

Black Hammock Wilderness Area

Land Management Plan

2010

**BLACK HAMMOCK WILDERNESS AREA
LAND MANAGEMENT PLAN**

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LAND MANAGEMENT PLAN SUMMARY

Black Hammock Wilderness Area

Acres: 700

Location: East Seminole County Section 31 Township 20 Range 32

Dates of Acquisition: 2000

Key Resource Issues:

Black hammock Wilderness Area is a 700 acre property located in east Seminole County near the town of Geneva, Florida, on the southeast side of Lake Jesup. The site contains a diverse collection of native plant communities and wildlife, and also helps to protect important recharge areas for the Geneva Bubble, the local aquifer. Additionally, the many wetland areas found throughout this property are important filters for water as it drains into Lake Jesup. The St. Johns River Water Management District owns property adjacent to the wilderness area creating a buffer and wildlife corridor on the east side of lake Jesup.

GENERAL DESCRIPTION:

- **Security** – Unlike many of the other Natural Lands properties, there is no caretaker residing on this property. There are four access points to the property, three of which are for public use. Natural Land's staff coordinate with the Seminole County Sheriff's office (SCSO) and Florida Fish and Wildlife Conservation Commission (FWC) to report any disturbances on the property.
- **Restoration** – Restoration of this site will focus on the reintroduction of fire to restore the flatwoods and sand pine scrub habitat. Due to the intense nature of fire and proximity to residential areas in the sand pine scrub, alternate methods such as mechanical treatment will be used along with fire to maintain the plant communities.
- **Fire** – Black Hammock Wilderness Area contains two true fire dependent plant communities, pine flatwoods and sand pine scrub. The Seminole County Natural Lands Program is developing a comprehensive Prescribed Burn Plan to address the use of fire as a management tool to maintain the ecological integrity of this Wilderness Area.
- **Invasive and Exotic Species** – Exotic plant species found at this site include the Air Potato (*Dioscorea bulbifera*), Old World Climbing Fern (*Lygodium microphyllum*), cogongrass (*Imperata cylindrica*), tuberous swordfern (*Nephrolepis cordifolia*), Brazilian pepper (*Schinus terbinthifolia*), Camphor tree (*Cinnamomum camphora*) and balsampear (*Momordica charantia*).

Exotic animal species include the brown anole (*Anolis sagrei*), Cuban tree frog (*Osteopilus septentrionalis*), and feral hog (*Sus scrofa*).

- **Wildlife and Plants** –Observations of wildlife on this site include the Barred Owl (*Strix varia*), White-tailed deer (*Odocoileus virginianus*), Bobcat (*Lynx rufus*), and Eastern Coral Snake (*Micrurus fulvius*).
- **Cultural Resources** – There are no known historical or cultural sites located on this property.

Key Land Use/Recreation Issues:

This wilderness area provides opportunities for a variety of recreational uses including environmental education, hiking, biking, horseback riding, fishing and wildlife viewing.

General Description:

- **Access** – The primary access point is a shared parking area on C.R. 426 at the Little Big Econ State Forest’s Barr Street entrance. There is also a small park and walk access point located at the East end of Howard Avenue along the Southern part of the property. There are two walk through access points for the surrounding neighborhoods located at the east end of Packard Ave. and one on Sunset Trail.
- **Public recreation** – The property is open to the public for passive, resource based recreational opportunities including nature study, hiking, local horseback riding, and biking. Motorized recreation is not allowed on any Natural Lands property.
- **Coordination of agreements** – Seminole County has entered an agreement with the Florida Division of Forestry for oversight of timbering operations. This partnership may be used to accomplish a timber thinning on this site.

