

Morningside Nature Center

Nature Park Management Plan
Public Review Draft

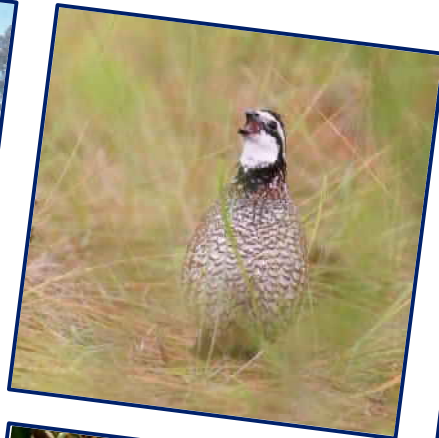
2025-2035

City of Gainesville

Parks, Recreation, and Cultural Affairs Department

October 2025

City of
Gainesville
Parks, Recreation and Cultural Affairs



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**City of Gainesville
Parks, Recreation, and Cultural Affairs Department
Morningside Nature Center
Nature Park Management Plan**

Public Review Draft

October 2025

Prepared for:

City of
Gainesville
Parks, Recreation and Cultural Affairs

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Executive Summary/Management Plan Summary

The City of Gainesville, Florida, manages a comprehensive park system that offers active recreation opportunities (e.g., playgrounds, sport fields, and pools), as well as passive recreation opportunities (e.g., hiking, bicycle riding, and wildlife viewing). A significant portion of the public recreation spaces, approximately 3,200 acres, is dedicated to conservation, natural resource management, and compatible-use outdoor passive recreation. This complex network of properties contains a variety of beneficial public resources including nature trails, nature centers, and environmentally significant natural systems. Depending upon the type of natural resources present, these lands are protected and maintained, or they are managed with active conservation practices that include prescribed burning, invasive plant control, habitat restoration, wildlife management, hydrological resource protection, and public use management.

The Natural Resource Management (NRM) Section under the Parks, Recreation, and Cultural Affairs (PRCA) Department for the City of Gainesville is responsible for managing, protecting, and restoring, where feasible, native natural communities and diversity in all nature parks and City-owned environmentally sensitive lands, and providing opportunities for environmental education and resource-based recreation. As such, each individual Nature Park Management Plan (NPMP) will serve as an adaptive framework for management of each property over a ten-year period, allowing for adjustments in response to evolving future conditions. Each report focuses on a particular park(s) and covers topics such as land use history, natural resource inventories, resource management challenges, and, most importantly, identifies the park's goals, objectives, and actions for managing those challenges.

This NPMP focuses on Morningside Nature Center (MNC), a 416-acre park located east of Gainesville's urban core on the fringes of the City's boundary. MNC provides an excellent opportunity to view fire-dependent communities with high vegetation and wildlife diversity. Ten different natural communities have been identified with sandhills, mesic flatwoods, and forested wetlands being the predominant communities present. Sandhills (categorized by Florida Natural Areas Inventory [FNAI] as S2 rare or imperiled statewide) and mesic flatwoods represent a total of 333.90 acres or 80.82 percent of the park. Gopher tortoise (*Gopherus polyphemus*) burrows are known to host a variety of commensal vertebrate and invertebrate species. Locally important species documented at MNC that benefit from gopher tortoise burrows include the eastern diamondback rattlesnake (*Crotalus adamanteus*) and the Florida pine snake (*Pituophis melanoleucus mugitus*). MNC also hosts 615 total taxa of plant species and several imperiled plant species.

Natural Resource Management Challenges at MNC

Each park is geographically uniquely located within the City. Ecosystems, stakeholders, natural resources, external threats, and recreational opportunities vary significantly. NRM Section staff meet these challenges by defining and addressing strategies to best meet current and anticipated future needs.

- 1 ▪ **Restoration.** Initiate or continue restorative actions (e.g., prescribed fire,
2 midstory oak reduction, invasive plant control, native vegetation plantings) to
3 achieve desired future conditions in each natural community type through the
4 clear definition of goals and objectives.
- 5 ▪ **Hydrology.** Protecting and restoring hydrology, water quality, and
6 connectivity in the wetlands is necessary given historical on- and off-site
7 hydrological disturbances (e.g., creek channelization, drainage ditches, and
8 vehicle usage on wet trails).
- 9 ▪ **Fire management.** Conduct a planning process which includes the
10 preparation of annual goals to maintain natural communities and address
11 backlogged acreage that presents wildfire risk and smoke management
12 concerns.
- 13 ▪ **Invasive species.** Continue treatments and monitoring of invasive species to
14 eliminate Category I and II invasive species on the park that negatively alter
15 natural communities.
- 16 ▪ **Cultural resources.** Continue protection of cultural and historic resources.
- 17 ▪ **Public Awareness and Education.** Increase public awareness and education
18 to help the community understand the importance of conservation and natural
19 resources management.
- 20 ▪ **Monitoring.** Improve ecological monitoring strategies (e.g., potential
21 partnerships, volunteers, and contractors) to support ongoing natural resource
22 management goals and objectives, given current low-staffing levels.

23 **Goals and Objectives**

24 The following goals and objectives have been developed to guide natural resource management activities
25 and address the primary challenges over the next ten-year period, in order to support natural resource
26 sustainability and the long-term ecological health of the natural communities at MNC.

Goals and Objectives	
Goals	Objective(s)
1 - Restore and maintain native habitats and communities.	1.1 – Safely conduct prescribed burns through appropriate planning, evaluation, and implementation with an emphasis on experience-based staff development.
	1.2 - Manage MNC with optimal fire return intervals in pyrogenic communities.
	1.3 - Eliminate Category I and II invasive plant species identified by the Florida Invasive Species Council, or if not possible, reduce populations too low to alter native plant communities.
	1.4 - Conduct annual monitoring to determine the success of restoration and conservation strategies.
	1.5 - Protect imperiled plant and animal species.
2 - Manage public access, passive recreation, research, and educational opportunities	2.1 - Provide public access to the park that is compatible with established passive recreation policies.
	2.2 - Prepare an updated trail plan that evaluates the existing trail system and identifies trails in need of restoration, upgrading, rerouting, modifying use restrictions, or closing.
	2.3 - Assess and monitor the current trail system for needed improvements and impacts to the health of native habitats and communities.
	2.4 - Provide compatible education, training, and research opportunities that meet the needs of the surrounding communities and that are consistent with conservation goals.
3 – Preserve and restore hydrology.	3.1 – Protect, maintain, and where possible restore hydrologic conditions with MNC natural communities.
4 - Manage forest resources through an ecosystem level approach, prioritizing natural community form and function.	4.1 - Prepare and implement a Forest Management Plan, including reforestation, harvesting, prescribed fire, and other related activities, based on restoration and maintenance needs of the existing natural communities on the property.
5 - Protect, preserve, and maintain cultural resources.	5.1 - Maintain current inventory of historic and cultural resources.
	5.2 - Monitor, protect, and preserve known cultural and historical sites.
6 - Develop and maintain capital facilities and infrastructure necessary to meet the needs of stakeholder groups where feasible.	6.1 - Ensure that the construction and maintenance of any new facilities and improvements to the park, including those outlined in the new Morningside Master Plan, are consistent with the goals and objectives of this plan.
7 - Manage annual fiscal and personnel needs for natural resource management activities at MNC.	7.1 - Prepare an annual work plan to address maintenance, staffing, and other operational needs.

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Acronyms and Abbreviations

%	percent
ASL	above sea level
CAPRA	Commission for Accreditation of Park and Recreation Agencies
CISMA	Cooperative Invasive Species Management Area
CON	Conservation
DFC	desired future conditions
DHR	Division of Historical Resources
DOF	(Florida) Division of Forestry
DPI	Division of Plant Industry
F.A.C	Florida Administrative Code
FDACS	Florida Department of Agriculture and Consumer Services
FDOT	Florida Department of Transportation
FFGS	Forest, Fisheries, and Geomatics Sciences
FFS	Florida Forest Service
FISC	Florida Invasive Species Council
FLMNH	Florida Museum of Natural History
FMSF	Florida Master Site Files
FMU	Fire Management Unit
FNAI	Florida Natural Areas Inventory
FS	Florida Statutes
FWC	Florida Fish and Wildlife Conservation Commission
GIS	Geographic Information System
IFAS	Institute of Food and Agricultural Sciences
IPaC	Information for Planning and Consultation
IPM	Invasive Plant Management
LDC	Land Development Code
MNC	Morningside Nature Center
NCC	Nature Centers Commission
NCFRxFWG	North Central Florida Prescribed Fire Working Group
NGO	non-governmental organization
NOD	Nature Operations Division
NPMP	Nature Park Management Plan (<i>also</i> the Plan)

Acronyms and Abbreviations (continued)

NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NRM	Natural Resource Management
PBE	prescribed burn evaluation
PBP	prescribed burn plan
Plan, the	Nature Park Management Plan (<i>also</i> NPMP)
PRCA	Parks, Recreation, and Cultural Affairs
SJRWMD	St. Johns River Water Management District
SR	State Route
SUA	Special Use Authorization
SUP	Special Use Permit
USDA	United States Department of Agriculture
USDA-SCS	United States Department of Agriculture- Soil Conservation Service
USFWS	United States Fish and Wildlife Service
WSPP	Wild Spaces and Public Places

1.1 Introduction

The City of Gainesville, Florida manages a comprehensive park system that offers active recreation opportunities (e.g., playgrounds, sport fields, and pools), passive recreation opportunities (e.g., hiking, bicycle riding, and wildlife viewing), as well as important cultural and historical sites and annual events. A significant portion of the public recreation spaces, approximately 3,200 acres, are dedicated to conservation, natural resource management, and compatible-use outdoor passive recreation. This complex network of properties contains a variety of beneficial public resources including nature trails, nature centers, and environmentally significant natural systems. Depending upon the type of natural resources present, these lands are protected and maintained, or they are managed with active conservation practices that include prescribed burning, invasive plant control, habitat restoration, wildlife management, hydrological resource protection, and public use management.

1.2 Purpose of Plan

A Nature Park Management Plan (NPMP; the Plan) is being prepared to establish an adaptive framework for informed decision making, while guiding resource management programs, practices, uses, and projects over the next ten-year planning period for a portion of the City of Gainesville nature parks. All planning documents for these properties are officially referred to as NPMPs and will be reviewed and updated at the conclusion of the ten-year planning period.

The NPMP is strategic in nature and does not attempt to prescribe detailed management direction to address every possible situation. While all components necessary for resource protection and restoration are included, the Plan also provides the flexibility necessary to respond to uncertain or unknown future events and conditions, such as fires, floods, climate change, changing economics, and social changes.

City of Gainesville Nature Park Management Plans

These planning documents have been designed to cover a multitude of City-owned conservation lands that are officially named as either “Park,” “Nature Park,” “Conservation Area,” “Nature Center,” or they may remain as unnamed parcels designated as green spaces within the City. Each property will have different management goals and strategies to best address conservation concerns. All planning documents for these properties are officially referred to as Nature Park Management Plans and will be reviewed and updated at the end of the ten-year planning period.

1.3 Organization of Plan

Each NPMP will be organized as follows to be easily used by a variety of stakeholders.

- Section 1 provides an introduction, including an overview of the City of Gainesville park system, the purpose of the NPMP, and an overview of the public review and stakeholder involvement process.
- Section 2 provides an overview of the PRCA lands, internal land management policies and coordination, consistency with the City of Gainesville Comprehensive Plan and other over-arching management documents, in coordination with land management agreements and outside agencies.
- Section 3 provides a general setting and regional context discussion for Morningside Nature Center (MNC; *also* the park), its land use and acquisition history, park significance, and current and proposed park land use, amenities, facilities.
- Section 4 provides an analysis of the inventory and current conditions of the natural resources on MNC including the topography and geology, hydrology, soils, natural communities, and wildlife.
- Section 5 provides the primary management challenges at MNC related to natural resource management, hydrology, invasive species, cultural resources, research and monitoring, public use and access management, timber resources, and capital facilities. Each challenge will include a discussion of the NRM Section's strategies to properly manage natural resources.
- Section 6 provides the goals, objectives, and actions that will guide land management over the next ten years. In addition to the NRM Section common practices, strategies to respond to the challenges identified in the previous section are included.

1.4 Public Review and Stakeholder Involvement

Public and stakeholder involvement on the NPMP is essential for implementing a collaborative and successful process. External participation involves stakeholder identification, outreach, and analysis and implementation of stakeholder feedback. It is the intent of the NRM Section to engage the public and stakeholders throughout the development of the NPMPs. The NPMPs will undergo internal review through the NPMP Steering Committee and other City of Gainesville leadership. Following this review, each NPMP will be submitted to the Nature Centers Commission (NCC) for review and approval. The public will be encouraged to provide input, and this input will be considered during the development and review of the NPMPs. Meetings to obtain public comment on each NPMP will be held at a convenient time and location. The public will have 30 days from the date of the public workshop to review the NPMP and provide comments. Comments received at the workshop will be reviewed and consolidated for each NPMP into a workshop summary report (Appendix A).

City of Gainesville Nature Park Management Authorities

2.1 City of Gainesville Nature Parks

The City of Gainesville PRCA manages more than 3,200 acres of parks, recreation spaces, natural areas, and community centers, each having their own unique identity, often shaped by the neighborhoods surrounding them. This NPMP will address the long-term management of each of the following nature parks (Table 2-1 and Figure 2-1). The City of Gainesville Comprehensive Plan provides the following definition of nature parks:

Nature parks are considered to be moderately sized, resource-based parks offering physical or visual access to environmentally significant open spaces. Typical amenities offered include trails, benches, picnic facilities, boardwalks, and exhibits. Motorized vehicles are prohibited from pedestrian and bicycle corridors. Public properties containing environmentally significant features that have not been developed to accommodate passive recreation are known as conservation areas.

Table 2-1 Parks, Recreation, and Cultural Affairs-Managed Lands, Acreage, and Amenities

Map Number	Name	Total Acres	Type	Amenities
1	Alfred A. Ring Nature Park	20.74	Nature	
2	29th Road Nature Park	10.00	Nature	
3	Greentree Park (Natural Area Only)	21.00	Recreation and Play	
4	Loblolly Woods Nature Park	160.69	Nature	
5	Cofrin Nature Park	30.34	Nature, Recreation and Play	

2 City of Gainesville Nature Park Management Authorities

6	Bivens Arm Nature Park	81.04	Nature	
7	Boulware Springs Nature Park	106.63	Nature	
8	Colclough Pond Nature Park	40.95	Nature	
9	Broken Arrow Bluff Nature Park	11.02	Nature	
10	Split Rock Conservation Area	241.03	Nature	
11	Morningside Nature Center	419.06	Nature, Heritage and Culture	
12	Flatwoods Conservation Area	158.00	Nature	
13	Gum Root Nature Park	371.78	Nature	
14	Clear Lake Nature Park	14.56	Nature	
15	Forest Park Conservation Area	28.05	Nature	
16	John Mahon Nature Park	9.83	Nature	
17	Terwilliger Pond Conservation Area	24.83	Nature	
18	Sugarfoot Conservation Area	195.03	Nature	
19	Hogtown Creek Headwaters Nature Park	90.00	Nature, Heritage and Culture, and Recreation and Play	
20	San Felasco Nature Park	189.90	Nature, Recreation and Play	
21	Springtree Nature Park	11.70	Nature, Recreation and Play	
Total Acres		2,236.18		

SOURCE: City of Gainesville. National Park Service Pictographic Symbols.

KEY:



= Dogs Allowed.
= Walking.
= Picnic Table.
= Grills.
= Restrooms.

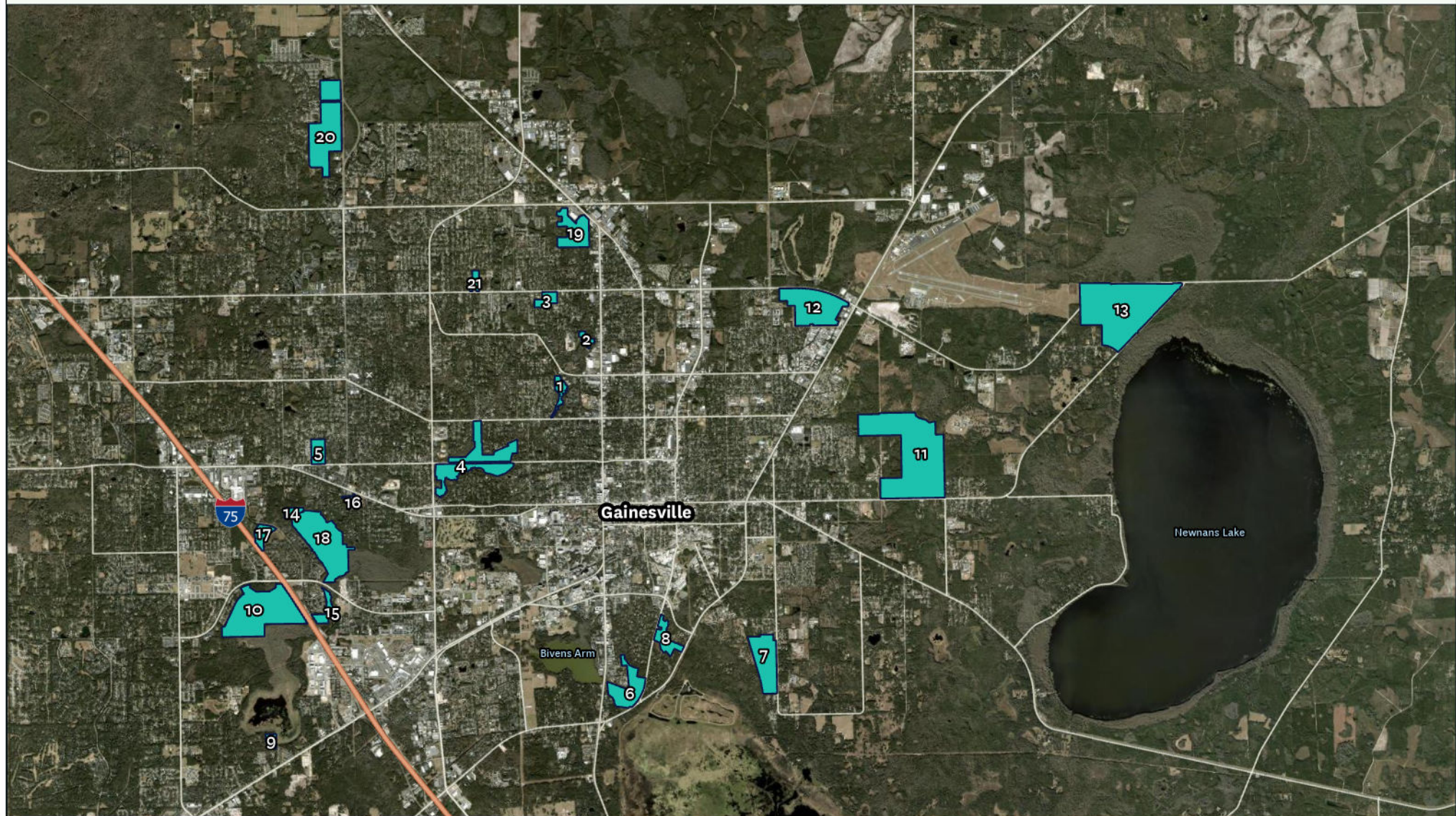


= Birding/Wildlife viewing
= Playground.
= Exercise/Fitness.
= Picnic Pavilion.
= ADA Accessible.



= Bicycle Trail
= Fishing

2-1 City of Gainesville - Nature Parks



Legend

 City of Gainesville Nature Parks



 Miles
0 0.5 1 2

2.2 City of Gainesville Nature Park Management Authorities

The City of Gainesville is committed to land conservation, aiming to protect natural and environmental resources through its Comprehensive Plan and Land Development Code (LDC). This involves regulating development activities to minimize impacts on natural resources, including surface waters, wetlands, trees and other natural features. The City's planning documents, including the Comprehensive Plan and LDC, establish the framework for land conservation. These documents outline policies and regulations to protect natural resources and ensure responsible development. Specifically, the Comprehensive Plan sets a broad vision and direction while the LDC, Chapter 30 of the City's Code and Ordinances, provides specific regulations and standards to implement that vision.

2.2.1 City of Gainesville Comprehensive Plan

The PRCA's management of its network of parks, recreation spaces, natural areas, and community centers contribute to the City of Gainesville's livability and overall quality of life, which are key elements of the Comprehensive Plan. Specifically, the management of nature parks and the preparation of this NPMP are consistent with the goals, objectives, and policies of the Comprehensive Plan as provided below:

- **Conservation, Open Space, and Groundwater Recharge Element** - The primary purpose of the Conservation, Open Space, and Groundwater Recharge Element is to identify Gainesville's natural environmental features, describe the functions and services they provide to the community, and describe the actions that should be taken to preserve, conserve, or restore the functions of the natural features found in the community.

City of Gainesville Land Conservation

The City acquires land for conservation working with partners like the Alachua Conservation Trust to protect natural resources and promote environmental stewardship. Funding is established through two local referendums, the Alachua County Forever (2000) and the Wild Spaces & Public Places (WSPP; 2008). The WSPP is a one-half percent (0.5%) sales surtax collected through December 31, 2032. Tax revenue is used to acquire and improve environmentally sensitive lands through the Alachua County Forever Program and to create, improve, and maintain parks, trails, and recreational facilities. WSPP oversees projects for the City's PRCA, supporting necessary capital infrastructure improvements in nature parks.

The City of Gainesville and Alachua County have developed a Registry of Protected Places which affords additional protection to City and County-owned property purchased for conservation, recreation, or cultural use.

- 1 ▪ **Recreation Element** - This element recognizes the
2 value and limitations of traditional, quantitative
3 recreation facility standards which estimate the need
4 and location of facilities based on people. To address
5 these limitations, this element considers how people
6 behave when offered various types of recreational
7 opportunities, emphasizing the importance public
8 access has in improving recreational opportunities.
- 9 ▪ **Cultural Affairs Element** - The successful
10 implementation of this element will contribute to the
11 creation of a unique environment in which the arts
12 and cultural resources attract regional and national
13 attention while enhancing the cultural economic life
14 of the community.
- 15 ▪ **Stormwater Element** - The purpose of this report is
16 to describe the City's stormwater management
17 system, assess the system's ability to provide
18 necessary protection to residents, structures, and the
19 environment including groundwater resources.

City of Gainesville Registry of Protected Public Places

Gainesville Code of Ordinances, Ordinance No. 100967 identifies real properties owned in fee simple by the City of Gainesville that are acquired or used for conservation, recreation, or cultural purposes, and that are deemed by the City Commission of the City of Gainesville to be worthy of the highest level of protection. The following nature parks are on the registry: 29th Road Nature Park, Alfred A. Ring Nature Park, Bivens Arm Nature Park, Broken Arrow Bluff Nature Park, Clear Lake Nature Park, Cofrin Nature Park, Forest Park, John Mahon Nature Park, Morningside Nature Center, Split Rock Conservation Area, and Sugarfoot Prairie.

Definitions

The following definitions were taken from the City of Gainesville Comprehensive Plan.

Local Nature Parks – moderately sized, resource-based parks which offer physical or visual access to environmentally significant open spaces. Such parks include trails, benches, picnic facilities, boardwalks, and exhibits. Public properties containing environmentally significant features that have not been developed to accommodate passive recreation are known as “conservation areas”.

Passive Recreation – also known as resource-based recreation: any recreation activity, such as boating, nature study, picnicking, or hiking that is primarily dependent on the passive enjoyment of the natural environment. Any human-built facilities at the site are designed only to enhance the enjoyment of, or otherwise promote the preservation of, the natural environment of the site.

Active Recreation – any recreation activity that is primarily dependent on human-built facilities (e.g., a ballfield, tennis court, or swimming pool) rather than the natural environment (e.g., a prairie, forest, creek, or lake) of the recreation site. The attractiveness of activity-based parks is primarily based on the human-built recreational facilities at the site, rather than the natural environment of the site.

2.2.2 City of Gainesville Parks, Recreation and Cultural Affairs

The City of Gainesville, PRCA, initiated in 1979, manages parks, recreation spaces, natural areas, and community centers while also offering a variety of cultural programs and events. Primary functions of the

PRCA include Park and Recreation Management, Cultural Affairs, Community Engagement, and Accessibility and Inclusion.

Vision – Our Passion: Engaging – Connecting – Building Community.

Mission – We create meaningful experiences and a feeling of connection and belonging for all through exceptional programs and services with well-maintained parks, public places, natural resources and historic sites.

Organizationally, the City of Gainesville’s PRCA is designed to manage various aspects of parks, recreation, and cultural activities, including administering grants, managing facilities, and supporting community events. The PRCA has been accredited through the National Recreation and Park Association’s Commission for Accreditation of Park and Recreation Agencies (CAPRA) since 2013. Recently the PRCA Department underwent several organizational changes, which resulted in Nature Operations Division (NOD) being dissolved, and both sections (Natural Resource Management and Environmental Education) were organizationally moved to separate divisions. The NRM Section was moved to Park Operations, and the Environmental Education Section was moved to the Youth Services Division. Figure 2-2 illustrates the PRCA’s current organizational structure.

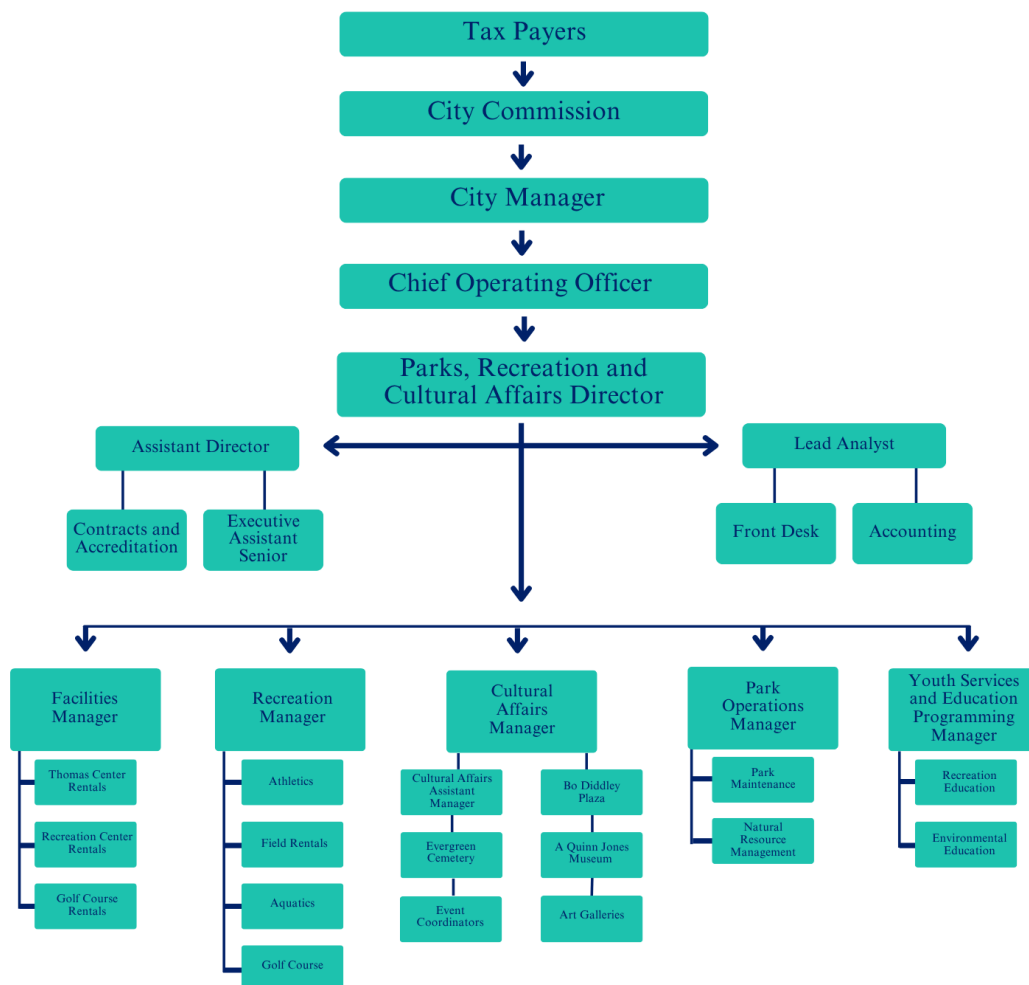


Figure 2-2 PRCA Department Organizational Structure

2.2.3 City of Gainesville Code of Ordinances

The City of Gainesville's Code of Ordinances, adopted in 1990 and republished in 1994, includes all general and permanent ordinances applicable to the city. A number of ordinances apply directly to the operation of the PRCA and the management of nature parks. *Chapter 18 Parks, Recreation and Cultural Affairs* establishes the following for recreational users of all parks.

- Lighted parks are open from 6:00 a.m. until 11:30 p.m. (unless otherwise posted, i.e., authorized by permit only).
- Nature parks are open from dawn to dusk.

The Code of Ordinances contains a complete list of prohibited activities in any park. The following are prohibited activities that are commonly applicable and of greater concern in nature parks.

- Do not set or stoke a fire, except for city authorized prescribed burns or those fires set or stoked in designated city or permitted grills.
- Do not gather firewood or other natural materials to set or stake a fire.
- Do not litter, dump, or deposit yard waste.
- Do not disturb the natural surface of the ground in any manner (unless authorized by the City Manager in writing).
- Do not pick flowers, nuts, berries, or fruit, or remove plants, trees, shrubs from any part of the park's grounds (unless authorized by the City Manager in writing).
- Do not operate or park any motorized vehicle, as defined in in Chapter 316 Florida Statutes (FS) on park grounds except in areas designated by the city as public parking areas.
- Do not engage in the destruction, removal, or alteration of any city owned facility or equipment from any park property
- Do not engage in the removal, alteration or destruction of archaeological or cultural resources from any park property or water body.
- Do not engage in the introduction, removal, destruction, or harassment of animals and plants from or on parklands.

The following additional guidelines are applicable to nature parks, centers, and conservation areas.

- Nature parks, centers, and conservation areas shall be open to the public; however, the activities established by the City Manager or designee for each park shall be compatible with the protection of the natural resources for each individual park and shall be posted at each park. Nature parks, centers, and conservation areas shall be closed to the public when, due to emergency conditions or activities undertaken by the federal, state or local government

1 for maintenance of such areas, closure is necessary to protect such lands or to
2 protect the health, safety and welfare of the public.

- 3 ▪ Hiking, defined as travel by foot, is permitted in nature parks, centers, and
4 conservation areas only on designated trails, established roads and in
5 firebreaks.
- 6 ▪ Bicycling is permitted at certain nature parks, centers, and conservation areas
7 that are specifically posted for that activity and shall only be permitted on
8 trails, established roads and firebreaks.
- 9 ▪ Horseback riding is permitted only from the north parking area of Boulware
10 Springs Nature Park to the Gainesville-Hawthorne State Trail.
- 11 ▪ Hunting or trapping is prohibited in any nature park, center, or conservation
12 area, except where specifically authorized in writing by the City Manager or
13 designee for the purposes of scientific study or the removal of nuisance species
14 and as regulated by the state.
- 15 ▪ Dogs are permitted in nature parks, centers, and conservation areas, except
16 where otherwise posted provided that such animals are leashed at all times.
17 When authorized in writing by the City Manager or designee, other domestic
18 animals may be permitted at nature parks, centers, and conservation areas. The
19 owner or other person responsible for the animal shall clean up and properly
20 dispose of the animal's waste as stated in Sections 18-20.
- 21 ▪ Swimming and water access is prohibited at all nature parks, centers, and
22 conservation areas except in areas posted for swimming and water access.
- 23 ▪ Fishing is prohibited, except at Palm Point Nature Park and Colclough Pond
24 Nature Park in compliance with the guidelines established in state law.
- 25 ▪ The disposal of oil, gasoline or other hazardous substances is prohibited at all
26 nature parks, centers, and conservation areas.
- 27 ▪ The use of metal detectors is prohibited in all nature parks, centers, and
28 conservation areas.
- 29 ▪ Concessions may be allowed in certain nature parks, centers, and conservation
30 areas, if determined to be appropriate to that natural area and are approved in
31 writing by the City Manager or designee. Appropriate to the natural area is
32 described as:
 - 33 ○ Concession is necessary to fulfill a need in the interest of the public and
34 will assist the city in providing public use of nature parks, centers, and
35 conservation areas;
 - 36 ○ Concession will be open to public;
 - 37 ○ Concession will be economically feasible for the city;

- Concession will be compatible with the protection of natural resources and the management of goals for that park as stated in the management plan; and
- Concession will not result in an unfair advantage over existing businesses that provide similar services in the area.
- Research may be permitted in nature parks, centers, and conservation areas if said research is compatible with the protection of the natural resources and the management goals for that park as stated in the management plan and when approved in writing by the City Manager or designee.

Gainesville Code of Ordinances, Ordinance No. 100967 adds certain specific real properties owned in fee simple by the City of Gainesville to the City of Gainesville Registry of Protected Public Places, as more specifically described in this Ordinance.

Chapter 30 Land Development Code

The stated purpose of the Land Development Code is that it implements the City of Gainesville Comprehensive Plan to secure an environment for present and future generations that is environmentally sustainable, socially just and desirable, and economically sound through the scientific, aesthetic, and orderly disposition of land, resources, facilities and services.

Article VIII. – Protection of Resources was established with the purpose of protecting the immediate and long-term public health, safety, and general welfare by preserving, enhancing, conserving, or restoring the natural environment and cultural resources.

Definitions

The following definitions were taken from Chapter 30 Land Development Code Article VIII.

Adverse impact - means any direct or indirect effect likely to cause, or actually causing, a decline in the stability, natural function or natural diversity of any environmental feature, or in the quiet, peaceful, safe or healthful use or occupancy of any on-site or off-site property.

Archeological resources - means physical evidences of past human activity, as well as evidences of the effects of that activity on the environment, including but not limited to: monuments, memorials, Indian habitations, ceremonial sites, abandoned settlements, sunken or abandoned watercraft, engineering works, treasure troves, artifacts, or other sites, landforms, properties, objects or features with intrinsic archaeological value. Generally, this term applies to physical evidences equal to, or greater than, 50 years in age.

Ecologically integrity - means the condition of an ecosystem whereby its natural communities and physical environments remain substantially intact, and key ecosystem processes such as nutrient cycles, succession, water levels and flow patterns, and the dynamics of sediment erosion and deposition, are functioning properly within the natural range of variability.

1 *Ecological value* - means the value of functions performed by an ecosystem. These functions provide the
2 habitat requirements for living organisms, support biological populations, and sustain species diversity.

3 *Nature parks and public conservation/preservation areas* - means those lands owned and managed for the
4 protection, preservation, and/or conservation of natural communities, as well as any other public park,
5 preserve, or conservation areas, or the portion of those parks, preserves, or conservation areas, that are
6 established to preserve natural communities. Nature parks and public conservation/preservation areas are
7 shown in the Nature Parks and Public Conservation/Preservation Areas District Map.

8 **2.2.4 Natural Resources Management Section**

9 The NRM Section within the PRCA Park Operations Team is responsible for managing, protecting, and
10 restoring, where feasible, native natural communities and diversity in all nature parks and PRCA-designated
11 environmentally sensitive lands, and providing opportunities for environmental education and resource-
12 based recreation. One of the primary responsibilities of the NRM Section is maintaining the ecological
13 integrity of nature parks and conservation areas through various land management activities including
14 prescribed burning, invasive exotic plant and wildlife control, upland and wetland restoration, rare/listed
15 species monitoring and surveys, volunteer trash cleanups and invasive plant removal projects, mechanical
16 vegetation management, forest management, fireline installation and rehabilitation, and insect pest control.

17 NRM Section staff undertake various responsibilities relating to the human use of nature parks and
18 conservation areas in the form of facility design and construction (i.e., nature trails, boardwalks, bridges
19 and overlooks), monitoring visitor use and enjoyment of nature parks (i.e., utilizing trail counters and visitor
20 surveys), assisting with nature park site tours and environmental education programming, and annually
21 supporting several environmental education special events. NRM Section staff are also charged with
22 monitoring parks for illegal activity and human impacts and encouraging appropriate visitor behavior
23 through education and coordinating with law enforcement, when necessary. NRM Section staff will share
24 annual goals with the Environmental Education Team and communicate changes and new developments
25 throughout the year. The goal is to provide the Environmental Education Team with information on ongoing
26 or proposed projects to help them better illustrate the challenges and opportunities of land management.

27 NRM Section staff also coordinate directly with other teams within the PRCA to successfully accomplish
28 their mission of natural resources management. These teams are identified on Figure 2-2 and each team's
29 mission is provided below.

- 30 ▪ *Administrative Team* – provides general support to the rest of the department specifically handling
31 budgeting, customer service, and accreditation.
- 32 ▪ *Cultural Affairs Team* – provides cultural and art programming throughout the city, management
33 of eight cultural or historical facilities around Gainesville and provides community support to
34 dozens of organizations through grant funding and event space.
- 35 ▪ *Recreation Operations Team* – provides athletic and recreational programming for all ages,
36 overseeing of six recreation centers, one recreation complex, three pools, and several athletic fields.

- *Youth Services and Education Programs Team* – provides educational programming for all ages, from toddlers to seniors and all abilities. Including after-school, out-of-school days, toddler Start Smart and cooking classes, summer camps, walking and tram tours, nature education classes/seminars/lectures, and more.

2.2.5 Nature Centers Commission

The NCC, created by Ordinance 2062 (07/21/75) assists the City Commission with matters related to the city nature centers. Ordinance 2062 has been amended by subsequent ordinances, including Ordinance 2592 (04/27/81) and Ordinance 3088 (12/17/84). The duties of the NCC, as established in the Code of Ordinances, are as follows.

- a. Assist the City Commission through recommendations and advice in respect to developing programs, ordinances, use regulations, and resource management policies as required to protect the natural systems and other values of designated nature centers and nature parks and other natural areas throughout the city.
- b. Periodically reviewing and recommending amendments to the Comprehensive Plan for the designated nature centers, nature parks, and other natural areas as requested by the City Commission or the local planning agency.
- c. Supporting membership programs or other programs to enhance funding, support, and continuity of approved programs and activities.
- d. Recommending, if needed, use fees for groups and individuals as required to ensure effective programming and operation.
- e. Carrying out fundraising campaigns as required to augment public funding of selected programs, exhibits, facilities, and operations.
- f. Recommending people management policies, such as prescribed limited access areas, necessary security personnel, fencing, maximum daily visitation levels, closing times and days, as required to protect the natural and other values of designated nature centers and nature parks.
- g. Advising the City Commission concerning:
 1. Real property suitable for purchase by the City for preservation as open space;
 2. The desirability of accepting real property gifts for preservation as open space; and
 3. The sale or exchange of City-owned real property in order to obtain real property more suitable for preservation as open space.

