area
 Figure 2: Natural Communities Map

Legend

- | | | |
|--------------------------|-------------------|------------------|
| FNAI Natural Communities | Yellow | Sandhill |
| Light Blue | Brown | Scrub |
| Green | Diagonal Hatching | Utility Corridor |
| Pink | Dark Green | Wet Flatwoods |
| Blue | Light Green | Wet Prairie |
| Dark Green | | |

0 0.1 0.2 0.3 0.4 0.5 Miles



Soils

Astatu

The Astatula series consists of very deep, excessively drained, very rapidly permeable soils on uplands of the South Central Florida Ridge, Southern Florida Flatwoods, and a few areas of the Eastern Gulf Coast Flatwoods. They formed in eolian and marine sands.

Basinger

The Basinger series consists of very deep, poorly drained and very poorly drained, rapidly permeable soils in sloughs, depressions, low flats, and poorly defined drainageways. They formed in sandy marine sediments.

Immokalee

The Immokalee series consists of very deep, very poorly and poorly drained soils that formed in sandy marine sediments. Immokalee soils are on flatwoods and low broad flats on marine terraces.

Myakka

The Myakka series consists of very deep, very poorly or poorly drained, moderately rapid or moderately permeable soils that occur primarily in mesic flatwoods of peninsular Florida. They formed in sandy marine deposits.

Pomello

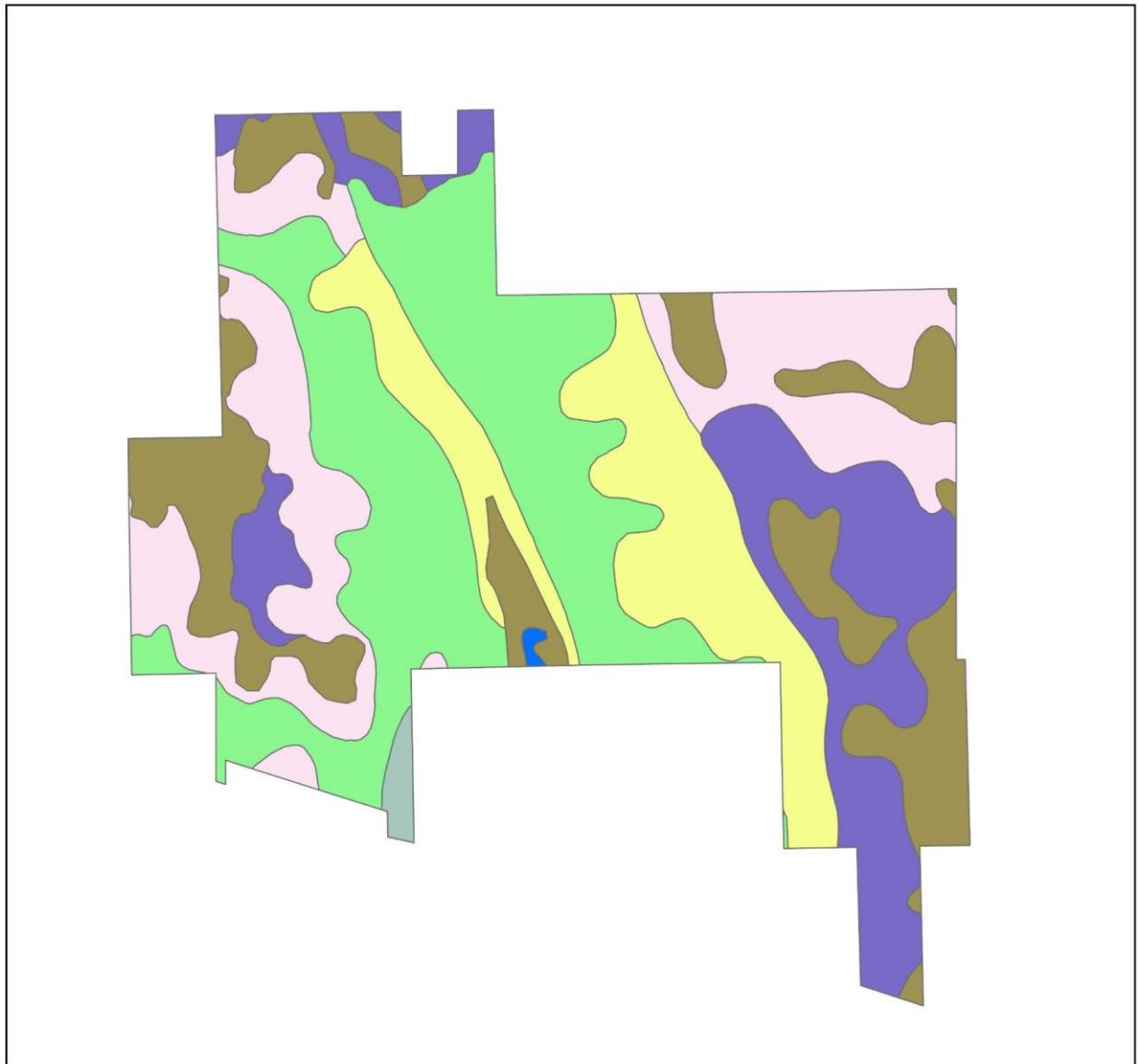
The Pomello series consists of very deep, moderately well to somewhat poorly drained soils that formed in sandy marine sediments. Pomello soils are on ridges, hills, and knolls in the flatwoods on marine terraces.