**Black Hammock Wilderness Area
Seminole County, Florida
LAND MANAGEMENT PLAN**

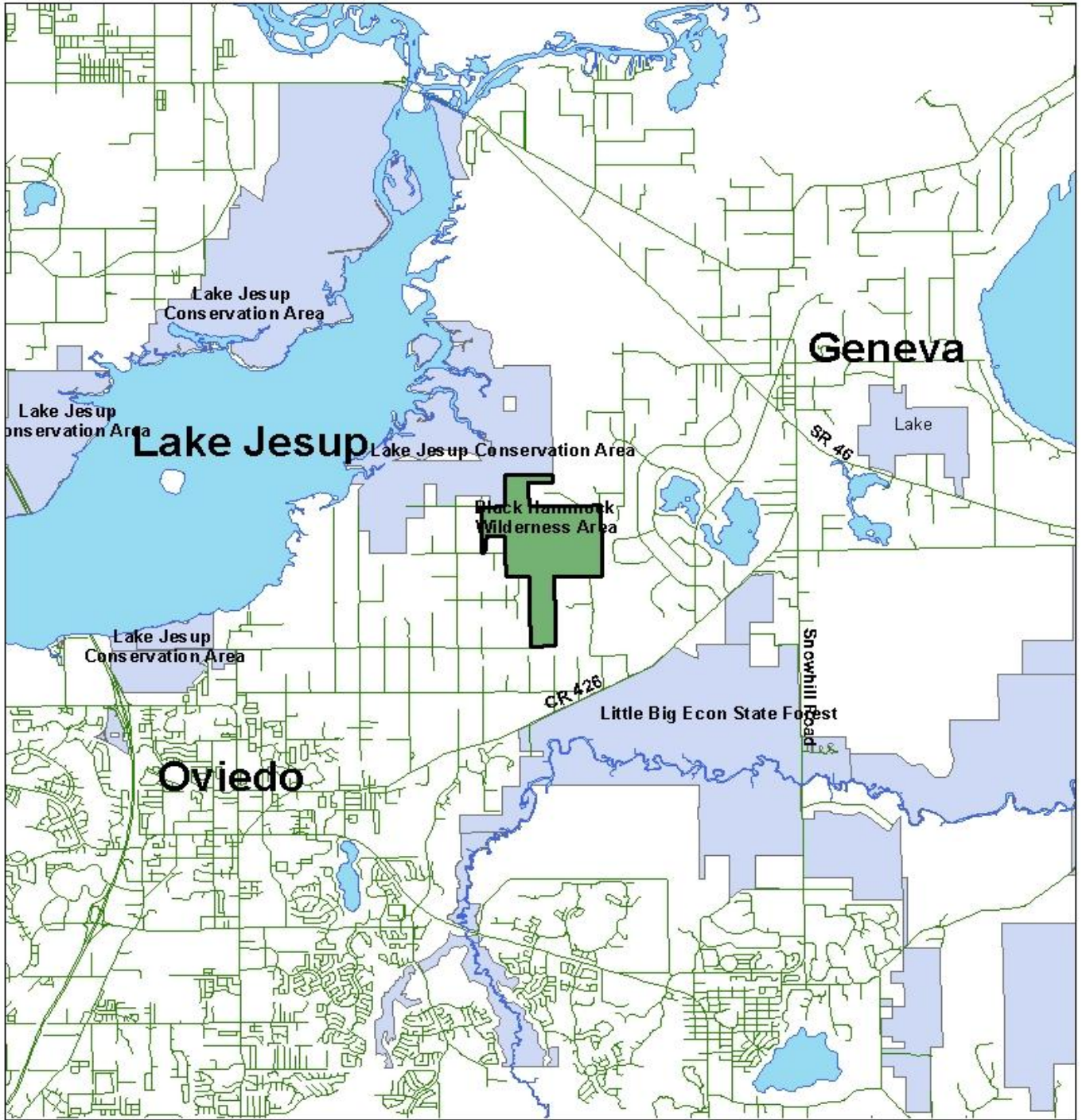
INTRODUCTION

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

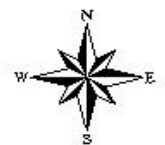
WILDERNESS AREA OVERVIEW

Regional Significance

The 700 acre Black Hammock Wilderness area is located on the East side of Seminole County, east of Lake Jesup. It can be found by taking SR 426 east to Barr Street and turn left into the parking area for the Little Big Econ State Forest and Seminole County's Cochran Trail which traverses through the wilderness area. This site's variety of habitats and beautiful trail system makes it a popular destination for local equestrians, mountain bikers, hikers and outdoor enthusiasts.



Black Hammock Wilderness Area
Figure 1: Location Map



0 1.5 3 Miles

1:84,583

Acquisition History

In 2000 Seminole County acquired approximately 618 acres east of Lake Jesup formerly known as the Tilden Groves, Segrest Crawford and Marcowitz tracts. This site contains habitats such as Pine Flatwoods, Sandpine Scrub and extensive areas of Hydric Hammock which give the Black Hammock area its name. An additional 80 acres was acquired in 2000 as mitigation for wetland impacts associated with the construction of a Lowe's department store in Oviedo Florida.

NATURAL RESOURCES OVERVIEW

Natural Communities

There are six distinct natural plant communities on this property. These include Pine Flatwoods, Sand Pine Scrub, Mixed Hardwood Swamp, Hydric Hammock, and Bayhead Swamp. Plant communities and fire regimes are taken from FNAI, 1990.

Pine Flatwoods

This habitat is characterized by slash (*Pinus elliottii*) and longleaf (*Pinus palustris*) pines, and an understory dominated by saw palmetto (*Serenoa repens*). Understory plants include shiny lyonia (*Lyonia lucida*), and gallberry (*Lyonia glabra*). The ground cover typically contains wire grass (*Aristida berychiana*), Golden aster (*Chrysopsis villosa*), and Vanilla plant (*Carphephorus odoratissima*). Pine flatwoods can be viewed in the central part of Black Hammock Wilderness Area.

Fire is an important feature in the development and maintenance of pine flatwoods. Natural fire occurrence in this habitat is 1 to 8 years, and nearly all plants and animals inhabiting this community are adapted to periodic fires; several species depend on fire for their existence.