2.2.6 Relationship with Existing Plans and Programs

The NPMP is designed as an operational plan to address land management within PRCA-designated lands. This NPMP will supersede all other PRCA land management plans. In addition to the Comprehensive Plan and Code of Ordinances, this NPMP will remain consistent with the following plans and programs.

The City of Gainesville Strategic Plan 2020 outlines the City’s vision, mission, and values over a 15-year period. The work of the NRM Section supports the Gainesville City Government Core Values and Mission to achieve the goals of an Equitable Community, More Sustainable Community, A Great Place to Live & Experience, Resilient Local Economy, and “Best in Class” Neighbor Services.

The City of Gainesville Urban Forest Management Plan 2020 was developed in response to the 2016 Urban Forest Ecological Analysis to address the numerous challenges of growing and maintaining a healthy urban forest in an efficient manner over a 20-year planning horizon. For natural areas, the NRM Section has several activities to complete to support the Urban Forest Management Plan including vegetative inventories and monitoring systems on native tree species collecting data on dead wood material, plant abundance, canopy cover, and tree diameter distribution. Additional activities include incorporating specific and measurable outcomes for water quality and developing and implementing a prescribed fire and fire management program in all nature parks. An invasive species inventory and assessment is required to be completed.

Florida Communities Trust (FCT) awards grants through the Florida Forever Funds to aid in the acquisition of community-based projects, urban open spaces, parks and greenway to implement local government comprehensive plans per F.A.C. 62-818.001. Hogtown Creek Headwaters, Cofrin Nature Park, and Hogtown Creek Greenway, comprised of 29th Road Nature Park, Loblolly Woods Nature Park, Forest Park, Split Rock Conservation Area, Broken Arrow Bluff Nature Park, and Sugarfoot Prairie were all acquired through this program and will receive an updated management plan per their FCT Grant Agreement.

Morningside Nature Center Land Use Component

This section provides a general setting, regional context and significance discussion for MNC, its land use and acquisition history, current and proposed park land use, amenities, and facilities.

3.1 Location and Significance

MNC is a 416-acre park located within Gainesville's eastern city limits, along East University Avenue (State Route [SR] 26). Although there is currently no direct connection to other conservation areas, several are proximate. San Felasco Hammock Preserve State Park, Hatchet Creek Wildlife Management Area, Newnans Lake State Forest, Devil's Millhopper Geological State Park, Hogtown Prairie, and Payne Prairie Preserve State Park are several significant conservation areas that encompass portions of the City of Gainesville and Alachua County (see Figure 3-1).

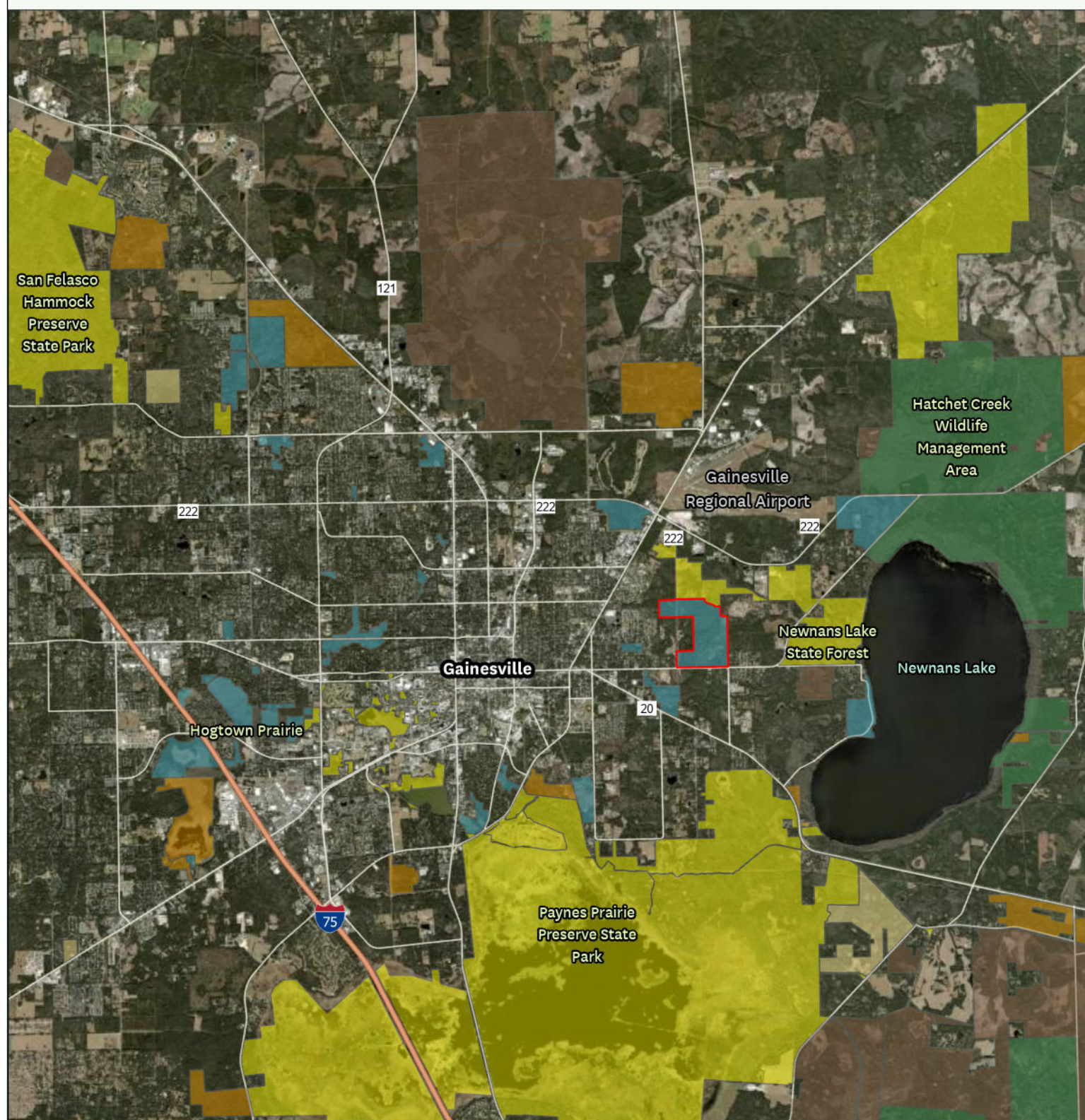
The property was initially acquired for public outdoor recreation in 1964 and MNC was established in 1970. MNC is one of the last remaining examples of fire-dependent longleaf pine woodlands in the area. MNC natural communities include sandhill, mesic flatwoods, wet flatwoods, basin swamp, depression marsh, cypress swamp, mesic hammock, dome swamp, and bottomland forest. This diversity of natural communities hosts a wealth of plant and wildlife biodiversity and, as such, has provided excellent research opportunities for University of Florida faculty and students.

The park also offers a unique opportunity for locals and visitors alike to engage in environmental education programs and participate in partner events (e.g., Cane Boil, GIRR) offered by the EE Section of the PRCA. MNC offers a view back in time to the 1870s with the Living History Farm, which offers historic buildings, livestock, and costumed interpreters. A series of nature programs, field trip activities, and summer camps are hosted at the park throughout the year creating appreciation of the natural areas through nature-based activities, guided walks, and historic themed events.

3.2 Adjacent Land Use

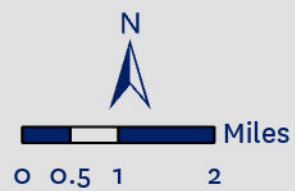
MNC is zoned as a Conservation (CON) district by the City of Gainesville with a stated purpose of conserving, protecting, and restoring environmentally significant lands and establishing a natural buffer between incompatible uses (Code of Ordinances; Figure 3-2). Land use adjacent to MNC is predominantly institutional to the north and east, residential and commercial to the south, and educational to the west. Further south and west of MNC, density increases with a mix of commercial and residential uses. Several public facilities (Agribusiness and Adult Education Center, W Travis Lofton Center, Eastside Community

3-1 Morningside Nature Center - Regional Significance Map

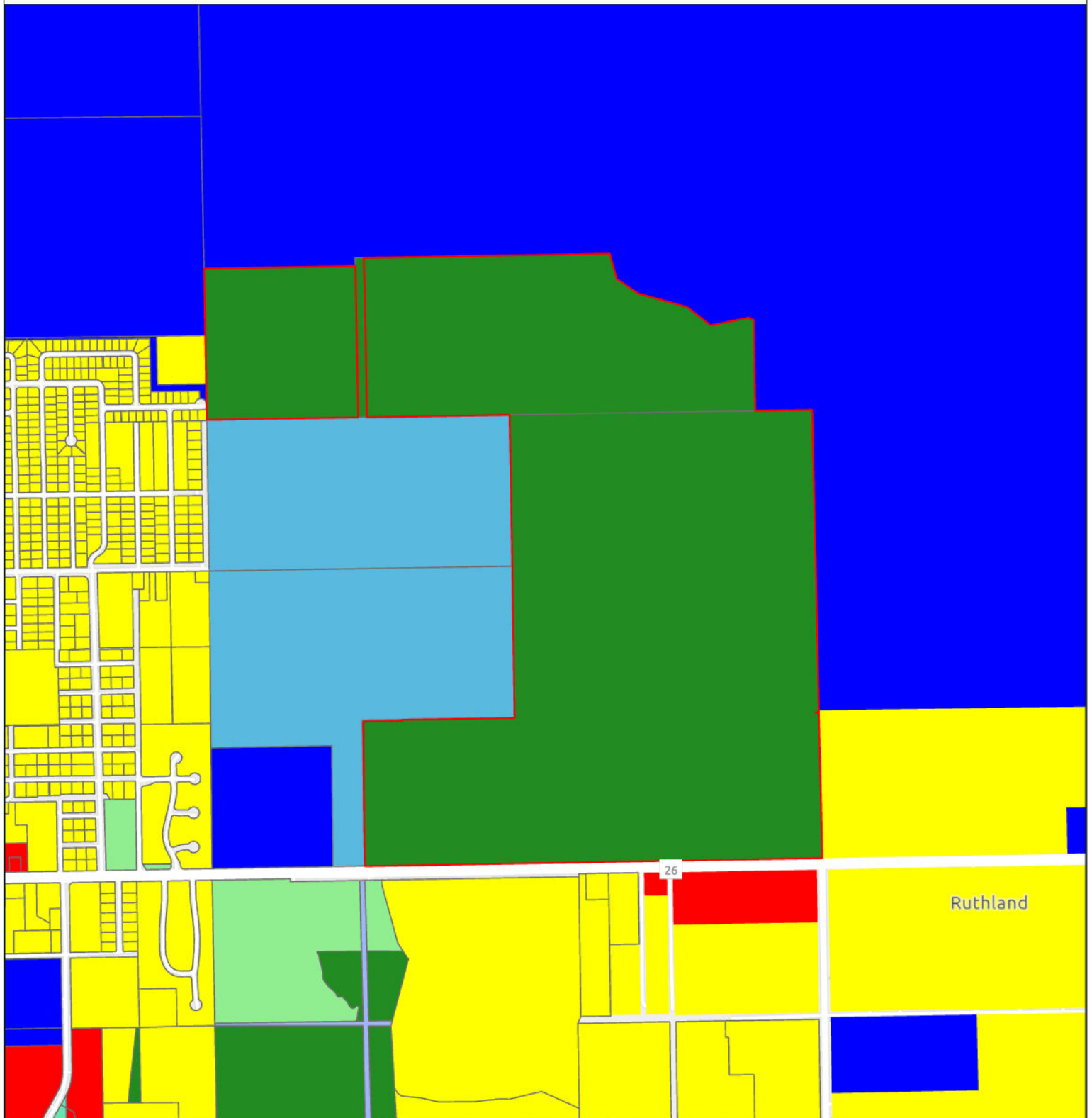


Legend

- Morningside Nature Center Boundary
- Conservation Areas
 - Alachua Conservation Trust
 - Alachua County
 - City of Gainesville
 - St. Johns River Water Management District
 - Internal Improvement Trust Fund
 - Private



3-2 Morningside Nature Center - Land Use Map



Legend

- Morningside Nature Center Boundary
- City of Gainesville Land Use
 - Commercial
 - Conservation
 - Education
 - Residential
 - Recreation
 - Institutional



Miles
0 0.07 0.15 0.3

Center, Horizon Center, and the North Florida Evaluation and Treatment Center) and some residential communities are located to the east and west of the MNC.

3.3 Acquisition History

MNC is within Section 2, Township 10 south, Range 20 east, and Section 35, Township 9 south, Range 20 east, in Gainesville, Alachua County, Florida. MNC consists of three parcels as detailed in Table 3-1 and illustrated on Figure 3-3.

Table 3-1 Morningside Nature Center Parcels

Parcel Number	Acquisition Date	Acquired From	Acres
10887-001-000	1964	U.S. General Services Administration	277.59
10860-000-000	2012	Jane H. Crawford Smith	40.00
10862-001-000	2013	Board of Trustees of the Internal Improvement Trust Fund of the State of Florida	97.82
Total			415.41

3.4 Cultural and Land Use History

Artifacts and remnants of past human inhabitants are part of the land's natural history. The NRM Section avoids damage to these known resources during all land management activities. *Chapter 18 Parks, Recreation and Cultural Affairs*, Sections 18 to 22, establishes that any person who discovers archaeological or cultural resources on any park shall immediately notify the City Manager or designee of such a discovery. Additionally, it is a goal of the NRM Section to have all staff certified by the Florida Department of State's Division of Historical Resources (DHR). NRM Section staff will monitor all activities and take measures to identify, locate, and protect any archaeological or cultural sites that may be located at any park. Management of archaeological and historic resources on the properties is governed by *Nature Operations Division's (NOD) Historical Resources Policies and Procedures* in accordance with Chapter 267, Florida Statutes (FS).

Although MNC lies in a region of Gainesville that is rich in archeological history, little information exists about human use prior to the 19th century. A search of the Florida Master Site File (FMSF) indicates that there are no documented archaeological sites on the property. However, occasional Native American artifacts are found on the park, and numerous archaeological sites are located within a mile of the park. Therefore, it is probable that human use of the area dates back to pre-colonial times.

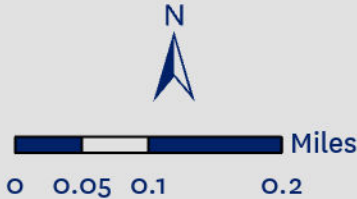
During the 19th and early 20th centuries, the property changed hands several times as shown in the historic timeline, Figure 3-4, before MNC was established. Although several plans existed to develop the land, the primary use was extraction of naval stores and timber production. Numerous "cat-faced" trees remain as monuments to that era, while two concrete slabs in the southern part of the park may be remnants of a

3-3 Morningside Nature Center - Acquisition History

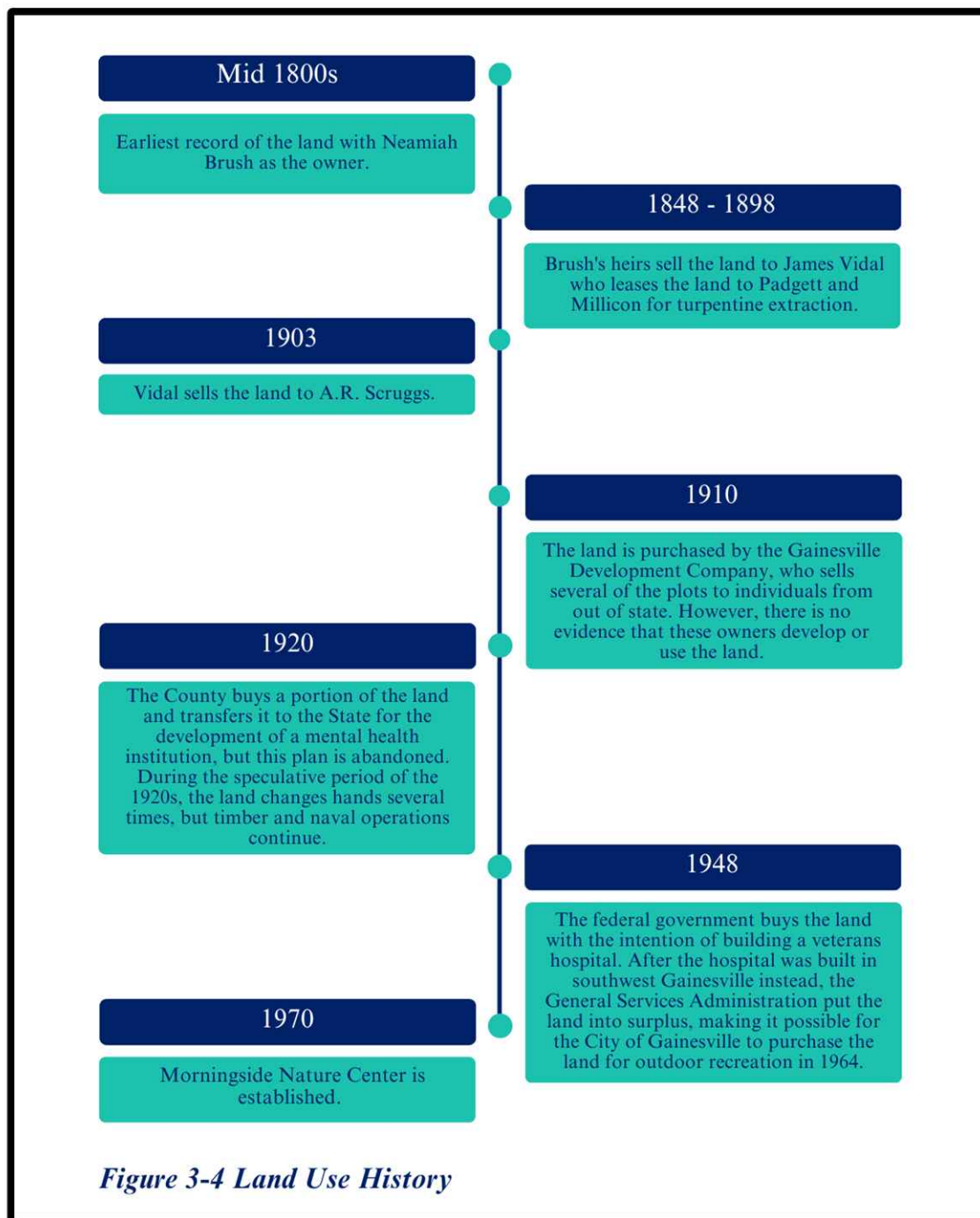


Legend

Morningside Nature Center Boundary



1 turpentine still. Although several structures in the Living History Farm were transported to the site from
2 elsewhere after the establishment of the park, they are considered to be historic structures. None of the
3 structures are listed in the National Register of Historic Places (NRHP).



3.5 Current Land Use, Amenities, and Facilities

3.5.1 Public Access and Recreational Uses

The City of Gainesville, through Equal Opportunity Policy EO-6, adheres to the 1990 Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973 and will make reasonable accommodations for access to City buildings, services, programs and activities. Chapter 18, City of Gainesville Code of Ordinances governs the authority of the Parks, Recreation, and Cultural Affairs (PRCA) to provide passive, natural resource dependent, recreational uses on its conservation lands, as well as appropriate public access. The compatibility for such recreational uses and public access points considers the environmental sensitivity and the suitability of the property. In general, compatible uses consist of outdoor recreation and educational activities, while public access points are minimal and allow for walkthrough foot traffic. MNC public access is via a primary improved entrance located off East University Avenue (SR 26) which leads to the main parking area and park facilities.

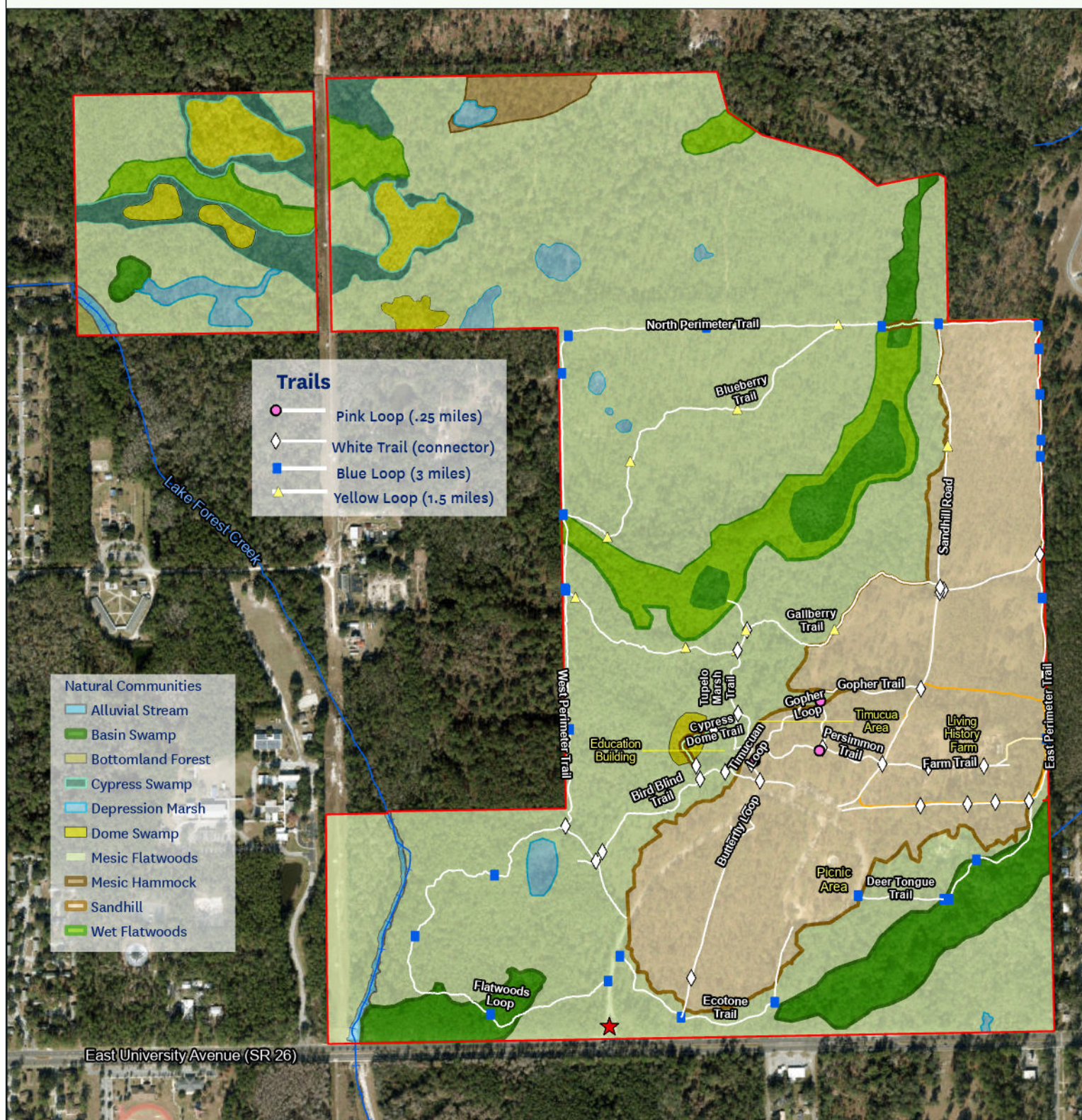
- A paved road extends from the main gate to the parking areas.
- Up to 10 parking spaces are available in a gravel parking area at the Nature Center Education Building.
- Up to 38 parking spaces are available north of the picnic loop.
- Additional paved parking for 50 vehicles is available to the east and west of the picnic loop.
- An unpaved parking area for up to 8 staff vehicles is available at the maintenance compound.

The MNC Nature Center Education Building, outdoor classroom, and Living History Farm provide key infrastructure components that facilitate environmental education programming, visitor experience and enhance the overall appreciation for the natural environment. These improvements also provide visitors, including school groups (e.g. summer camps and field trip programs), families, natural resources professionals, and individuals, with a space to learn about ecology, conservation efforts, and land management practices. The NRM Section is not primarily responsible for facilitating environmental education programming and events as they occur on MNC, however, they work cooperatively with the Environmental Education Section of the PRCA to develop resources for programs. This is essential in raising awareness and appreciation for the natural and cultural resources present at MNC.

MNC has undergone extensive physical improvements in support of its passive recreation and educational use (Figure 3-5).

- The Nature Center Education Building is a 1,000-square-foot concrete block structure.
- Timucua reproduction structures built of cypress saplings with thatched palm roofs.

3-5 Morningside Nature Center - Recreational Opportunities Map



Legend

- Morningside Nature Center Boundary
- Boardwalks
- Living History Farm
- Morningside Nature Center Main Entrance Gate



Miles
0 0.05 0.1 0.2

- A Living History Farm (10 acres), consisting of historic structures, was relocated from other sites and reproductions of historic buildings were built onsite. The Living History Farm has its own set of General Administrative Procedures provided in Appendix B. Structures that make up the farm include:
 - An 1840 pine cabin relocated from Micanopy.
 - A 1900-era board-and-batten construction kitchen installed in 1986 from materials salvaged from a site in Forest Grove.
 - A log barn dating to the 1880s, moved from Chiefland in 1976.
 - A wood-frame schoolhouse from the 1930s, relocated to the farm in 1990.
 - Historic reproductions built on the site, including two (2) wood-frame composting outhouses, sheds and a log blacksmith shop.
 - Additional farm facilities, including a vegetable garden, cash crop fields, and livestock pens. A well is also present on site.
- Maintenance Compound
 - A 960-square-foot reproduction of a historic farmstead that houses maintenance and farm offices, as well as storage and kitchen facilities for the education staff.
 - A three-bay garage facility (southwest of the farmstead).
 - Three (3) storage sheds.
 - A pole barn for lumber storage.
- Approximately 6 miles of maintained nature trails.
 - The pink loop is 0.25 miles located in the central portion of the park between the Education Building and the Living History Farm.
 - The blue loop is 3.00 miles and follows the perimeter boundary of the park.
 - The yellow loop is 1.50 miles throughout the northcentral portion of the park.
- A 3.30-acre picnic area with a screened teaching pavilion, restrooms, and picnic tables.

The education and the maintenance facilities are both connected to the city water supply and have electricity and phone service. Three (3) fire hydrants are located on MNC, one on the north side of the entrance road at the intersection of the driveway to the education building, the second at the southwest gate to the Living History Farm, and the third in the northeast corner of the park. The education facility, maintenance facility, and public restroom in the picnic area are all served by septic systems.

MNC has a variety of wildlife viewing opportunities including:

- A wood-frame, tin-roof bird blind exists in the southwestern part of the property.
- A 358-foot boardwalk (currently scheduled for reconstruction) is located west of the Nature Center Education Building through a cypress dome community.

3.5.2 Special Use Authorization

In accordance with PRCA guidelines, any research or special projects conducted on PRCA-designated properties, must obtain a Special Use Permit (SUP) issued by the NRM Section (Appendix C). One of the many benefits of nature parks is the opportunity to observe and learn about native species and natural processes without having to travel long distances. This permit process was created to balance public access and associated impacts by providing guidelines regarding research and class activities as they occur in PRCA-designated properties.

To properly manage research requests for the protection of the limited natural resources available, PRCA staff require a Special Use Authorization (SUA) Form to be completed prior to the start of any research or study project (Appendix C). Any research or project that involves off-trail uses, collecting plants or plant parts, animals, soils, or leaving flagging or any other markings within the nature park requires prior authorization. A SUA Form is available on the City of Gainesville website or can be received by contacting the NRM Section staff. Following the completion of the research project, the researcher must supply their data and a copy of any completed reports to the NRM Section staff.

3.5.3 Park Inspection and Maintenance

Each PRCA-designated property is required to be inspected at least monthly in accordance with *NOD Site Inspection Procedures*. The purpose is to evaluate the site and conditions, which involves reporting the areas and facilities inspected, maintenance needs, and any observed illegal activities. Some issues can be addressed at the time of the visit while ones that require additional assistance, resources, or time are noted or called in to the Supervisor. The most recent inspection is maintained on file so that projects can be re-evaluated at the next inspection.

The *NOD Maintenance Operations Manual* establishes the policies and procedures to maintain the City of Gainesville's nature parks and the routine maintenance schedule. A preventative maintenance schedule is also established monthly, biannually, annually, and every two, three, and five years to ensure the longevity of the City's nature parks.

3.5.4 Law Enforcement and Security

The PRCA Department is reliant upon the City of Gainesville Police Department to enforce local ordinances and administrative rules on PRCA-designated lands. PRCA staff and visitors report potential violations to the most appropriate law enforcement agency, which may also include the Florida Fish and Wildlife Conservation Commission (FWC) or Alachua County Sheriff's Office.

3.6 Cooperating Land Management Agencies and Agreements

The NRM Section maintains cooperative management agreements and/or leases with government agencies (state and federal), other non-governmental organizations (NGOs), and volunteers to provide management, protection, and public access. A strength of the NRM Section is the development of effective partnerships and cooperative relationships with other governmental and private organizations with similar/complimentary functions and authority. Several state agencies have a major or direct role in the management of the City of Gainesville nature parks.

- The Florida Department of Agriculture and Consumer Services (FDACS) Florida Forest Service (FFS), assists the NRM Section with the development of wildfire emergency plans; prescribed burning activities; and wildfire mitigation strategies, including fuel reduction/mechanical assistance. FFS also provides entomologists and pine beetle program staff to support PRCA properties. The FDACS Division of Plant Industry (DPI) has provided floristic inventories and assistance through their botany and air potato beetle program.
- The FWC provides staff for the enforcement of state laws pertaining to wildlife, freshwater fish, and other aquatic life. FWC also aids the NRM Section with wildlife management programs, including listed species management.
- The NRM Section participates in CISMA (Cooperative Invasive Species Management Area) meetings and activities, to engage, learn, and share information and management strategies with other land managers, private landowners, and experts. Participation in CISMA is also one of the requirements to participate in the FWC Uplands Invasive Plant Management (IPM) program. Conservation land managers in each regional working group, which includes the Withlacoochee Regional Working Group, submit invasive plant control projects for possible contractual services funded through the FWC Uplands IPM program.
- The DHR assists the NRM Section with management and protection of cultural resources.
- The NRM Section is a cooperator in the North Central Florida Prescribed Fire Working Group (NCFRxFWG), originated in 2002, as a means of sharing resources and expertise among agencies and organizations that utilize prescribed fire. As a member, the NRM Section can be assisted on prescribed burns by personnel from other cooperating agencies if they meet NRM Section's training and safety standards. In addition, NRM Section staff can participate in burns with other agencies and gain additional prescribed fire experience. This organization allows access to resources and training that are critical to meeting NRM Section land management goals.

- Multiple departments and disciplines within the University of Florida—
Institute of Food and Agricultural Sciences (IFAS); Forest, Fisheries, and
Geomantics Sciences (FFGS); McGuire Center; and Florida Museum of
Natural History (FLMNH) have contributed anecdotal scientific research
information over a range of topics including social and ecological disciplines.

Volunteers provide an extension of the NRM Section workforce to accomplish the agency mission. The NRM Section provides volunteers with an opportunity to work in areas such as trail development and maintenance and general resource management. Volunteers will continue to provide vital assistance in managing the NRM Section lands in the future.

3.7 Proposed Land Uses, Amenities, and Facilities

Any proposed amenities and facilities on MNC must remain in accordance with Article VIII. Protection of Resources (specifically, Division 3.-Natural and Archaeological Resources and Division 6.-Environmental Protection Areas) of Chapter 30- Land Development Code.

MNC is undergoing a Master Plan (15- to 20-year) planning process to consider infrastructure changes to support the goals of creating an accessible and welcoming experience for visitors and strengthening connections to the nearby communities. The proposal and completion of any projects must remain consistent with the goals and objectives of this NPMP in addition to Article VIII of Chapter 30-Land Development Code. No project should adversely affect or alter natural and archaeological resources, as they are identified in this NPMP, without first obtaining the required natural and archaeological resources and approval in accordance with the regulations outlined in Article VIII of Chapter 30-Land Development Code. Both the Master Plan and this NPMP are guided by the following mission and vision for MNC.

Morningside’s Mission

“To provide meaningful experiences through education, research and conservation.”

Morningside’s Vision

“A gateway for every generation to connect to cultural history and the natural world.”

Morningside Nature Center Natural Resource Inventory

This section provides an inventory and current conditions of the natural resources at MNC including topography and geology, hydrology, soils, natural communities, and wildlife.

4.1 Topography and Geology

MNC lies within the Northern Peninsular Slopes subdistrict of the Ocala Uplift District. The Ocala Uplift is a broad uplift dating back to the Mid- to Late Tertiary period; characterized by the presence of limestone at or near the surface in most places. The most distinctive features are low, rolling limestone plains, but the landscape varies. The Northern Peninsular Slopes are erosional slopes and hills that are typically well-drained by both surface and subsurface flows. Soils are typically sandy but rich and phosphatic; historically, hardwood forests were frequent, but sandhill vegetation occurred where soils were deep. Most of MNC is encompassed by the Newnans Lake Basin sub-province, a low, gently sloping region; the westernmost edge of the property lies within the higher San Felasco sub-province. Topographically, the park ranges in elevation from 115 feet above sea level (ASL) in the southeast corner of the park to a high of 151 feet ASL in the northwestern corner. The majority of the park consists of broad, level expanses of flatwoods with lower wetland areas interspersed throughout. A ridge runs across the southern portion of the park.

The physiography of Alachua County has been divided into three provinces (United States Department of Agriculture-Soil Conservation Service [USDA-SCS] 1985; White 1970; Williams 1977). The northeastern portion of the county is an upland plateau with numerous swamps and perched water tables. Hawthorne formation clays tend to be thicker in this portion of the county. The western portion of the county is characterized by expansive plains of low elevation and relief. Sinkholes are common here, and as a result, channeled surface water is rare. Southeastern Alachua County is a transitional area between the upland plateau and low plains, containing hills representing erosional relics and flat bottom lakes and prairies. MNC is situated in the plateau area of Alachua County, which has a nearly level topography and ranges in elevation from 150 to 200 feet ASL. Many peaty swamps occur throughout the plateau area. These may have been formed by the compaction of Pleistocene sediments, or by solution of underlying calcareous rocks. Sinkholes are not common in this area, but a few can be found near its margins, such as Devil's Millhopper (Pirkle 1956).

4.2 Hydrology

MNC is located in the Orange Creek Basin, a 600-square-mile basin primarily within Alachua County but also includes portions of western Putnam County and northern Marion County. MNC is located near the northwest boundary of the Ocklawaha Watershed (HUC 03080102), which is dominated by wetlands, lakes,

and rivers, including the Ocklawaha River, a major tributary of the St. Johns River. The hydrology of the watershed is characterized by a high-water table and frequent flooding, which is vital for maintaining the region's unique ecosystem. The St. Johns River Water Management District (SJRWMD) subdivides each major watershed into planning units. MNC is located within the Orange Creek Planning Unit (Adamus et al. 1997). Within the Orange Creek Planning Unit, MNC is within the Sunland Drain and Forest Creek basins which are eastern-sloping basins that feed into Newnans Lake via three major creek systems: Sunnyland Creek, which originates just outside the northeast boundary of MNC, Lake Ridge Creek, which originates on the eastern boundary of MNC, and Lake Forest Creek (also referred to as Moccasin Creek), which traverses MNC in the northwest and southwestern sections of MNC. Approximately 28.9% (119.6 acres) of MNC lies within the 100-year floodplain, as defined by the Federal Emergency Management Agency.

4.3 Soils

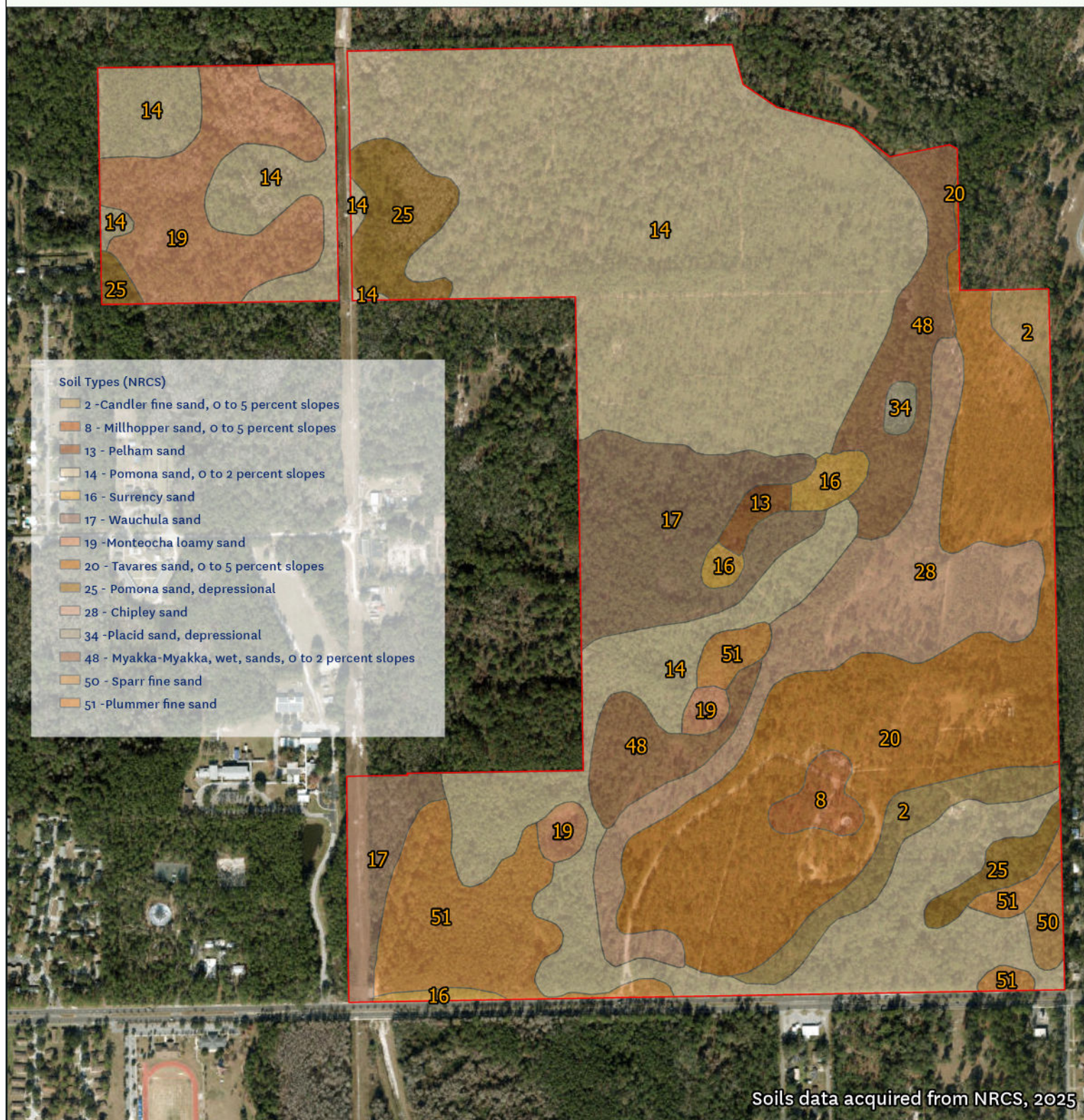
The USDA's Natural Resource Conservation Service (NRCS) data (Appendix D) were used to determine the spatial distribution and extent of coverage by each soil type (Table 4-1 and Figure 4-1). In general, MNC contains 14 soil types, including soils typically associated with sandhills, flatwoods, and swamps.