Tavares

The Tavares series consists of very deep, moderately well drained soils that formed in sandy marine or eolian deposits. Tavares soils are on hills, ridges and knolls of the lower Coastal Plain.

Water Resources

A large portion of a flatwoods lake, Upper Lake Proctor, comprises the western boundary of the property. Water levels in this pond shift drastically during the dry and wet seasons. There are also a number of depression marshes throughout the sandhill and scrub, and there is one other small flatwoods lake on the south boundary. These ephemeral ponds play a key role in the reproduction of several amphibian species such as the Barking Tree frog, Dwarf salamander and Florida Gopher Frog as well as provide nesting habitat for Sandhill Cranes. The eastern half of the property is part of the Lake Harney drainage basin, and the western half drains to the Econlockhatchee River, as part of the Big Econlockhatchee Drainage Basin.



Lake Proctor Wilderness Area
Figure 3: Soil Map

Legend

- | | |
|---|---|
|  ASTATULA |  POMELLO |
|  BASINGER |  TAVARES |
|  IMMOKALEE |  WATER |
|  MYAKKA | |



IMPLEMENTATION

Integral to the goals and objectives for managing acquired lands in an acceptable manner are protection and restoration of those lands where feasible. An important element in protecting the resources is to prevent dumping, poaching, and other illegal activities. Appropriate land management activities, such as prescribed burning, forest management, and removal of exotics, should be continued to protect the viability of the site.

Rules and Regulations

Seminole County Code Chapter 190 Section 4 establishes the provisions relating to management and use of the properties acquired or managed by Seminole County Natural Lands Program.

RESOURCE MANAGEMENT PROGRAM

Monitoring

Monitoring natural resources is an important tool in gauging the overall health of an ecosystem. The Natural Lands Program has developed a monitoring plan that encompasses all sites. From 1996 until June 2004, baseline monitoring was conducted on the property. This included herp arrays, drift fences, cover boards, bird surveys, marking gopher tortoises, photo points, small mammal trapping, fish and turtle traps and bird/bat boxes.

Gopher tortoise populations are monitored by staff via burrow surveys after prescribed burns and mechanical treatment. The data collected from this monitoring effort allow staff to estimate gopher tortoise populations on each property.

Currently, the Natural Lands program hosts a bioblitz twice a year on a different property. A bioblitz occurred at LPWA in spring 2019, and the next one is currently scheduled for fall 2024.