Sand Pine Scrub

This plant community is often referred to as Florida's desert because this dry habitat only occurs on sandy, well-drained soils of relic dune lines deposited by ancient tides. Today this community is characterized by species such as sand pine (*Pinus clausa*), sand Live oak (*Quercus geminata*), rusty lyonia (*Lyonia ferruginea*), and rosemary (*Ericoides ceratiola*). The plants and wildlife that inhabit this area are accustomed to a hot and dry environment where water is scarce. This habitat can be found along the eastern portion of BHWA.

Fire plays a critical role in this plant community type. Historically, this habitat would sustain fire every 20 to 60 years under extreme hot, dry and windy conditions. Fires are very intense and burn the entire canopy and ground cover to restart the process of succession from the ground up.

Mixed Hardwood Swamp

Bald cypress (*Taxodium distichum*), black gum (*Nyssa sylvatica*), and red maple (*Acer rubrum*) trees form a dense canopy which creates a shaded, cool microclimate for a diverse assemblage of wildlife. These swamps serve as important filters and flood storage areas for water making its way to Lake Jesup.

Hydric Hammock

This habitat often exists in association with hardwood swamps, forming a transition to higher upland habitats or on areas of slightly higher elevation in broad flood plains. Tree species found in this habitat include the cabbage palm (*Sabal palmetto*), hackberry (*Celtis occidentalis*), laurel oak (*Quercus laurifolia*), water oak (*Quercus nigra*), and sweet gum (*Liquidambar styraciflua*). Groundcover could include several ferns and vines such as cinnamon fern

(*Osmunda cinnamomea*), virginia creeper (*Parthenocissus quinquefolia*), and trumpet vine (*Campsis radicans*).

Hydric hammocks occur on low, flat, wet sites where limestone may be near the surface. Soil is mostly level and poorly drained but very rich in organic composition. A normal hydrologic regime is critical in the development and maintenance of this habitat.

Bayhead Swamp

Bayhead swamps are characterized as densely forested, peat filled seepage depressions often at the base of sandy slopes. There are a few isolated examples of this plant community type throughout Black Hammock Wilderness Area. 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*).

Fire

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 Black Hammock Wilderness Area is to restore the Sand Pine Scrub, 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 and/or exclude smoke impacts to adjoining or nearby urbanized areas, roads and highways.

Wildlife

A wide array of wildlife species have been recorded at Black Hammock Wilderness Area. These include the cotton rat (*Sigmodon hispidus*), cotton mouse (*Peromyscus gossypinus*), barred owl (*Strix varia*), racoon (*Procyon lotor*), red tailed hawk (*Buteo jamaicensis*), and white tailed deer (*Odocoileus virginianus*). Numerous amphibian and reptilian species are found throughout the property including slimy salamanders (*Plethodon grobmani*), Southeastern five-lined skinks (*Eumeces inexpectatus*), Eastern diamondback rattlesnake (*Crotalus adamanteus*), and Florida box turtle (*Terrapene carolina bauri*).

A baseline study was implemented by SCNLP staff from 2000 until 2004. In 1998, a monitoring plan was developed to survey species using standard sampling methodologies for bird surveys,

herp arrays, drift fence, coverboards, gopher tortoise marking, and small mammal trapping. Nest boxes were erected and surveyed as well.

In 2006, NLD staff revised the monitoring plan to focus more closely on the effects of land management practices on flora and fauna.

Listed Species

There are a number of rare and state listed species found on the property including gopher tortoise (*Gopherus polyphemus*), sandhill crane (*Grus canadensis*), snowy egret (*Egretta thula*), and the little blue heron (*Egretta caerulea*).

A volunteer program was established by SCNLP staff to mark and record information on gopher tortoises and box turtles. Volunteers complete at least four hours of training before they are certified to participate in this mark-recapture monitoring effort.

Exotics

Florida's climate is not only attractive to humans, but also to invasive exotic species. An exotic species is defined as a species introduced to Florida, purposefully or accidentally, from a natural range outside of Florida. Some examples of 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 segrei*), 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 per year either directly or indirectly through grants, trying to control 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 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 exotics from both categories.

Exotic plant species found at this site include the air potato (*Dioscorea bulbifera*), old world climbing fern (*Lygodium microphyllum*), Asian sword fern (*Nephrolepis cordata*), camphor tree (*Cinnamomum camphora*) and wild balsam apple (*Momordica charantia*).

The NLD has an exotic management plan in place and there is an ongoing treatment program to control exotic species. A status of exotic animal species will be developed over the next 10 years.

Soils

Felda and Manatee Mucky Fine Sands, Depressional (Type 15)

These are very poorly drained soils occurring in depressions. Normal high-water elevation occurs from June through December and ranges from two feet above to one foot below the surface. Recreational development is limited due to severe ponding and the sandy nature of the soil.