Table 4-1 Soils at Morningside Nature Center (MNC)

Map Unit	Name and Description	Acres at MNC	Percent (%) of MNC	Classification
2	Candler fine sand, 0 to 5 percent slopes	10.90	2.60%	Non-Hydric
8	Millhopper sand, 0 to 5 percent slopes	3.60	0.90%	Non-Hydric
13	Pelham sand	1.80	0.40%	Non-Hydric
14	Pomona sand, 0 to 2 percent slopes	178.60	43.20%	Non-Hydric
16	Surrency sand	4.30	1.00%	Hydric
17	Wauchula sand	31.40	7.60%	Non-Hydric
19	Monteocha loamy sand	24.40	5.90%	Hydric
20	Tavares sand, 0 to 5 percent slopes	66.70	16.10%	Non-Hydric
25	Pomona sand, depressional	13.20	3.20%	Hydric
28	Chipley sand	30.50	7.40%	Non-Hydric
34	Placid sand, depressional	1.00	0.30%	Hydric
48	Myakka-Myakka, wet, sands, 0 to 2 percent slopes	22.00	5.30%	Non-Hydric
50	Sparr fine sand	2.10	0.50%	Non-Hydric
51	Plummer fine sand	23.00	5.60%	Non-Hydric
Total		413.30	100.00%	

SOURCE: USDA NRCS Custom Soil Resource Report for Alachua County, Florida, Morningside Nature Center.

4-1 Morningside Nature Center - Soil Map



Legend

Morningside Nature Center Boundary



Miles
0 0.05 0.1 0.2

Management measures for soil resources include the protection of natural vegetation to prevent soil erosion, through the prevention of unauthorized off-road vehicle access, avoiding driving on wet soils, and not taking heavy machinery into inundated or hydric soils. Care should also be taken to limit soil disturbance during maintenance of existing firebreaks or installation of new firebreaks.

4.4 Natural Communities

4.4.1 Community Types

Natural communities throughout MNC were mapped with the assistance of NRM Section staff as part of the development of this NPMP. Briefly, 10 total natural communities were identified on MNC and are provided in Table 4-2 and illustrated on Figure 4-2. MNC is dominated by upland communities, including mesic flatwoods, with a large sandhill community extending from the northeast corner into the east central portion of the park. Isolated forested wetland communities (i.e., dome swamps, basin swamps and depression marshes) occur at lower elevations within the mesic flatwoods. Each natural community found on the MNC is discussed in the following sections. These sections contain a summary of key MNC-specific natural community information, including global and state rank, fire interval, typical vegetation, typical wildlife, threats, and management practices.

Historically, the natural communities and native vegetation at MNC have been impacted by on-site and off-site disturbances including farming, logging, livestock grazing, and turpentine extraction. Fire suppression across several of MNC's natural communities has resulted in high fuel loads, which lead to an increased risk of catastrophic wildfires and crown fires, establishment of thick duff layers, proliferation of ladder fuels that carry fires to tree canopies, and encroachment of hardwood and woody species that shade out desirable groundcover species. Forested wetland communities within MNC are closely linked to the extent and duration of flooding during the wet season. The plants and animals that inhabit the wetland communities within MNC are dependent on seasonal hydrologic fluctuations between wet and dry periods, making the natural hydrological processes integral to the success of the MNC wetland communities.

The NRM Section uses the *Guide to the Natural Communities of Florida* (FNAI 2010) when identifying, classifying, and describing the natural areas present at each PRCA-designated park. The NRM Section is responsible for the protection of natural resources through the application of effective and efficient land management practices. Land management practices include prescribed fire, forest management, invasive species control, habitat maintenance, and habitat restoration. NRM Section staff utilize the reference descriptions as the desired future conditions (DFCs) outlined in the *Guide to the Natural Communities of*

NRM Section Management Policy

It shall be the policy of the NRM Section of Park Operations to utilize the FNAI natural community reference descriptions as the desired future conditions for all restoration plans.

FNAI has identified 72 reference sites for 13 natural community types which were used to develop detailed characterizations of high-quality examples of Florida's natural communities. These descriptions, served as models for structure, composition, and ecological function. They are used to assess the condition of similar communities, establish desired future conditions for restoration, and inform land management decisions.

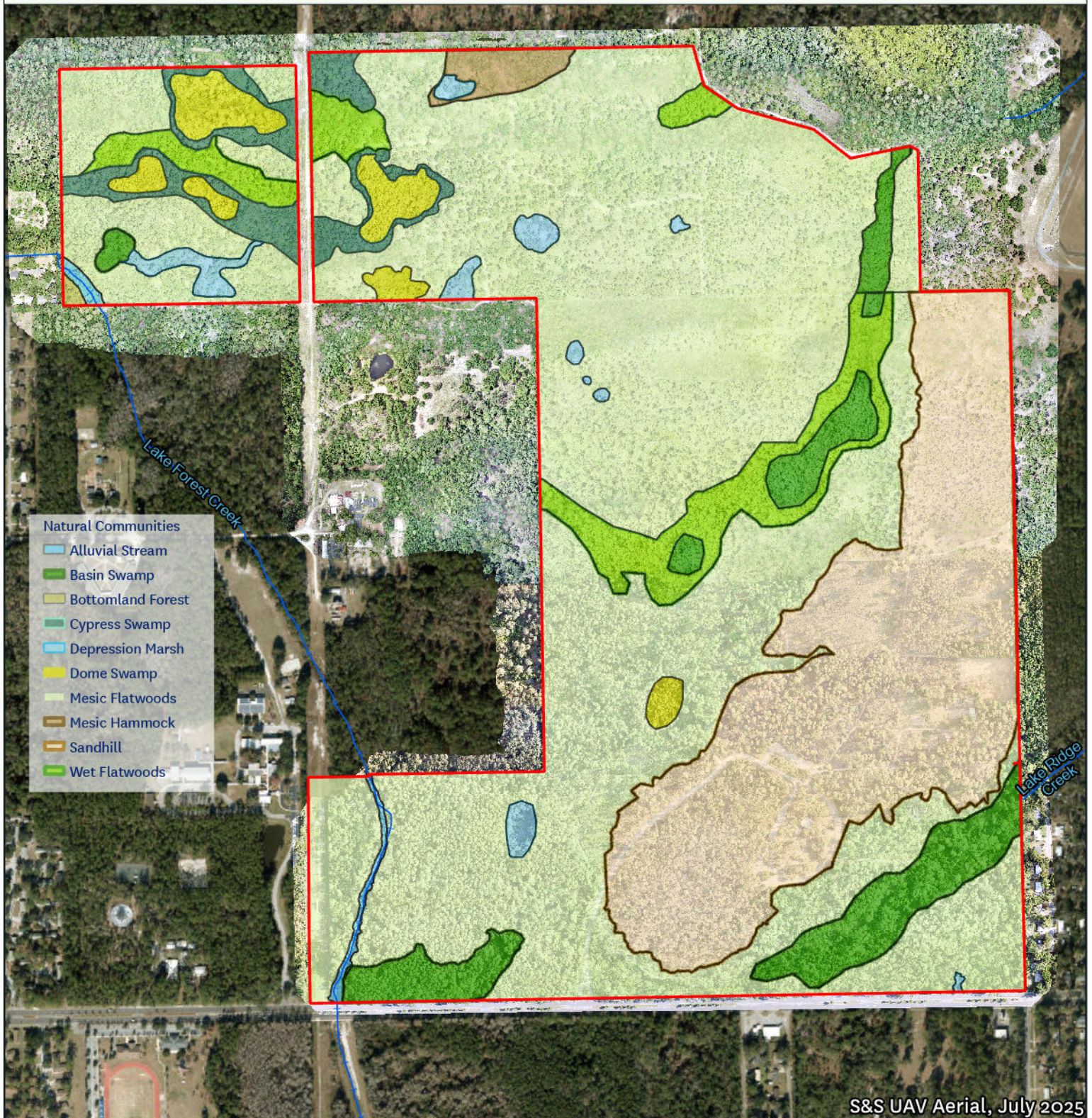
1 *Florida* (FNAI 2010) to set and achieve land management objectives for each community type. Each natural
 2 community is detailed in the following sections identifying typical and current conditions of each natural
 3 community as well as addressing the FNAI Global and State Element Rank, fire interval, typical vegetation,
 4 typical wildlife, and management measures.

Table 4-2 Morningside Natural Community Type Summary				
Map Unit Symbol	Acreage	Percent (%) of Land Cover	Global and State Rank	Community Designation
Sandhill	88.81	21.50%	G3/S2	Xeric
Mesic Flatwoods	245.09	59.32%	G4/S4	Mesic
Basin Swamp	24.25	5.87%	G4/S3	Hydric
Depression Marsh	5.61	1.36%	G4/S4	Hydric
Dome Swamp	10.41	2.51%	G4/S4	Hydric
Wet Flatwoods	22.08	5.34%	G4/S4	Hydric
Bottomland Forest	0.34	0.08%	G4/S3	Hydric
Cypress Swamp	11.43	2.77%	None	Hydric
Mesic Hammock	3.50	0.85%	G3/S3	Mesic
Alluvial Stream	1.64	0.40%	G4/S2	Hydric
Total	413.16	100%		

KEY: FNAI Global and State Rankings
 G3 = rare or vulnerable globally.
 G4 = apparently secure globally.
 S2 = imperiled statewide.
 S3 = rare or vulnerable statewide.
 S4 = apparently secure in Florida.

5

4-2 Morningside Nature Center - Natural Communities



Legend

 Morningside Nature Center Boundary



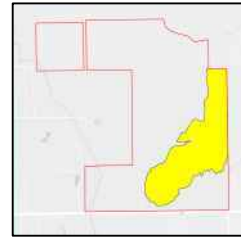
 Miles
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Sandhill

Sandhill communities occur on 88.81 acres or 21.50% of MNC. Sandhills typically occur on hilltops and their slopes and ridges with steep or gentle topography, where soils are deep, sandy, well drained, and are relatively infertile. Sandhill vegetation is characterized by widely spaced southern pine tree species with a sparse midstory of oaks and a relatively dense groundcover with sandy soils. Herbaceous groundcover is moderate to dense, containing the highest plant diversity dominated by wiregrass and a variety of other graminoids and forbs. Exposed bare patches of sandy soil are common. Herbs and pine litter form a continuous layer capable of carrying frequent, low-intensity fires. The community is dependent on burrowing animals (e.g., gopher tortoise [*Gopherus polyphemus*] and pocket gopher [*Geomys pinetis*]) for recycling nutrients back to the surface.

MNC sandhill communities occupy the highest elevations of the park. Sandhills exhibit a variation in canopy coverage and composition with canopies dominated by longleaf pine (*Pinus palustris*) at different densities and age classes. Gopher tortoises are present throughout MNC sandhills requiring the minimization of ground disturbance during management activities. Specific precautions will be taken during the use of heavy equipment.

Management activities should focus on regular prescribed burning and minimizing soil disturbance given the fragility of groundcover vegetation. Ideally, hardwood removal would be accomplished by hand or mechanical means. Prescribed fires (late spring through early summer) will stimulate herbaceous growth and diversity and reduce hardwood encroachment. Groundcover restoration, including re-introducing and restoring wiregrass (*Aristida stricta*), may be necessary to facilitate prescribed burning. Regular monitoring should be conducted to control common invasive species, including cogon grass (*Imperata cylindrica*) and natal grass (*Melinis repens*), which can alter fire behavior and impact groundcover biodiversity.



Global and State Rank: G3/S2

Fire Interval: 1–3 years

Typical Vegetation:

longleaf pine (*Pinus palustris*), turkey oak (*Quercus laevis*), wiregrass (*Aristida stricta* var. *beyrichiana*), blazing star (*Liatris spp.*), sand live oak (*Q. geminata*), pricklypear (*Opuntia humifusa*), bluestems (*Andropogon spp.*), bracken fern (*Pteridium aquilinum*), saw palmetto (*Serenoa repens*), toothache grass (*Ctenium aromaticum*)

Typical Wildlife:

gopher tortoise (*Gopherus polyphemus*), fence lizard (*Sceloporus undulatus*), red-headed woodpecker (*Melanerpes erythrocephalus*), eastern towhee (*Pipilo erythrophthalmus*), Florida pocket gopher (*Geomys pinetis*), bobwhite quail (*Colinus virginiana*), coachwhip (*Masticophis flagellum*), eastern diamondback (*Crotalus adamanteus*)

Threats:

Facility development
Fire suppression
Invasive species

Management Practices:

Frequent prescribed fire
Minimize ground disturbance
Invasive treatment control and monitoring
Supplementary planting

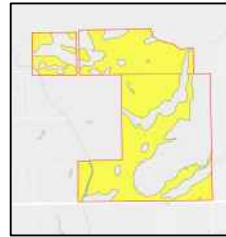


Mesic Flatwoods

Mesic flatwoods occur on 245.09 acres or 59.32% of MNC. Mesic flatwoods are typically flat and characterized by an open canopy of longleaf pine (*Pinus palustris*). Typical shrubs consist of saw palmetto (*Serenoa repens*), gallberry (*Ilex glabra*), dwarf live oak (*Quercus minima*), shiny blueberry (*Vaccinium myrsinites*), and fetterbush (*Lyonia lucida*). Soils consist of acidic sands overlaying an organic hardpan or clayey layer. During the rainy season, lower areas may briefly flood while during dryer periods may experience drought-like conditions.

Mesic flatwoods are the dominant natural community at MNC. On MNC, these areas contain a mixed canopy of slash pine (*Pinus elliotii*) and longleaf pine with a dense midstory of saw palmetto, gallberry, wax myrtle (*Myrica cerifera*), and other medium height shrubs such as dwarf huckleberry (*Gaylussacia dumosa*), shiny blueberry, and deerberry (*Vaccinium stamineum*). A few areas contain a longleaf pine canopy with a more open groundcover dominated by runner oaks (*Quercus pumila*), wiregrass and various wildflowers.

Mesic flatwoods are a fire dependent community with a required fire return interval of 2-4 years to ensure the encouragement of groundcover species and reduction of hardwood encroachment. In areas where fire is infrequent, hardwood tree species, such as water oak (*Quercus nigra*), and laurel oak (*Quercus laurifolia*), are present as subdominant or dominant canopy components. Gallberry and fetterbush may be common midstory species. Regular monitoring of this community for invasive species and encroaching hardwoods is necessary to prevent overdominance of hardwoods and other common woody understory species. Topography and depth-to-water table likely influence the composition of the tree canopy, but fire, or the lack thereof, appears to be the dominant influence upon species composition.



Global and State Rank: G4/S4

Fire Interval: 2–4 years

Typical Vegetation:

longleaf pine (*Pinus palustris*), shiny blueberry (*Vaccinium myrsinites*), fetterbush (*Lyonia lucida*), wiregrass (*Aristida stricta*), gallberry (*Ilex glabra*), saw palmetto (*Serenoa repens*), wax myrtle (*Myrica cerifera*)

Typical Wildlife:

oak toad (*Anaxyrus quercicus*), black racer (*Coluber constrictor*), brown headed nuthatch (*Sitta pusilla*), pine warbler (*Setophaga pinus*), gray fox (*Urocyon cinereoargenteus*), white-tailed deer (*Odocoileus virginianus*), raccoon (*Procyon lotor*), eastern diamondback (*Crotalus adamanteus*)

Threats:

Fire suppression
Woody encroachment
Invasive species

Management Practices:

Prescribed fire
Invasive treatment control and monitoring



Basin Swamp

Basin swamps occur on 24.25 acres or 5.87% of MNC. Basin swamps are relatively large, irregularly shaped basins, not associated with a river, however, are vegetated with hydrophytic trees and shrubs that tolerate extended periods of flooding. Basin swamps often overlay a clay or another impervious soil layer, causing the areas to hold water. The typical hydroperiod (time area is flooded) is 200 to 300 days a year.

MNC basin swamps occur in the lower elevations of the park where they serve as catchment basins for the surrounding communities, as they are typically lower in elevation than the surrounding wet communities and experience longer periods of inundation during wetter seasons and often maintain areas of standing water during dry periods. MNC basin swamps are mostly dominated by pond cypress (*Taxodium ascendens*) although some areas, particularly in the southwest part of the park, contain a large component of swamp tupelo (*Nyssa sylvatica* var. *biflora*). The ecotonal edges contain a large diversity of plants, particularly in areas where the shrub cover is less dense. Common herbs along the basin swamp ecotone are maidencane (*Panicum hemitomon*) and Virginia chain fern (*Woodwardia virginica*).

Fire intervals are variable depending upon dominant vegetation, fire exposure, and drought. The interior of basin swamps may go without fire for decades or even centuries while the exposed outer edges can be more susceptible to frequent fire. It is highly desirable to allow fire from adjacent pyrogenic communities to enter and burn through naturally. Fire exclusion can lead to hardwood encroachment and peat accumulation. Hydrologic disturbances (e.g., ditches, trails, firebreaks, and roads) should be minimized, if not avoided. Plowed firebreaks should not limit fires from burning into this community, nor be placed around this community. Reduction of invasive species populations is also necessary. Basin swamps will be assessed with other wetlands for needs regarding mechanical removal of hardwoods.



Global and State Rank: G4/S3

Fire Interval: Variable

Typical Vegetation:

swamp tupelo (*Nyssa biflora*), pond cypress (*Taxodium ascendens*), slash pine (*Pinus elliotti*), red maple (*Acer rubrum*), swamp bay (*Persea palustris*), sweetbay magnolia (*Magnolia virginiana*), buttonbush (*Cephalanthus occidentalis*), fetterbush (*Lyonia lucida*), wax myrtle (*Morella cerifera*), maidencane (*Panicum hemitomon*)

Typical Wildlife:

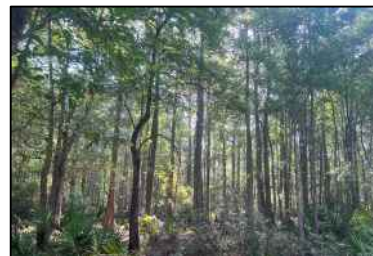
cricket frog (*Acris Gryllus*), striped mud turtle (*Kinosternon baurii*), ringneck snake (*Diadophis punctatus*), cottonmouth (*Agkistrodon conanti*), great horned owl (*Bubo virginianus*), white-tailed deer (*Odocoileus virginianus*)

Threats:

Invasive species
Woody encroachment
Hydrological disruption

Management Practices:

Maintain natural hydroperiods
Invasive treatment control and monitoring
Periodic fire in ecotones



Depression Marsh

Depression marshes occur on 5.61 acres or 1.36% of MNC. Depression marshes are generally circular, shallow, herb-dominated wetlands found in depressions on a sand substrate, often within wet flatwoods, mesic flatwoods, or sandhills. They are typical of karst regions, where sand has sunk in or around sinkholes. Concentric zones or bands of vegetation occur related to hydroperiod length, depth of flooding, and fire-carrying characteristics. Depression marsh hydrology can vary; however, it is mostly dry every year. Depression marshes may hold water for as few as 50 days or up to more than 200 days per year. Since depression marshes are ephemeral (temporary) wetlands, they usually lack fish populations that would feed on reptile and amphibian eggs and larvae. Thus, it provides important breeding habitat for many reptiles and amphibians. The center of depression marshes often contains aquatic plants while there is typically no canopy or subcanopy although scattered trees may exist. A fringe of grasses, sedges, and rushes occur.

Many small depression marshes occur within MNC flatwoods which have experienced varying levels of woody shrub encroachment. The marsh nearest the northwest corner of the park contains numerous medium-sized swamp tupelo, suggesting that it may be undergoing succession into a dome swamp.

Depression marshes are fire dependent and should be burned into or through during the burning of surrounding uplands. Ideally, fire should be prescribed when water is low or absent (April to June) and not during the winter months, when the depression holds water. A high percentage of woody species may eventually reduce the hydroperiod leading to undesirable succession. Any hydrological disturbances, (e.g., ditches, trails, firebreaks, and roads) around depression marshes should be minimized, if not avoided. Plowed firebreaks should not limit fires from burning into this community, nor be placed around this community. Reduction of invasive species populations is also necessary. Depression marshes will be assessed with other wetlands regarding the need for removal or thinning of hardwood species. Mechanical removal of vegetation around the ecotone of this community can be considered, but care should be taken to avoid rutting or soil disturbance.



Global and State Rank: G4/S4

Fire Interval: 1–5 years

Typical Vegetation:

St John's wort (*Hypericum spp.*), spike rush (*Eleocharis spp.*), netted chain fern (*Woodwardia areolata*), yelloweyed grass (*Xyris spp.*), buttonbush (*Cephalanthus occidentalis*), wax myrtle (*Morella cerifera*), hooded pitcher plants (*Sarracenia minor*), Carolina redroot (*Lacnathes caroliniana*)

Typical Wildlife:

Striped newt (*Notophthalmus perstriatus*), oak toad (*Anaxyrus quercicus*), little grass frog (*Pseudacris ocularis*), southern chorus frog (*Pseudacris nigrita*), gopher frog (*Lithobates capito*), white ibis (*Eudocimus albus*), Southern leopard frog (*Lithobates sphenoccephalus*)

Threats:

Fire suppression
Hydrological disruption
Woody encroachment

Management Practices:

Maintain natural hydroperiods
Invasive treatment control and monitoring
Periodic fire in ecotones



Dome Swamp

Dome swamps occur on 10.41 acres or 2.51% of MNC. A dome swamp is an isolated forested, circular depression wetland occurring within fire-maintained communities such as mesic flatwoods. Generally, these swamps are small but may also be large and shallow. The trees are typically taller in the center and give the area a “dome” appearance. Dome swamps may hold water 200 to 300 days per year, with the deepest area at the center. Pond cypress (*Taxodium ascendens*) often dominates, but swamp tupelo (*Nyssa sylvatica* var. *biflora*), may also dominate or occur as co-dominant. Typically, shrubs are sparse to moderate but can be dense or absent based on fire frequency. Herbaceous species can be dense or absent, particularly along the edges and may include a wide variety of ferns, graminoids, and herbs.

Several dome swamps exist at MNC which receive overland sheet flow from surrounding uplands. These appear to be variably affected by management history, particularly in the northern parts of MNC that have not experienced regular prescribed fires. This limited fire return interval has allowed for shrub and hardwood encroachment along the ecotone, slowly transitioning these dome swamp communities into a mixed forested wetland. The dome swamps along the utility easement have altered hydrology due to the ditching of this area.

The primary focus of management should be applying growing season fires that are effective at reducing shrub encroachment and maintaining or increasing herbaceous percent covers, when fuel and weather conditions allow. Any hydrological disturbances, (e.g., ditches, trails, firebreaks, and roads) around depression marshes should be minimized, if not avoided. Plowed firebreaks should not limit fires from burning into this community nor be placed around this community. Reduction of invasive species populations is also necessary. Dome swamps will be assessed with other wetland communities regarding the need for removal of hardwood species.



Global and State Rank: G4/S4

Fire Interval:

3–5 years (edge)
100–150 years (center)

Typical Vegetation:

pond cypress (*Taxodium ascendens*), swamp tupelo (*Nyssa biflora*), slash pine (*Pinus elliotii*), red maple (*Acer rubrum*), netted chain fern (*Woodwardia areolata*), cinnamon fern (*Osmundastrum cinnamomeum*), various orchids (*Encyclia spp*), hooded pitcher plants (*Sarracenia minor*), button bush (*Cephalanthus occidentalis*)

Typical Wildlife:

oak toad (*Anaxyrus quercicus*), southern cricket frog (*Acris gryllus*), snapping turtle (*Chelydra serpentina*), mud turtle (*Kinosternon subrubrum subrubrum*), barred owl (*Strix varia*)

Threats:

Hydrological disruption
Invasive species
Fire Suppression

Management Practices:

Maintain natural hydroperiods
Invasive treatment control and monitoring
Periodic fire in ecotones



Wet Flatwoods

Wet flatwoods occur on 22.08 acres or 5.34% of MNC. Wet flatwoods are flat, poorly drained communities of southern pine species with a diverse understory of hydrophytic herbs and shrubs. During the rainy season, standing water may be prevalent in these areas for one or more months. Wet flatwoods have an open canopy of slash pine (*Pinus elliottii*), longleaf pine (*P. palustris*), or in some instances sweetbay magnolia (*Magnolia virginiana*). Shrub layer and ground cover composition can vary while the herbaceous layers should be dense and diverse.

Associated with these areas is an organic hardpan or clay layer that reduces movement of water from above to below the surface and vice versa. Nearly all vegetation and wildlife in this community are either adapted to or dependent upon fire. This community can occupy broad areas, but more commonly occurs as a transitional area, especially between dome swamps and mesic flatwoods, or as a lower elevation pine woods connecting wetlands.

At MNC, these communities are similar in structure and composition to mesic flatwoods. Many have experienced some alteration associated with prolonged fire exclusion, mechanical disturbance, or hydrological changes. Encroachment by hardwood tree species and other woody shrubs has occurred, especially in fire suppressed areas. In hydrologically disrupted areas, seasonal saturation has been replaced by either prolonged dryness or standing water, resulting in species composition toward more shrub-dominated conditions. Despite these alterations, several retain the characteristic structure and composition of wet flatwoods and represent candidates for targeted restoration.

Management should focus on reintroduction of frequent fire to fire excluded areas, maintenance of areas that have been frequently burned, and invasive species removal and monitoring.



Global and State Rank: G4/S4

Fire Interval: 5–7 years

Typical Vegetation:

slash pine (*Pinus elliottii*), longleaf pine (*Pinus palustris*), saw palmetto (*Serenoa repens*), wiregrass (*Aristida stricta*), beaksedges (*Rhynchospora* spp.) spikesedges (*Eleocharis* spp.), gallberry (*Ilex glabra*), fetterbush (*Lyonia lucida*)

Typical Wildlife:

cricket frog (*Acris crepitans*), southern chorus frog (*Pseudacris nigrita*), white-tailed deer (*Odocoileus virginianus*), cottonmouth (*Agkistrodon piscivorus*)

Threats:

Fire suppression
Woody encroachment
Hydrological disruption

Management Practices:

Prescribed fire
Invasive treatment control and monitoring
Mechanical treatments

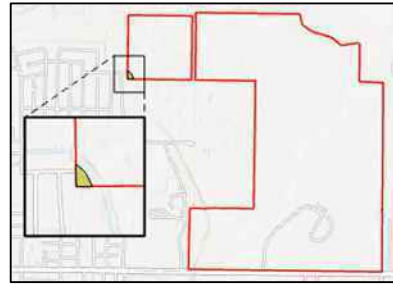


Bottomland Forest

Bottomland forest occurs on 0.34 acres or 0.08% of MNC. Bottomland forest is a deciduous or mixed deciduous/evergreen closed canopy wetland forest on terraces and levees within riverine floodplains and in shallow depressions. Found in situations intermediate between swamps (which are flooded most of the time) and uplands, the canopy may be quite diverse with both deciduous and evergreen hydrophytic to mesophytic trees. Bottomland forests occur on low-lying, seasonally flooded and/or saturated soils of a riverine floodplain. Bottomland forests are inundated for a portion of the wet season but may dry out during late spring. This variability accounts for the mixed canopy species composition.

Bottomland forests within MNC contain a mature closed canopy of hydrophytic hardwood trees. Tall shrubs are relatively sparse in this community and provide an open aspect to the understory. The herbaceous stratum may be sparse to dense, depending on species present. Epiphytes are found occasionally in this community. Vines are common but are typically found in low quantities.

Bottomland forest communities within MNC would benefit from hydrologic restoration efforts. Historic alterations such as ditching and firelines should be filled to restore historical hydroperiods and depths, when practicable. Hydrologic restoration in surrounding wetland communities will also benefit bottomland forest when connected by surface or ground waters. Pines will not be planted within this community. Forestry operations are not recommended in this sensitive wetland community. This community naturally inhibits fire and does not require the use of firebreaks to exclude fire. Regular surveys for invasive species within this community are necessary to prevent infestations from occurring.



Global and State Rank: G4/S3

Fire Interval: None

Typical Vegetation:

Sweetbay magnolia (*Magnolia virginiana*), red maple (*Acer rubrum*), water oak (*Quercus nigra*), sweetgum (*Liquidambar styraciflua*), laurel oak (*Quercus laurifolia*), sugarberry (*Celtis laevigata*), American holly (*Ilex opaca*)

Typical Wildlife:

white-tailed deer (*Odocoileus virginianus*), eastern box turtle (*Terrapene carolina carolina*), southern leopard frog (*Lithobates sphenoccephalus*), yellow-crowned night heron (*Nyctanassa violacea*), green heron (*Butorides virescens*), pileated woodpecker (*Dryocopus pileatus*), raccoon (*Procyon lotor*)

Threats:

Invasive species
Hydrological disruption

Management Practices:

Invasive treatment control and monitoring
Hydrologic restoration



Cypress Swamp

Cypress swamp occurs on 11.43 acres or 2.77% of MNC. Often isolated from stream systems, cypress swamps occasionally connect to adjacent hydrologic features during flood events. Canopies range from open to closed, with taller trees concentrated in the wetter central zones. Typically, understory vegetation is sparse due to prolonged inundation but may include scattered shrubs. Fire is rare in cypress swamps due to long hydroperiods, but may influence outer edges during dry periods, especially where swamps interface with fire-maintained uplands such as mesic flatwoods.

Cypress swamps at MNC occur as seasonally inundated forested wetlands dominated by bald cypress (*Taxodium distichum*), often accompanied by pond cypress (*Taxodium ascendens*), swamp tupelo (*Nyssa sylvatica* var. *biflora*), red maple (*Acer rubrum*), and other wetland hardwoods such as sweetbay (*Magnolia virginiana*), and swamp bay (*Persea palustris*). Typically, these swamps form in large depressions or poorly drained basins where peat accumulates over sandy or marl substrates and surface water persists for extended periods during the wet season. Where intact, cypress swamps at MNC remain among the most ecologically valuable wetland features, contributing to regional biodiversity and landscape-level hydrologic function. However, some demonstrate signs of vegetative succession at their margins where hardwood encroachment has occurred due to reduced fire frequency and altered hydrology. The interior zones often retain their characteristic open water or saturated conditions and support intact swamp vegetation.

Management should focus on protecting the hydrologic regime, avoiding ditching or compaction, and ensuring that adjacent uplands are managed with appropriate fire return intervals. Invasive species such as Chinese tallow (*Triadica sebifera*) should be monitored and controlled, particularly in disturbed swamps or those near infrastructure.



Global and State Rank: G4/S3

Fire Interval: None

Typical Vegetation:

Bald cypress (*Taxodium distichum*), pond cypress (*Taxodium ascendens*), swamp tupelo (*Nyssa sylvatica* var. *biflora*), swamp bay (*Persea palustris*), titi (*Cyrilla racemiflora*), buttonbush (*Cephalanthus occidentalis*), wax myrtle (*Morella cerifera*), royal fern (*Osmunda regalis*), red maple (*Acer rubrum*), sweetbay (*Magnolia virginiana*)

Typical Wildlife:

Southern leopard frog (*Lithobates sphenoccephalus*), pine woods tree frog (*Hyla femoralis*), southern toad (*Anaxyrus terrestris*), raccoon (*Procyon lotor*), barred owl (*Strix varia*), Florida cottonmouth (*Agkistrodon conanti*)

Threats

Hydrological disruption
Woody Encroachment
Fire Suppression

Management Practices:

Maintain natural hydroperiods
Invasive treatment control and monitoring
Hydrologic regime protection



Mesic Hammock

Mesic hammock occurs on 3.50 acres or 0.85% of MNC. Mesic hammocks are a well-developed evergreen hardwood and/or palm forest on rarely inundated soils, occurring in naturally fire-protected areas. Typically, the canopy is closed and dominated by live oak (*Quercus virginiana*) with cabbage palm (*Sabal palmetto*) in the canopy and subcanopy. Mesic hammocks may occur as “islands” on high ground within basin swamps or hydric hammock or in ecotones between wetlands and upland communities. Other landscape positions affording protection from the spread of fire from one or more directions are likely places for mesic hammock development, including edges of lakes, sinkholes, other depressional or basin wetlands, and river floodplains. Mesic hammock soils are sands mixed with organic matter and may have a thick layer of leaf litter, which combined with heavy shading of the ground layer, maintains a high level of moisture at ground level.

Mesic hammocks on MNC are present along the northern boundary. They appear like successional hardwood forests but have a much higher canopy coverage of live oak and less fast-growing hardwoods. Cabbage palm is occasional throughout the subcanopy. Shrubs typically include American beautyberry (*Callicarpa americana*), fetterbush (*Lyonia lucida*), gallberry (*Ilex glabra*), and saw palmetto (*Serenoa repens*). The herbaceous layer is weedy with common ragweed (*Ambrosia artemisiifolia*), flat sedge (*Cyperus* sp.), witchgrass (*Dichanthelium* sp.), fireweed (*Erechtites hieracifolius*), dogfennel (*Eupatorium capillifolium*), and American pokeweed (*Phytolacca americana*).

Mesic hammocks are of considerable importance to wildlife, providing cover, nesting sites, and hardwood mast. Migratory birds use hammocks for resting cover and foraging, and animals of neighboring wetland communities may take refuge in mesic hammock islands during floods. Because the hammocks on the MNC are derived from historical mesic flatwoods, they would likely benefit from prescribed fire. When practical and within prescription, fires in the adjacent flatwoods should be allowed to burn into hammocks.



Global and State Rank:

G3/S3

Fire Interval: None

Typical Vegetation:

live oak (*Quercus virginiana*), cabbage palm (*Sabal palmetto*), laurel oak (*Quercus laurifolia*), water oak (*Q. nigra*), American beautyberry (*Callicarpa americana*), saw palmetto (*Serenoa repens*), common ragweed (*Ambrosia artemisiifolia*), witchgrass (*Dichanthelium* sp.), fireweed (*Erechtites hieracifolius*), dogfennel (*Eupatorium capillifolium*), American pokeweed (*Phytolacca americana*)

Typical Wildlife:

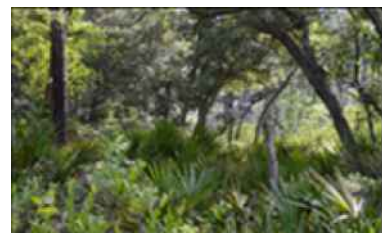
eastern gray squirrel (*Sciurus carolinensis*), white-tailed deer (*Odocoileus virginianus*), southern toad (*Anaxyrus terrestris*), green anole (*Anolis carolinensis*), red-headed woodpecker (*Melanerpes erythrocephalus*)

Threats:

Fire Suppression
Hydrological disruption
Invasive species

Management Practices:

Prescribed fire
Invasive treatment control and monitoring
Hydrologic regime protection



Alluvial Stream

Alluvial streams occur on 1.64 acres or 0.40% on MNC. Alluvial streams are characterized as perennial or intermittent seasonal watercourses originating in high uplands that are primarily composed of sandy clays and clayey-silty sands. Because clay is a substantial component of these soils, surface runoff generally predominates over subsurface drainage. Thus, alluvial stream waters are typically turbid due to a high content of suspended particulates, including clays, silts, and sands, as well as detritus and other organic debris. Water temperatures may fluctuate substantially and are generally correlated with seasonal fluctuations in air temperature. Similarly, other water quality parameters vary substantially and generally fluctuate with seasonal rainfall patterns.

Alluvial streams are sparsely distributed in Florida, being primarily restricted to northern central Florida and the panhandle. Nearly all have been degraded to some degree by disturbances within their watersheds. More serious damage can occur through physical alterations of their main channels, such as dredging, filling or damming. The adjacent floodplain communities are an essential and interrelated component of a viable alluvial stream community.

The alluvial stream on MNC, Lake Forest Creek (also referred to as Moccasin Creek), exhibits some of the characteristics of typical alluvial streams, such as a sandy bottom, but lacks alluvial deposits and high sandy banks. Much of this is due to the anthropomorphic influences on the stream, including the construction of levees along the banks of the stream system to prevent spillovers and reduce the chances of flooding. Management strategies for this community include regular surveys for invasive species establishing along the banks of the stream system and monitoring the flow of the creek system for blockages that may result in changes to regular flow of the stream.



Global and State Rank: G4/S2

Fire Interval: None

Plant Species:

Sweetgum (*Liquidambar styraciflua*), swamp tupelo (*Nyssa biflora*), red maple (*Acer rubrum*), swamp bay (*Persea palustris*), buttonbush (*Cephalanthus occidentalis*), lizard's tail (*Saururus cernuus*), cinnamon fern (*Osmundastrum cinnamomeum*)

Typical Wildlife:

Southern leopard frog (*Lithobates sphenoccephalus*), Florida cottonmouth (*Agkistrodon conanti*), common snapping turtle (*Chelydra serpentina*), river otter (*Lontra canadensis*), yellow-bellied slider (*Trachemys scripta scripta*)

Threats:

Hydrological disruption
Invasive species

Management Practices:

Invasive treatment control and monitoring
Monitoring flow of creek system
Monitor for severe bank erosion



4.4.2 Natural Communities Restoration

In situations where ecosystems have been degraded, damaged, transformed, or destroyed to the point where conservation and protection alone are not sufficient to allow for recovery, ecological restoration should be undertaken. Restoration aims to repair a degraded landscape through the implementation of restorative and management actions, such as prescribed fire, removal of invasive species, or plantings. For the purposes of this NPMP, restoration is defined as the process of returning ecosystems to the appropriate structure and species composition, based on soil type, representative species present, and hydrology.

Several significant historical management events have shaped the current condition and management practices used within the natural communities at MNC. These significant historical events include hydrological disruption, southern pine beetle (*Dendroctonus frontalis*) outbreaks, fire exclusion, wildfires, and invasive species encroachment which are critical reference points to inform ongoing and future management actions and methods. In most cases, one natural community type has been transformed into a different natural community type. As a result, restorative actions have been undertaken in affected areas throughout the park. Many of these were identified in the previous management plan (2004) but there have been additional restorative actions since then. Understanding these previous management actions and the purpose behind them is an important factor in the NRM staff developing adaptive management policies and informing future managers about the efficacy of historical management strategies.