Monitoring Accomplishments

- Gopher tortoise burrow monitoring occurred in 2011, 2015, 2016, 2017, 2018, 2019 and 2020

Monitoring Strategies

- Continue organizing bioblitzes
- Continue monitoring burrows after mechanical treatment and prescribed fire
- Continue monitoring invasive plant species.
- Establish 5-10 photo points to monitor effects of mechanical treatment and prescribed fire

Restoration

Restoration of the fire dependent communities is an ongoing process using both prescribed fire and mechanical treatments. At this site focus will be on the reintroduction of fire to restore the flatwoods, sandhill, and possibly the sand pine scrub habitats. In some cases mechanical treatment may also be used to reduce fuel heights. Pine thinning east of the powerline, in the wet flatwoods, should be considered as well.

Restoration and Habitat Enhancement Accomplishments

- 118.3 acres of scrub were mechanically treated in the past 10 years

Restoration and Habitat Enhancement Strategies

- Conduct mechanical treatment in scrub as needed
- Pursue timber management in the northeast portion of the property
- Conduct hardwood thinning in the sandhill portions of the property

Fire Management

Fire is an integral part of the Florida landscape. Before the influx of settlers, lightning fires would burn unimpeded through fire adaptive communities and landscapes until extinguished via changes in weather and/or fuel characteristics. Native Americans would also burn at various times of the year to attract wild game and to keep the landscape open for easy travel. Today, due to increased development pressures on conservation areas, fires must be managed under strict regulations and performed according to set criteria depending on the site.

Seminole County hired the Nature Conservancy to develop a Prescribed Burn Plan for all Natural Land sites and make recommendations for the application of this important management tool.

The objective of prescribed burning at Lake Proctor Wilderness Area is to restore the sand pine scrub and sandhill plant communities, maintain the flatwoods communities, promote species diversity, and reduce the accumulation of hazardous fuel loads and associated wildfire risks. This would also help to minimize the wildfire threat and smoke impacts to adjoining or nearby urbanized areas, roads and highways.

Fire was reintroduced to the property in 2004. Most of the scrub on the property has been mechanically treated and burned, but the sandhill and some of the flatwoods still need more frequent fire. 40% of the current burnable acreage is within the proper fire return interval (FRI) at LPWA. Most of the sandhill needs some level of hardwood thinning, along with frequent prescribed fire, to restore the natural community. There are another 89.7 acres that need either fireline or low water crossing installation, mechanical treatment, or timber thinning before prescribed fire would be possible.

Fire Management Accomplishments

- Since 2010, 7 prescribed burns have been completed on the property on 8 burn zones, totaling 107.8 acres

Fire Management Strategies

- Conduct 50% lightning season burns.
- Maintain 70% of the fire-type acres within the recommended FRI
- Build up to 1.2 mile of new fireline to conduct prescribed fire on an additional 90 acres

Table 2: Natural Community and Fire Return Interval

Plant Community	Recommended Fire Return Interval
Scrub	10-30 years
Mesic Flatwoods	2-4 years
Improved Pasture	1-3 years

Fire frequencies based on FNAI.

Wildlife

Continued habitat management through roller chopping, mowing and burning should provide optimum habitat for wildlife species. Wildlife observations will continue to be added to the NLP database.

Wildlife Strategies

- Continue to record wildlife observations.
- Continue land management activities.

Listed Species

Surveys are conducted annually to verify the existence of listed plant and animal species.