Immokalee Series (Type 16)

These are poorly drained sandy soils occurring on the lower Atlantic and Gulf Coastal flatwoods and are formed in sandy marine sediments. Normal high-water elevation occurs from June through November, and ranges from the surface to one foot below.

Pomello (Type 27)

These are moderately well drained sandy soils on low ridges. The high water table elevation ranges from 2.0 to 3.5 feet below the surface

St. Johns and Eau Gallie Fine Sands (Type 29)

These are nearly level, poorly drained soils occurring in broad, low flatwood areas of the coastal plain. Normal high-water elevation ranges from the surface to one foot below during the wet season. Recreational use is limited, due to severe wetness and sandy nature of the soil.

Samsula Series (Type 10)

These are nearly level, very poorly drained organic soils that occur in freshwater swamps and marshes. Like the Basinger series, normal high-water elevation occurs between June and February and ranges from 2 feet above to 1 foot below the surface. Recreational use is limited by severe ponding and excessive muck levels.

Eau Gallie Series (Type 13)

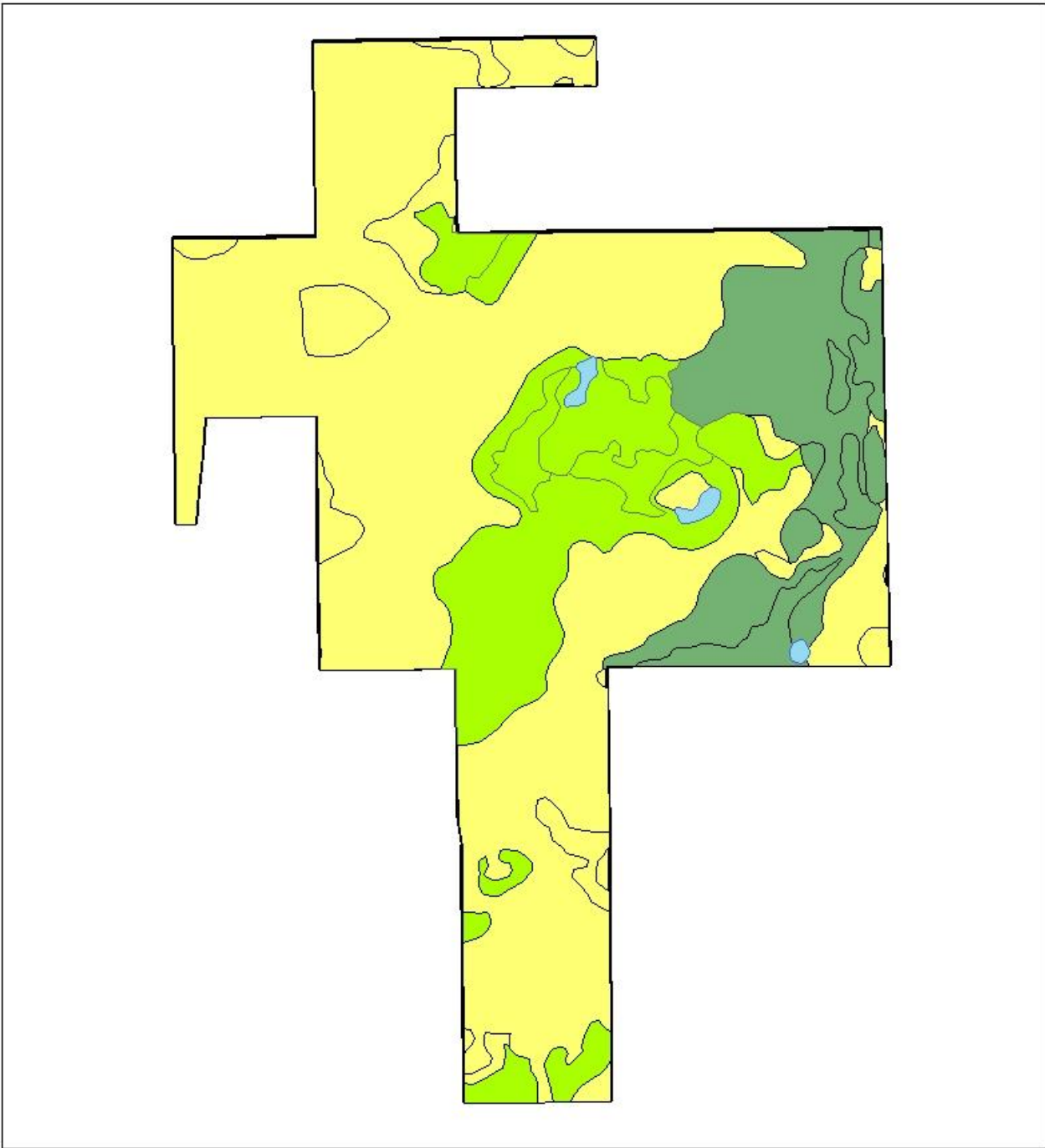
These are nearly level, poorly drained soils on low ridges in flatwoods areas. Normal high-water elevation occurs from June through October, and ranges from the surface to one foot below. Recreational use is limited due to severe wetness and the sandy nature of the soil.