Typically, NRM Section staff utilize prescribed fire, the mechanical treatment of heavy vegetation, and supplementary planting of longleaf pine and wiregrass and other native species in a community that is undergoing restoration. These types of methods are important for improving the habitat for numerous rare and listed species, increasing native biodiversity, and supporting the long-term conservation of fire-dependent ecosystems such as longleaf pine. In many instances, when burning is prohibited, the priority should be to reduce or rearrange hazardous fuels to allow for prescribed fire reintroduction through mechanical or hand clearing in high fuel load areas, minimizing overall ground disturbance as much as possible.

4.5 Wildlife

MNC contains a variety of natural communities and habitat types that support a wide array of imperiled and more common wildlife species. NRM Section maintains a species list that is updated primarily through opportunistic observations. A thorough desktop analysis was conducted to determine the documented species and protected habitat located on MNC. This analysis included the generation of a USFWS Information for Planning and Consultation (IPaC) report and an FNAI Standard Data Report (Appendix E).

4.5.1 Imperiled Wildlife

The gopher tortoise is the primary imperiled species observed and documented on MNC. This species inhabits MNC's sandhill communities which have historically been impacted by habitat fragmentation and fire suppression. Many, if not all, MNC facility expansions (i.e., parking, picnicking and roadways) have occurred on sandhill communities, resulting in this species' frequent encounters with urban interface (crossing roads, trails, and foraging in picnic areas) and, regularly, with park guests. Gopher tortoises are fossorial, or burrowing species that establish large, deep burrows within sandy upland communities that provide shelter to other species, particularly during fires which are regular within their ecosystem. Many species are known to utilize their burrows for shelter, including the eastern diamondback rattlesnake (*Crotalus adamanteus*), the eastern indigo snake, the short-tailed snake, Florida pine snake (*Pituophis melanoleucus mugitus*), gopher frog (*Lithobates capito*), Florida mouse (*Peromyscus floridanus*), gopher tortoise copris beetle (*Copris gopher*), punctate gopher tortoise onthophagus beetle (*Onthophagus polphemus polyphemi*), and the gopher tortoise aphodius beetle (*Alloblackburneus troglodytes*).

Given the significant ecological value of gopher tortoises and their burrows their continued protection is critical. Consideration should be given to conducting a 100% survey of acceptable habitats to locate gopher tortoise burrows within the park. Burrow surveys should be conducted in accordance with survey techniques outlined in FWC's *Gopher Tortoise Permitting Guidelines*, (April 2008, Revised 2023). Data collected from these surveys should be used to manage the MNC gopher tortoise population and ensure the identification of burrow locations for protection during future land management activities. Interpretive signage should be located near gopher tortoise habitats along pedestrian trails advising against harassment or disturbance of tortoises and their burrows while relaying the significance of the gopher tortoise's role as a keystone species within sandhill ecosystem.

Management of desirable habitat for gopher tortoises typically includes the use of frequent prescribed fire to maintain an open canopy and diverse groundcover stratum, optimally with less than 60% canopy coverage and an herbaceous groundcover of over 50% (FWC, 2008, Revised 2023). Ground disturbance activities should be minimized to reduce the encroachment of invasive species, promote the coverage of graminoid species, and preserve the upper soil horizons that fossorial species depend on for burrowing and foraging, such as the bicolored burrowing scarab beetle and the short-tailed snake.

Other rare wildlife species including mammals, herpetofauna, birds, and invertebrates have been historically observed and documented in pine flatwoods and wetland communities; they have been identified on or near MNC based on habitat models and species range models (FNAI Standard Data Report in Appendix E). These species should be considered during field surveys, land management, and impact avoidance and mitigation. Species surveys should be conducted within MNC. Table 4-3 provides imperiled species either known to occur or have occurred at or near MNC.

Table 4-3 Imperiled Wildlife Species Documented At or Near Morningside Nature Center					
		Status			
Common Name	Scientific Name	State	Federal	Global	Notes
Mammals					
Southern fox squirrel	<i>Sciurus niger niger</i>	LS	N	G5T3, S3	Possibly extirpated; documented in 1986 and one in 2020s.
Florida black bear	<i>Ursus americanus floridana</i>	S4	N	G5T4	Observed in surrounding area in 2020.
Long-tailed weasel	<i>Neogale frenata olivacea</i>	N	N	S3G5 T4	Specimens collected on or near MNC between 1927 and 1974.
Herpetofauna					
Eastern diamondback rattlesnake	<i>Crotalus adamanteus</i>	N	N	G3S3	Commensal species for Gopher tortoises. Observed during prescribed burn 07/30/2025.
Eastern indigo snake	<i>Drymarchon corais couperi</i>	LT	LT	G4, S3	Commensal species for Gopher tortoise. Last documented sighting uncertain.
Gopher tortoise	<i>Gopherus polyphemus</i>	LS	N	G3, S3	Known to inhabit sandhill uplands throughout MNC
Gopher frog	<i>Lithobates capito</i>	LS	N	G3G4 S3	Commensal species for Gopher tortoise.
Short-tailed snake	<i>Lampropeltis extenuata</i>	ST	PT	G3S3	Gopher tortoise commensal species. Observed within or near MNC in 1992.
Striped newt	<i>Notophtalmus perstriatus</i>	C	N	G2G3	Determined to likely inhabit the wetlands of MNC.
Florida pine snake	<i>Pituophis melanoleucus mugitus</i>	LS	N	G4T3 S3	Gopher tortoise commensal species. Last documented in 2003.
Birds					
Florida sandhill crane	<i>Anigone canadensis pratensis</i>	ST	N	G5T2, S2	Determined to likely inhabit the uplands of MNC.
Florida burrowing owl	<i>Athene cunicularia floridana</i>	S3	N	ST	Unlikely to inhabit MNC.
Whooping crane	<i>Grus americana</i>	N	N	EXPN	Experimental Population, Non-Essential.
Bald eagle	<i>Haliaeetus leucocephalus</i>	LT	LT	G3, S3	Occasional; documented in 2004.
Wood stork	<i>Mycteria americana</i>	FT	T	G4, S2	Determined to likely inhabit the wetlands of MNC.
Invertebrates					
Ataenius beetle	<i>Ataenius brevicollis</i>	S1S2	N	G3G5	Determined to potentially inhabit the uplands of MNC.
Bicolored burrowing scarab beetle	<i>Bolbocerosoma hamatum</i>	S1S2	N	G2G3	Determined to potentially inhabit the uplands of MNC.

Table 4-3 Imperiled Wildlife Species Documented At or Near Morningside Nature Center

KEY:		
STATE:	FEDERAL:	GLOBAL:
LS = species of special concern.	LT = Listed Threatened	EXPN = Experimental Population, Not currently listed
S3 = either very rare and local in Florida or found locally in a restricted range or vulnerable to extinction from other factors.	N = Not Listed Federally	G#G# = Range of rank; insufficient data to assign specific global rank (e.g., G2G3)
S4 = apparently secure in Florida	PT = species proposed for listing as threatened	G3 = rare or vulnerable globally.
N = not currently listed, nor currently being considered for listing	T = threatened	G3G4 = status uncertain-rare to apparently secure.
LT = listed as threatened.		G4 = apparently secure globally.
ST = State Threatened		G4T3 = apparently secure globally but local subspecies rare or vulnerable.
C = Conservation Concern		G5T2 = demonstrably secure globally, Threatened within the state
FT = Federally Threatened		G5T3 = demonstrably secure globally but local subspecies rare or vulnerable.
S1S2 = Range of rank; insufficient data to assign specific global rank		G5T4 = demonstrably secure globally, threatened populations exist
		S2 = imperiled statewide.
		S3 = rare or vulnerable statewide.
		S3G5 = rare or vulnerable statewide, demonstrably secure globally
		ST = State Threatened
		T4 = Threatened but state populations considered rare or vulnerable

4.5.2 Imperiled Plant Species

An Updated Floristic Inventory of Morningside Nature Center, Gainesville, Alachua County, Florida (2022) was conducted by botanists from the FDACS – Division of Plant Industry, from February 2020 to December 2021. This updated floristic inventory of MNC yielded a total of 615 taxa in 317 genera, including 114 families. Most representative plant families on MNC include Poaceae (96 taxa), Asteraceae (978 taxa), Cyperaceae (66 taxa), Fabaceae (49 taxa), and Ericaceae (17 taxa). Table 4-4 provides imperiled plant species that been documented on MNC.

Florida toothache grass (*Ctenium floridanum*) is a state-listed threatened species endemic to the southeastern United States, typically found in fire-maintained upland habitats, particularly longleaf pine sandhills and wet flatwoods, growing in moist to seasonally saturated sandy soils. At MNC, Florida toothache grass occurs in open, seasonally moist flatwoods and sandhill uplands with intact native groundcover and a frequent prescribed fire regime. The species depends on low shrub density and high light availability, conditions maintained through growing season burns that reduce hardwood encroachment and stimulate herbaceous diversity. Like many groundcover species in fire-adapted ecosystems, Florida toothache grass is vulnerable to fire exclusion, hydrologic alteration, and mechanical disturbance. Effective conservation of toothache grass within MNC includes preservation of natural hydrology, regular prescribed fire, and avoidance of soil disturbance, especially from mowing, grading, or off-road vehicle activity. Monitoring known populations and incorporating this species into groundcover restoration plantings can

Common Name	Scientific Name	Status			Notes
		State	Federal	Global	
Many-flowered grass-pink	<i>Calopogon multiflorus</i>	S2S3	T	G2G3	Observed in sandhill-flatwoods ecotone within MNC in 2016.
Florida Toothache Grass	<i>Ctenium floridanum</i>	S2	N	G2	Observed in sandhill communities on site, documented in Floristic inventory.
Chapman's skeletongrass	<i>Gymnopogon chapmanianus</i>	S3	N	G3	Observed in 2013 within a sandhill-flatwoods ecotone.
Florida spiny pod	<i>Matelea floridana</i>	S2	N	G2	Observed within uplands in MNC in 2012, and nearby to the north in 2017.
Pinesap	<i>Monotropa hypopithys</i>	S1	N	G5	Observed within upland sandhill communities in 2014.
Giant orchid	<i>Pteroglossapis ecristata</i>	S2	N	G2	
Hooded pitcher plant	<i>Sarracenia minor</i>	ST	N	G4	Observed within depression marshes and in adjacent habitat, documented in Floristic inventory (2025).
KEY: STATE: S1 = Critically imperiled in Florida S2 = Imperiled in Florida because of rarity S3 = Either very rare and local in Florida or found locally in a restricted range or vulnerable to extinction from other factors. S2S3 = Imperiled in Florida because of rarity or very rare and local in Florida. ST = State Threatened FEDERAL: N = Not Listed Federally T = Threatened GLOBAL: G2 = Imperiled globally. G3 = Either very rare and local throughout its range. G4 = Apparently secure globally. G5 = Demonstrably secure globally. G2G3 = Demonstrably secure globally, threatened populations exist					

further support its persistence. Its presence is a valuable indicator of high-quality, functioning flatwoods habitat.

Hooded pitcher plant (*Sarracenia minor*) is a state-listed threatened species native to the southeastern United States found in wet, acidic, nutrient-poor soils of flatwoods, seepage slopes, and wet savannas. Within MNC, the hooded pitcher plant is typically associated with seasonally saturated wetlands and wet flatwoods, particularly in areas with intact hydrology and frequent growing season fire. Management includes protecting shallow groundwater flows, preventing ditching or drainage, and applying regular prescribed burns to control shrub encroachment. Management measures for all protected species at MNC include management of invasive vegetation, maintenance of natural hydroperiods and drainage patterns, restriction of inappropriate recreational uses, and periodic monitoring to assess the status of the various species. Public education and information should be provided at kiosks, as printed material and via the

internet so citizens are informed about activities that disturb or harm imperiled species. Wildlife surveys are recommended to determine the presence and monitor the status of the imperiled species on MNC. GPS logging of burrows, territories, and the location of listed plant populations is recommended for resident species or important foraging areas.

4.5.3 Invasive Species

Invasive plants are one of the most significant threats to natural areas, particularly in and around urban settings. The use of equipment, especially external equipment, poses a threat of dropping and spreading non-native plants throughout the park. Species that are considered invasive are species that (a) are non-native to a specified geographic area; (b) were introduced by humans (intentionally or unintentionally); and (c) do or can cause environmental, economic, or human harm. The Florida Invasive Species Council (FISC) serves as the primary resource when determining invasive plants, their impacts, and recommended control methods. Invasive plants are classified by either Category I or Category II. Category I invasives alter native plant communities by displacing native species, changing community structures or ecological functions, or hybridizing with natives. Category II invasives have increased in abundance or frequency but have not yet altered Florida plant communities or ecological function to the extent shown by Category I species.

A variety of invasive species listed by the FISC may occur throughout the MNC natural communities. The full FISC List of Invasive Plant Species and a list of all previously documented invasive species at MNC are provided in Appendix F. NRM Section staff have documented numerous invasive plant species, with the most prominent being cogon grass, centipede grass (*Eremochloa opiuroides*), Chinese tallow, coral ardisia (*Ardisia crenata*), air potato (*Dioscorea bulbifera*), skunk vine, camphor tree (*Camphora officinarum*), and Japanese climbing fern (*Lygodium japonicum*). Areas in the park that frequently experience invasive species include those with high urban and public interface, such as the boundaries of the park and along trails. Chemical intervention is typically used to prevent the spread of invasive plants when discovered in the park. It is often difficult to eradicate invasive species occurrences completely; therefore, continued treatments are necessary to control and reduce invasive plant occurrences to a point where they no longer are detrimental to the natural resources and communities at the park. Early detection and treatment, along with ongoing monitoring is the best approach for minimizing the risk and threat of invasive plants.

Natural Resource Protection and Management

This section identifies and describes the primary management challenges at MNC and identifies solution strategies to address these challenges. Challenges include natural resource management, hydrology, invasive species, cultural resources, research and monitoring, public use and access management, forest resource management and capital facilities.

The NRM Section is responsible for the protection of natural resources through the application of effective and efficient land management practices. Land management practices include prescribed fire, forest management, invasive species control, habitat maintenance, and habitat restoration. The primary land management tool at MNC is the application of prescribed fire, which is the most cost-effective method to maintain the MNC natural communities. MNC uses FNAI reference descriptions as the DFCs, which are outlined in the *2010 FNAI Guide to the Natural Communities of Florida* (Florida Natural Areas Inventory, 2010). Along with prescribed fire, the NRM Section uses other common land management techniques to achieve specific land management goals and objectives.

Annual Habitat Management Goals are developed by the NRM Section to prioritize land management actions. The establishment of these goals includes the prioritization of areas and acreages for prescribed burns, mechanical treatments, and chemical removal of invasive plants. Mechanical treatments account for biomass removal, mulching restoration treatments, and maintenance mowing to remove dense, overgrown vegetation.

Consideration of the ecosystem, stakeholders, resources, external threats, and recreational opportunities provide critical context for the individual park's challenges and opportunities, allowing land managers to develop effective strategies to protect park resources and provide a quality visitor experience. Much of MNC's land management challenges (i.e., lack of fire and invasive species control) are due to it being located on the fringes of Gainesville's urban area coupled with the fact that it provides the rare opportunity to view fire-dependent communities in proximity to an urban setting. Excellent examples of several natural communities occur at MNC. Among the most outstanding and rare communities is sandhill, characterized by FNAI as S2, rare or imperiled statewide. Sandhills serve as habitat to a diverse array of species, including listed species: gopher tortoise, eastern indigo snake, and giant orchid.

NRM Section Management Policy

It shall be the policy of the NRM Section of Park Operations to utilize the FNAI natural community reference descriptions as the desired future conditions for all restoration plans.

FNAI has identified 72 reference sites for 13 natural community types which were used to develop detailed characterizations of high-quality examples of Florida's natural communities. These descriptions, served as models for structure, composition, and ecological function. They are used to assess the condition of similar communities, establish desired future conditions for restoration, and inform land management decisions (Florida Natural Areas Inventory 2010).

The following resource management challenges have been identified during the management of MNC in an urban environment. More specifically, these challenges represent problems or obstacles that prevent a desired outcome. Recognition of these challenges is the initial step in a strategic planning process. In strategic planning, strategies define the overall approach to achieving goals, while actions are the specific steps taken to implement those strategies. Strategies provide the “roadmap” and actions are the individual tasks that move you “along that path.” These management challenges were used to develop the goals, objectives, and actions detailed in Section 6.

5.1 Fire and Smoke Management

Management Challenge: Smoke management has presented a major obstacle when implementing prescribed fire on the property, resulting in fire-suppressed management units in need of restoration actions.

Strategies

- *Continue to communicate and coordinate with adjacent landowners and organizations to ensure understanding of MNC management goals.*
- *Use available tools and resources to minimize potential smoke management impacts and increase outreach for areas of potential impact.*
- *Continue to draft resolution plans for fire suppressed management units and implement actions accordingly.*

Goal(s):

- 1) Natural Communities
- 3) Hydrology
- 4) Forest Resources

Objective(s):

- 1.1) Prescribed burns
- 1.2) Fire-dependent natural communities
- 3.1) Hydrologic conditions
- 4.1) Forest Management Plan

5.1.1 The Importance of Fire

Prescribed fire is a land management tool used to restore and maintain fire-dependent ecosystems, enhance forest health, improve wildlife habitat, decrease fuel loading, and prevent dangerous, uncontrolled wildfire by reducing hazardous fuel loads. Fire promotes healthy ecosystems by stimulating pyrophytic vegetation, inhibiting non-pyrophytic vegetation, releasing nutrients into the soil, and enhancing food production for wildlife.

A safety benefit of prescribed fire is that it reduces fuels that have accumulated over time to manageable levels, reducing the potential for catastrophic wildfires. If fuels are not reduced every few years, wildfires can be destructive and hard to control. Florida has a long history of lightning fires and is designated as one of the lightning capitals of the world. Many of the state’s natural communities are adapted to fire and depend upon periodic fire to remain healthy.

The threat of wildfire at MNC is high due to the park’s urban interface and proximity to East University Avenue (SR 26). Prescribed fire is a vital tool for managing the fire-dependent natural communities at MNC (343.01 acres or 82.99%) and the fire-dependent plant and animal species populations that occupy them.

5.1.2 Management Measures for Fire

Prescribed burning is the most important land management tool, both ecologically and economically, for managing vegetation and natural communities and for perpetuating existing native wildlife populations. Prescribed fires are carefully planned, multi-faceted, and conducted per individual specifications concerning current vegetation composition and structure, desired future conditions, current fuel loadings, weather conditions, personnel, and equipment. Prescribed fires at MNC are implemented by trained crews under the direction of a Florida Certified Prescribed Burn Manager in accordance with Chapters 590.125 FS and 5I-2 Florida Administrative Code (F.A.C) and the annually updated *MNC Fire Management Plan* (Appendix G).

Fire Management Units

Until the late 1990s, MNC was divided into dozens of burn compartments and sub-compartments. Shortly thereafter, burn compartments were consolidated into Fire Management Units (FMUs) for the purpose of restoring, maintaining, and protecting in perpetuity all natural communities, ecotones, and their ecological processes by reducing the number of firelines and establishing a more natural fire regime.

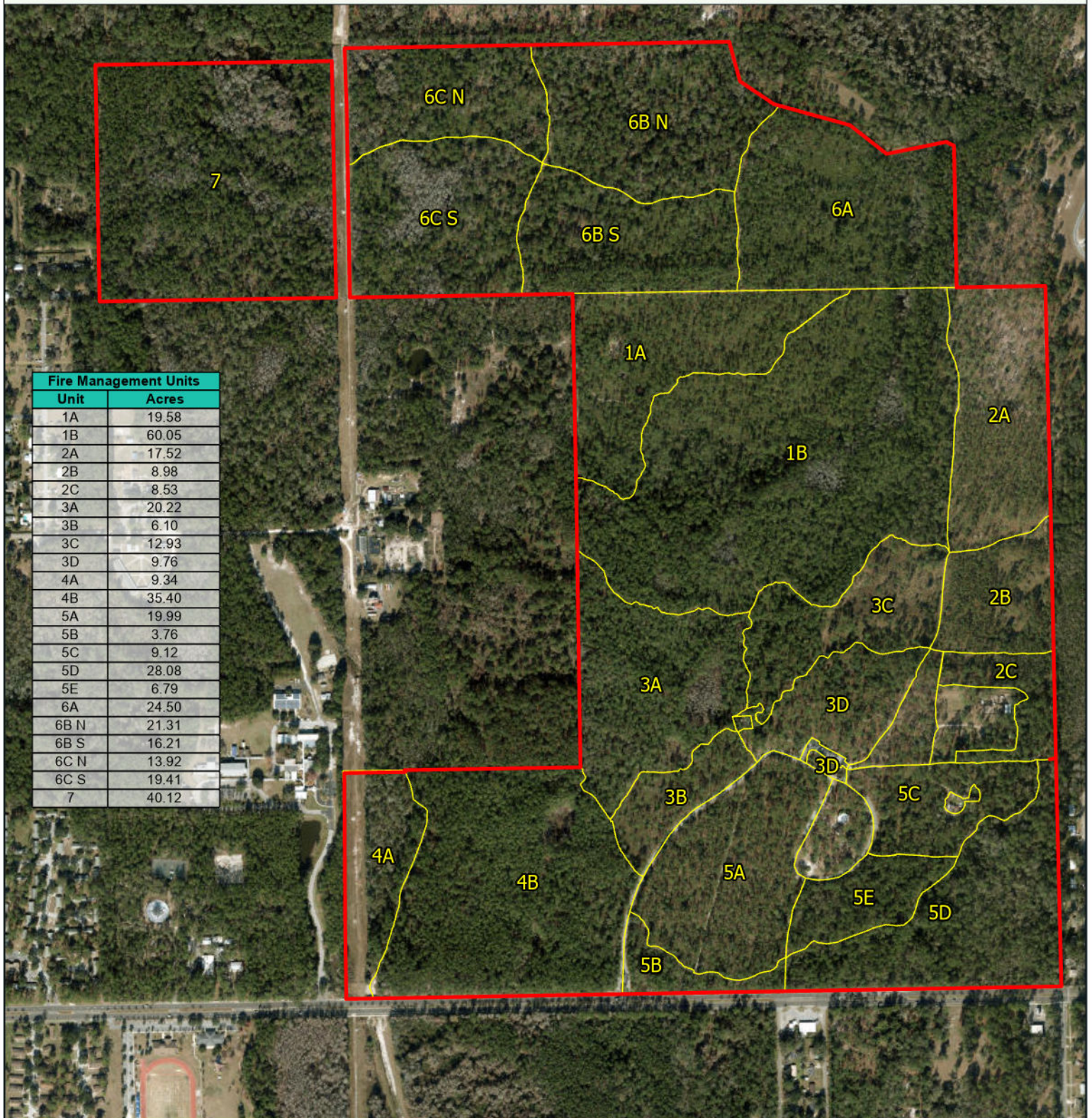
In all, MNC is divided into seven (7) FMUs, containing 22 individual burn zones (compartments) ranging in size from 3.76 to 60.05 acres (Figure 5-1), each with their own burn schedule. Each FMU is surrounded by permanent trails, which serve either as interior firebreaks or as the perimeter boundary. Various ecotones exist throughout the property, and fire unit boundaries are designed to minimize impacts on transitional areas between natural community types. Data related to FMUs, burn zones, and firebreaks are stored and updated in Geographic Information Systems (GIS). The majority of FMUs contain a minimum of two natural communities and may be divided into sub-compartments when weather, fuel, or safety conditions dictate.

MNC FMU Prioritization

Prioritization of these units considers ecological health, natural historic fire regimes, and wildfire risk, and aims to balance several goals: restoring units that are currently in poor condition; maintaining units that are relatively healthy and increasing the size of contiguous areas of high-quality habitat.

NRM Section staff divide FMU priorities into either Priority 1 or Priority 2. Priority 1 areas are of higher priority due to site conditions and natural community needs. Priority 2 areas indicate additional FMUs that are on the rotation list that may be considered if the appropriate weather and site conditions are available.

5-1 Morningside Nature Center - Fire Management Unit Map



Legend

- ▬ Morningside Nature Center Boundary
- ▬ Morningside Fire Management Unit Boundaries



0 0.05 0.1 0.2 Miles

MNC Fire Management Plan and Prescribed Burn Plans

The *MNC Fire Management Plan* (Appendix G), updated annually, describes all fire activities at MNC including prescribed fires and wildfires. It serves as a source of information and an action plan for the City of Gainesville's NRM Section and Gainesville Fire Rescue and the Florida Forest Service (FFS). It specifies FMUs, FMU prescriptions, appropriate fire-return intervals, and fire pre-suppression planning. The use of prescribed fire is dependent upon ecological needs, seasonal timing and scheduling, available resources, and appropriate weather conditions. Preparation for prescribed fire includes creation or maintenance of firelines, surveying pre-burn conditions, preparing a prescribed burn plan, and notifying adjacent property owners.

MNC Prescribed Burn Plans (PBPs) are written for each FMU, at a scale large enough to safely mimic a variable natural fire regime and to fulfill the stated FMU purpose. At a minimum, each MNC PBP contains the purpose of the fire, specific management objectives, detailed map or aerial photograph, and smoke screening. PBPs also contain a Prescribed Burning Checklist (logistics, notification of neighbors, placement of smoke signs, etc.). A Certified Burn Manager writes all PBPs and supervises all prescribed fire activity at MNC. A Certified Prescribed Burner has completed a training program that includes NWCG S-13 (Wildland Firefighter Training), S-190 (Introduction to Wildland Fire Behavior), and L-180 (Human Factors in the Wildland Fire Service). A Certified Prescribed Burner has additionally completed Interagency Basic Prescribed Fire training, as well as suggested S-290 (Intermediate Wildland Fire Behavior), S-390 (Introduction to Wildland Fire Calculations), S-215 (Fire Operations in the Wildland/Urban Interface – Florida), and Rx-340 (Introduction to Fire Effects – Florida). MNC prescribed fires meet all provisions of 590.125(2) and 590.125(3) FS, and 5I-2.0061 and 5I-2.0062 F.A.C. Prescribed burn evaluations (PBEs) are conducted after every prescribed fire and wildfire to assess habitat impacts. A historical fire record for all significant fires and prescribed burns is maintained, using completed burn plans and GIS data. These records are intended to provide data for future management decisions.

NRM Section's Burn Manager is responsible for generating the annual prescribed burn goals for MNC, which identify priority FMUs for both dormant season and growing season burns. Any listed species present in a burn unit that is within its prescribed burn interval should be stated in the annual prescribed burn goal and PBPs. Additional restrictions and requirements relative to burning within proximity to these species or habitats should also be addressed and may include time of year, pre-burn preparation, fire-return intervals, and other burn parameters.

Prescribed Fire Safety and Smoke Management

Prescribed fire as a management tool raises concerns regarding the health and safety of nearby residents and their property. Heavy fuel loads in some areas coupled with urban conditions and its adjacency to East University Avenue (SR 26) make prescribed fire at MNC difficult. Smoke management is a serious and difficult issue, especially when conducting prescribed fire in urban areas and adjacent to busy roads and low-lying areas. Each PBP will contain a current FFS-generated Smoke Management Map.

Within MNC, many areas of pyrophytic habitat have heavy loads of fuel given the long duration of fire exclusion and suppression. Areas recently burned by wildfire (2020) may contribute to smoke issues due to increased dead wood and snags. FMUs that contain thick layers of detritus (duff) can create long-term smoke dispersal issues and result in tree mortality due to root damage. These areas with heavy loads of fuel

within a fire-suppressed FMU require specific weather and wind conditions (e.g., speed and direction) to complete a prescribed burn. Optimally, lighter fuel loads should be achieved after several prescribed fires which will generate less smoke and may allow for burning over a wider range of weather and wind conditions. Formulating prescribed fire prescriptions to increase smoke dispersal and reduce smoke on nearby roads and urban areas can help alleviate smoke-related health concerns. In addition to weather conditions, types and amounts of fuels have a significant effect on the quantity and quality of smoke generated by prescribed fires and potential threats to public safety and health. As fuels change over time, the significance of smoke-related issues also may change.

Effective communication is crucial for successful prescribed fire smoke management. It involves informing the public about planned burns, potential smoke impacts, and how to minimize exposure. Clear, timely, and locally relevant information helps build public support and allows individuals to take necessary precautions. Each time the NRM Section conducts a burn, early notification is provided to local papers and radio stations. Signs are posted on the roadways next to the park on the day of the burn and only removed following a 24-hour interval with no detectable smoke or fire in the burn area. As a courtesy, local schools and medical facilities are contacted by phone.

5.2 Hydrology

Management Challenge: Hydrology of the existing natural communities continues to be a management concern.

Strategies

- *Prevent further damage to trails and firelines by rehabilitating rutted areas, as needed.*
- *Coordinate monitoring of water quality with local and state agencies, as needed.*

Goal(s):

3) Hydrology

Objective(s):

3.1) Hydrologic conditions

Florida's native habitats are precisely adapted to natural drainage patterns and seasonal water level fluctuations. Variations in these factors frequently determine the types of natural communities that occur on a particular site. Even minor changes to natural hydrology can result in the loss of plant and animal species from the landscape. The hydrology of MNC reflects a complex interaction between natural wetland features and historical modifications that have altered water flow patterns across the park.

Approximately 80% of MNC vegetative communities consist of wetlands or flatwoods that are either seasonally flooded or at least affected by a high-water table. Several wetland communities including basin swamps, dome swamps, and cypress swamps are embedded in flatwoods throughout MNC. Due to hydrologic alterations, these wetlands occur as primarily isolated depressional systems, fed by direct rainfall and localized sheet flow from stormwater runoff, and have no significant connectivity to other water bodies. These wetlands serve as important breeding sites for amphibians and provide favorable conditions for diverse hydric plant species.

Surface water features influencing hydrology at MNC include Lake Forest Creek. Lake Forest Creek is one of the largest tributaries discharging into Newnan's Lake and briefly crosses MNC at two locations. The

primary threat facing these hydrologically dependent communities is both onsite and offsite hydrologic disruption, which can significantly influence their quality and composition. Wetlands within northern MNC have experienced significant hydrological alterations. Historical aerial imagery review (1964–1971) showed the construction of a drainage ditch along the northern boundary, likely in conjunction with the powerline easement. It is believed that the construction of this ditch significantly altered regional surface water hydrology. Overland sheet flow that historically was vital in the recharge of the northern wetland systems is now captured by this ditch and conveyed to the northeast into Sunnyland Creek. As a result, most of the wetlands in the northern MNC have become relics or are seasonally dry (hydrologic inputs disrupted by engineered conveyances).

To support the long-term ecological management on the park, consideration should be given to hydrologic restoration due to the number of water-dependent natural communities present. MNC should consider collaborating with surrounding public landowners including the Florida Department of Agriculture and Consumer Services (Newnans Lake State Forest). If any development was to occur on properties adjacent to MNC, the use of culverts should be considered where necessary, to encourage water flow back into the wetlands on the park.

5.3 Invasive Plant Species

Management Challenge: Invasive plants continue to be an ongoing management concern.

Strategies

- *Continue treatments and monitoring of invasive species consistent with annual management goals.*

Goal(s):

1) Natural Communities

Objective(s):

1.3) Eliminate Category I and II invasive plants

Management and control of invasive plants is one of the most important tasks in maintaining and restoring natural communities. Invasive plants can negatively disrupt natural communities in a variety of ways. They can out-compete and displace native species and alter the natural balance of natural communities by reducing floral and faunal biodiversity. Invasive plants can also alter natural processes such as fire frequency, intensity, and water flow.

In addition to herbicide applications and other control methods (hand pulling and biological controls), the long-term control of these species must include surveys for new infestations and monitoring areas for those previously targeted with control measures. Routine natural community surveys help discover new infestations before they have an opportunity to spread. Monitoring the areas of historical eradication efforts help determine the effectiveness of herbicide formulations, herbicide application timing, and overall control efforts. Invasive species control is time consuming and expensive. Resources include commitment of NRM Section staff's time for surveys, monitoring, and invasive species control, and/or sufficient funds and staff time for hiring and managing qualified contractors.

As noted in Section 3.5.3, the most frequently observed invasive plant species at MNC include cogon grass, Chinese tallow, Chinese privet (*Ligustrum sinense*), camphor trees (*Camphora officinarum*), wild taro (*Colocasia esculenta*), air potato (*Dioscorea bulbifera*), coral ardisia (*Ardisia crenata*), centipede grass

(*Eremochloa ophiuroides*), and other turf-like grasses. Each of these are listed by the FISC as a Category I and II species (FISC 2025). Category I and II lists include invasives, which are “altering native plant communities by displacing native species, changing community structures or ecological functions or hybridizing with natives; or Invasive plants that have increased in abundance or frequency but have not yet altered Florida plant communities to the extent shown by Category I species. These species may become Category I if ecological damage is demonstrated.” (FISC 2023). Appendix F provides the *FISC List of Invasive Plant Species*, updated June 2025, and a list of all invasive species that have been documented on MNC.

NRM Section staff utilize various methods to control invasive species, including manual, mechanical, and chemical removal, and education. Manual removal can be time intensive, but it is recommended for invasive species that have small seedlings or root structures that can be easily transported or reestablished. Chemical (herbicide) removal is the most used method for prevention and treatment throughout the park. The Annual Habitat Management Goals identify the species, acreage, and the priority for treatment that must be completed at MNC. Mechanical treatments can consist of biomass removal, mulching restoration treatments, or maintenance mowing to address the identified issue. When mechanical treatment is the preferred option, it is important to NRM Section Staff to ensure equipment is properly cleaned before and after to minimize the spread of invasive species into other areas of the park.

Early documentation and treatment are the most effective methods for controlling invasive plant infestations. If untreated, there is a significant risk that large populations could arise through the spread of seeds or spores. Adjacent lands are a source for invasive plant species through landscaping practices or harboring seed sources. A number of invasive species have been observed encroaching along the southeastern boundary of the park. Cooperation and consultation with adjoining property owners and landscape managers is recommended, especially with the neighborhood to the southeast. Early detection through surveys and rapid control/treatment followed by monitoring are part of the invasive plant management effort at MNC. Mapping and documenting new and ongoing infestations, typically through GIS, are also included in the invasive plant management program. Herbicide treatment has been commonly used in the past for prevention and treatment.

5.4 Cultural Resources Management

Management Challenge: The current cultural resources (historical and archaeological) are in need of adequate protection and monitoring.

Strategies

- *Implement state protection and monitoring guidelines for any newly discovered archaeological resources.*

In implementing natural resource management practices, it is important to protect cultural resources from damage. Cultural resources at MNC face threats from a variety of sources (e.g., looting or wildfires). Cat-faced trees are recognized to be at risk due to exposed wood and resin. The location of any cat-faced trees is maintained

Goal(s):

5) Cultural Resources

Objective(s):

5.1) Inventory of historic and cultural resources

5.2) Cultural and historical sites

through GIS. Prior to conducting prescribed fires, special efforts should be made to protect known cat-faced trees. Protection measures could include raking around the base of the tree or removing extra debris surrounding it. Staff discontinued the use of disking in most areas in the early 2000s following the discovery of several chert projectile points during routine fire line maintenance. Although not historical, the thatched roofs in the Timucua Area are also at risk from fire. Wetting this area prior to and during a prescribed fire will help minimize this risk.

The NRM Section protects and documents cultural artifacts in adherence with the *Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties*, as revised June 2021, and provided in Appendix H. NRM Section staff are certified by the Florida DHR and will closely monitor all activities and take measures to identify, locate, and protect any archaeological or cultural sites that may be located at the park. Management of archaeological and historic resources on the property is governed by NOD's *Historical Resources Policies and Procedures* in accordance with Chapter 267, FS.

Cultural resource management for NRM Section staff entails research, cultural resource site documentation, planning, cultural site management and preservation, park development, and stewardship. Part of the cultural resource site documentation includes the maintenance of FMSF for each recorded site on PRCA properties. The collection of artifacts or the disturbance of archaeological and historic sites at the park are prohibited without prior authorization from DHR. A search of the FMSF was conducted as part of the preparation of this NPMP and no sites were identified (see Appendix I).

5.5 Research and Monitoring

Management Challenge: Ecological monitoring is an ongoing challenge due to low staffing levels.

Strategies

- *Identify key monitoring activities that can be outsourced to volunteers, private contractors, or internal and outside agencies.*
- *Reassess current monitoring needs for long-term management and prioritize based on current goals and objectives.*

Ecological monitoring, the collection of data on an ecosystem's structure and composition, is crucial to the decision-making process of adaptive management given the feedback it provides on the outcomes of management actions. Currently, staff conduct photo point monitoring, locally important wildlife assessments, and targeted rare plant surveys using available GIS data and limited transect monitoring when time and resources allow. Staff also coordinate volunteer bird count surveys.

NRM Section land management activities protect federally and state-listed threatened and endangered species known to occur on PRCA-designated lands. The NRM Section prioritizes the maintenance of healthy, functioning ecosystems and natural processes as the basis for meeting the habitat requirements of the greatest number of native species, including those imperiled species

Goal(s):

- 1) Natural Communities
- 2) Public Access/Passive Recreation
- 7) Staffing levels, budget, and volunteer programs

Objectives:

- 1.4) Annual monitoring
- 1.5) Imperiled species
- 2.3) Trail system
- 2.4) Education, training, and research
- 7.1) Annual budget

that occur at the park (see Section 4.5). Typically, monitoring strategies prioritize rare or listed species population estimates, location, and management impacts. Restoration actions, land management activities, and status updates are incorporated into monitoring guidelines to determine priorities and management efficacy. Locations of known populations of listed plants and all sightings of listed animals should be recorded by GPS whenever possible and shared among NRM Section staff to ensure their protection from any land management or maintenance practices.

At a minimum, the monitoring program should be conducted annually and include:

- Habitat assessment to determine fuel loads and habitat structure and to develop management recommendations for specific management activities.
- Imperiled wildlife assessments to determine species in need of additional protection measures.
- Invasive species mapping and treatment to determine areas of concern and develop strategies for ongoing management.

Research by outside organizations is encouraged, so long that it remains consistent with the goals of the NRM Section and this NPMP. Continued partnerships or agreements with nearby researchers (i.e., University of Florida) and volunteers will be essential in achieving these monitoring targets. Historically, volunteers have been helpful with wildlife surveys and planting of seedlings. Additional volunteer mechanisms (formal or informal) could be evaluated to aid NRM Section staff in achieving their land management goals, especially given continued low staffing levels.

5.6 Public Use and Access Management

Management Challenge: Public access to the park in future years needs to be adequately managed to prevent damage to or degradation of the existing natural resources, including program or event scheduling conflicts that may arise when land management actions are planned.

Management Challenge: While currently at minimal levels, unauthorized access, illegal dumping, vandalism, and unauthorized off-road vehicle use may pose threats in the future.