Plants

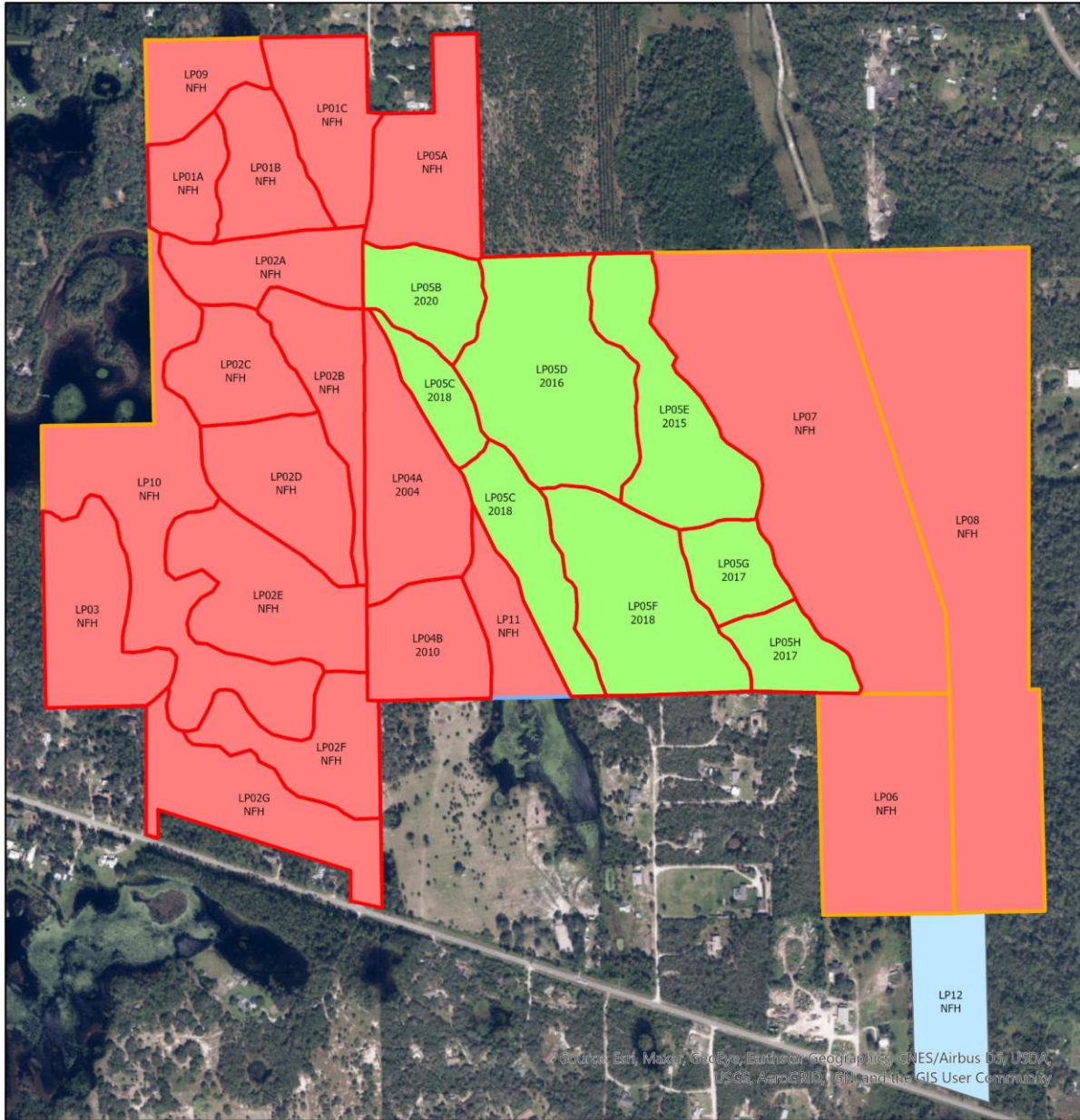
Listed plant species recorded on site include Curtis’s Milkweed (*Asclepias curtissii*) and *Garberia heterophylla*.

Animals

Listed animal species include the gopher tortoise (*Gopherus polyphemus*), Florida pine snake (*Pituophis melanoleucus mugitus*), and sandhill crane (*Grus canadensis*).

Listed Plant and Animal Strategies

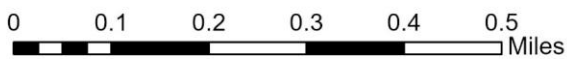
- Continue monitoring for gopher tortoises.
- Continue annual listed plant surveys.