Delray Series (Type 9)

These are deep, very poorly drained soils that occur on low, broad flats in central and south Florida. The normal high-water elevation occurs from June through March, and ranges from the surface to 1 foot below. Recreational use is limited due to severe wetness and sandy nature of the soil

Myakka/Eau Gallie Fine Sands (Type 20)

These are nearly level, poorly drained sandy soils in broad areas of the flatwoods, in depressions, and in areas between sand ridges and ponds and sloughs. The water table is between 1.0 and 3.0 feet below grade during the wet season.



Black Hammock Wilderness Area
 Figure 2: Natural Communities Map

Legend

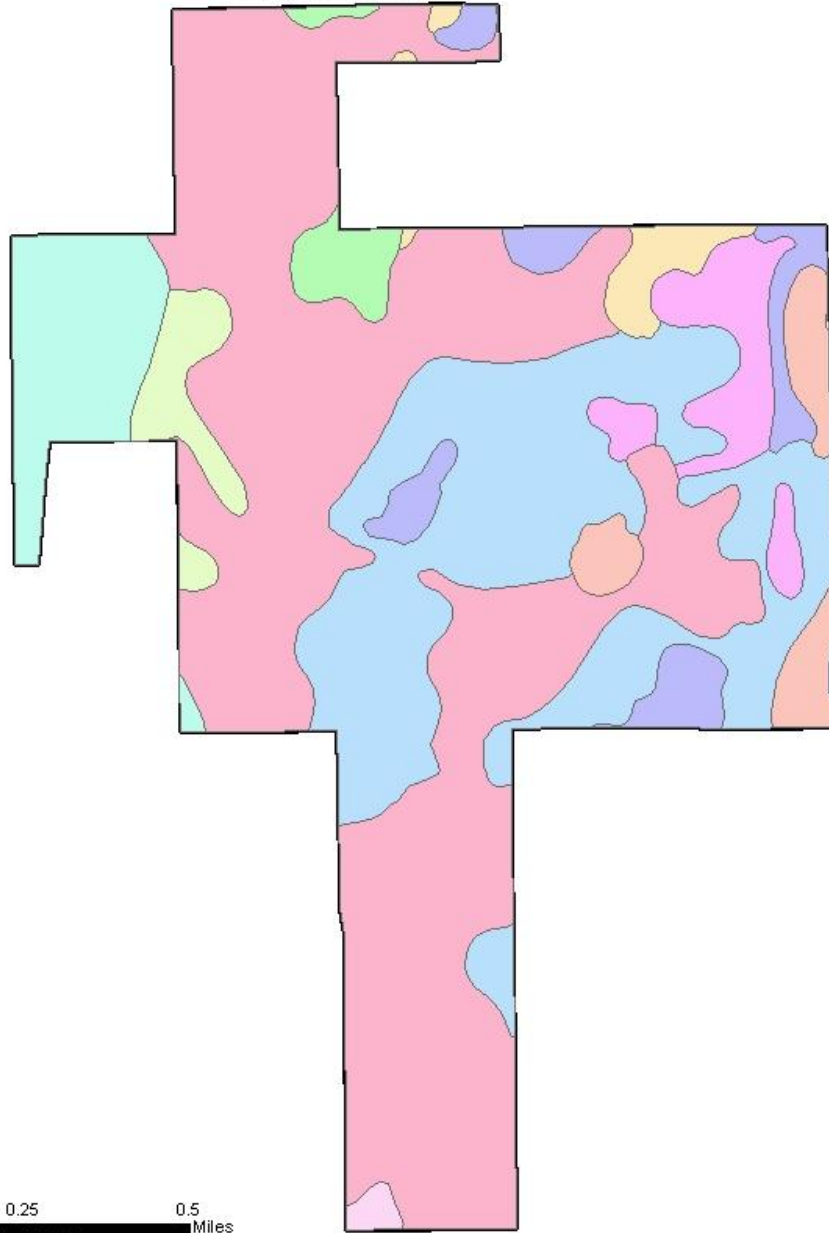
- Bay Swamp
- Pine Flatwoods (Mesic/Scrubby)
- Scrub
- Marsh

0 0.25 0.5 Miles

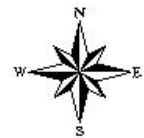
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






**Black Hammock Wilderness Area
Figure 3: Soils Map**



0 0.25 0.5
Miles
1:14,240



Legend

- | | |
|--|---|
|  BASINGER & DELRAY FINE SANDS |  MYAKKA & EAUGALLIE FINE SANDS |
|  BASINGER SAMSULA & HONTOON SOILS |  PAOLA-ST. LUCIE SANDS 0-5% SLOPES |
|  EAUGALLIE & IMMOKALEE FINE SANDS |  NITTAW MUCKY FINE SAND - DEPRESSIONAL |
|  FELDA & MANATEE MUCKY FINE SANDS |  POMELLO FINE SAND 0-5% SLOPES |
|  IMMOKALEE SAND |  ST. JOHNS & EAUGALLIE FINE SANDS |

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 PROTECTION AND MANAGEMENT

Monitoring

Monitoring natural resources is an important tool in gauging the overall health of an ecosystem. The SCNLP 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.