Strategies

- *Work with law enforcement agencies including the Florida Fish and Wildlife Conservation Commission, Gainesville Police Department, Alachua County and other State authorities as needed to log and report activities as they occur.*
- *Re-construct boundary fencing in key areas as time and resources allow.*

Goal(s):

2) Public Access/Passive Recreation

Objective(s):

2.1) Public Access

2.2) Trail plan

2.3) Trail system

2.4) Education, training, and research

- *Assess the current nature trail system to identify needed improvements to ensure wayfinding features and overall trail design meets public access needs.*
- *Develop a scheduling and communications system to ensure educational activities at the park have alternative planning options when land management actions may disrupt the planned activities.*

5.6.1 Security

MNC is located inside the boundary of the City of Gainesville and is periodically patrolled by Gainesville Police Department and the Alachua County Sheriff's Office for unauthorized activity. There are no resident security personnel at MNC. A gated entrance opened and closed by a contractor under the direction of NRM Section staff is located off East University Avenue (SR 26). Signage at the gate identifies the property and provides basic park rules and hours of operation. Portions of the park's perimeter are fenced including half of the northwestern boundary along the residential area, a portion of the western boundary separating MNC from GROW HUB, and portions of the easternmost boundary. Much of this fencing is in disrepair and is in need of replacement. Security measures may be periodically reviewed to ensure access is managed appropriately, while accounting and adjusting for any changes or development that may occur adjacent to MNC.

5.6.2 Managing Public Access and Visitor Usage

PRCA-designated lands are available for public use, including picnicking, hiking, wildlife viewing, and other passive recreational activities. Managing access is important in providing public use opportunities that are consistent with the established land management goals for MNC. Unauthorized access can present significant challenges including environmental damage and safety risks for visitors and staff. Furthermore, unauthorized access can strain park resources due to increased enforcement and maintenance needs.

Increases in population and development surrounding MNC intensifies the challenges associated with managing public access and visitor usage. The problem of managing access is exacerbated given that MNC facilities are secluded from the main road, thereby creating concerns that they could be targets for illegal activities, particularly when equipment and materials are unable to be stored inside. The *Morningside Nature Center Preliminary Master Plan* (City of Gainesville Wild Spaces & Public Places 2025) proposed two new access points, one along the northwesternmost boundary through the existing gate, and another along the northern boundary adjacent to Newnan's Lake State Forest. The *City of Gainesville Mobility Plan* (City of Gainesville, 2024) identifies a multi-use trail to be established along the southern boundary on East University Avenue (SR 26) with a portion extending through the utility easement. Construction of this multi-use trail could create an additional strain on park resources, including public use measures to manage the influx of people around MNC's boundaries.

Specifically, unauthorized access to the park has been known to occur through the flatwoods along East University Avenue (SR 26) east of the entrance gate, leading to the creation of undesirable spur trails. The western boundary of the park abuts residential development, promoting concerns over illegal access and dumping. To discourage unauthorized access, a locked gate and fence as well as signs acknowledging that the presence of a nature park are maintained. However, there is evidence of continued periodic dumping

which can harm wildlife and natural communities, especially if it continues or increases in quantity and frequency. Further, the lack of clearly delineated property boundary lines between MNC and Newnans Lake State Forest has resulted in the establishment of an unofficial and unmaintained network of mountain biking trails that has negatively impacted existing natural communities through soil erosion and vegetation loss and disruption. Replacing old fencing and installing new fencing in key boundary areas will be evaluated as a viable solution to meet these challenges.

Trail monitoring and maintenance are key components to effectively provide and manage public access and use. NRM Section staff utilizes the *Trail Counter Field Manual TTC-4420* (Diamond Traffic Products 2008) for the installation of trail counters and collection of visitor data. Currently, one trail counter is located at MNC, which is typically relocated every two years. Data is saved in a master database and is used to estimate total nature park and park system visitor calculations. Additional trail counters could be installed on the nature trails to monitor visitor use. Due to the creation of unauthorized trails, NRM Section staff should annually evaluate the existing trail network. Unauthorized or non-maintained trails should be properly closed to prevent disturbance to wildlife and natural communities. Trails through the wet parts of the park can be seasonally inundated, limiting access by users. Staff vehicle use on wet trails causes ruts, which in turn increases the duration of flooding. Trails should be evaluated during wet periods to identify problem areas. All NRM Section maintained trails should be properly marked to prevent people from veering off trail, especially where areas are open and accessible following a prescribed burn. Any changes to the trails system should be updated in the GIS trail data.

5.7 Forest Resource Management

Management Challenge: Forest resources are in need of an adequate plan development and subsequent management actions to maximize ecological benefit for all existing natural communities.

Strategies

- *Develop a forest management plan to establish a baseline inventory of forest resources, assess current natural community conditions, and create an action plan to restore identified areas.*

Goal(s):

- 1) Natural Communities
- 4) Forest Resources

Objective(s):

- 1.1) Prescribed burns
- 4.1) Forest Management Plan

Within the last several years, MNC forest resources have undergone significant events affecting the amount and condition of forest resources. The 2001 pine beetle infestation impacted three main areas of MNC which took decades of natural and manual restoration efforts for regeneration. The wildfire in 2020 impacted 131 acres in the northern portion of MNC. Additionally, each year the park is impacted by several storms and periodic hurricanes resulting in significant damage to the park's overstory trees. A forest resource management plan is needed to establish baseline resources and conditions to assess the current needs of natural communities on MNC to maintain ecosystem health. The forest management plan will include recommendations such as timber harvesting, tree plantings, groundcover restoration, midstory oak removal, and other related restoration actions for long-term ecological benefit of the natural communities. The overall goal of this plan would be to develop a baseline inventory of forest resources, to assess current natural community conditions, and to create an action plan

to restore areas that are in need while emphasizing the protection of the ecosystems and prioritize natural community form and function over timber value. This includes the protection of groundcover and minimizing long-term damage to the natural hydrology at the park. If timber resources are not in optimal condition, i.e., tree density (basal area and trees per acre) or species composition, land management practices should work towards restoration or reduction in overstocking for ecological benefit. Groundcover protection, minimization of soil disturbance from machinery, cultural resource protection, and hydrologic protection will be a top priority during timber harvesting operations.

5.8 Capital Facilities

Management Challenge: Capital facility developments and improvements need to be aligned with the existing goals and objectives of this management plan, as well as with the long-term needs of all stakeholder groups.

Strategies

- *Update management goals at the beginning of each fiscal year and communicate them with the NCC.*

Goal(s):

6) Capital Facilities and Infrastructure

Objective(s):

6.1) New facilities and Morningside Master Plan

Existing facility developments, including trails, roads, and rights-of-way have resulted in the fragmentation of MNC natural communities, particularly in the sandhills. Given that the majority, if not all, of the existing capital facilities occur within the sandhill communities, significant challenges exist for conducting proper natural resource management. Extra precautions must be taken around the Living History Farm and Timucua Area during prescribed burning to ensure fire does not spread into these areas.

The installation of trails in the northern portion of MNC would likely support passive recreational opportunities not currently available for the public. To reduce the risk of harming natural communities and resources, trail construction should minimize ground disturbance. The placement of trails through existing firelines and/or FMU perimeters, avoiding areas that become seasonally inundated with water, would support the annual use and management of the trail network and minimize valuable resources necessary for maintenance.

The *Morningside Nature Center Preliminary Master Plan (2025)* identifies some infrastructure changes and developments to support the long-term need of all stakeholder groups. To ensure that any future developments and improvements do not adversely affect the natural communities at MNC, the NCC should be notified of annual management goals and any changes to the overall land use management goals to ensure any proposed park alterations are consistent with the goals and objectives of this NPMP. In addition, the City of Gainesville has an internal review structure to ensure proposed projects and plans remain consistent with the City of Gainesville's planning documents.

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Natural Resource Management Goals and Objectives

1 This NPMP aims to protect and enhance natural resources, identified in Section 4 through strategic
2 planning, with goals focusing on long-term ecological health and sustainability, and objectives outlining
3 specific, measurable actions to achieve these goals. The following goals and objectives provide direction
4 and focus management resources for the next ten-year planning period. Funding, agency program priorities,
5 and staff resources during the planning period will determine the degree to which these objectives are met.
6 Management activities at MNC during this planning period must conserve, protect, utilize, and enhance the
7 natural and historical resources and manage resource-based public outdoor recreation and education, which
8 is compatible with the protection of this park. Most of the management actions will be conducted by PRCA,
9 the NRM Section, although appropriate activities will be contracted to private sector vendors or completed
10 with the cooperation of other agencies, NGOs or volunteer organizations.

11 To address the primary management challenges described in Section 5, Table 6-1 outlines the goals and
12 objectives to be achieved under this NPMP. The goals and objectives as identified in this Plan will guide
13 land and natural resource management over the next ten years. The goals and objectives will also directly
14 influence the development of their annual habitat management goals and future work plans. When the NRM
15 Section staff are formulating their internal annual items, they will refer to the metrics in the goals and
16 objectives table to aid in the formulation of specific actions to complete.

Table 6-1 Goals, Objectives, and Actions		MEASURE (Metric)	2027	2029	TARGETS 2031	2033	2035
Goal 1	Restore and maintain native habitats and communities						
Objective 1.1	<i>Safely conduct prescribed burns through appropriate planning, evaluation, and implementation with an emphasis on experience-based staff development.</i>						
Action	Evaluate and maintain fire unit boundaries and firelines for priority burn units as identified in annual burn plans and assess new unit boundaries as needed.	Burn units due in fire rotation evaluated/maintained	X	X	X	X	X
Action	Evaluate smoke management planning with the Florida Forest Service; discuss findings and include in Fire Management Plan.	Evaluate smoke management plan		X		X	
Action	Annually, evaluate effectiveness of Fire Management Plan and use available tools and resources to improve firing techniques, burn seasonality, frequency, and smoke management.	Evaluate and update Fire Management Plan	X	X	X	X	X
Action	Attend appropriate meetings and training activities to ensure the safety and professional development of the burn team.	# trainings and meetings attended					
Action	Evaluate fire equipment needs/upgrades and maintain equipment to ensure the safety of the burn team.	Fire equipment needs/upgrades evaluated annually	X	X	X	X	X
Action	Maintain active involvement in the North-Central Florida Prescribed Fire Working Group to maximize training opportunities for all staff.	Participate annually.					
Objective 1.2	<i>Manage MNC with optimal fire return intervals in pyrogenic communities.</i>						
Action	Annually draft habitat management goals that identify and prioritize Fire Management Units in need of supplemental plantings, fire, mechanical and chemical treatments with FNAI natural community descriptions as the benchmark to determine success.	Habitat goals drafted annually	X	X	X	X	X
Action	Continue the use of frequent growing season fire; however, if Fire Management Unit exceeds fire interval, prioritize prescribed burning frequency over seasonality due to narrow windows of opportunity.	Acres burned during growing season					
Action	Implement mechanical vegetation reduction where necessary to reduce wildfire risk, improve natural communities and facilitate prescribed burning.	Acres treated mechanically					

Table 6-1 Goals, Objectives, and Actions		MEASURE (Metric)	2027	2029	TARGETS		
			2031	2033	2035		
Action	Conduct wetland encroaching and off-site upland hardwood removal projects as needed.	Acres of hardwoods treated/removed					
Action	Annually update GIS data of Fire Management Units with the following information for each unit: last burn date, elapsed time since last burn, and whether or not the elapsed time since last burn exceeds the optimal fire return interval for any natural community in that Fire Management Unit.	# of Fire Management Units updated					
Objective 1.3	<i>Eliminate Category I and II invasive plant species identified by the Florida Invasive Species Council, or if not possible reduce populations too low to alter native plant communities</i>						
Action	Identify and map priority invasive species and annually monitor for changes in abundance and extent.	Acres surveyed					
Action	Annually treat known infestation sites.	% of infestations treated	20	20	20	20	20
Action	Collaborate with public and private neighbors to reduce new introductions and control existing invasive populations.	Collaboration completed	X	X	X	X	X
Action	Monitor and maintain invasive treatments and occurrences; keep accurate treatment and GIS records.	Records updated	X	X	X	X	X
Objective 1.4	<i>Conduct annual monitoring to determine the success of restoration and conservation strategies.</i>						
Action	Create long-term ecological monitoring protocols based on current staffing levels and explore contracting and volunteer opportunities if staffing is unable to meet needs.	Protocols created	X	X	X	X	X
Action	Identify and implement new restoration projects (both uplands and/or wetlands) only when appropriate short- and long-term goals have been created for future actions.	# of restoration projects					
Action	Implement natural community monitoring with photo points, vegetation monitoring and/or wildlife monitoring to assess actions, as appropriate.	# of photo points					
Objective 1.5	<i>Protect imperiled plant and wildlife species</i>						
Action	Opportunistically identify, GPS, and track known occurrences of imperiled plants and animals observed on site and disseminate locations, when necessary, to maintenance teams to avoid negative impacts.	# of imperiled species observed and reported	X	X	X	X	X

Table 6-1 Goals, Objectives, and Actions		MEASURE (Metric)	2027	2029	TARGETS		
					2031	2033	2035
Action	Revisit the need to update floristic inventory.	Inventory completed	X		X		X
Action	Develop monitoring protocols for selected imperiled species.	Protocols created	X	X	X	X	X
Action	Annually update list with any newly discovered species.	List updated annually	X	X	X	X	X
Goal 2	Manage public access, passive recreation, research, and educational opportunities.						
Objective 2.1	<i>Provide public access to the park that is compatible with established passive recreation policies.</i>						
Action	Work with law enforcement agencies including the Florida Fish and Wildlife Conservation Commission, Gainesville Police Department, Alachua County Sheriff and other State authorities as needed to log and report illegal activities as they occur.	Coordinate on a regular basis	X	X	X	X	X
Action	Establish and implement the Morningside Master Plan in coordination with established Land Development Code policies and protected land registry.	TBD					
Action	Re-construct boundary fencing in key areas as time and resources allow.	# of miles of fencing reconstructed					
Action	Evaluate access to newly acquired parcels in the Northern portion of MNC and establish compatible passive recreation opportunities as needed.	Access points identified					
Objective 2.2	<i>Prepare a trail plan that evaluates the existing trail system and identifies trails in need of restoration, upgrading, rerouting, modifying use restrictions, or closing.</i>						
Action	Annually update GIS trail data as needed	GIS trail data updated	X	X	X	X	X
Action	Reassess the carrying capacity of the park trails and developed areas in coordination with the Morningside Master Plan.	Assess carrying capacity					
Action	Re-design and re-blaze nature trails as needed to meet visitor needs and resource management objectives.	# of miles of re-blazed nature trails	1	1	1	1	1
Objective 2.3	<i>Assess and monitor current trail system for needed improvements and impacts to the health of native habitats and communities.</i>						
Action	Continue the use of trail counters to determine monthly trail usage.	Monthly counts	X	X	X	X	X
Action	Establish and implement monitoring protocol to assess the effects of recreational activities on the health of native habitats.	Monitoring protocols established	X	X	X	X	X

Table 6-1 Goals, Objectives, and Actions		MEASURE (Metric)	2027	2029	TARGETS 2031 2033 2035		
Action	Annually monitor trail network for visitor impacts including unauthorized trail alterations and provide adequate maintenance/improvements.	Trails monitored annually	X	X	X	X	X
Action	Maintain trail infrastructure and assess the need for improvements to boardwalks and trails.	Trail infrastructure improvement projects	2	2	2	2	2
Objective 2.4	<i>Provide compatible education, training, and research opportunities that are consistent with conservation goals.</i>						
Action	Ensure all active environmental education and natural resource training facilities and programs are aligned with natural resource management goals.	Goals analyzed	X	X	X	X	X
Action	Review and manage Special Use Authorization and Special Use Permit applications to ensure research requests do not harm or adversely impact natural communities.	TBD					
Action	Determine passive recreational carrying capacity.	Carrying capacity determined	X	X	X	X	X
Action	Monitor education, training and recreation activities for visitor use impacts.	Impacts monitored	X	X	X	X	X
Action	Coordinate with the Environmental Education staff to inform the public on current restoration and management projects.	Coordination with Environmental Education staff completed	X	X	X	X	X
Action	Develop a communication system between Environmental Education staff and Natural Resource Management staff that can be used on days when favorable conditions for fire or other management activities may conflict with recreation, training and educational programs.	Communication system developed	X	X	X	X	X
Goal 3	<i>Preserve and restore hydrology.</i>						
Objective 3.1	<i>Protect and maintain hydrologic conditions within MNC natural communities.</i>						
Action	Prevent vehicle and machinery rutting along wet trails and within management units and rehab when necessary.	TBD					
Action	Consider coordination opportunities with Alachua County and the St. Johns River Water Management District to monitor surface water quality	TBD	X	X	X	X	X

Table 6-1 Goals, Objectives, and Actions		MEASURE (Metric)	2027	2029	TARGETS		
			2031	2033	2035		
Action	Maintain and construct future low water crossings with gravel/filter fabric.	# of crossings constructed and/or maintained	1	1	1	1	1
Action	Develop plan to reroute or reduce impacts of firelines if damage to wetlands is occurring.	# of miles of firelines monitored					
Goal 4	Manage forest resources with an ecosystem level approach, prioritizing natural community form and function.						
Objective 4.1	Prepare and implement a Forest Management Plan including reforestation, harvesting, prescribed fire and other related activities based on restoration and maintenance needs of the existing natural communities on the property.						
Action	Consult with the appropriate organizations regarding forest management activities as appropriate.	Consultation completed	X	X	X	X	X
Action	Ensure the protection of ground cover diversity during forest management actions (i.e., timber harvests).	TBD					
Action	Conduct a forest resource assessment using the appropriate agency or professional forestry consultant.	Acres assessed					
Goal 5	Protect, preserve, and maintain cultural resources.						
Objective 5.1	Maintain current inventory of historic and cultural resources.						
Action	Survey for historic resources during resource management activities.	Survey completed	X	X	X	X	X
Action	Ensure any newly discovered archaeological sites are recorded with the Florida Division of Historical Resources (DHR).	# of sites recorded					
Action	Maintain and update GIS location data for "cat faced" trees and any existing and newly discovered archaeological sites.	GIS data updated	X	X	X	X	X
Objective 5.2	Monitor, protect, and preserve known cultural and historical sites.						
Action	Coordinate with DHR during the design and implementation of plans for new infrastructure developments.	Coordination with DHR completed	X	X	X	X	X
Action	Coordinate with the Environmental Education team to provide information that educates the public on the importance of cultural resources.	Coordination with Environmental Education team completed	X	X	X	X	X
Action	Protect all "cat face" trees during resource management activities.	# of "cat faced" trees protected					

6 Natural Resource Management Goals and Objectives

Table 6-1 Goals, Objectives, and Actions		MEASURE (Metric)	2027	2029	TARGETS		
			2031	2033	2035		
Action	Ensure that resource management activities do not adversely impact cultural and historical sites.	Assess resource management activities	X	X	X	X	X
Action	Minimize ground disturbance around historical buildings and known cultural sites during resource management activities.	TBD					
Goal 6	Develop and maintain capital facilities and infrastructure necessary to meet the needs of stakeholder groups where feasible.						
Objective 6.1	Ensure that the construction and maintenance of any new facilities and improvements to the park including those outlined in the new Morningside Master Plan are consistent with the goals and objectives of this plan.						
Action	Maintain all existing capital facilities (e.g., structures, trails, parking lots, benches, and picnic tables).	Facilities maintained	X	X	X	X	X
Action	Assess the current area boundary fencing; repair and replace as needed.	# of miles of boundary fencing					
Action	Communicate with Nature Centers Commission on any proposed plans or projects.	Communication completed	X	X	X	X	X
Action	Minimize the environmental impacts of future amenities and site improvements through the adherence to local policies and regulations.	Expertise provided	X	X	X	X	X
Goal 7	Manage annual fiscal and personnel needs for natural resource management activities at MNC.						
Objective 7.1	Prepare an annual work plan to address maintenance, staffing, and other operational needs.						
Action	Support and schedule volunteer participation in operations, wildlife monitoring, and natural system management where feasible	# of volunteer workdays scheduled	2	2	2	2	2
Action	Recruit volunteers for specific park needs (invasive species, trail monitoring, resource monitoring, and restoration activities) where feasible	# of volunteers recruited	X	X	X	X	X
Action	Develop annual work plan for upcoming year	Annual work plan	X	X	X	X	X
Action	Expand volunteer opportunities to engage with natural resource based educational programs consistent with land management goals.	# of student volunteers recruited	X	X	X	X	X

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- 6 Management Plan. 123 pp.
- 7 Nature Operations Division. *Fire Management Plan Prescribed Burning*.
- 8 Nature Operations Division. *Historical Resources Policies and Procedures*
- 9 Nature Operations Division. *Maintenance Operations Manual*
- 10 United States Department of Agriculture Natural Resources Conservation Service (2025). Custom Soil
- 11 Resource Report for Alachua County, Florida Morningside Nature Center.

Appendix A

Workshop Summary Report



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Appendix B

Living History Farm Procedures



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**Nature Operations Division
City of Gainesville**

**General Administrative Procedures
For Living History Farm**

Tree harvesting or removal

- Whenever possible, tree canopy characteristic of the area's original natural communities should be retained.
- If canopy tree removal is deemed necessary for farm or education program goals, staff should preferentially remove non-preferred trees (laurel oak, water oak, sweetgum, sugarberry, and loblolly pine) rather than more preferred species (other hardwoods and pines).
- If canopy tree removal can result in a desired ecological effect (benefit to preferred species) and the removal does not result in a negative programmatic effect then removal shall be pursued as time permits. This will also ensure that the farm is not a source population for unwanted tree species.
- Any tree removal inside or outside the farm boundary should occur only after consultation with Land Management staff.

**Nature Operations Division
City of Gainesville**

**General Administrative Procedures
For Living History Farm**

Landscaping and non-native species

Non-native species would likely have been part of the landscape of a farm in the historic period being re-created at the Living History Farm. However, non-native species may have negative impacts on the surrounding natural communities. For that reason, consultation with land management should occur before the introduction of new species of non-native flora.

- Continued use of crop species and existing non-native landscape species not known to be invasive may continue as long as there is no evidence that these plants are spreading into surrounding natural areas.
- Planting preference in buffer zones will be for native species when possible (native fruit trees as opposed to cultivated citrus).
- Effects of plantings in buffer zones will be minimized. Only the ring around the base of the plant/tree may be maintained or mulched for irrigation purposes. Mulch will not be broadcasted throughout buffer area and native groundcover will be maintained. Mulch to be used in buffer zones will consist of non-pine wood chips, and should never contain hay (which can contain non-native seeds).
- Non-native plants and trees will not be arbitrarily planted at the farm. A valid programmatic reason will be required for non-native plantings.
- Farm staff will be watchful for new occurrences non-native invasive species (encroaching Cogon Grass, Air Potato patches) and will notify land management staff upon their discovery. Farm Staff may then proceed to remove the invasive with or without the help of land management staff.
- Non-native Invasive species will never be planted.

**Nature Operations Division
City of Gainesville**

**General Administrative Procedures
For Living History Farm**

Livestock Grazing

Free-range livestock grazing was a historic part of Florida agriculture, and it has been proposed that livestock be allowed to graze freely within the living history farm. Grazing can have both positive and negative effects and must be managed to ensure desired outcomes.

- If stocking rates are too high livestock could damage preferred native vegetation in farm buffer zones through overgrazing and trampling.
- However, grazing can also reduce undesirable species such as laurel/water oak seedlings and reduce fuel loads for fire.
- To ensure that buffer zone vegetation remains in good condition grazing in buffer zones will take place in accordance with a written management plan, which land management staff must approve.
- The most recent grazing and resource management findings, not feelings or assumptions, will dictate grazing practices.
- Aesthetics of the farm and buffer zones will be maintained. Livestock grazing outside of pens should not result in unnaturally sandy areas.

**Nature Operations Division
City of Gainesville**

**General Administrative Procedures
For Living History Farm**

Fencing

- Fencing of the farm area has been initiated to reduce vandalism and reduce deer damage to crop plants.
- To allow movement of wildlife, fencing must be placed and maintained far enough off the ground and have large enough openings to allow the passage of gopher tortoises.
- Fence location must also consider aesthetics and safety of staff persons during prescribed fires.

**Nature Operations Division
City of Gainesville**

**General Administrative Procedures
For Living History Farm**

Fire management

- Natural communities within the fenced area of the farm will continue to be burned according to a fire regime appropriate to the community, as outlined in the NOD Fire Management Plan.
- Whenever possible, burning in buffer zones should be done at the same time as adjacent areas outside the farm.
- As in all other prescribed burns done by NOD, burning of buffer zones, other farm areas or debris piles shall be conducted in accordance with NOD policy, with an approved burn plan, and under the direction of a state-certified burn manager.

**Nature Operations Division
City of Gainesville**

**General Administrative Procedures
For Living History Farm**

Use of buffer zones

- Sandhill is extremely sensitive to soil disturbance, and heavy traffic or other disturbance can cause long-term or permanent damage in these communities. For that reason, activities with a high probability of impacting groundcover or soil (e.g. expansion of crop areas, special events, repeated vehicle use) are not to take place in Farm Buffer Zone A or B.
- Zones C and D may be lightly used for grazing and fruit and nut tree plantings in accordance with aforementioned livestock grazing and non-native plant policies.
- The portion of Zone C between the kitchen garden and the schoolhouse will be planted and maintained in such a way that screens the visitor's view of the maintenance compound.
- At this time Zone E is only designated for possible light grazing.
- Native groundcover will not be removed and replaced with non-native grasses in any buffer zone.
- Additional facilities or crop areas shall be placed in areas lacking significant wiregrass or other exceptional native groundcover.

**Nature Operations Division
City of Gainesville**

**General Administrative Procedures
For Living History Farm**

Disposal of organic waste and natural debris

- Farm activities generate organic waste materials of a variety of types. These wastes, including animal manure, crop residues and hay will be composted and/or spread on crop areas.
- Due to potential damage to native vegetation, smoke hazards during prescribed fire, and unwanted dispersal of seeds, no farm waste materials should be piled outside of the farm or in farm buffer zones.
- Naturally occurring organic debris (leaves, branches, wood chips) should also be disposed of or dispersed in an appropriate manner, so as not to create unsightly piles or potential hotspots during prescribed fires outside of the farm or in farm buffer zones.
- Designated composting sites will be located in developed portions of the farm, minimizing the risk of non-native plant establishment.

**Nature Operations Division
City of Gainesville**

**General Administrative Procedures
For Living History Farm**

Livestock

Breeds:

- Only animals and breeds that documentation shows were owned or could have been owned in Florida during 1870 will be kept. (Breeds with importation dates after 1870 will not be considered as long as the time period we interpret remains the same). Undocumented breeds or species of animals will never kept for any reason, including revenue generation for Morningside or the City of Gainesville.
- Preference will be given to documented breeds that are the safest to work with and offer the greatest programmatic use.
- Preference will also be given to documented breeds that are rare, whose presence and managed breeding at the LHF may perpetuate the continuance of the breed.

Care:

- Comprehensive care and upkeep, including veterinary procedures will be provided to all animals in accordance with the farm supervisor and U.F.'s Food Animal Reproduction and Medicine Service (FARMS) as stated in the Farm Procedures Manual.
- All animals large and small should receive adequate medical attention if sick or injured. The best medical care will be given unless it is deemed to be cost prohibitive.
- Sick or injured animals that cannot be rehabilitated must be humanely euthanized.
- Quality of life for farm animals will be enriched whenever possible through exercise, grooming, companionship, safe food supplementations, etc.
- Feeding and special care instructions will be posted on the dry erase board at the barn.

Breeding:

- Breeding of animals will not be driven by revenue production; however managed breeding programs can help recoup costs by producing marketable livestock.

Further information on LHF livestock management can be found in the farm operations manual.

**Nature Operations Division
City of Gainesville**

**General Administrative Procedures
For Living History Farm**

Chemical Use and Nuisance Species

Pest control:

- Pesticides may be used for rodent control as last resort (after humane trapping and other deterrents have not worked)
- Only poisons that cannot result in secondary poisons (to raptors, etc.) will be used.
- Preference will be given to environmentally friendly insect control methods including but not limited to beneficial insects, hand picking and materials that do not indiscriminately kill all insects such as *Bt (Bacillus thuringiensis)* as opposed to broad spectrum insecticides.

Trapping of predators:

- Predators (wild or domestic) may be humanely trapped in live traps in accordance with Alachua County Animal Control and the Florida Fish and Wildlife Conservation Commission.
- No trapping will be conducted during hot days or during times when trapped animal will not be found within a reasonable amount of time.
- Relocation, release or other methods of dealing with trapped wildlife will be conducted in consultation with NOD's Natural Resource Management Section.

Weed Control:

- Farm staff will remain vigilant in the control of nuisance invasive species within the farm.
- A plant pest unique to the farm is a non-native stinging nettle which pops up in and around animal areas.
- Herbicides will only be used when absolutely necessary (manual control is preferred).

Gardening:

- Farm will strive to convert to drip irrigation if possible. This method reduces the amount of water used and amount wasted (lost to evaporation or unneeded areas).
- Composting of plant and animal waste will be done for use on crops. Additional compost will be attained as needed. Compost both mixed into the soil and used as mulch atop crops reduces the amount of water needed by irrigation.
- Fertilization will be conducted as needed with preference for lighter and more frequent doses as opposed to heavy doses. Heavy doses of fertilizer are not only possibly harmful to the crop and wasteful but can result in an unnecessary nutrient loading to nearby natural areas.

**Nature Operations Division
City of Gainesville**

**General Administrative Procedures
For Living History Farm**

Programmatic Relationships

Educational Programming

- Programs will convey environmental messages when possible (ex: lessons about composting, not wasting, simpler living, green architecture)
- In the context of the living history farm, programs may include the mention of the benefits of small farms, including but not limited to dual-purpose animals, efficient production, less runoff, animal welfare, pastured meats, etc.

Local Partnerships/relationships

- Staff will seek to network and maintain relationships with other living history sites including Dudley Farm and Cracker Country for mutual benefit.
- The LHF will seek to partner with other non-profit programs such as 4-H for mutual benefit. (4H programs include master gardener, hatching eggs, show stock production, etc.)
- When possible, the LHF will seek and maintain relationships with local businesses in order to acquire needed resources (ex: compost and supplemental food sources such as fruit stands, restaurants, etc.)
- Staff will network with other tourism providers, hotels, etc. to promote the farm and other NOD destinations.

Appendix C

**Special Use Authorization
and Special Use Permit**



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City of Gainesville

Parks, Recreation, and Cultural Affairs Department Research/Special Use Authorization Form

Applicant information			
Name			
Address			
Email		Phone number	
Institution		Department	

Advisor information (if applicable)			
Name			
Address			
Email		Phone number	
Institution		Department	

Project information			
Type of project (e.g. Masters' research, undergraduate class project, etc.)			
Project description. Provide a DETAILED description including methods and focal species--e.g. if your project requires collecting, how many samples/individuals will be collected? If you plan to have marked study plots, how many and of what size? What specifically will you measure and what impact will that have on the site? Attach additional pages if necessary.			
Permits received or required (e.g. USFWS)			
Intended project location			
Project start date		Completion date	
Names of assistants or cooperators (if applicable)			
What benefits will this project provide to the City of Gainesville and the Department of Parks, Recreation, and Cultural Affairs?			

Please complete and return to: Nature Operations Division, Station 66, Box 490, Gainesville, FL 32627 or email to barbierin1@cityofgainesville.org

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Appendix D

USDA's NRCS Soils Data



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United States
Department of
Agriculture

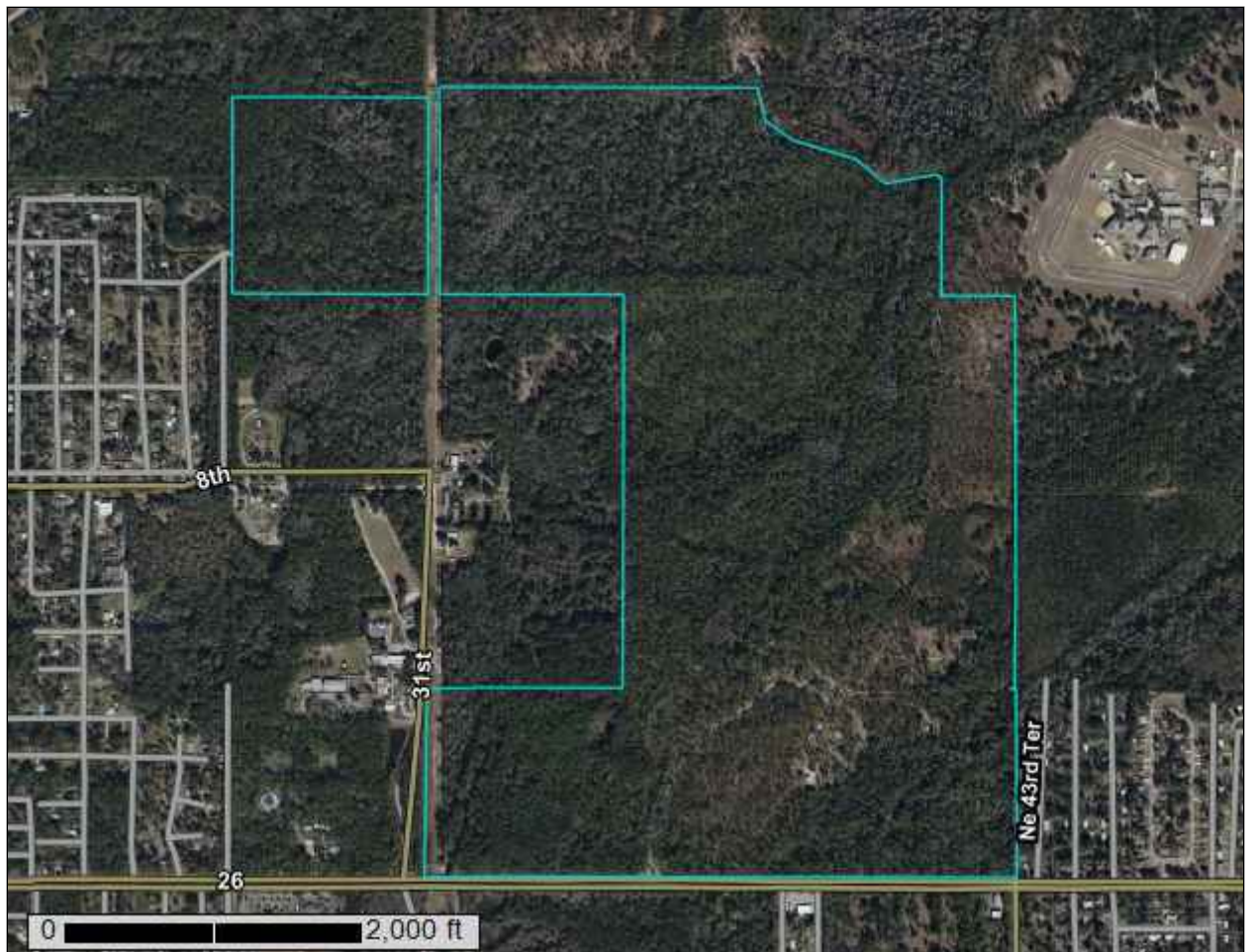
NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Alachua County, Florida**

Morningside Park



March 6, 2025

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

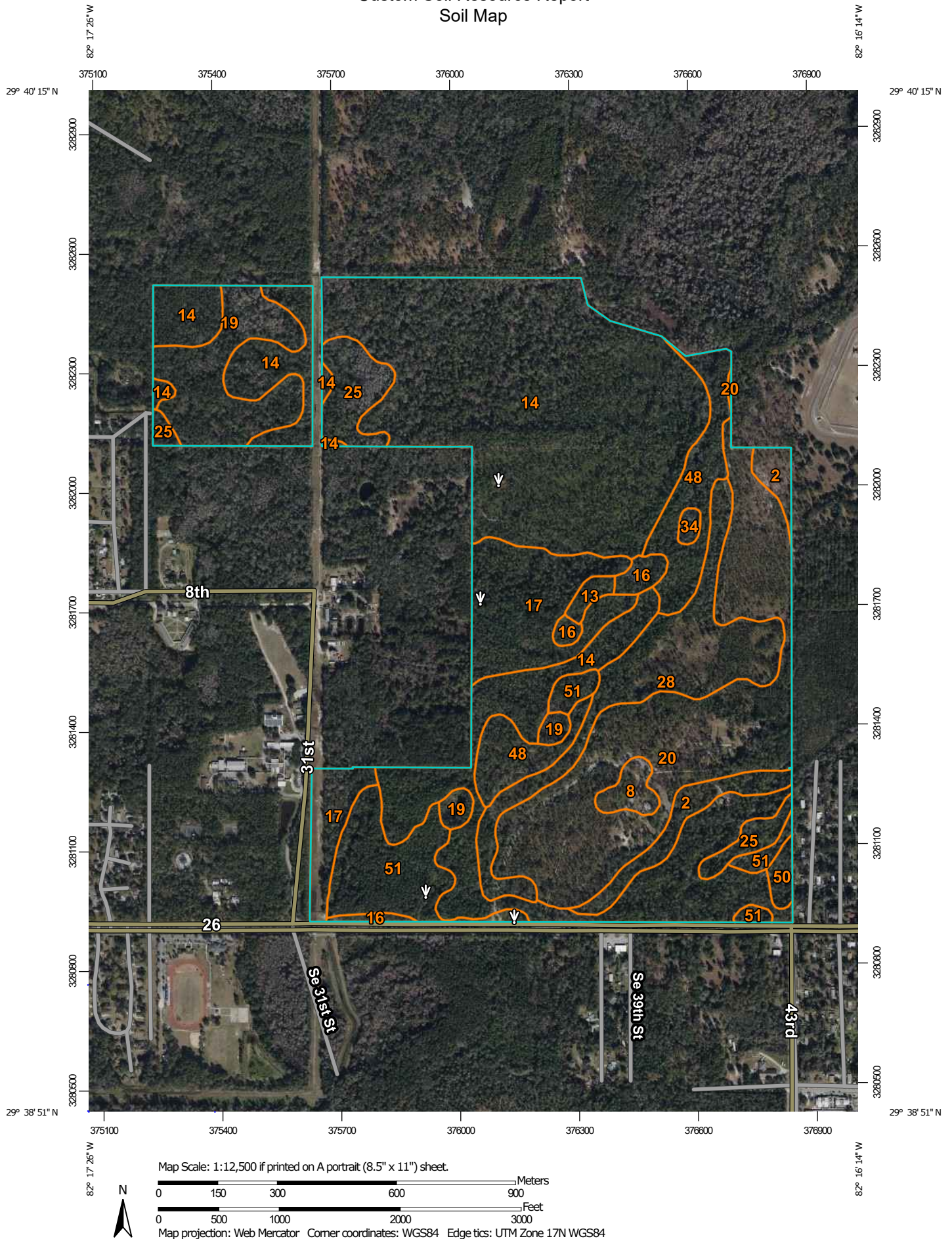
Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