Source: Eric Mackey, GodEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Lake Proctor Wilderness Area Figure 4: Fire History Map

This map shows each management zone, the most recent burn year, and whether or not it is currently maintained within the proper fire return interval (FRI), as well as the priority for maintaining the FRI. NFH = No Fire History



Legend

Within FRI, Priority

- Y, High
- N, High
- N, Medium
- N, Low
- N, N/A

Invasive Species

Florida's climate is not only attractive to humans, but also to invasive exotic species. An invasive exotic species is defined as a species introduced to Florida, purposefully or accidentally, from a natural range outside of Florida with the ability to become established outside of cultivation and out-compete native species. Some examples of invasive exotic species in Florida include Brazilian pepper (*Schinus terbinthifolius*), air potato (*Dioscorea bulbifera*), old world climbing fern (*Lygodium microphyllum*), cogongrass (*Imperata cylindrica*), feral hog (*Sus scrofa*), Cuban brown anole (*Anolis sagrei*), nine-banded armadillo (*Dasyurus novemcinctus*), Eurasian collared-dove (*Streptopelia decaocto*), Cuban treefrog (*Osteopilus septentrionalis*), and walking catfish (*Clarias batrachus*). The State of Florida spends millions of dollars each year either directly or indirectly through grants, trying to control invasive exotic species.

Since the impacts of invasive exotic species have both an environmental and economic impact, a non-governmental organization called the Florida Exotic Pest Plant Council (now the Florida Invasive Species Council) was formed. This organization provides a list of Florida's most invasive exotic species. The list is split into two categories: Category I species are those that are altering native plant communities by displacing native species and Category II species are those that have increased in abundance or frequency but have not yet altered Florida plant communities to the extent shown by Category I species. Lake Proctor Wilderness Area has invasive species from both categories.

Plants

Invasive species infestations at LPWA primarily occur near the property boundaries. Invasive species found at this site include cogongrass (*Imperata cylindrica*), old world climbing fern (*Lygodium microphyllum*), coral ardisia (*Ardisia crenata*), and sword fern (*Nephrolepis cordifolia*). Infestation sizes are small enough that NLP staff can maintain control with regular treatments. The highest priority for the site should be treating the coral ardisia that occurs in the northwest and southwest corners, as well as any patches of cogon grass. Staff should continue to monitor for new infestations as they patrol the property.

Animals

Invasive animal species found at LJWA include the Brown anole (*Norops sagrei*) and Cuban tree frog (*Osteopilus septentrionalis*) and feral hog (*Sus scrofa*). The Natural Lands Program has contracted up to 6 nuisance feral hog removal agents at a time. Feral cats and dogs are trapped and turned over to Seminole County Animal Services when observed on the property.

Invasive Plant and Animal Accomplishments since 2010

- 11 acres treated by NLP staff
- 27 acres treated by FWC contractors

Invasive Plant and Animal Strategies

- Keep all Category I invasive species under maintenance control
- Continue feral hog agent program.

LAND USE MANAGEMENT

Public Access

The primary parking/access for the public is located at 920 State Road 46 in Geneva. There are also maintenance access points located east and west of the main entrance on SR 46 and a walk thru access on the east side of the site for the Jungle Road community.

Public Access Strategies

- Continue regular maintenance on public access area.
- Maintain signs and kiosk.

Recreation

Resource-based recreational opportunities provided on this property include hiking, biking, horseback riding, fishing, and wildlife viewing

Recreation Accomplishments

- The parking lot was expanded to allow for increased equestrian access in 2018
- In partnership with Seminole County Public Safety, “safety” or “locator” signs have been installed to assist with emergency response.

Recreation Strategies

- Continue regular maintenance on trails.

Environmental Education

While no educational facilities exist on this property, it is used as an outdoor classroom for students of all ages.