In 2006, a new Natural Lands Program Monitoring Plan was developed. According to that plan, monitoring at BHWA now includes gopher tortoise marking, photo points, plant transects, and small mammal trapping. Also, exotic treatment success will be monitored using photo points.

Gopher tortoise populations are monitored through a volunteer program. Post-burn burrow surveys are conducted by staff. The data collected from these two types of monitoring effort allow staff to estimate gopher tortoise populations on each property

Monitoring Strategies

- Continue quarterly monitoring
- Continue volunteer monitoring program
- Continue monitoring exotic species

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 pine flatwoods and possibly the sand pine scrub habitats. In some cases mechanical treatment may also be used. The hydric hammock and mixed hardwood swamps have been altered in the past through human related activity. The effects will be assessed and possible restoration will be evaluated.

Restoration Strategies

- Continue to evaluate the need for restoration activity

Forest Management

Florida Statutes require public agencies to evaluate lands they manage for timber production. Planting of upland forest species may be a component of future upland restoration projects.

Forest Management Strategies

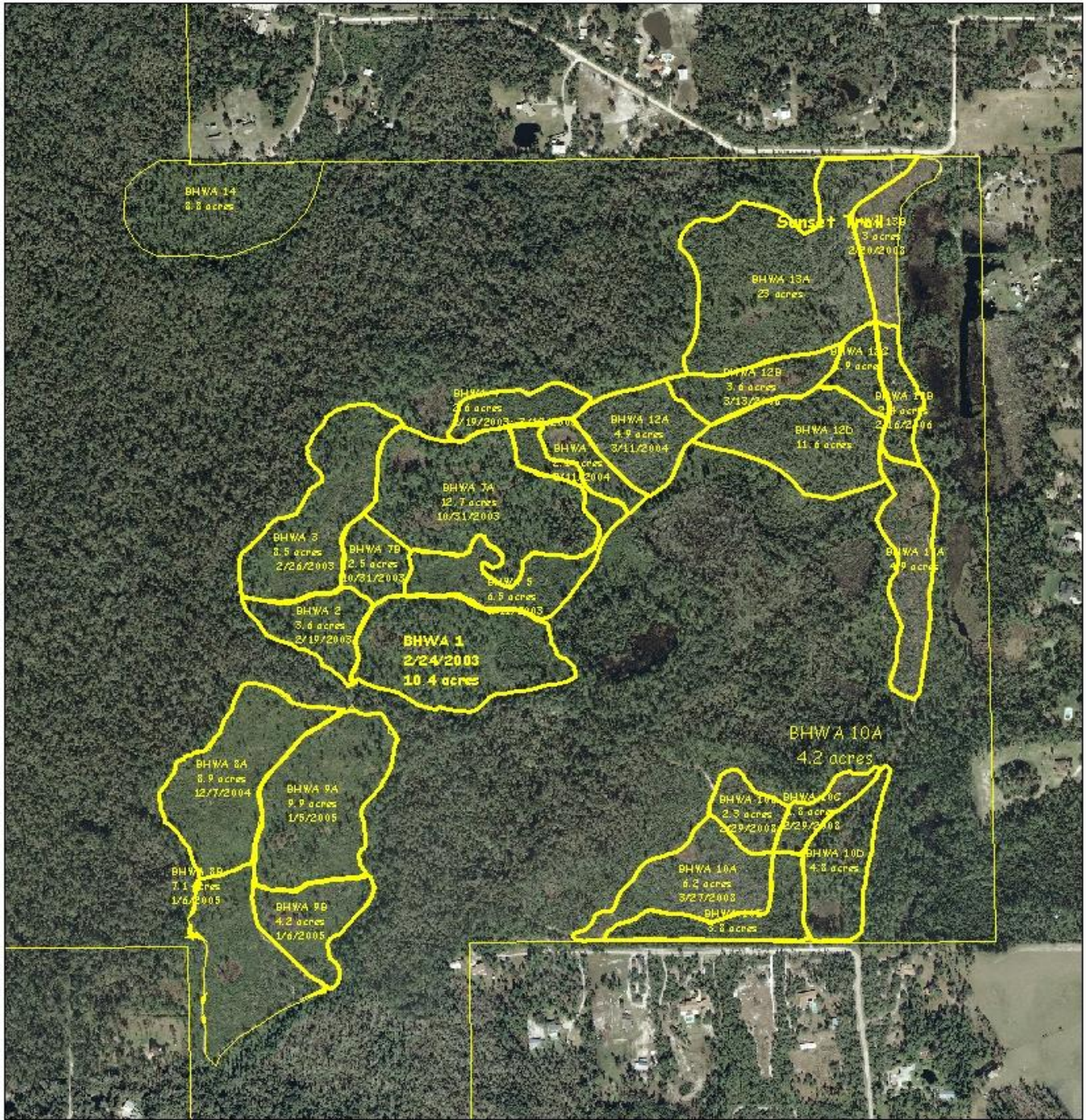
- At this time there are no plans to conduct any forestry related activity within Black Hammock Wilderness Area.