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

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Alachua County, Florida

Survey Area Data: Version 26, Aug 28, 2024

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

Date(s) aerial images were photographed: Jan 9, 2022—Feb 10, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
2	Candler fine sand, 0 to 5 percent slopes	10.9	2.6%
8	Millhopper sand, 0 to 5 percent slopes	3.6	0.9%
13	Pelham sand	1.8	0.4%
14	Pomona sand, 0 to 2 percent slopes	178.6	43.2%
16	Surrency sand	4.3	1.0%
17	Wauchula sand	31.4	7.6%
19	Monteocha loamy sand	24.4	5.9%
20	Tavares sand, 0 to 5 percent slopes	66.7	16.1%
25	Pomona sand, depressional	13.2	3.2%
28	Chiple sand	30.5	7.4%
34	Placid sand, depressional	1.0	0.3%
48	Myakka-Myakka, wet, sands, 0 to 2 percent slopes	22.0	5.3%
50	Sparr fine sand	2.1	0.5%
51	Plummer fine sand	23.0	5.6%
Totals for Area of Interest		413.3	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

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

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a

particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Custom Soil Resource Report

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Alachua County, Florida

2—Candler fine sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2shkf
Elevation: 10 to 260 feet
Mean annual precipitation: 47 to 64 inches
Mean annual air temperature: 68 to 77 degrees F
Frost-free period: 290 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Candler and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Candler

Setting

Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve, tread
Down-slope shape: Linear, convex
Across-slope shape: Linear
Parent material: Sandy marine deposits and/or sandy eolian deposits

Typical profile

A - 0 to 4 inches: fine sand
E - 4 to 72 inches: fine sand
E and Bt - 72 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: R154XX001FL - Yellow Sands Xeric Uplands
Forage suitability group: Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Other vegetative classification: Longleaf Pine-Turkey Oak Hills (R154XY002FL), Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)

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Hydric soil rating: No

Minor Components

Astatula

Percent of map unit: 4 percent

Landform: Ridges on marine terraces, hills on marine terraces, knolls on marine terraces

Landform position (two-dimensional): Summit, backslope

Landform position (three-dimensional): Interfluve, side slope, riser, rise

Down-slope shape: Convex

Across-slope shape: Linear

Ecological site: R154XX001FL - Yellow Sands Xeric Uplands

Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G155XB111FL)

Hydric soil rating: No

Apopka

Percent of map unit: 3 percent

Landform: Ridges on marine terraces, hills on marine terraces

Landform position (two-dimensional): Summit, backslope

Landform position (three-dimensional): Interfluve, side slope, riser

Down-slope shape: Convex

Across-slope shape: Linear

Ecological site: F154XA004FL - Moist Sandy Pine-Hardwood Woodlands

Other vegetative classification: Longleaf Pine-Turkey Oak Hills (R155XY002FL),
Sandy soils on ridges and dunes of xeric uplands (G155XB111FL)

Hydric soil rating: No

Adamsville

Percent of map unit: 3 percent

Landform: Knolls on marine terraces, rises on marine terraces

Landform position (three-dimensional): Tread, rise

Down-slope shape: Convex

Across-slope shape: Linear

Ecological site: F154XA004FL - Moist Sandy Pine-Hardwood Woodlands

Other vegetative classification: Upland Hardwood Hammock (R155XY008FL),
Sandy soils on rises and knolls of mesic uplands (G155XB131FL)

Hydric soil rating: No

Arredondo

Percent of map unit: 2 percent

Landform: Knolls on marine terraces, ridges on marine terraces

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope, interfluve, tread

Down-slope shape: Convex

Across-slope shape: Linear

Ecological site: F154XA004FL - Moist Sandy Pine-Hardwood Woodlands

Other vegetative classification: Longleaf Pine-Turkey Oak Hills (R154XY002FL),
Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)

Hydric soil rating: No

Tavares

Percent of map unit: 2 percent

Landform: Flatwoods on marine terraces, hills on marine terraces, knolls on
marine terraces, ridges on marine terraces

Landform position (two-dimensional): Summit

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Landform position (three-dimensional): Interfluve, side slope, tread, rise
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Ecological site: F154XA004FL - Moist Sandy Pine-Hardwood Woodlands
Other vegetative classification: Sand Pine Scrub (R155XY001FL), Longleaf Pine-Turkey Oak Hills (R155XY002FL), Sandy soils on rises, knolls, and ridges of mesic uplands (G155XB121FL)
Hydric soil rating: No

Millhopper

Percent of map unit: 1 percent
Landform: Flatwoods on marine terraces, rises on marine terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread, talf, rise
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F154XA004FL - Moist Sandy Pine-Hardwood Woodlands
Other vegetative classification: Sandy soils on rises, knolls, and ridges of mesic uplands (G155XB121FL)
Hydric soil rating: No

8—Millhopper sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2w0q5
Elevation: 30 to 160 feet
Mean annual precipitation: 44 to 56 inches
Mean annual air temperature: 66 to 75 degrees F
Frost-free period: 270 to 330 days
Farmland classification: Not prime farmland

Map Unit Composition

Millhopper and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Millhopper

Setting

Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, interfluve, tread
Down-slope shape: Linear, convex
Across-slope shape: Convex, linear
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 9 inches: sand
E - 9 to 58 inches: sand
Bt1 - 58 to 64 inches: loamy sand

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Btg2 - 64 to 89 inches: sandy clay loam

Properties and qualities

Slope: 0 to 5 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 2.00 in/hr)

Depth to water table: About 42 to 72 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 4.0

Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: A

Ecological site: F154XA004FL - Moist Sandy Pine-Hardwood Woodlands

Forage suitability group: Sandy soils on rises, knolls, and ridges of mesic uplands (G154XB121FL)

*Other vegetative classification: Upland Hardwood Hammock (R154XY008FL),
Sandy soils on rises, knolls, and ridges of mesic uplands (G154XB121FL)*

Hydric soil rating: No

Minor Components

Candler

Percent of map unit: 5 percent

Landform: Knolls on marine terraces, ridges on marine terraces

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope, interfluvium, tread

Down-slope shape: Convex

Across-slope shape: Convex

Ecological site: R154XX001FL - Yellow Sands Xeric Uplands

*Other vegetative classification: Longleaf Pine-Turkey Oak Hills (R154XY002FL),
Longleaf Pine-Turkey Oak Hills (R155XY002FL), Sandy soils on ridges and
dunes of xeric uplands (G154XB111FL)*

Hydric soil rating: No

Tavares

Percent of map unit: 4 percent

*Landform: Knolls on marine terraces, flatwoods on marine terraces, ridges on
marine terraces, flats on marine terraces*

Landform position (two-dimensional): Shoulder, backslope

Landform position (three-dimensional): Interfluvium, base slope

Down-slope shape: Convex

Across-slope shape: Linear

Ecological site: F154XA004FL - Moist Sandy Pine-Hardwood Woodlands

*Other vegetative classification: Longleaf Pine-Turkey Oak Hills (R154XY002FL),
Sandy soils on rises, knolls, and ridges of mesic uplands (G154XB121FL)*

Hydric soil rating: No

Arredondo

Percent of map unit: 3 percent

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Landform: Ridges on marine terraces, hills on marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, interfluvium, riser
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Ecological site: F154XA004FL - Moist Sandy Pine-Hardwood Woodlands
Other vegetative classification: Longleaf Pine-Turkey Oak Hills (R154XY002FL),
Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Hydric soil rating: No

Gainesville

Percent of map unit: 1 percent
Landform: Hills on marine terraces
Landform position (three-dimensional): Interfluvium
Down-slope shape: Linear, convex
Across-slope shape: Convex, linear
Ecological site: F154XA003FL - Dry Yellow Sands Pine Woodland
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands
(G154XB111FL)
Hydric soil rating: No

Kanapaha

Percent of map unit: 1 percent
Landform: Rises on marine terraces
Landform position (three-dimensional): Interfluvium, talus
Down-slope shape: Linear, convex
Across-slope shape: Convex, linear
Ecological site: F154XA005FL - Poorly Drained Upland Pine-Hardwood Forests
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands
(G154XB141FL)
Hydric soil rating: Yes

Sumterville, bouldery subsurface

Percent of map unit: 1 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Interfluvium
Down-slope shape: Linear, convex
Across-slope shape: Convex, linear
Ecological site: F154XA004FL - Moist Sandy Pine-Hardwood Woodlands
Other vegetative classification: Upland Hardwood Hammock (R154XY008FL),
Loamy and clayey soils on flats and rises of mesic lowlands (G154XB331FL)
Hydric soil rating: No

13—Pelham sand

Map Unit Setting

National map unit symbol: brp5
Elevation: 10 to 450 feet
Mean annual precipitation: 50 to 58 inches
Mean annual air temperature: 66 to 73 degrees F

Custom Soil Resource Report

Frost-free period: 248 to 278 days

Farmland classification: Not prime farmland

Map Unit Composition

Pelham and similar soils: 70 percent

Minor components: 30 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pelham

Setting

Landform: Flats on marine terraces

Landform position (three-dimensional): Talf

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 7 inches: sand

E - 7 to 29 inches: sand

Btg - 29 to 69 inches: sandy clay loam

Cg - 69 to 80 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)

Depth to water table: About 6 to 18 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 4.0

Available water supply, 0 to 60 inches: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: B/D

Forage suitability group: Sandy over loamy soils on flats of hydric or mesic
lowlands (G154XB241FL)

Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic
lowlands (G154XB241FL)

Hydric soil rating: No

Minor Components

Wauchula, non-hydric

Percent of map unit: 6 percent

Landform: Flats on marine terraces

Landform position (three-dimensional): Talf

Down-slope shape: Convex

Across-slope shape: Linear

Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic
lowlands (G154XB241FL)

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Hydric soil rating: No

Surrency

Percent of map unit: 6 percent

Landform: Depressions on marine terraces

Landform position (three-dimensional): Dip

Down-slope shape: Concave

Across-slope shape: Concave

Other vegetative classification: Sandy over loamy soils on stream terraces, flood plains, or in depressions (G154XB245FL)

Hydric soil rating: Yes

Pomona

Percent of map unit: 6 percent

Landform: Flats on marine terraces

Landform position (three-dimensional): Talf

Down-slope shape: Convex

Across-slope shape: Linear

Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G154XB141FL)

Hydric soil rating: No

Mulat, non-hydric

Percent of map unit: 6 percent

Landform: Flats on marine terraces

Landform position (three-dimensional): Talf

Down-slope shape: Convex

Across-slope shape: Linear

Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic lowlands (G154XB241FL)

Hydric soil rating: No

Riviera

Percent of map unit: 6 percent

Landform: Flats on marine terraces

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic lowlands (G154XB241FL)

Hydric soil rating: Yes

14—Pomona sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2w4gc

Elevation: 20 to 180 feet

Mean annual precipitation: 50 to 58 inches

Mean annual air temperature: 66 to 73 degrees F

Frost-free period: 248 to 278 days

Farmland classification: Not prime farmland

Map Unit Composition

Pomona and similar soils: 70 percent

Minor components: 30 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pomona

Setting

Landform: Flats on marine terraces

Landform position (three-dimensional): Talf

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 5 inches: sand

E - 5 to 16 inches: sand

Bh - 16 to 24 inches: sand

E' - 24 to 43 inches: sand

B'tg - 43 to 69 inches: sandy clay loam

Cg - 69 to 84 inches: sandy clay loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Runoff class: High

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)*

Depth to water table: About 6 to 18 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 4.0

Available water supply, 0 to 60 inches: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4w

Hydrologic Soil Group: A/D

Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks

*Forage suitability group: Sandy soils on flats of mesic or hydric lowlands
(G155XB141FL)*

*Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands
(G155XB141FL)*

Hydric soil rating: No

Minor Components

Newnan

Percent of map unit: 6 percent

Landform: Flats on marine terraces

Landform position (three-dimensional): Talf

Down-slope shape: Convex

Across-slope shape: Linear

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Ecological site: F155XY150FL - Sandy Flatwoods and Hammocks on Rises and Knolls of Mesic Uplands

Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)

Hydric soil rating: No

Myakka, non-hydric

Percent of map unit: 6 percent

Landform: Flats on marine terraces

Landform position (three-dimensional): Talf

Down-slope shape: Convex

Across-slope shape: Linear

Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks

Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)

Hydric soil rating: No

Pelham

Percent of map unit: 6 percent

Landform: Flats on marine terraces

Landform position (three-dimensional): Talf

Down-slope shape: Convex

Across-slope shape: Linear

Ecological site: F153AY060NC - Wet Loamy Flats and Depressions,
F153BY060NC - Wet Loamy Flats and Depressions

Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)

Hydric soil rating: No

Wauchula, non-hydric

Percent of map unit: 6 percent

Landform: Flats on marine terraces

Landform position (three-dimensional): Talf

Down-slope shape: Convex

Across-slope shape: Linear

Ecological site: F155XY130FL - Sandy over Loamy Flatwoods and Hammocks

Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)

Hydric soil rating: No

Sparr

Percent of map unit: 6 percent

Landform: Rises on marine terraces, flats on marine terraces

Landform position (three-dimensional): Talf, rise

Down-slope shape: Convex

Across-slope shape: Linear

Ecological site: F154XA004FL - Moist Sandy Pine-Hardwood Woodlands

Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)

Hydric soil rating: No

16—Surrency sand

Map Unit Setting

National map unit symbol: brpc
Elevation: 10 to 120 feet
Mean annual precipitation: 50 to 58 inches
Mean annual air temperature: 66 to 73 degrees F
Frost-free period: 248 to 278 days
Farmland classification: Not prime farmland

Map Unit Composition

Surrency and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Surrency

Setting

Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 15 inches: sand
E - 15 to 28 inches: sand
Btg1 - 28 to 44 inches: sandy clay loam
Btg2 - 44 to 80 inches: sandy clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.06 to 2.00 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: A/D
Forage suitability group: Sandy over loamy soils on stream terraces, flood plains,
or in depressions (G154XB245FL)

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Other vegetative classification: Sandy over loamy soils on stream terraces, flood plains, or in depressions (G154XB245FL)
Hydric soil rating: Yes

Minor Components

Samsula

Percent of map unit: 5 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Organic soils in depressions and on flood plains (G154XB645FL)
Hydric soil rating: Yes

Monteocha

Percent of map unit: 5 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G154XB145FL)
Hydric soil rating: Yes

Pomona

Percent of map unit: 5 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G154XB141FL)
Hydric soil rating: No

Wauberg

Percent of map unit: 5 percent
Landform: Marshes on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic lowlands (G154XB241FL)
Hydric soil rating: Yes

17—Wauchula sand

Map Unit Setting

National map unit symbol: brpf
Elevation: 10 to 450 feet

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Mean annual precipitation: 50 to 58 inches
Mean annual air temperature: 66 to 73 degrees F
Frost-free period: 248 to 278 days
Farmland classification: Not prime farmland

Map Unit Composition

Wauchula, non-hydric, and similar soils: 70 percent
Wauchula, hydric, and similar soils: 15 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wauchula, Non-hydric

Setting

Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 8 inches: sand
E - 8 to 14 inches: fine sand
Bh - 14 to 18 inches: loamy sand
E' - 18 to 28 inches: sand
Btg - 28 to 62 inches: fine sandy loam
Cg - 62 to 80 inches: sandy clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: About 12 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Ecological site: F154XA007FL - Moist Sandy Wet-Mesic Flatwoods
Forage suitability group: Sandy over loamy soils on flats of hydric or mesic lowlands (G154XB241FL)
Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic lowlands (G154XB241FL)
Hydric soil rating: No

Description of Wauchula, Hydric

Setting

Landform: Flats on marine terraces

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Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 8 inches: sand
E - 8 to 14 inches: fine sand
Bh - 14 to 18 inches: loamy sand
E' - 18 to 28 inches: sand
Btg - 28 to 62 inches: fine sandy loam
Cg - 62 to 80 inches: sandy clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Ecological site: F154XA007FL - Moist Sandy Wet-Mesic Flatwoods
Forage suitability group: Sandy over loamy soils on flats of hydric or mesic lowlands (G154XB241FL)
Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic lowlands (G154XB241FL)
Hydric soil rating: Yes

Minor Components

Pomona

Percent of map unit: 3 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F154XA007FL - Moist Sandy Wet-Mesic Flatwoods
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G154XB141FL)
Hydric soil rating: No

Pelham

Percent of map unit: 3 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear

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Ecological site: F153AY060NC - Wet Loamy Flats and Depressions,
F153BY060NC - Wet Loamy Flats and Depressions
Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic
lowlands (G154XB241FL)
Hydric soil rating: No

Mulat, non-hydric

Percent of map unit: 3 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F153AY060NC - Wet Loamy Flats and Depressions,
F153BY060NC - Wet Loamy Flats and Depressions
Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic
lowlands (G154XB241FL)
Hydric soil rating: No

Riviera

Percent of map unit: 2 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F154XA007FL - Moist Sandy Wet-Mesic Flatwoods
Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic
lowlands (G154XB241FL)
Hydric soil rating: Yes

Sparr

Percent of map unit: 2 percent
Landform: Rises on marine terraces, flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F154XA004FL - Moist Sandy Pine-Hardwood Woodlands
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands
(G154XB131FL)
Hydric soil rating: No

Newnan

Percent of map unit: 2 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F154XA008FL - Moist Sandy Scrubby Flatwoods
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands
(G154XB131FL)
Hydric soil rating: No

19—Monteocha loamy sand

Map Unit Setting

National map unit symbol: brpj
Elevation: 10 to 200 feet
Mean annual precipitation: 50 to 58 inches
Mean annual air temperature: 66 to 73 degrees F
Frost-free period: 248 to 278 days
Farmland classification: Not prime farmland

Map Unit Composition

Monteocha and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Monteocha

Setting

Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 12 inches: loamy sand
E - 12 to 18 inches: loamy sand
E/Bh - 18 to 48 inches: sand
B'tg - 48 to 85 inches: sandy loam
Cg - 85 to 94 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: A/D

Custom Soil Resource Report

Ecological site: F154XA015FL - Mineral Depressional Wetlands

Forage suitability group: Sandy soils on stream terraces, flood plains, or in depressions (G154XB145FL)

Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G154XB145FL)

Hydric soil rating: Yes

Minor Components

Samsula

Percent of map unit: 7 percent

Landform: Depressions on marine terraces

Landform position (three-dimensional): Dip

Down-slope shape: Concave

Across-slope shape: Concave

Ecological site: F154XA014FL - Histic Wetland Depressions

Other vegetative classification: Organic soils in depressions and on flood plains (G154XB645FL)

Hydric soil rating: Yes

Placid

Percent of map unit: 7 percent

Landform: Depressions on marine terraces

Landform position (three-dimensional): Dip

Down-slope shape: Concave

Across-slope shape: Concave

Ecological site: F154XA015FL - Mineral Depressional Wetlands

Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G154XB141FL)

Hydric soil rating: Yes

Surrency

Percent of map unit: 6 percent

Landform: Depressions on marine terraces

Landform position (three-dimensional): Dip

Down-slope shape: Concave

Across-slope shape: Concave

Ecological site: F154XA015FL - Mineral Depressional Wetlands

Other vegetative classification: Sandy over loamy soils on stream terraces, flood plains, or in depressions (G154XB245FL)

Hydric soil rating: Yes

20—Tavares sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2v173

Elevation: 0 to 180 feet

Mean annual precipitation: 44 to 56 inches

Mean annual air temperature: 68 to 75 degrees F

Frost-free period: 300 to 365 days

Custom Soil Resource Report

Farmland classification: Not prime farmland

Map Unit Composition

Tavares and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tavares

Setting

Landform: Knolls on marine terraces, ridges on marine terraces, flats on marine terraces

Landform position (two-dimensional): Shoulder, backslope

Landform position (three-dimensional): Interfluve, base slope

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Eolian or sandy marine deposits

Typical profile

A - 0 to 7 inches: sand

C - 7 to 80 inches: sand

Properties and qualities

Slope: 0 to 5 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 50.02 in/hr)

Depth to water table: About 42 to 72 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 4.0

Available water supply, 0 to 60 inches: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: A

Ecological site: F154XA004FL - Moist Sandy Pine-Hardwood Woodlands

Forage suitability group: Sandy soils on rises, knolls, and ridges of mesic uplands (G154XB121FL)

Other vegetative classification: Longleaf Pine-Turkey Oak Hills (R154XY002FL),
Sandy soils on rises, knolls, and ridges of mesic uplands (G154XB121FL)

Hydric soil rating: No

Minor Components

Apopka

Percent of map unit: 6 percent

Landform: Ridges on marine terraces, knolls on marine terraces

Landform position (two-dimensional): Summit, shoulder, footslope

Landform position (three-dimensional): Crest, side slope, nose slope

Down-slope shape: Convex

Across-slope shape: Linear

Ecological site: F154XA004FL - Moist Sandy Pine-Hardwood Woodlands

Custom Soil Resource Report

Other vegetative classification: Longleaf Pine-Turkey Oak Hills (R154XY002FL),
Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Hydric soil rating: No

Candler

Percent of map unit: 4 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, interfluve, tread
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R154XX001FL - Yellow Sands Xeric Uplands
Other vegetative classification: Longleaf Pine-Turkey Oak Hills (R154XY002FL),
Longleaf Pine-Turkey Oak Hills (R155XY002FL), Sandy soils on ridges and
dunes of xeric uplands (G154XB111FL), Sandy soils on ridges and dunes of
xeric uplands (G155XB111FL)
Hydric soil rating: No

Adamsville

Percent of map unit: 3 percent
Landform: Rises on flatwoods, knolls on flatwoods
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve, talf, rise
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F154XA004FL - Moist Sandy Pine-Hardwood Woodlands
Other vegetative classification: Upland Hardwood Hammock (R154XY008FL),
Upland Hardwood Hammock (R155XY008FL), Sandy soils on rises and knolls
of mesic uplands (G155XB131FL)
Hydric soil rating: No

Zolfo

Percent of map unit: 2 percent
Landform: Flats on marine terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F154XA008FL - Moist Sandy Scrubby Flatwoods
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands
(G154XB131FL)
Hydric soil rating: No

25—Pomona sand, depressional

Map Unit Setting

National map unit symbol: brpv
Elevation: 10 to 400 feet
Mean annual precipitation: 50 to 58 inches
Mean annual air temperature: 66 to 73 degrees F

Custom Soil Resource Report

Frost-free period: 248 to 278 days

Farmland classification: Not prime farmland

Map Unit Composition

Pomona and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pomona

Setting

Landform: Depressions on marine terraces

Landform position (three-dimensional): Dip

Down-slope shape: Concave

Across-slope shape: Concave

Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 4 inches: sand

E - 4 to 25 inches: sand

Bh - 25 to 32 inches: sand

E' - 32 to 52 inches: sand

B'tg - 52 to 80 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 4.0

Available water supply, 0 to 60 inches: Low (about 5.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7w

Hydrologic Soil Group: A/D

Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps

Forage suitability group: Sandy soils on stream terraces, flood plains, or in depressions (G154XB145FL)

Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G154XB145FL)

Hydric soil rating: Yes

Minor Components

Plummer, non-hydric

Percent of map unit: 4 percent

Landform: Flats on marine terraces

Landform position (three-dimensional): Talf

Down-slope shape: Convex

Custom Soil Resource Report

Across-slope shape: Linear

Ecological site: F153AY060NC - Wet Loamy Flats and Depressions,
F153BY060NC - Wet Loamy Flats and Depressions

Other vegetative classification: Sandy soils on stream terraces, flood plains, or in
depressions (G154XB145FL)

Hydric soil rating: No

Monteocha

Percent of map unit: 4 percent

Landform: Depressions on marine terraces

Landform position (three-dimensional): Dip

Down-slope shape: Concave

Across-slope shape: Concave

Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps

Other vegetative classification: Sandy soils on stream terraces, flood plains, or in
depressions (G154XB145FL)

Hydric soil rating: Yes

Pompano

Percent of map unit: 4 percent

Landform: Flats on marine terraces

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps

Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands
(G154XB141FL)

Hydric soil rating: Yes

Surrency

Percent of map unit: 3 percent

Landform: Depressions on marine terraces

Landform position (three-dimensional): Dip

Down-slope shape: Concave

Across-slope shape: Concave

Ecological site: F154XA015FL - Mineral Depressional Wetlands

Other vegetative classification: Sandy over loamy soils on stream terraces, flood
plains, or in depressions (G154XB245FL)

Hydric soil rating: Yes

28—Chipley sand

Map Unit Setting

National map unit symbol: brpz

Elevation: 10 to 150 feet

Mean annual precipitation: 50 to 58 inches

Mean annual air temperature: 66 to 73 degrees F

Frost-free period: 248 to 278 days

Farmland classification: Not prime farmland

Map Unit Composition

Chipley and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Chipley

Setting

Landform: Knolls on marine terraces, rises on marine terraces, flats on marine terraces

Landform position (three-dimensional): Interfluve

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Sandy marine deposits

Typical profile

A - 0 to 12 inches: sand

C - 12 to 81 inches: sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: About 18 to 42 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 4.0

Available water supply, 0 to 60 inches: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: A

Forage suitability group: Sandy soils on rises and knolls of mesic uplands (G154XB131FL)

Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G154XB131FL)

Hydric soil rating: No

Minor Components

Pompano

Percent of map unit: 4 percent

Landform: Flats on marine terraces

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G154XB141FL)

Hydric soil rating: Yes

Tavares

Percent of map unit: 4 percent
Landform: Flats on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on rises, knolls, and ridges of mesic uplands (G154XB121FL)
Hydric soil rating: No

Myakka, non-hydric

Percent of map unit: 4 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G154XB141FL)
Hydric soil rating: No

Zolfo

Percent of map unit: 3 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G154XB131FL)
Hydric soil rating: No

34—Placid sand, depressional

Map Unit Setting

National map unit symbol: brqp
Elevation: 10 to 200 feet
Mean annual precipitation: 50 to 58 inches
Mean annual air temperature: 66 to 73 degrees F
Frost-free period: 248 to 278 days
Farmland classification: Not prime farmland

Map Unit Composition

Placid and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Placid

Setting

Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip

Custom Soil Resource Report

Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Sandy marine deposits

Typical profile

A - 0 to 15 inches: sand
Cg - 15 to 82 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 5.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: A/D
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Forage suitability group: Sandy soils on stream terraces, flood plains, or in depressions (G154XB145FL)
Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G154XB145FL)
Hydric soil rating: Yes

Minor Components

Samsula

Percent of map unit: 10 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R155XY100FL - Organic Freshwater Isolated Marshes and Swamps
Other vegetative classification: Organic soils in depressions and on flood plains (G154XB645FL)
Hydric soil rating: Yes

Pompano

Percent of map unit: 5 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G154XB141FL)

Hydric soil rating: Yes

48—Myakka-Myakka, wet, sands, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2tw1

Elevation: 10 to 130 feet

Mean annual precipitation: 43 to 62 inches

Mean annual air temperature: 64 to 75 degrees F

Frost-free period: 280 to 365 days

Farmland classification: Not prime farmland

Map Unit Composition

Myakka and similar soils: 75 percent

Myakka, wet, and similar soils: 15 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Myakka

Setting

Landform: Flatwoods on marine terraces

Landform position (three-dimensional): Tread, tal

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Sandy marine deposits

Typical profile

A - 0 to 6 inches: sand

E - 6 to 20 inches: sand

Bh - 20 to 36 inches: sand

C - 36 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 5.95 in/hr)

Depth to water table: About 6 to 18 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 4.0

Available water supply, 0 to 60 inches: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4w

Hydrologic Soil Group: A/D

Custom Soil Resource Report

Forage suitability group: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)

Other vegetative classification: South Florida Flatwoods (R155XY003FL), Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)

Hydric soil rating: No

Description of Myakka, Wet

Setting

Landform: Flatwoods on marine terraces

Landform position (three-dimensional): Tread, tal

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Sandy marine deposits

Typical profile

A - 0 to 6 inches: sand

E - 6 to 20 inches: sand

Bh - 20 to 36 inches: sand

C - 36 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)

Depth to water table: About 0 to 6 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 4.0

Available water supply, 0 to 60 inches: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4w

Hydrologic Soil Group: A/D

Forage suitability group: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)

Other vegetative classification: South Florida Flatwoods (R155XY003FL), Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)

Hydric soil rating: Yes

Minor Components

Basinger

Percent of map unit: 5 percent

Landform: Drainageways on marine terraces

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Dip

Down-slope shape: Convex, linear

Across-slope shape: Linear, concave

Hydric soil rating: Yes

Eaugallie

Percent of map unit: 4 percent
Landform: Flatwoods on marine terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Placid, depressional

Percent of map unit: 1 percent
Landform: Depressions on marine terraces
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave, convex
Across-slope shape: Concave, linear
Hydric soil rating: Yes

50—Sparr fine sand

Map Unit Setting

National map unit symbol: brll
Elevation: 30 to 160 feet
Mean annual precipitation: 50 to 58 inches
Mean annual air temperature: 66 to 73 degrees F
Frost-free period: 248 to 278 days
Farmland classification: Not prime farmland

Map Unit Composition

Sparr and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sparr

Setting

Landform: Rises on marine terraces, flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 8 inches: fine sand
E - 8 to 48 inches: sand
Bg - 48 to 56 inches: loamy sand
Btg - 56 to 84 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 18 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A
Ecological site: F154XA004FL - Moist Sandy Pine-Hardwood Woodlands
Forage suitability group: Sandy soils on rises and knolls of mesic uplands (G154XB131FL)
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G154XB131FL)
Hydric soil rating: No

Minor Components

Newnan

Percent of map unit: 3 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F154XA008FL - Moist Sandy Scrubby Flatwoods
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G154XB131FL)
Hydric soil rating: No

Lochloosa

Percent of map unit: 3 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F154XA004FL - Moist Sandy Pine-Hardwood Woodlands
Other vegetative classification: Sandy over loamy soils on rises and knolls of mesic uplands (G154XB231FL)
Hydric soil rating: No

Zolfo

Percent of map unit: 3 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F154XA008FL - Moist Sandy Scrubby Flatwoods

Custom Soil Resource Report

Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G154XB131FL)

Hydric soil rating: No

Millhopper

Percent of map unit: 3 percent

Landform: Flats on marine terraces, rises on marine terraces

Landform position (three-dimensional): Interfluve

Down-slope shape: Convex

Across-slope shape: Linear

Ecological site: F154XA004FL - Moist Sandy Pine-Hardwood Woodlands

Other vegetative classification: Sandy soils on rises, knolls, and ridges of mesic uplands (G154XB121FL)

Hydric soil rating: No

Kanapaha

Percent of map unit: 3 percent

Landform: Rises on marine terraces

Landform position (three-dimensional): Interfluve, talf

Down-slope shape: Convex

Across-slope shape: Linear

Ecological site: F154XA005FL - Poorly Drained Upland Pine-Hardwood Forests

Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G154XB141FL)

Hydric soil rating: No

51—Plummer fine sand

Map Unit Setting

National map unit symbol: brnn

Elevation: 10 to 400 feet

Mean annual precipitation: 50 to 58 inches

Mean annual air temperature: 66 to 73 degrees F

Frost-free period: 248 to 278 days

Farmland classification: Not prime farmland

Map Unit Composition

Plummer, non-hydric, and similar soils: 65 percent

Plummer, hydric, and similar soils: 20 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Plummer, Non-hydric

Setting

Landform: Flats on marine terraces

Landform position (three-dimensional): Talf

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 6 inches: fine sand
E - 6 to 42 inches: fine sand
Btg - 42 to 81 inches: sandy clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 2.00 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Forage suitability group: Sandy soils on flats of mesic or hydric lowlands
(G154XB141FL)
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands
(G154XB141FL)
Hydric soil rating: No

Description of Plummer, Hydric

Setting

Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 6 inches: fine sand
E - 6 to 42 inches: fine sand
Btg - 42 to 81 inches: sandy clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 2.00 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Forage suitability group: Sandy soils on flats of mesic or hydric lowlands
(G154XB141FL)
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands
(G154XB141FL)
Hydric soil rating: Yes

Minor Components

Pomona

Percent of map unit: 4 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands
(G154XB141FL)
Hydric soil rating: No

Pompano

Percent of map unit: 4 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands
(G154XB141FL)
Hydric soil rating: Yes

Mulat, hydric

Percent of map unit: 4 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic
lowlands (G154XB241FL)
Hydric soil rating: Yes

Sparr

Percent of map unit: 3 percent
Landform: Rises on marine terraces, flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands
(G154XB131FL)
Hydric soil rating: No

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Custom Soil Resource Report

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Appendix E

FNAI and IPaC Reports



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FNAI Standard Data Report
June 24, 2025



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850-224-8207
fax 850-681-9364
www.fnai.org

June 24, 2025

Chris Kennedy
S&S Environmental Consultants
249 Pinewood Drive
Tallahassee, FL 32303

Dear Mr. Kennedy,

Thank you for requesting information from the Florida Natural Areas Inventory (FNAI). At your request we have produced the following report for your project area.

The purpose of this Standard Data Report is to provide objective scientific information on natural resources located in the vicinity of a site of interest, in order to inform those involved in project planning and evaluation. This Report makes no determination of the suitability of a proposed project for this location, or the potential impacts of the project on natural resources in the area.

Project: Morningside Nature Center

Date Received: 6/19/2025

Location: Alachua County

Based on the information available, this site appears to be located in a significant region of natural areas and habitat for several rare species.

Element Occurrences

A search of our maps and database indicates that we currently have many element occurrences mapped in the vicinity of the study area (see enclosed map and element occurrence table). Please be advised that a lack of element occurrences in the FNAI database is not a sufficient indication of the absence of rare or endangered species on a site.

Federally Listed Species

Our data indicate **proposed** federally listed species are present on or very near this site, specifically Short-tailed Snake (*Lampropeltis extenuata*) (see enclosed map and tables for details). This statement should not be interpreted as a legal determination of presence or absence of federally listed species on a property.

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



Florida Resources
and Environmental
Analysis Center

Institute of Science
and Public Affairs

The Florida State University

*Several of the species and natural communities tracked by the Inventory are considered **data sensitive**. Occurrence records for these elements contain information that we consider sensitive due to collection*

Tracking Florida's Biodiversity

pressures, extreme rarity, or at the request of the source of the information. The Element Occurrence Record has been labeled "Data Sensitive." We request that you not publish or release specific locational data about these species or communities without consent from the Inventory. If you have any questions concerning this please do not hesitate to call.

Likely and Potential Rare Species

In addition to documented occurrences, other rare species and natural communities may be identified on or near the site based on habitat models and species range models (see enclosed Biodiversity Matrix Report). These species should be taken into consideration in field surveys, land management, and impact avoidance and mitigation.

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

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

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

CLIP

The enclosed map shows natural resource conservation priorities based on the Critical Lands and Waters Identification Project. CLIP is based on many of the same natural resource data developed for the Florida Forever Conservation Needs Assessment, but provides an overall picture of conservation priorities across different resource categories, including biodiversity, landscapes, surface waters, and aggregated CLIP priorities (that combine the individual resource categories). CLIP is also based primarily on remote sensed data and is not intended to be the definitive authority on natural resources on a site.

For more information on CLIP, visit <https://www.fnai.org/services/clip>.

Managed Areas

Portions of the site appear to be located within the Morningside Nature Center, managed by the City of Gainesville.

The Managed Areas data layer shows public and privately managed conservation lands throughout the state. Federal, state, local, and privately managed conservation lands are included.

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

Please visit www.fnai.org/species-communities/tracking-main for county or statewide element occurrence distributions and links to more element information.

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

Information provided by this database may not be published without prior written notification to the Florida Natural Areas Inventory, and the Inventory must be credited as an information source in these publications. **The maps contain sensitive environmental information, please do not distribute or publish without prior consent from FNAI.** FNAI data may not be resold for profit.

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

Sincerely,

Kerri Brinegar

Kerri Brinegar
GIS / Data Services

Encl

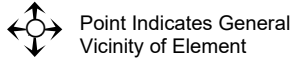


Florida Natural Areas Inventory

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Element Occurrences

- Animals
- Plants
- Communities
- Other
- Data Sensitive



Conservation Lands

- Federal
- State
- Local
- Private
- State Aquatic Preserves



Land Acquisition Projects

- Florida Forever
- Board of Trustees Projects

- FNAI Rare Species Habitat
- FNAI Biodiversity Matrix Square Mile Units
- County Boundary
- Roads
- Water

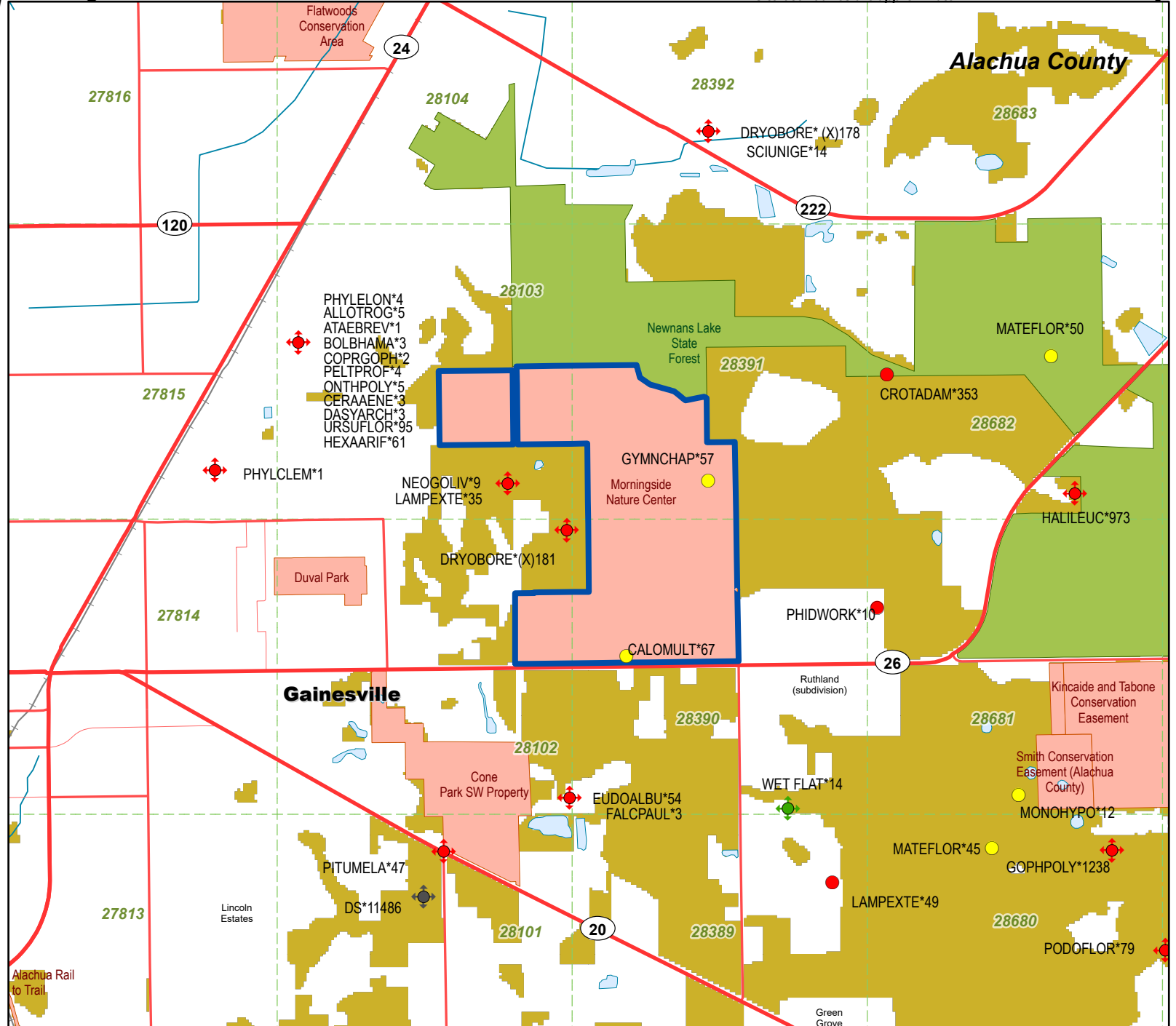
NOTE

This map contains environmentally sensitive information. Please do not distribute or publish without prior consent from FNAI. Map should not be interpreted without accompanying documents.