Environmental Education Strategies

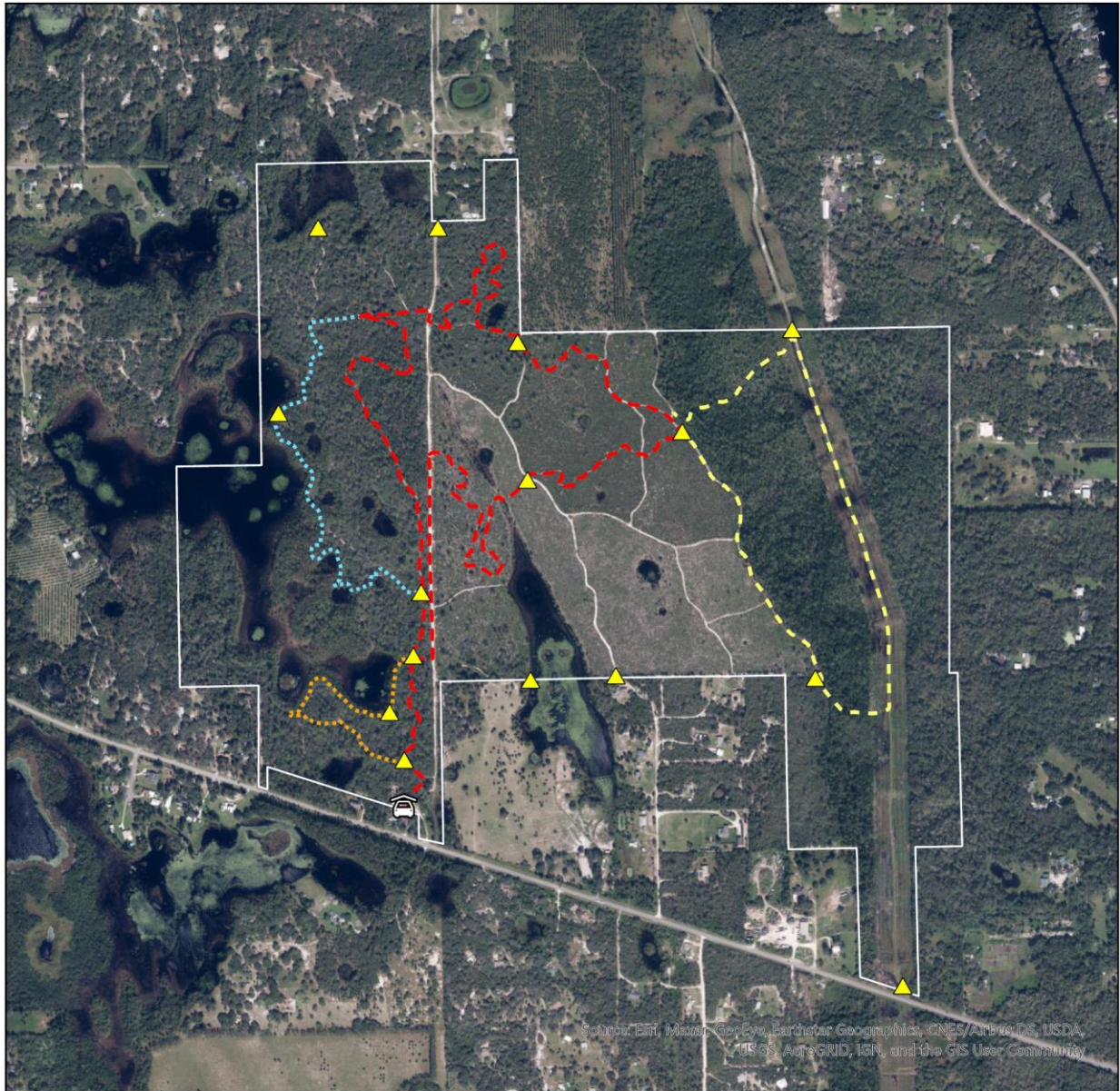
- Continue education programs.

Security

Lake Proctor Wilderness Area has a resident caretaker who routinely patrols the property. The Sheriff’s office is notified of any illegal activity.

Security Strategies

- Continue maintaining resident caretaker on-site.



Lake Proctor Wilderness Area Figure 5: Recreation Map

0 0.1 0.2 0.3 0.4 0.5 Miles



Legend

Trails

Blue Trail

Orange Trail

Red Trail

Yellow Trail

Trailhead/Parking

Safety Markers

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