Fire Management

Fire was reintroduced to the property in 2002. The use of fire will serve to restore and maintain the integrity of these natural plant communities, benefitting both vegetation and wildlife.

Fire Management Strategies

- Burn all sites with no burn history
- Switch to 50% lightning season burns



Black Hammock Wilderness Area
Figure 4: Burn Zone Map



1:7,646

Table 2: Natural Community and Fire Return Interval

Plant Community	Fire Frequency for Restoration	Fire Frequency for Maintenance
Pine Flatwoods	1-3 years	3 – 7 years
Hydric Hammock	None	None
Mixed Hardwood Swamp	None	None
Sand Pine Scrub	5 – 10 years	7 – 12 years
Bayhead Swamp	None	None

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 small mammal trapping.
- Continue land management activities.

Listed Species

Surveys are conducted annually to verify the existence of listed plant and animal species. A volunteer program was established by Natural Land’s staff to mark and record information on gopher tortoises. Volunteers complete at least four hours of training before they are certified to participate in the mark-recapture monitoring effort.

Plants

Curtiss’s milkweed (*Asclepias curtissii*) has been found on the property.

Animals

Listed animal species include the Gopher Tortoise (*Gopherus polyphemus*), and Sandhill crane (*Grus canadensis*).

Listed Plant and Animal Strategies

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

Exotic Species

Surveys are conducted annually to verify the existence of listed plant and animal species. There are several exotic plant and animal species within BHWA. These invasive species out-compete and displace native flora and fauna

Plants

Exotic plant species include the Air Potato (*Dioscorea bulbifera*), Old World Climbing Fern (*Lygodium microphyllum*), Camphor tree (*Cinnamomum camphora*) and wild balsam apple (*Momordica charantia*) all of which are listed as either Category I or II plants.

Animals

The NLD has contracted two nuisance feral hog removal agents. Feral cats and dogs are trapped and turned over to Seminole County Animal Services when observed on the property.

Exotic Plant and Animal Strategies

- Get all Category I exotic species under maintenance control.
- Continue feral hog agent program.

Cultural Resources Protection

LAND USE MANAGEMENT

Access

- The primary access point is a shared parking area on C.R. 426 at the Little Big Econ State Forest's Barr Street entrance. There is also a small park and walk access point located at the Eastern end of Howard Avenue along the Southern part of the property. There are two walk through access points for the surrounding neighborhoods located at the east end of Packard Ave. and one on Sunset Trail.