Morningside Nature Center

Site boundaries are approximate.

Alachua County



0 0.25 0.5 1 Miles

Map produced by KAB
6/24/2025



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Florida Natural Areas Inventory

CLIP v4.0 Resource Priorities

Biodiversity Resource Category

- Priority 1 - highest
- Priority 2
- Priority 3
- Priority 4
- Priority 5

Landscape Resource Category

- Priority 1 - highest
- Priority 2
- Priority 3
- Priority 4
- Priority 5

Surface Water Resource Category

- Priority 1 - highest
- Priority 2
- Priority 3
- Priority 4
- Priority 5

Aggregated CLIP Priorities

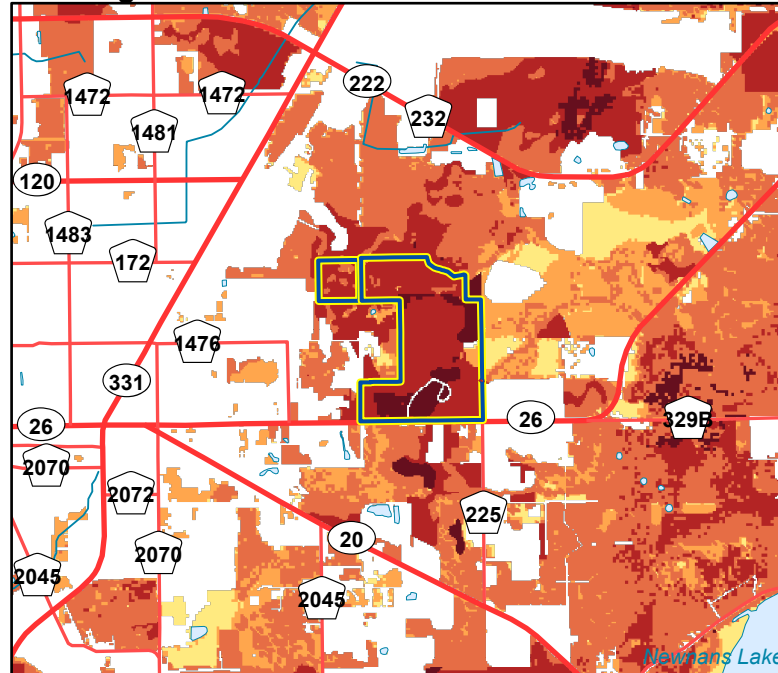
- Priority 1 - highest
- Priority 2
- Priority 3
- Priority 4
- Priority 5

Site Boundary

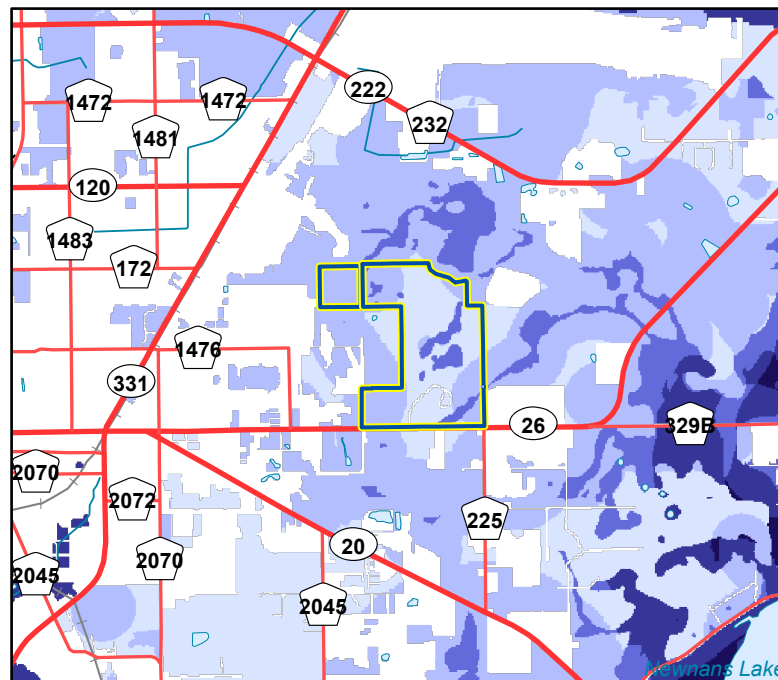
Map should not be interpreted without
accompanying documents.

Critical Lands and Waters Identification Project
(CLIP) is a cooperative effort between the FSU
Florida Natural Areas Inventory, UF Center for
Landscape Conservation Planning, and FL Fish &
Wildlife Conservation Commission, with additional
funding from FL Dept of Environmental Protection and
US Fish & Wildlife Service.

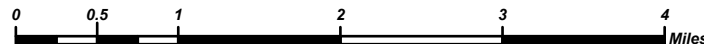
Morningside Nature Center



CLIP Biodiversity Resource Priorities

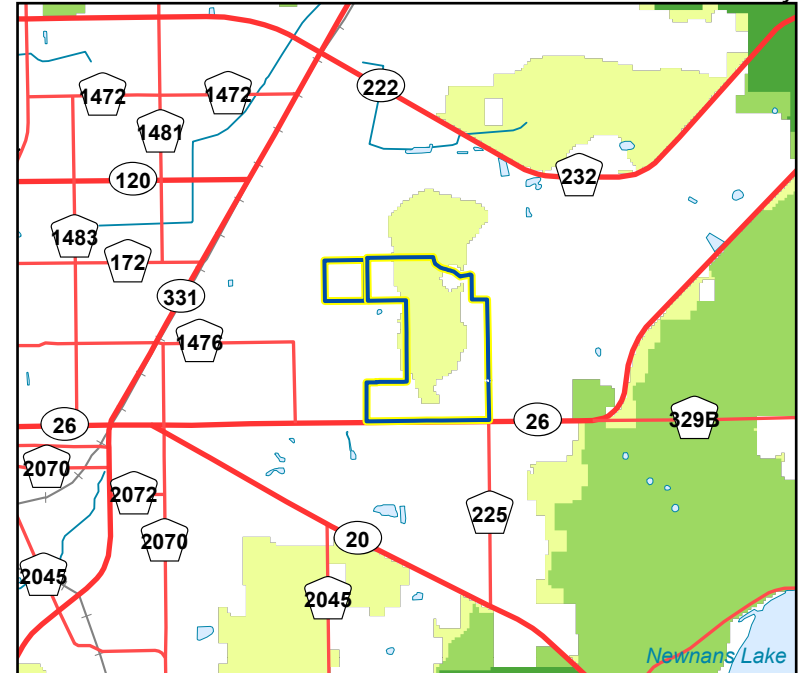


CLIP Surface Water Resource Priorities

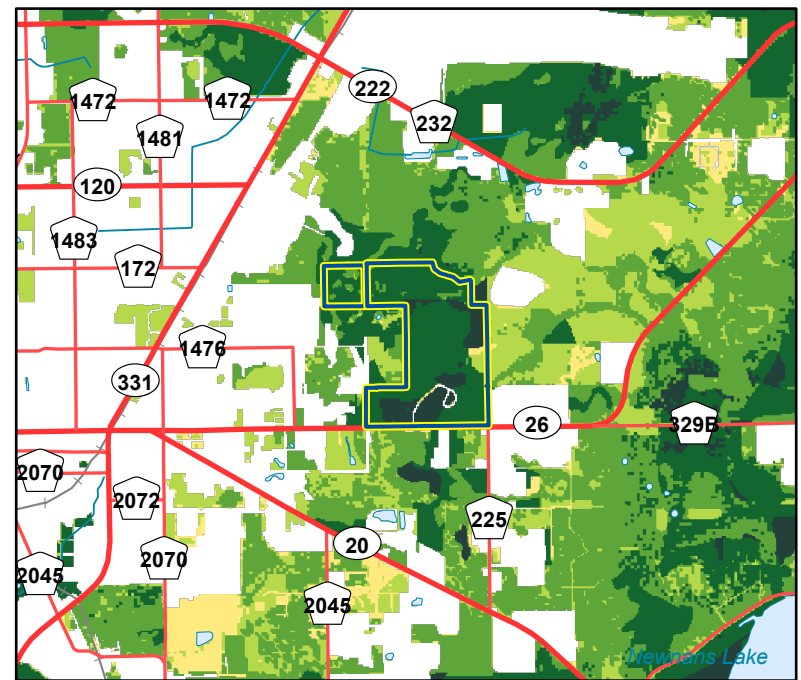


Site boundaries are approximate.

Alachua County



CLIP Landscape Resource Priorities



CLIP Aggregated Resource Priorities

Map produced by KAB
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FNAI ELEMENT OCCURRENCE REPORT on or near Morningside Nature Center



Map Label	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing	Observation Date	Description	EO Comments
ALLOTROG*5	<i>Alloblackburneus troglodytes</i>	Gopher Tortoise Aphodius Beetle	G2G3	S2	N	N	1972-08-10	1972-08-10: No description given (B73WOO01FLUS).	1972-08-10: Two specimens were collected by F.W. Mead using a black light trap (B73WOO01FLUS). 1969-07-21: Three specimens were collected by R.E. Woodruff using a black light trap (B73WOO01FLUS). 1969-06-08: One specimen was collected by R.E. Woodruff usi
ATAEBREV*1	<i>Ataenius brevicollis</i>	An Ataenius Beetle	G3G5	S1	N	N	1956-08-07	1956-08-07: No description given (B73WOO01FLUS).	1956-08-07: One specimen was collected with a blacklight trap by L.A. Hetrick (B73WOO01FLUS).
BOLBHAMA*3	<i>Bolbocerosoma hamatum</i>	Bicolored Burrowing Scarab Beetle	G3G4	S3	N	N	1971	1971: No description given (B73WOO01FLUS).	1939-1971: There is a total of 55 specimens that have been collected using light traps by various collectors. The most specimens were collected 1967-04-20 (B73WOO01FLUS). The collections were through all the months except January, June, and December (B73WO
CALOMULT*67	<i>Calopogon multiflorus</i>	many-flowered grass-pink	G2G3	S2S3	N	T	2016-04-22	Transition from dry sandhill to flatwoods	4 individuals: one with no flower spike, one with expired flower spike, one with eaten flower spike, one blooming (5 flowers) (U18FNA02FLUS)
CERAAENE*3	<i>Ceratocanthus aeneus</i>	Shining Ball Scarab Beetle	G2G3	S2	N	N	1961-09-01	1935-03: the stomach of a leopard frog otherwise no description given (B73WOO01FLUS).	1961-09-01: One specimen was collected by W.J. Platt, III (B73WOO01FLUS). 1935-03: One specimen was collected by J. Kilby from the stomach of Rana sphenocephala (B73WOO01FLUS).
COPRGOPH*2	<i>Copris gopheri</i>	Gopher Tortoise Copris Beetle	G2	S2	N	N	1972-10-04	1972-10-04: No description given (B73WOO01FLUS).	A total of 11 specimens were collected on five dates over ca. seven years. Most were attracted to UV light, but one collection of three specimens was from a tortoise burrow.
CROTADAM*353	<i>Crotalus adamanteus</i>	Eastern Diamondback Rattlesnake	G3	S3	UR	N	2014-12-01	old fields or abandoned pastures. Quite a few tortoises are now on those abandoned ag fields, probably because they have moved over from nearby corrections land. Different areas are undergoing a combination of prescribed fire, scalping/LLP planting treatm	2014: individual observed entering a gopher tortoise burrow



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Map Label	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing	Observation Date	Description	EO Comments
DASYARCH*3	<i>Dasyutilla archboldi</i>	Lake Wales Ridge Velvet Ant	G2G3	S2S3	N	N	1973	1973: No description given (U08ALM01FLUS).	1973: Two specimens were collected at this site (U08ALM01FLUS).
DRYOBORE* (X)178	<i>Dryobates borealis</i>	Red-cockaded Woodpecker	G3	S2	T	FT	1978 circa	PINE.	One active colony recorded circa 1978; two other colonies immediately NW were inactive (UNDBAK02FLUS). Not sure when birds disappeared
DRYOBORE* (X)181	<i>Dryobates borealis</i>	Red-cockaded Woodpecker	G3	S2	T	FT	1978 circa	Pine	One active colony recorded circa 1978 (UNDBAK02FLUS). Aerial imagery from 1995 shows generally unsuitable habitat in vicinity of colony and little mature pineland remaining (PNDNES03FLUS).
DS*11486	<i>Data Sensitive Element</i>	Data Sensitive	G5	S3	N	N	1948-05-02	Data Sensitive	Data Sensitive
EUDOALBU*54	<i>Eudocimus albus</i>	White Ibis	G5	S4	N	N	1981 pre	NONE GIVEN.	NESTING REPORTED; NO FURTHER DATA.
FALCPAUL*3	<i>Falco sparverius paulus</i>	Southeastern American Kestrel	G5T4	S3	N	ST	1981 pre	NONE GIVEN.	NESTING REPORTED; NO FURTHER DATA.
GOPHPOLY*1238	<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST	2020	Mixture of hardwood/coniferous, pasture, urban, and baygall habitat. Newnans Lake SF: There were two burrows near the developed site for the forestry office at construction time, but we did not trap a tortoise at that time since they moved on to their win	2014-12-01: Pedersen observed 25 burrows as scattered locations (U14PED01FLUS). 2008-06-20: Seventy-six, small and large burrows were documented in 2 hours of surveying. It was estimated (by Geoffrey Parks) that about 40 of the 76 burrows were active (53%
GYMNCHAP*57	<i>Gymnopogon chapmanianus</i>	Chapman's skeletongrass	G3	S3	N	N	2013-10-07	Along trail that passes along the ecotone between open sandhill and less-frequently-burned flatwoods.	Approximately 13 individuals observed at Morningside Nature Center in 2013.
HALILEUC*973	<i>Haliaeetus leucocephalus</i>	Bald Eagle	G5	S3	N	N	2003	2005-07-12: Source does not provide a description.	Nest status: Active, 2003, 2002, 1999; Not active, 2000; Unknown status or not assessed, 2001;(U03FWC01FLUS)
HEXAARIF*61	<i>Hexastylis arifolia</i>	little brown jug	G5	S3	N	T	1938-06-13	None given.	A specimen was collected in 1938 (U23SER05FLUS).
LAMPEXTE*35	<i>Lampropeltis extenuata</i>	Short-tailed Snake	G3	S3	PT	ST	1934-04-14	No general description given	UF-396, 14 APRIL 1934, H.K. WALLACE.
LAMPEXTE*49	<i>Lampropeltis extenuata</i>	Short-tailed Snake	G3	S3	PT	ST	1992-04-14	No general description given	Juvenile female (TL=21.5 cm, SVL=19 cm), umbilical scar evident.



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Map Label	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing	Observation Date	Description	EO Comments
MATEFLOR*45	<i>Matelea floridana</i>	Florida spiny-pod	G2	S2	N	E	2012-08-15	This population occurs within Upland Mixed Woodland. <i>Matelea floridana</i> plants have also been observed approximately 500m to the NE in xeric hammock and sandhill and also have been observed in successional hardwood forest 1200m to the NW (29.648204, -82.2	At least 14 plants have been observed in the polygon drawn. Frequently encountered within a 1500m radius since 2008.
MATEFLOR*50	<i>Matelea floridana</i>	Florida spiny-pod	G2	S2	N	E	2017-05-15	Along trail through Newnan's Lake State Forest	About 10 vines present (U18FNA02FLUS)
MONOHPO*12	<i>Monotropa hypopithys</i>	pinemap	G5	S1	N	E	2014-12-28	Growing in a 1x2m area within a seldomly used woods road in xeric hammock that was formerly sandhill. Associated species in the canopy include <i>Quercus geminata</i> , <i>Q. laurifolia</i> , <i>Pinus elliotii</i> , in the midstory <i>Q. margarettae</i> , <i>Q. laevis</i> , <i>Q. laurifolia</i> , <i>Mag</i>	Twelve plants observed in a 1x2m area. One was flowering the rest were in fruit.
NEOGOLIV*9	<i>Neogale frenata olivacea</i>	Southeastern Weasel	G5T4	S3?	N	N	1974-02-09	None given	8 weasel museum specimens collected between 1927 and 1974.
ONTHPOLY*5	<i>Onthophagus polyphemi polyphemi</i>	Punctate Gopher Tortoise Onthophagus Beetle	32G3T2T3	S2	N	N	1966-07-27	1966-07-27: a gopher tortoise burrow (B73WOO01FLUS).	1966-07-27: Three specimens were collected by E. Gourley from a gopher tortoise burrow (B73WOO01FLUS). 1966-05-14: One specimen was collected by E. Gourley from a gopher tortoise burrow (B73WOO01FLUS). 1965-07: One specimen was collected by E. Gourley from
PELTPROF*4	<i>Peltotrupes profundus</i>	Florida Deepdigger Scarab Beetle	G3	S3	N	N	1972-07	1953-01-13: in high pine oak (B73WOO01FLUS).	1972-07: Forty five specimens were collected by various collectors using blacklight traps (B73WOO01FLUS). 1959-04: Two hundred and forty specimens were collected by various collectors using malt traps (B73WOO01FLUS). 1953-01-13: Two specimens were collect
PHIDWORK*10	<i>Phidippus workmani</i>	Workman's Jumping Spider	G4	S4	N	N	1974-07-14	1974-07-14: near xeric ecotone woods (U08ALM01FLUS).	1974-07-14: One specimen was collected from okra by G.B. Edwards (U08ALM01FLUS).



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Map Label	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing	Observation Date	Description	EO Comments
PHYLCLEM*1	<i>Phyllophaga clemens</i>	Clemens' June Beetle	G2	S1	N	N	1986-06-11	1986-06-11: No description given (B89WOO01FLUS).	1986-06-11: A specimen was collected at Gainesville by P. E. Skelley (B89WOO01FLUS).
PHYLELON*4	<i>Phyllophaga elongata</i>	Elongate June Beetle	G3	S3	N	N	1968-08-08	1968-08-08: No description given (B89WOO01FLUS).	1968-08-08: One specimen was collected by Corbin (B89WOO01FLUS).
PITUMELA*47	<i>Pituophis melanoleucus</i>	Pine Snake	G4	S3	PS	ST	2014-09-28	Morningside Nature Center: flatwoods and longleaf pine sandhill (ca. 60 ac.) with turkey and black jack oak; diverse groundcover (U10HOW01FLUS). Additional Description. 2014-09-28 observation in fire-suppressed former sandhill near mobile home, with tortoi	Periodic observations of individuals across this area for 3 decades, but need surveys.
PODOFLOR*79	<i>Podomys floridanus</i>	Florida Mouse	G3	S3	N	N	1933-05-30	Sand scrub	1925-1933: 13 specimens collected (U85FSM01FLUS)
SCIUNIGE*14	<i>Sciurus niger niger</i>	Southeastern Fox Squirrel	G5T5	S3	N	N	2008-05-22	2008-05-22: Nece observed squirrel in prescribe-burned longleaf pine adjacent to habitat restoration area (wiregrass, longleaf planted in site where pine beetle-infested loblolly pines had been clearcut a few years ago; U08NEC01FLUS). 1986: sandhills, dis	Considered declining in the vicinity of Morningside Nature Center since the 1970s. One adult was observed there in 2008. One adult was observed at the Gainesville Municipal Airport in 1987
URSUFLO*95	<i>Ursus americanus floridanus</i>	Florida Black Bear	G5T4	S4	N	N	2020-11-19	Large area of pine plantation, mesic and wet flatwoods, and dome and basin swamps; Largely private commercial timberland, nurseries, and small neighborhoods; public lands are dominated by pine plantation but also have flatwoods interspersed with dome swam	2002: 1,025-1,539 bears estimated in the primary ranges in the Ocala-St. John's region. Part of a larger population that includes Okefenokee Swamp National Wildlife Refuge in Georgia (U05SIM01FLUS). 2014: 1,198 bears estimated in the Ocala-St. John's regi
WET FLAT*14	Wet flatwoods		G4	S4	N	N	2007-03-22	2002: in low areas within mesic flatwoods dominated by slash pine (G02DRP03FLUS). 1984: SURROUNDING PRAIRIE, GRADING INTO MESIC FLATWOODS W/ LONGLEAF PINE (PNDYOU01FLUS).	2002: no additional species information (G02DRP03FLUS). 2004: Update to last obs date was based on interpretation of aerial photography (U05FNA02FLUS). 1984: POND PINE DOMINATES; NO FURTHER DATA.



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Florida Natural Areas Inventory Biodiversity Matrix Report



Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Matrix Unit ID: 28102					
Documented					
<i>Ursus americanus floridanus</i>	Florida Black Bear	G5T4	S4	N	N
Likely					
<i>Antigone canadensis pratensis</i>	Florida Sandhill Crane	G5T2	S2	N	ST
<i>Calopogon multiflorus</i>	many-flowered grass-pink	G2G3	S2S3	N	T
<i>Ctenium floridanum</i>	Florida toothache grass	G2	S2	N	E
<i>Lampropeltis extenuata</i>	Short-tailed Snake	G3	S3	PT	ST
Mesic flatwoods		G4	S4	N	N
<i>Mycteria americana</i>	Wood Stork	G4	S2	T, PDL	FT
Sandhill		G3	S2	N	N
<i>Verbesina heterophylla</i>	variable-leaf crownbeard	G2	S2	N	E
Potential					
<i>Agrimonia incisa</i>	incised groove-bur	G3G4	S2	N	T
<i>Alloblackburneius troglodytes</i>	Gopher Tortoise Aphodius Beetle	G2G3	S2	N	N
<i>Ambystoma cingulatum</i>	Frosted Flatwoods Salamander	G2	S1	T	FT
<i>Ambystoma tigrinum</i>	Eastern Tiger Salamander	G5	S3	N	N
<i>Arnoglossum diversifolium</i>	variable-leaved Indian-plantain	G3	S3	N	T
<i>Asplenium curtissii</i>	Curtiss' spleenwort	G1	S1	N	N
<i>Asplenium heteroresiliens</i>	Morzentii's spleenwort	G2	S1	N	N
<i>Asplenium plenum</i>	ruffled spleenwort	G1Q	S1	N	N
<i>Ataenius brevicollis</i>	An Ataenius Beetle	G3G5	S1	N	N
<i>Athene cunicularia floridana</i>	Florida Burrowing Owl	G4T3	S3	N	ST
<i>Bolbocerosoma hamatum</i>	Bicolored Burrowing Scarab Beetle	G3G4	S3	N	N
<i>Brickellia cordifolia</i>	Flyr's brickell-bush	G3	S2	N	E
<i>Ceratocanthus aeneus</i>	Shining Ball Scarab Beetle	G2G3	S2	N	N
<i>Copris gopheri</i>	Gopher Tortoise Copris Beetle	G2	S2	N	N
<i>Corynorhinus rafinesquii</i>	Rafinesque's Big-eared Bat	G3G4	S1	N	N
<i>Dasymutilla archboldi</i>	Lake Wales Ridge Velvet Ant	G2G3	S2S3	N	N
<i>Drymarchon couperi</i>	Eastern Indigo Snake	G3	S2?	T	FT
<i>Dryobates borealis</i>	Red-cockaded Woodpecker	G3	S2	T	FT
<i>Eudocimus albus</i>	White Ibis	G5	S4	N	N
<i>Falco sparverius paulus</i>	Southeastern American Kestrel	G5T4	S3	N	ST
<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST
<i>Hartwrightia floridana</i>	Florida hartwrightia	G2G3	S2S3	UR	T
<i>Heterodon simus</i>	Southern Hognose Snake	G2	S2S3	N	N
<i>Hexastylis arifolia</i>	little brown jug	G5	S3	N	T
<i>Lithobates capito</i>	Gopher Frog	G2G3	S3	UR	N
<i>Litsea aestivalis</i>	pondspice	G3	S2	N	E
<i>Matelea floridana</i>	Florida spiny-pod	G2	S2	N	E
<i>Myotis austroriparius</i>	Southeastern Myotis	G4	S3	N	N
<i>Neofiber alleni</i>	Round-tailed Muskrat	G2	S2	N	N
<i>Neogale frenata olivacea</i>	Southeastern Weasel	G5T4	S3?	N	N
<i>Notophthalmus perstriatus</i>	Striped Newt	G2G3	S2	N	ST
<i>Onthophagus polyphemi polyphemi</i>	Punctate Gopher Tortoise Onthophagi	G3T3	S2	N	N
<i>Peltotrupes profundus</i>	Florida Deepdigger Scarab Beetle	G3	S3	N	N
<i>Peucaea aestivalis</i>	Bachman's Sparrow	G3	S3	N	N

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Florida Natural Areas Inventory

Biodiversity Matrix Report



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<i>Phyllophaga clemens</i>	Clemens' June Beetle	G2	S1	N	N
<i>Phyllophaga elongata</i>	Elongate June Beetle	G3	S3	N	N
<i>Podomys floridanus</i>	Florida Mouse	G3	S3	N	N
<i>Pycnanthemum floridanum</i>	Florida mountain-mint	G3	S3	N	T
<i>Sciurus niger niger</i>	Southeastern Fox Squirrel	G5T5	S3	N	N
<i>Sideroxylon alachuense</i>	silver buckthorn	G1	S1	N	E
Wet flatwoods		G4	S4	N	N

Matrix Unit ID: 28103

Documented

<i>Ursus americanus floridanus</i>	Florida Black Bear	G5T4	S4	N	N
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Likely

<i>Antigone canadensis pratensis</i>	Florida Sandhill Crane	G5T2	S2	N	ST
<i>Calopogon multiflorus</i>	many-flowered grass-pink	G2G3	S2S3	N	T
<i>Ctenium floridanum</i>	Florida toothache grass	G2	S2	N	E
<i>Lampropeltis extenuata</i>	Short-tailed Snake	G3	S3	PT	ST
Mesic flatwoods		G4	S4	N	N
<i>Mycteria americana</i>	Wood Stork	G4	S2	T, PDL	FT
<i>Verbesina heterophylla</i>	variable-leaf crownbeard	G2	S2	N	E

Potential

<i>Agrimonia incisa</i>	incised groove-bur	G3G4	S2	N	T
<i>Alloblackburneius troglodytes</i>	Gopher Tortoise Aphodius Beetle	G2G3	S2	N	N
<i>Ambystoma cingulatum</i>	Frosted Flatwoods Salamander	G2	S1	T	FT
<i>Arnoglossum diversifolium</i>	variable-leaved Indian-plantain	G3	S3	N	T
<i>Asplenium curtissii</i>	Curtiss' spleenwort	G1	S1	N	N
<i>Asplenium heteroresiliens</i>	Morzent's spleenwort	G2	S1	N	N
<i>Asplenium plenum</i>	ruffled spleenwort	G1Q	S1	N	N
<i>Ataenius brevicollis</i>	An Ataenius Beetle	G3G5	S1	N	N
<i>Athene cunicularia floridana</i>	Florida Burrowing Owl	G4T3	S3	N	ST
<i>Bolbocerosoma hamatum</i>	Bicolored Burrowing Scarab Beetle	G3G4	S3	N	N
<i>Brickellia cordifolia</i>	Flyr's brickell-bush	G3	S2	N	E
<i>Ceratocanthus aeneus</i>	Shining Ball Scarab Beetle	G2G3	S2	N	N
<i>Copris gopheri</i>	Gopher Tortoise Copris Beetle	G2	S2	N	N
<i>Dasymutilla archboldi</i>	Lake Wales Ridge Velvet Ant	G2G3	S2S3	N	N
<i>Drymarchon couperi</i>	Eastern Indigo Snake	G3	S2?	T	FT
<i>Dryobates borealis</i>	Red-cockaded Woodpecker	G3	S2	T	FT
<i>Eudocimus albus</i>	White Ibis	G5	S4	N	N
<i>Falco sparverius paulus</i>	Southeastern American Kestrel	G5T4	S3	N	ST
<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST
<i>Hartwrightia floridana</i>	Florida hartwrightia	G2G3	S2S3	UR	T
<i>Heterodon simus</i>	Southern Hognose Snake	G2	S2S3	N	N
<i>Hexastylis arifolia</i>	little brown jug	G5	S3	N	T
<i>Lithobates capito</i>	Gopher Frog	G2G3	S3	UR	N
<i>Litsea aestivalis</i>	pondspice	G3	S2	N	E
<i>Matelea floridana</i>	Florida spiny-pod	G2	S2	N	E
<i>Myotis austroriparius</i>	Southeastern Myotis	G4	S3	N	N
<i>Neofiber alleni</i>	Round-tailed Muskrat	G2	S2	N	N

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Florida Natural Areas Inventory

Biodiversity Matrix Report



Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
<i>Neogale frenata olivacea</i>	Southeastern Weasel	G5T4	S3?	N	N
<i>Notophthalmus perstriatus</i>	Striped Newt	G2G3	S2	N	ST
<i>Onthophagus polyphemi polyphemi</i>	Punctate Gopher Tortoise Onthophagi	G3T3	S2	N	N
<i>Peltotrupes profundus</i>	Florida Deepdigger Scarab Beetle	G3	S3	N	N
<i>Peucaea aestivalis</i>	Bachman's Sparrow	G3	S3	N	N
<i>Phyllophaga clemens</i>	Clemens' June Beetle	G2	S1	N	N
<i>Phyllophaga elongata</i>	Elongate June Beetle	G3	S3	N	N
<i>Podomys floridanus</i>	Florida Mouse	G3	S3	N	N
<i>Pycnanthemum floridanum</i>	Florida mountain-mint	G3	S3	N	T
<i>Sciurus niger niger</i>	Southeastern Fox Squirrel	G5T5	S3	N	N
<i>Sideroxylon alachuense</i>	silver buckthorn	G1	S1	N	E
Wet flatwoods		G4	S4	N	N

Matrix Unit ID: 28390

Documented

<i>Calopogon multiflorus</i>	many-flowered grass-pink	G2G3	S2S3	N	T
<i>Pituophis melanoleucus</i>	Pine Snake	G4	S3	PS	ST
<i>Sciurus niger niger</i>	Southeastern Fox Squirrel	G5T5	S3	N	N
<i>Ursus americanus floridanus</i>	Florida Black Bear	G5T4	S4	N	N

Likely

<i>Antigone canadensis pratensis</i>	Florida Sandhill Crane	G5T2	S2	N	ST
<i>Ctenium floridanum</i>	Florida toothache grass	G2	S2	N	E
<i>Drymarchon couperi</i>	Eastern Indigo Snake	G3	S2?	T	FT
<i>Lampropeltis extenuata</i>	Short-tailed Snake	G3	S3	PT	ST
Mesic flatwoods		G4	S4	N	N
<i>Mycteria americana</i>	Wood Stork	G4	S2	T, PDL	FT
<i>Phidippus workmani</i>	Workman's Jumping Spider	G4	S4	N	N
<i>Podomys floridanus</i>	Florida Mouse	G3	S3	N	N
Sandhill		G3	S2	N	N
<i>Verbesina heterophylla</i>	variable-leaf crownbeard	G2	S2	N	E

Potential

<i>Agrimonia incisa</i>	incised groove-bur	G3G4	S2	N	T
<i>Alloblackburneius troglodytes</i>	Gopher Tortoise Aphodius Beetle	G2G3	S2	N	N
<i>Ambystoma cingulatum</i>	Frosted Flatwoods Salamander	G2	S1	T	FT
<i>Ambystoma tigrinum</i>	Eastern Tiger Salamander	G5	S3	N	N
<i>Arnoglossum diversifolium</i>	variable-leaved Indian-plantain	G3	S3	N	T
<i>Asplenium curtissii</i>	Curtiss' spleenwort	G1	S1	N	N
<i>Asplenium heteroresiliens</i>	Morzent's spleenwort	G2	S1	N	N
<i>Asplenium plenum</i>	ruffled spleenwort	G1Q	S1	N	N
<i>Ataenius brevicollis</i>	An Ataenius Beetle	G3G5	S1	N	N
<i>Athene cunicularia floridana</i>	Florida Burrowing Owl	G4T3	S3	N	ST
<i>Bolbocerosoma hamatum</i>	Bicolored Burrowing Scarab Beetle	G3G4	S3	N	N
<i>Brickellia cordifolia</i>	Flyr's brickell-bush	G3	S2	N	E
<i>Ceratocanthus aeneus</i>	Shining Ball Scarab Beetle	G2G3	S2	N	N
<i>Copris gopheri</i>	Gopher Tortoise Copris Beetle	G2	S2	N	N
<i>Corynorhinus rafinesquii</i>	Rafinesque's Big-eared Bat	G3G4	S1	N	N
<i>Dasymutilla archboldi</i>	Lake Wales Ridge Velvet Ant	G2G3	S2S3	N	N

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<i>Dryobates borealis</i>	Red-cockaded Woodpecker	G3	S2	T	FT
<i>Eudocimus albus</i>	White Ibis	G5	S4	N	N
<i>Falco sparverius paulus</i>	Southeastern American Kestrel	G5T4	S3	N	ST
<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST
<i>Hartwrightia floridana</i>	Florida hartwrightia	G2G3	S2S3	UR	T
<i>Heterodon simus</i>	Southern Hognose Snake	G2	S2S3	N	N
<i>Lithobates capito</i>	Gopher Frog	G2G3	S3	UR	N
<i>Litsea aestivalis</i>	pondspice	G3	S2	N	E
<i>Matelea floridana</i>	Florida spiny-pod	G2	S2	N	E
<i>Myotis austroriparius</i>	Southeastern Myotis	G4	S3	N	N
<i>Neofiber alleni</i>	Round-tailed Muskrat	G2	S2	N	N
<i>Neogale frenata olivacea</i>	Southeastern Weasel	G5T4	S3?	N	N
<i>Notophthalmus perstriatus</i>	Striped Newt	G2G3	S2	N	ST
<i>Onthophagus polyphemi polyphemi</i>	Punctate Gopher Tortoise Onthophagi	G3T3	S2	N	N
<i>Peltotrupes profundus</i>	Florida Deepdigger Scarab Beetle	G3	S3	N	N
<i>Peucaea aestivalis</i>	Bachman's Sparrow	G3	S3	N	N
<i>Phyllophaga clemens</i>	Clemens' June Beetle	G2	S1	N	N
<i>Phyllophaga elongata</i>	Elongate June Beetle	G3	S3	N	N
<i>Pycnanthemum floridanum</i>	Florida mountain-mint	G3	S3	N	T
<i>Sideroxylon alachuense</i>	silver buckthorn	G1	S1	N	E
<i>Spigelia loganioides</i>	pinkroot	G2	S2	N	E
Wet flatwoods		G4	S4	N	N

Matrix Unit ID: 28391

Documented

<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	N	ST
<i>Gymnopogon chapmanianus</i>	Chapman's skeletongrass	G3	S3	N	N
<i>Pituophis melanoleucus</i>	Pine Snake	G4	S3	PS	ST
<i>Ursus americanus floridanus</i>	Florida Black Bear	G5T4	S4	N	N

Likely

<i>Antigone canadensis pratensis</i>	Florida Sandhill Crane	G5T2	S2	N	ST
<i>Calopogon multiflorus</i>	many-flowered grass-pink	G2G3	S2S3	N	T
<i>Ctenium floridanum</i>	Florida toothache grass	G2	S2	N	E
<i>Lampropeltis extenuata</i>	Short-tailed Snake	G3	S3	PT	ST
<i>Matelea floridana</i>	Florida spiny-pod	G2	S2	N	E
Mesic flatwoods		G4	S4	N	N
<i>Mycteria americana</i>	Wood Stork	G4	S2	T, PDL	FT
<i>Phidippus workmani</i>	Workman's Jumping Spider	G4	S4	N	N
Sandhill		G3	S2	N	N
<i>Sciurus niger niger</i>	Southeastern Fox Squirrel	G5T5	S3	N	N
Upland hardwood forest		G5	S3	N	N
<i>Verbesina heterophylla</i>	variable-leaf crownbeard	G2	S2	N	E

Potential

<i>Agriomonia incisa</i>	incised groove-bur	G3G4	S2	N	T
<i>Alloblackburneius troglodytes</i>	Gopher Tortoise Aphodius Beetle	G2G3	S2	N	N
<i>Ambystoma cingulatum</i>	Frosted Flatwoods Salamander	G2	S1	T	FT
<i>Arnoglossum diversifolium</i>	variable-leaved Indian-plantain	G3	S3	N	T

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<i>Asplenium curtissii</i>	Curtiss' spleenwort	G1	S1	N	N
<i>Asplenium heteroresiliens</i>	Morzenti's spleenwort	G2	S1	N	N
<i>Asplenium plenum</i>	ruffled spleenwort	G1Q	S1	N	N
<i>Ataenius brevicollis</i>	An Ataenius Beetle	G3G5	S1	N	N
<i>Athene cunicularia floridana</i>	Florida Burrowing Owl	G4T3	S3	N	ST
<i>Bolbocerosoma hamatum</i>	Bicolored Burrowing Scarab Beetle	G3G4	S3	N	N
<i>Brickellia cordifolia</i>	Flyr's brickell-bush	G3	S2	N	E
<i>Ceratocanthus aeneus</i>	Shining Ball Scarab Beetle	G2G3	S2	N	N
<i>Copris gopheri</i>	Gopher Tortoise Copris Beetle	G2	S2	N	N
<i>Dasymutilla archboldi</i>	Lake Wales Ridge Velvet Ant	G2G3	S2S3	N	N
<i>Drymarchon couperi</i>	Eastern Indigo Snake	G3	S2?	T	FT
<i>Dryobates borealis</i>	Red-cockaded Woodpecker	G3	S2	T	FT
<i>Eudocimus albus</i>	White Ibis	G5	S4	N	N
<i>Falco sparverius paulus</i>	Southeastern American Kestrel	G5T4	S3	N	ST
<i>Hartwrightia floridana</i>	Florida hartwrightia	G2G3	S2S3	UR	T
<i>Heterodon simus</i>	Southern Hognose Snake	G2	S2S3	N	N
<i>Lithobates capito</i>	Gopher Frog	G2G3	S3	UR	N
<i>Litsea aestivalis</i>	pondspice	G3	S2	N	E
<i>Myotis austroriparius</i>	Southeastern Myotis	G4	S3	N	N
<i>Neofiber alleni</i>	Round-tailed Muskrat	G2	S2	N	N
<i>Neogale frenata olivacea</i>	Southeastern Weasel	G5T4	S3?	N	N
<i>Notophthalmus perstriatus</i>	Striped Newt	G2G3	S2	N	ST
<i>Onthophagus polyphemi polyphemi</i>	Punctate Gopher Tortoise Onthophagi	G3T3	S2	N	N
<i>Peltotrupes profundus</i>	Florida Deepdigger Scarab Beetle	G3	S3	N	N
<i>Peucaea aestivalis</i>	Bachman's Sparrow	G3	S3	N	N
<i>Phyllophaga clemens</i>	Clemens' June Beetle	G2	S1	N	N
<i>Phyllophaga elongata</i>	Elongate June Beetle	G3	S3	N	N
<i>Podomys floridanus</i>	Florida Mouse	G3	S3	N	N
<i>Pycnanthemum floridanum</i>	Florida mountain-mint	G3	S3	N	T
<i>Sideroxylon alachuense</i>	silver buckthorn	G1	S1	N	E
<i>Spigelia loganioides</i>	pinkroot	G2	S2	N	E
Wet flatwoods		G4	S4	N	N

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Elements and Element Occurrences

An **element** is any exemplary or rare component of the natural environment, such as a species, natural community, bird rookery, spring, sinkhole, cave, or other ecological feature.