Access Strategies

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

Recreation

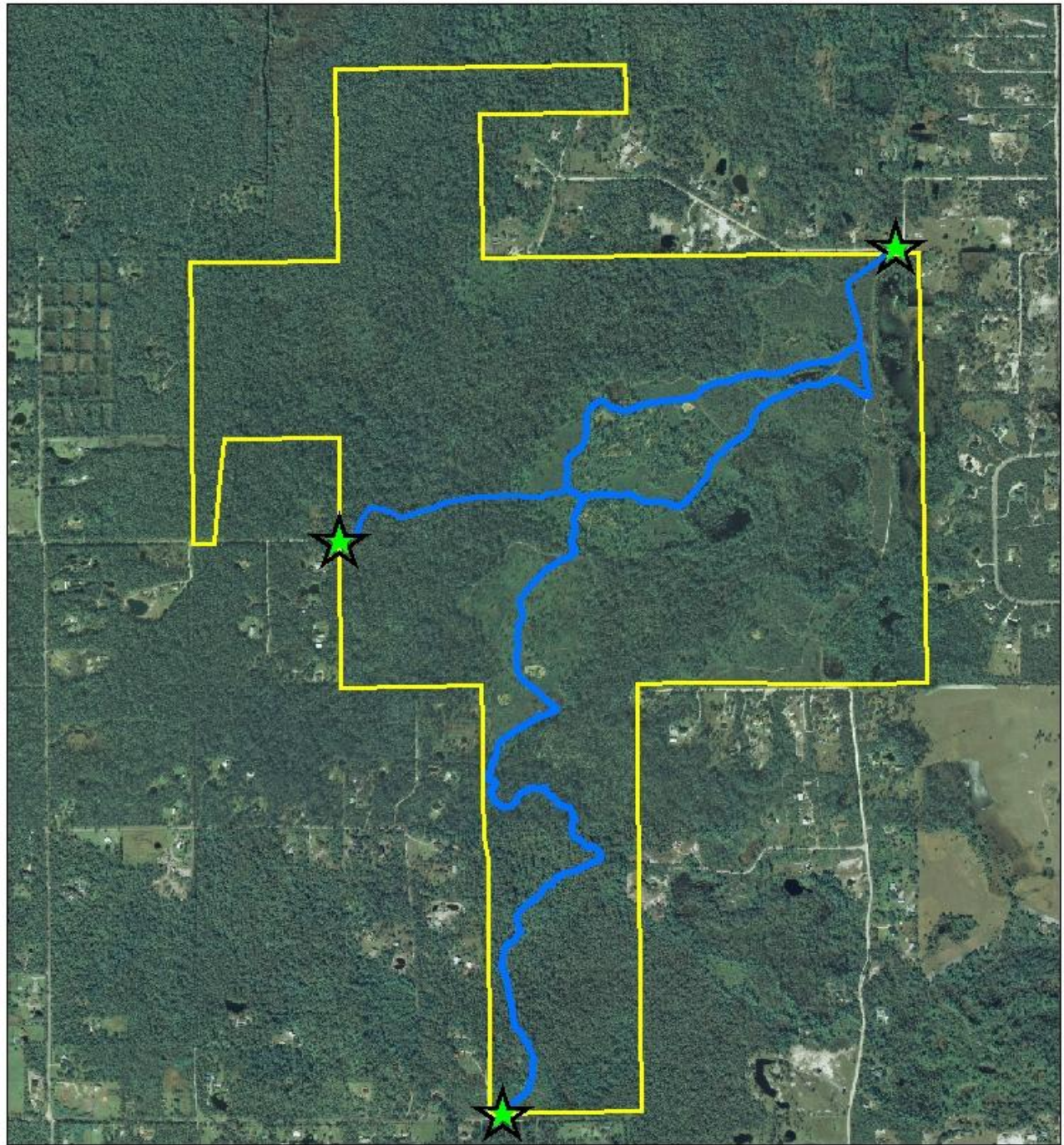
Resource-based recreational opportunities provided on this property include hiking, biking, horseback riding, and wildlife viewing.

Recreation Strategies

- Continue regular maintenance of trails

Environmental Education

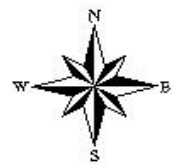
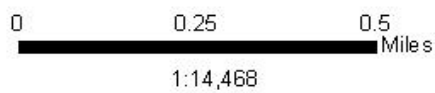
While no educational facilities exist on this property, it is used as an outdoor classroom for enthusiasts and students of all ages.



Legend

-  Trails
-  Public Access

Black Hammock Wilderness Area
Figure 5: Recreation Map



Security

The security of Black Hammock Wilderness Area will continue to be addressed through the existing partnerships with SCSO and FWC.

Security Strategies

- Continue with current security

ADMINISTRATION AND IMPLEMENTATION

Acquisition

Additional lands for Black Hammock may be purchased under the State's Florida Forever program, and the Seminole County Natural Lands Program.

Acquisition Strategies

- Continue to pursue adjacent parcels as available.

Implementation Chart

An implementation chart of activities and responsibilities follows.

**Conservation Area
Management Activity Implementation Chart**

TASK	RESPONSIBLE LEAD	DUE DATE	COOPERATORS
RESOURCE PROTECTION AND MANAGEMENT			
<u>Restoration</u>			
Evaluate need for restoration activity	NL	On-going	
<u>Forest Management</u>			
No current plan for forestry related activities			
<u>Fire Management</u>			
Develop prescribed fire plan	NL	2013	PS, DOF
Divide property into burn zones (Done)	NL	2013	PS, DOF
<u>Wildlife</u>			
Continue to record wildlife observations	NL	On-going	Volunteers
Continue with land management activities	NL	On-going	PW
<u>Listed Species</u>			
Plants & Animals			
Continue monitoring for gopher tortoises	NL	On-going	Volunteers
Continue with small mammal trapping	NL	On-going	Volunteers
Continue with listed plant species survey	NL	On-going	Volunteers
<u>Exotic Species</u>			
Plants & Animals			
Get all Category I exotics under maintenance control	NL	2012	PW
Continue with exotic species monitoring	NL	On-going	Volunteers
LAND USE MANAGEMENT			
<u>Access</u>			
Continue regular maintenance of public access areas	NL	On-going	PW
Maintain signs and kiosks	NL	On-going	PW
<u>Recreation</u>			
Maintain regular maintenance of all recreational resources	NL	On-going	PW, Volunteers
<u>Security</u>			
Continue with current security	NL	On-going	

KEY

DOF Division of Forestry
PS Public Safety

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