An **element occurrence (EO)** is an area of land and/or water in which a species or natural community is, or was, present. An EO should have practical conservation value for the Element as evidenced by potential continued (or historical) presence and/or regular recurrence at a given location.

Element Ranking and Legal Status

Using a ranking system developed by NatureServe and the Natural Heritage Program Network, the Florida Natural Areas Inventory assigns two ranks for each element. The global rank is based on an element's worldwide status; the state rank is based on the status of the element in Florida. Element ranks are based on many factors, the most important ones being estimated number of Element Occurrences (EOs), estimated abundance (number of individuals for species; area for natural communities), geographic range, estimated number of adequately protected EOs, relative threat of destruction, and ecological fragility.

FNAI GLOBAL ELEMENT RANK

- G1** = Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
- G2** = Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
- G3** = Either very rare and local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.
- G4** = Apparently secure globally (may be rare in parts of range).
- G5** = Demonstrably secure globally.
- GH** = Of historical occurrence throughout its range, may be rediscovered (e.g., ivory-billed woodpecker).
- GX** = Believed to be extinct throughout range.
- GXC** = Extirpated from the wild but still known from captivity or cultivation.
- G#?** = Tentative rank (e.g., G2?).
- G#G#** = Range of rank; insufficient data to assign specific global rank (e.g., G2G3).
- G#T#** = Rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definition as above (e.g., G3T1).
- G#Q** = Rank of questionable species - ranked as species but questionable whether it is species or subspecies; numbers have same definition as above (e.g., G2Q).
- G#T#Q** = Same as above, but validity as subspecies or variety is questioned.
- GU** = Unrankable; due to a lack of information no rank or range can be assigned (e.g., GUT2).
- GNA** = Ranking is not applicable because the element is not a suitable target for conservation (e.g. a hybrid species).
- GNR** = Element not yet ranked (temporary).
- GNRTNR** = Neither the element nor the taxonomic subgroup has yet been ranked.

FNAI STATE ELEMENT RANK

- S1** = Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
- S2** = Imperiled in Florida because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
- S3** = Either very rare and local in Florida (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.
- S4** = Apparently secure in Florida (may be rare in parts of range).
- S5** = Demonstrably secure in Florida.
- SH** = Of historical occurrence in Florida, possibly extirpated, but may be rediscovered (e.g., ivory-billed woodpecker).
- SX** = Believed to be extirpated throughout Florida.
- SU** = Unrankable; due to a lack of information no rank or range can be assigned.
- SNA** = State ranking is not applicable because the element is not a suitable target for conservation (e.g. a hybrid species).
- SNR** = Element not yet ranked (temporary).

FEDERAL LEGAL STATUS

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

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

C = Candidate species for which federal listing agencies have sufficient information on biological vulnerability and threats to support proposing to list the species as Endangered or Threatened.

E = Endangered: species in danger of extinction throughout all or a significant portion of its range.

E, T = Species currently listed endangered in a portion of its range but only listed as threatened in other areas

E, PDL = Species currently listed endangered but has been proposed for delisting.

E, PT = Species currently listed endangered but has been proposed for listing as threatened.

E, XN = Species currently listed endangered but tracked population is a non-essential experimental population.

T = Threatened: species likely to become Endangered within the foreseeable future throughout all or a significant portion of its range.

PE = Species proposed for listing as endangered.

PS = - An infraspecific taxon or population has federal status but the entire species does not - status is in only a portion of the species range.

PT = Species proposed for listing as threatened.

SAT = Treated as threatened due to similarity of appearance to a species which is federally listed such that enforcement personnel have difficulty in attempting to differentiate between the listed and unlisted species.

SC = Not currently listed, but considered a "species of concern" to USFWS.

DL = Delisted.

UR = Under review.

STATE LEGAL STATUS

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

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

C = Candidate for listing at the Federal level by the U. S. Fish and Wildlife Service

FE = Listed as Endangered Species at the Federal level by the U. S. Fish and Wildlife Service

FT = Listed as Threatened Species at the Federal level by the U. S. Fish and Wildlife Service

FXN = Federal listed as an experimental population in Florida

FT(S/A) = Federal Threatened due to similarity of appearance

ST = State population listed as Threatened by the FFWCC. Defined as a species, subspecies, or isolated population which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat is decreasing in area at a rapid rate and as a consequence is destined or very likely to become an endangered species within the foreseeable future.

SSC = Listed as Species of Special Concern by the FFWCC. Defined as a population which warrants special protection, recognition, or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance, or substantial human exploitation which, in the foreseeable future, may result in its becoming a threatened species. (SSC* for *Pandion haliaetus* (Osprey) indicates that this status applies in Monroe county only.)

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

Plants: Definitions derived from Sections 581.011, 581.185 and 581.185(2), Florida Statutes, and the Preservation of Native Flora of Florida Act, 5B-40.001. FNAI does not track all state-regulated plant species; for a complete list of state-regulated plant species, call Florida Division of Plant Industry, 352-372-3505 or see: <https://www.flrules.org/gateway/ChapterHome.asp?Chapter=5B-40>.

E = Endangered: species of plants native to Florida that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue; includes all species determined to be endangered or threatened pursuant to the U.S. Endangered Species Act.

T = Threatened: species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in number as to cause them to be Endangered.

CE = Commercially exploited: species native to the state which are subject to being removed in significant numbers from native habitats in the state and sold or transported for sale.

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

Element Occurrence Ranking

FNAI ranks of quality of the element occurrence in terms of its viability (EORANK). Viability is estimated using a combination of factors that contribute to continued survival of the element at the location. Among these are the size of the EO, general condition of the EO at the site, and the conditions of the landscape surrounding the EO (e.g. an immediate threat to an EO by local development pressure could lower an EO rank).

A = Excellent estimated viability
A? = Possibly excellent estimated viability
AB = Excellent or good estimated viability
AC = Excellent, good, or fair estimated viability
B = Good estimated viability
B? = Possibly good estimated viability
BC = Good or fair estimated viability
BD = Good, fair, or poor estimated viability
C = Fair estimated viability
C? = Possibly fair estimated viability
CD = Fair or poor estimated viability
D = Poor estimated viability
D? = Possibly poor estimated viability
E = Verified extant (viability not assessed)
F = Failed to find
H = Historical
NR = Not ranked, a placeholder when an EO is not (yet) ranked.
U = Unrankable
X = Extirpated

*For additional detail on the above ranks see: <http://www.natureserve.org/explorer/eorankguide.htm>

FNAI also uses the following EO ranks:

H? = Possibly historical
F? = Possibly failed to find
X? = Possibly extirpated

The following offers further explanation of the H and X ranks as they are used by FNAI:

The rank of H is used when there is a lack of recent field information verifying the continued existence of an EO, such as (a) when an EO is based only on historical collections data; or (b) when an EO was ranked A, B, C, D, or E at one time and is later, without field survey work, considered to be possibly extirpated due to general habitat loss or degradation of the environment in the area. This definition of the H rank is dependent on an interpretation of what constitutes "recent" field information. Generally, if there is no known survey of an EO within the last 20 to 40 years, it should be assigned an H rank. While these time frames represent suggested maximum limits, the actual time period for historical EOs may vary according to the biology of the element and the specific landscape context of each occurrence (including anthropogenic alteration of the environment). Thus, an H rank may be assigned to an EO before the maximum time frames have lapsed. Occurrences that have not been surveyed for periods exceeding these time frames should not be ranked A, B, C, or D. The higher maximum limit for plants and communities (i.e., ranging from 20 to 40 years) is based upon the assumption that occurrences of these elements generally have the potential to persist at a given location for longer periods of time. This greater potential is a reflection of plant biology and community dynamics. However, landscape factors must also be considered. Thus, areas with more anthropogenic impacts on the environment (e.g., development) will be at the lower end of the range, and less-impacted areas will be at the higher end.

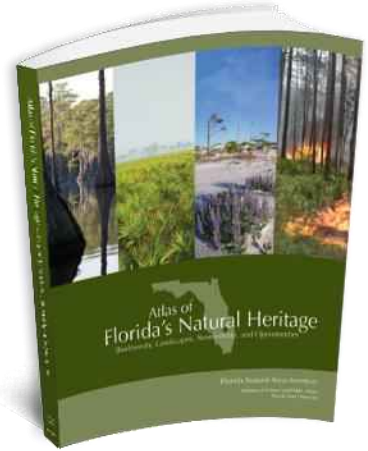
The rank of X is assigned to EOs for which there is documented destruction of habitat or environment, or persuasive evidence of eradication based on adequate survey (i.e., thorough or repeated survey efforts by one or more experienced observers at times and under conditions appropriate for the Element at that location).



Atlas of Florida's Natural Heritage

Biodiversity, Landscapes, Stewardship, and Opportunities

The Florida Natural Areas Inventory is pleased to announce the publication of the ***Atlas of Florida's Natural Heritage: Biodiversity, Landscapes, Stewardship, and Opportunities***. This high-quality, full-color *Atlas* is sure to become a standard reference for anyone involved in the conservation, management, study, or enjoyment of Florida's rich natural resources. We hope the *Atlas* will inspire, educate, and raise awareness of and interest in biodiversity and conservation issues.



Learn more about the Atlas, view sample pages and order your copy today at:
<https://www.fnai.org/publications/atlas-natural-heritage>

Check out our various web maps and
GIS data options here:

<https://geodata.fnai.org/>

and

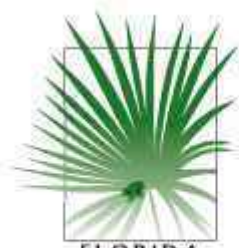


FNAI Biodiversity Matrix
June 2, 2025



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Suite 200-C
Tallahassee, FL 32303
850-224-8207
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Florida Natural Areas Inventory

Biodiversity Matrix Query Results

UNOFFICIAL REPORT

Created 6/2/2025

(Contact the FNAI Data Services Coordinator at 850.224.8207 or kbrinegar@fnai.fsu.edu for information on an official Standard Data Report)

NOTE: The Biodiversity Matrix includes only rare species and natural communities tracked by FNAI.

Report for 4 Matrix Units: 28102 , 28103 , 28390 , 28391



Descriptions

DOCUMENTED - There is a documented occurrence in the FNAI database of the species or community within this Matrix Unit.

DOCUMENTED-HISTORIC - There is a documented occurrence in the FNAI database of the species or community within this Matrix Unit; however the occurrence has not been observed/reported within the last twenty years.

LIKELY - The species or community is *known* to occur in this vicinity, and is considered likely within this Matrix Unit because:

1. documented occurrence overlaps this and adjacent Matrix Units, but the documentation isn't precise enough to indicate which of those Units the species or community is actually located in; *or*
2. there is a documented occurrence in the vicinity and there is suitable habitat for that species or community within this Matrix Unit.

POTENTIAL - This Matrix Unit lies within the known or predicted range of the species or community based on expert knowledge and environmental variables such as climate, soils, topography, and landcover.

Matrix Unit ID: 28102

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

3 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
<i>Mesic flatwoods</i>	G4	S4	N	N
<i>Mycteria americana</i> Wood Stork	G4	S2	T	FT
<i>Sandhill</i>	G3	S2	N	N

Matrix Unit ID: 28103

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

2 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
<i>Mesic flatwoods</i>	G4	S4	N	N
<i>Mycteria americana</i> Wood Stork	G4	S2	T	FT

Matrix Unit ID: 28390
5 Documented Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
<i>Calopogon multiflorus</i> many-flowered grass-pink	G2G3	S2S3	N	T
<i>Pituophis melanoleucus</i> Pine Snake	G4	S3	N	ST
<i>Pteroglossaspis ecristata</i> giant orchid	G2G3	S2	N	T
<i>Sciurus niger niger</i> Southeastern Fox Squirrel	G5T5	S3	N	N
<i>Verbesina heterophylla</i> variable-leaf crownbeard	G2	S2	N	E

0 Documented-Historic Elements Found

3 Likely Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
<i>Mesic flatwoods</i>	G4	S4	N	N
<i>Mycteria americana</i> Wood Stork	G4	S2	T	FT
<i>Sandhill</i>	G3	S2	N	N

Matrix Unit ID: 28391
4 Documented Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
<i>Ctenium floridanum</i> Florida toothache grass	G2	S2	N	E
<i>Gopherus polyphemus</i> Gopher Tortoise	G3	S3	C	ST
<i>Pituophis melanoleucus</i> Pine Snake	G4	S3	N	ST
<i>Pteroglossaspis ecristata</i> giant orchid	G2G3	S2	N	T

0 Documented-Historic Elements Found

5 Likely Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
<i>Mesic flatwoods</i>	G4	S4	N	N
<i>Mycteria americana</i> Wood Stork	G4	S2	T	FT
<i>Sandhill</i>	G3	S2	N	N
<i>Sciurus niger niger</i> Southeastern Fox Squirrel	G5T5	S3	N	N
<i>Upland hardwood forest</i>	G5	S3	N	N

Matrix Unit IDs: 28102 , 28103 , 28390 , 28391
48 Potential Elements Common to Any of the 4 Matrix Units

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Agrimonia incisa incised groove-bur	G3	S2	N	T
Ambystoma cingulatum Frosted Flatwoods Salamander	G2	S1	T	FT
Ambystoma tigrinum Eastern Tiger Salamander	G5	S3	N	N
Antigone canadensis pratensis Florida Sandhill Crane	G5T2	S2	N	ST
Aphodius troglodytes Gopher Tortoise Aphodius Beetle	G2G3	S2	N	N
Arnoglossum diversifolium variable-leaved Indian-plantain	G2	S2	N	T
Asplenium x curtissii Curtiss' spleenwort	GNA	S1	N	N
Asplenium x heteroresiliens Morzenti's spleenwort	G2	S1	N	N
Asplenium x plenum ruffled spleenwort	G1Q	S1	N	N
Ataenius brevicollis An Ataenius Beetle	G3G5	S1S2	N	N
Athene cunicularia floridana Florida Burrowing Owl	G4T3	S3	N	ST
Bolbocerosoma hamatum Bicolored Burrowing Scarab Beetle	G3G4	S3	N	N
Brickellia cordifolia Flyr's brickell-bush	G3	S2	N	E
Calopogon multiflorus many-flowered grass-pink	G2G3	S2S3	N	T
Ceratocanthus aeneus Shining Ball Scarab Beetle	G2G3	S2	N	N
Copris gopheri Gopher Tortoise Copris Beetle	G2	S2	N	N
Corynorhinus rafinesquii Rafinesque's Big-eared Bat	G3G4	S1	N	N
Ctenium floridanum Florida toothache grass	G2	S2	N	E
Dasymutilla archboldi Lake Wales Ridge Velvet Ant	G2G3	S2S3	N	N
Drymarchon couperi Eastern Indigo Snake	G3	S2?	T	FT
Dryobates borealis Red-cockaded Woodpecker	G3	S2	E, PT	FE
Eudocimus albus White Ibis	G5	S4	N	N
Falco sparverius paulus Southeastern American Kestrel	G5T4	S3	N	ST
Gopherus polyphemus Gopher Tortoise	G3	S3	C	ST
Hartwrightia floridana hartwrightia	G2	S2	N	T
Heterodon simus Southern Hognose Snake	G2	S2S3	N	N
Lampropeltis extenuata Short-tailed Snake	G3	S3	N	ST
Lithobates capito Gopher Frog	G2G3	S3	N	N
Litsea aestivalis pondspice	G3?	S2	N	E
Matelea floridana Florida spiny-pod	G2	S2	N	E
Myotis austroriparius Southeastern Myotis	G4	S3	N	N

<i>Neofiber alleni</i> Round-tailed Muskrat	G2	S2	N	N
<i>Notophthalmus perstriatus</i> Striped Newt	G2G3	S2	N	C
<i>Onthophagus polyphemi polyphemi</i> Punctate Gopher Tortoise Onthophagus Beetle	G2G3T2T3	S2	N	N
<i>Peltotrupes profundus</i> Florida Deepdigger Scarab Beetle	G3	S3	N	N
<i>Peucaea aestivalis</i> Bachman's Sparrow	G3	S3	N	N
<i>Phidippus workmani</i> Workman's Jumping Spider	G2G3	S2S3	N	N
<i>Phyllophaga clemens</i> Clemens' June Beetle	G2	S1	N	N
<i>Phyllophaga elongata</i> Elongate June Beetle	G3	S3	N	N
<i>Podomys floridanus</i> Florida Mouse	G3	S3	N	N
<i>Pteroglossaspis ecristata</i> giant orchid	G2G3	S2	N	T
<i>Pycnanthemum floridanum</i> Florida mountain-mint	G3	S3	N	T
<i>Sciurus niger niger</i> Southeastern Fox Squirrel	G5T5	S3	N	N
<i>Sideroxylon alachuense</i> silver buckthorn	G1	S1	N	E
<i>Spigelia loganioides</i> pinkroot	G2Q	S2	N	E
<i>Ursus americanus floridanus</i> Florida Black Bear	G5T4	S4	N	N
<i>Verbesina heterophylla</i> variable-leaf crownbeard	G2	S2	N	E
<i>Wet flatwoods</i>	G4	S4	N	N

Disclaimer

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

Unofficial Report

These results are considered unofficial. FNAI offers a [Standard Data Request](#) option for those needing certifiable data.

iPaC Resource List



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IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Alachua County, Florida



Local office

Florida Ecological Services Field Office

☎ (352) 448-9151

📠 (772) 562-4288

✉ fw4filesregs@fws.gov

777 37th St

Suite D-101

Vero Beach, FL 32960-3559

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

-
1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
 2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Tricolored Bat <i>Perimyotis subflavus</i>	Proposed Endangered
Wherever found	
No critical habitat has been designated for this species.	
https://ecos.fws.gov/ecp/species/10515	

Birds

NAME	STATUS
Eastern Black Rail <i>Laterallus jamaicensis ssp. jamaicensis</i>	Threatened
Wherever found	
No critical habitat has been designated for this species.	
https://ecos.fws.gov/ecp/species/10477	
Everglade Snail Kite <i>Rostrhamus sociabilis plumbeus</i>	Endangered
Wherever found	
There is final critical habitat for this species. Your location does not overlap the critical habitat.	
https://ecos.fws.gov/ecp/species/7713	
Red-cockaded Woodpecker <i>Dryobates borealis</i>	Threatened
Wherever found	
No critical habitat has been designated for this species.	
https://ecos.fws.gov/ecp/species/7614	
Whooping Crane <i>Grus americana</i>	EXPN
No critical habitat has been designated for this species.	
https://ecos.fws.gov/ecp/species/758	

Reptiles

NAME	STATUS
Eastern Indigo Snake <i>Drymarchon couperi</i>	Threatened
Wherever found	
No critical habitat has been designated for this species.	
https://ecos.fws.gov/ecp/species/646	

Insects

NAME	STATUS
------	--------

Wherever found

There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat.

<https://ecos.fws.gov/ecp/species/9743>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act ² and the Migratory Bird Treaty Act (MBTA) ¹. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

There are Bald Eagles and/or Golden Eagles in your [project](#) area.

Measures for Proactively Minimizing Eagle Impacts

For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the [National Bald Eagle Management Guidelines](#). You may employ the timing and activity-specific distance recommendations in this document when designing your project/activity to avoid and minimize eagle

impacts. For bald eagle information specific to Alaska, please refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#).

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

If disturbance or take of eagles cannot be avoided, an [incidental take permit](#) may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the [Do I Need A Permit Tool](#). For assistance making this determination for golden eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

Ensure Your Eagle List is Accurate and Complete

If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the [Supplemental Information on Migratory Birds and Eagles](#), to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

Review the FAQs

The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Sep 1 to Jul 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read ["Supplemental Information on Migratory Birds and Eagles"](#), specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

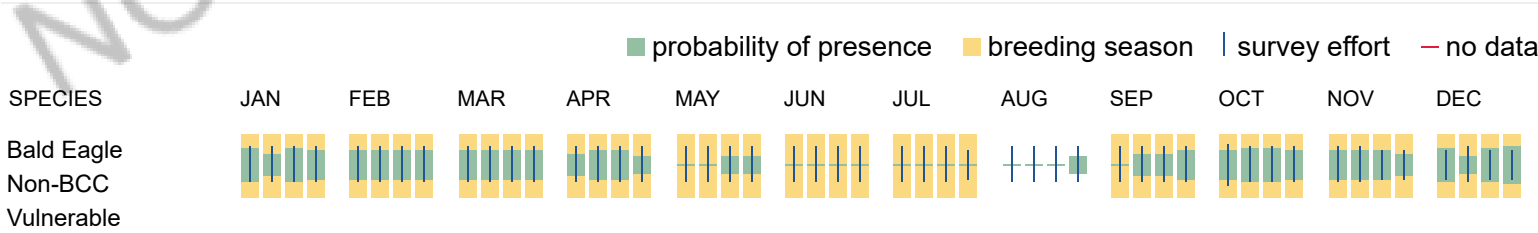
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Bald & Golden Eagles FAQs

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are an eagle ([Bald and Golden Eagle Protection Act](#) requirements may apply).

Proper interpretation and use of your eagle report

On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort line or no data line (red horizontal) means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagles are breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the [RAIL Tool](#) and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:

The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Migratory birds

The Migratory Bird Treaty Act (MBTA) ¹ prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service). The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The Service interprets the MBTA to prohibit incidental take.

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

Measures for Proactively Minimizing Migratory Bird Impacts

Your IPaC Migratory Bird list showcases [birds of concern](#), including [Birds of Conservation Concern \(BCC\)](#), in your project location. This is not a comprehensive list of all birds found in your project area. However, you can help proactively minimize significant impacts to all birds at your project location by implementing the measures in the [Nationwide avoidance and minimization measures for birds](#) document, and any other project-specific avoidance and minimization measures suggested at the link [Measures for avoiding and minimizing impacts to birds](#) for the birds of concern on your list below.

Ensure Your Migratory Bird List is Accurate and Complete

If your project area is in a poorly surveyed area, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the [Supplemental Information on Migratory Birds and Eagles document](#), to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

Review the FAQs

The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
------	-----------------

American Kestrel *Falco sparverius paulus*

Breeds Apr 1 to Aug 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9587>

Bachman's Sparrow *Peucaea aestivalis*

Breeds May 1 to Sep 30

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/6177>

Bald Eagle *Haliaeetus leucocephalus*

Breeds Sep 1 to Jul 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Black Skimmer *Rynchops niger*

Breeds May 20 to Sep 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/5234>

Chimney Swift *Chaetura pelagica*

Breeds Mar 15 to Aug 25

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Great Blue Heron *Ardea herodias occidentalis*

Breeds Jan 1 to Dec 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Henslow's Sparrow *Centronyx henslowii*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/3941>

Lesser Yellowlegs *Tringa flavipes*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9679>

Magnificent Frigatebird *Fregata magnificens*

Breeds Oct 1 to Apr 30

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Painted Bunting *Passerina ciris*

Breeds Apr 25 to Aug 15

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Prairie Warbler *Setophaga discolor*

Breeds May 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Red-headed Woodpecker *Melanerpes erythrocephalus*

Breeds May 10 to Sep 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Swallow-tailed Kite *Elanoides forficatus*

Breeds Mar 10 to Jun 30

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/8938>

Willet *Tringa semipalmata*

Breeds Apr 20 to Aug 5

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Worthington's Marsh Wren *Cistothorus palustris griseus*

Breeds Apr 10 to Aug 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example,

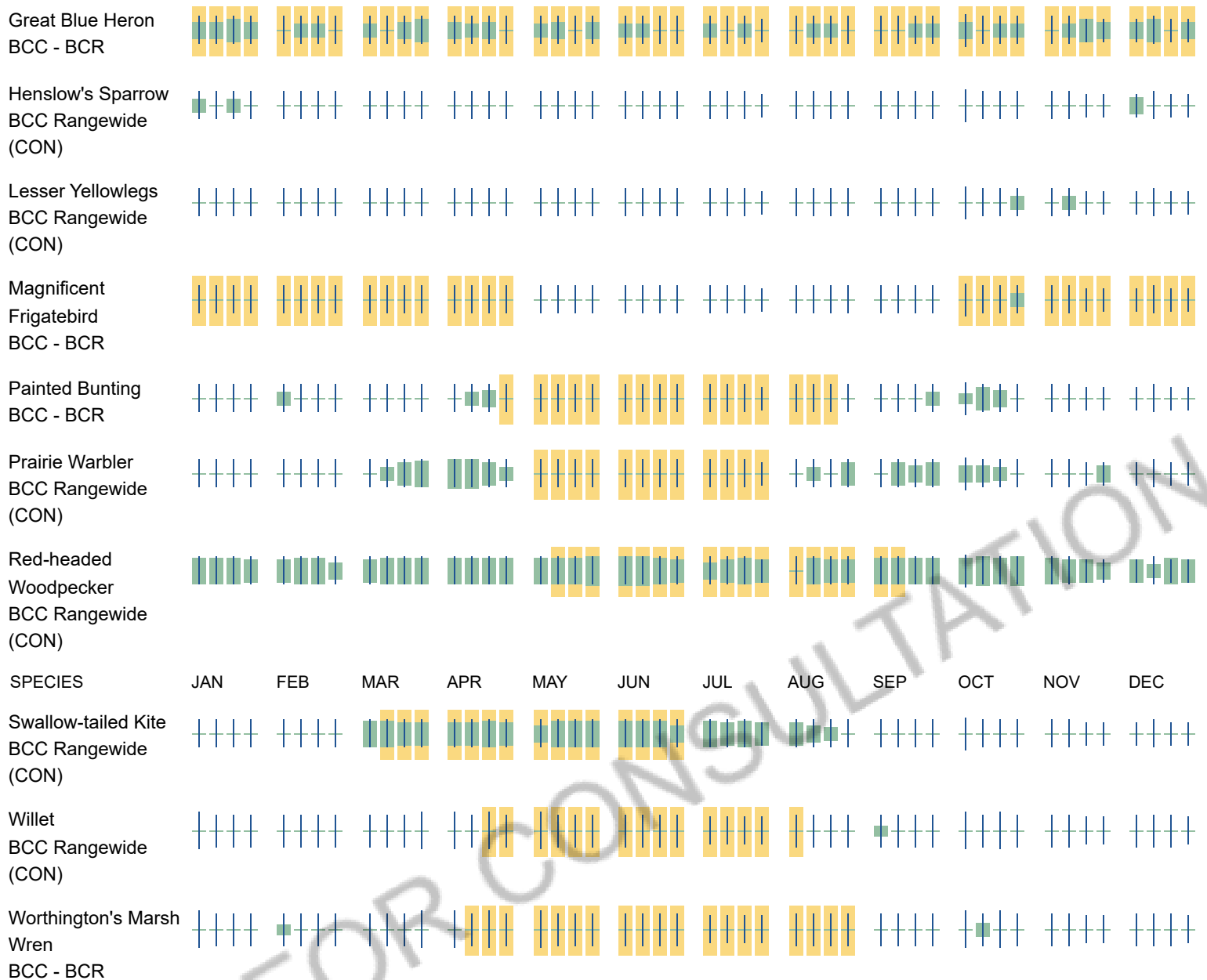
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

- To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

Survey Timeframe

SPECIES	probability of presence breeding season survey effort no data											
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
American Kestrel BCC - BCR												
Bachman's Sparrow BCC Rangewide (CON)												
Bald Eagle Non-BCC Vulnerable												
Black Skimmer BCC Rangewide (CON)												
Chimney Swift BCC Rangewide (CON)												



Migratory Bird FAQs

Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Avoidance & Minimization Measures for Birds](#) describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the [Bald and Golden Eagle Protection Act](#) and those species marked as “Vulnerable”. See the FAQ “What are the levels of concern for migratory birds?” for more information on the levels of concern covered in the IPaC migratory bird species list.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle ([Bald and Golden Eagle Protection Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, and to verify survey effort when no results present, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

Why are subspecies showing up on my list?

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the [RAIL Tool](#) and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Bald and Golden Eagle Protection Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ "Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Proper interpretation and use of your migratory bird report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list does not represent all birds present in your project area. It is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:

The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the [NWI map](#) to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus,

detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Appendix F

Invasive Species



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FISC Category I ¹			
Scientific Name	Common Name	Zone	Link to Atlas of Florida Plants
<i>Abrus precatorius</i>	rosary pea	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=347
<i>Acacia auriculiformis</i>	earleaf acacia	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=43
<i>Albizia julibrissin</i>	silk tree; mimosa	N, C	https://florida.plantatlas.usf.edu/Plant.aspx?id=188
<i>Albizia lebeck</i>	woman's tongue	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=129
<i>Ardisia crenata</i>	coral ardisia; scratchthroat	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=91
<i>Ardisia elliptica</i>	shoebutton ardisia	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1653
<i>Asparagus aethiopicus</i>	Sprenger's asparagus-fern	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=332
<i>Bauhinia variegata</i>	orchid tree; mountain ebony	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1492
<i>Bischofia javanica</i>	Javanese bishopwood	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1498
<i>Calophyllum antillanum</i>	santa maria; galba; Antilles calophyllum	S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1724
<i>Casuarina equisetifolia</i>	Australian-pine; horsetail casuarina	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=390
<i>Casuarina glauca</i>	gray sheoak; suckering Australian-pine	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1952
<i>Cenchrus purpureus</i> (<i>Pennisetum purpureum</i>)	elephantgrass; napiergrass	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1426
<i>Cinnamomum camphora</i>	camphortree	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=442
<i>Colocasia esculenta</i>	wild taro; dasheen; coco yam	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=209
<i>Colubrina asiatica</i>	latherleaf; Asian nakedwood	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=348
<i>Cupaniopsis anacardioides</i>	carrotwood	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=47
<i>Cyperus blepharoleptos</i>	Cuban bulrush	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=104
<i>Deparia petersenii</i>	Japanese false spleenwort	N, C	https://florida.plantatlas.usf.edu/Plant.aspx?id=1363
<i>Dioscorea alata</i>	white yam; winged yam; water yam	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1750
<i>Dioscorea bulbifera</i>	air-potato	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1823
<i>Dolichandra unguis-cati</i> (<i>Macfadyena unguis-cati</i>)	catclaw vine	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1823
<i>Eichhornia crassipes</i>	common water-hyacinth	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1319
<i>Eugenia uniflora</i>	Surinam cherry	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1388
<i>Ficus microcarpa</i> ²	Indian laurel fig	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1958
<i>Heptapleurum actinophyllum</i> (<i>Schefflera actinophylla</i>)	Australian umbrella tree; octopus tree	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=423
<i>Hydrilla verticillata</i>	waterhyme; hydrilla	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1469
<i>Hygrophila polysperma</i>	Indian swampweed; green hygro	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=159
<i>Hymenachne amplexicaulis</i>	trompetilla; West Indian marshgrass	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=150
<i>Imperata cylindrica</i>	cogongrass	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1407
<i>Ipomoea aquatica</i>	water-spinach	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=388
<i>Jasminum dichotomum</i>	Gold Coast jasmine	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=137
<i>Jasminum fluminense</i>	Brazilian jasmine; jazmin de trapo; corky-stemmed jasmine	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=61
<i>Lantana strigocamara</i> (<i>Lantana camara</i>)	lantana; shrubverbena	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1789
<i>Ligustrum lucidum</i>	glossy privet	N, C	https://florida.plantatlas.usf.edu/Plant.aspx?id=488
<i>Ligustrum sinense</i>	Chinese privet	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1935
<i>Lonicera japonica</i>	Japanese honeysuckle	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=232
<i>Ludwigia peruviana</i>	Peruvian primrosewillow	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=3077
<i>Lumnitzera racemosa</i>	lumitzera	S	
<i>Luziola subintegra</i>	Tropical American watergrass	S	https://florida.plantatlas.usf.edu/Plant.aspx?id=4270
<i>Lygodium japonicum</i>	Japanese climbing fern	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1559
<i>Lygodium microphyllum</i>	small-leaf climbing fern; Old World climbing fern	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1638
<i>Manilkara zapota</i>	sapodilla	S	https://florida.plantatlas.usf.edu/Plant.aspx?id=214
<i>Melaleuca quinquenervia</i>	punktree; melaleuca	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=46
<i>Melinis repens</i>	rose natalgrass	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=145
<i>Microsorium grossum</i> (<i>Phymatosorus scolopendria</i>)	serpent fern; wart fern	S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1448
<i>Microstegium vimineum</i>	Nepalese browntop; Japanese stiltgrass	N	https://florida.plantatlas.usf.edu/Plant.aspx?id=300
<i>Mimosa pigra</i>	black mimosa; catclaw mimosa	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1614
<i>Nandina domestica</i>	sacred bamboo; heavenly bamboo	N, C	https://florida.plantatlas.usf.edu/Plant.aspx?id=1548
<i>Nephrolepis brownii</i>	Asian sword fern	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1505
<i>Nephrolepis cordifolia</i>	tuberous sword fern	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1824
<i>Neyraudia reynaudiana</i>	Burma reed; silkreed	S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1347
<i>Nymphoides cristata</i>	crested floatingheart	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=4059
<i>Paederia crudasiana</i>	sewervine	S	https://florida.plantatlas.usf.edu/Plant.aspx?id=168
<i>Paederia foetida</i>	skunkvine	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1466
<i>Panicum repens</i>	torpedograss	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1652
<i>Pistia stratiotes</i>	water-lettuce	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=4002
<i>Psidium cattleianum</i>	strawberry guava	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=96
<i>Psidium guajava</i>	guava	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1395
<i>Pueraria montana</i> var. <i>lobata</i>	kudzu	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=432
<i>Rhodomyrtus tomentosa</i>	rose myrtle; downy rose-myrtle	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=86
<i>Ruellia simplex</i>	Britton's wild petunia; Mexican petunia	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1302
<i>Salvinia minima</i>	water spangles	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1336
<i>Scaevola taccada</i>	beach naupaka	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1900
<i>Schinus terebinthifolia</i>	Brazilian pepper	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=52
<i>Scleria eggersiana</i>	Eggers nutrush	S	https://florida.plantatlas.usf.edu/Plant.aspx?id=4900
<i>Scleria lacustris</i>	Wright's nutrush; lakeshore nutrush	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1373
<i>Scleria microcarpa</i>	Tropical nutrush	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=4857
<i>Senna pendula</i> var. <i>glabrata</i>	Christmas cassia; valamuerto	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1331
<i>Solanum tampicense</i>	wetland nightshade; aquatic soda apple	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=273
<i>Solanum viarum</i>	Tropical soda apple	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=65
<i>Sporobolus jacquemontii</i>	West Indian dropseed; giant smutgrass	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1622
<i>Syngonium podophyllum</i>	arrowhead vine; American evergreen	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=257
<i>Syzygium cumini</i>	Java plum	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=338
<i>Tectaria incisa</i>	incised halberd fern	S	https://florida.plantatlas.usf.edu/Plant.aspx?id=3073
<i>Thelypteris opulenta</i> (<i>Ambloventum opulentum</i>)	jeweled maiden fern	S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1432
<i>Thespesia populnea</i>	portia tree; seaside mahoe	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=346
<i>Tradescantia fluminensis</i>	small-leaf spiderwort	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=64
<i>Tradescantia spathacea</i>	Moses-in-the-cradle; oyster-plant; boatlily	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1970
<i>Triadica sebifera</i> (<i>Sapium sebiferum</i>)	popcorn tree; Chinese tallow tree	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1353

FISC Category II¹

Scientific Name	Common Name	Zone	Link to Atlas of Florida Plants
<i>Adenanthera pavonina</i>	red beadtrees; red sandalwood	S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1670
<i>Agave sisalana</i>	sisal hemp	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=268
<i>Alstonia macrophylla</i>	devil tree	S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1943
<i>Alternanthera philoxeroides</i>	alligatorweed	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1343
<i>Antigonon leptopus</i>	coral vine; queen's jewels	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1578
<i>Ardisia japonica</i>	Japanese ardisia	N	https://florida.plantatlas.usf.edu/Plant.aspx?id=4323
<i>Aristolochia elegans</i> (<i>Aristolochia littoralis</i>)	elegant dutchman's-pipe; calico flower	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=26
<i>Asclepias curassavica</i>	tropical milkweed	N, C, S	https://florida.plantatlas.usf.edu/Plant/species/1400
<i>Asystasia gangetica</i>	Chinese violet; Ganges primrose	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=158
<i>Begonia cucullata</i>	wax begonia; club begonia	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1337
<i>Broussonetia papyrifera</i>	paper mulberry	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=220
<i>Bruguiera gymnorhiza</i>	large-leafed orange mangrove	S	https://florida.plantatlas.usf.edu/Results.aspx
<i>Callisia fragrans</i>	basket plant; inch plant	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1575
<i>Casuarina cunninghamiana</i>	river sheoak	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1129
<i>Cecropia palmata</i>	trumpet tree	S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1323
<i>Cenchrus polystachios</i> (<i>Pennisetum polystachion</i>)	West Indian pennisetum; missiongrass	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=162
<i>Cenchrus setaceus</i> (<i>Pennisetum setaceum</i>)	fountaingrass	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=125
<i>Cestrum diurnum</i>	dayflowering jessamine	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1763
<i>Chamaedorea seifrizii</i>	bamboo palm	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=297
<i>Clematis terniflora</i>	sweet autumn virginibower; sweet autumn clematis	N, C	https://florida.plantatlas.usf.edu/Plant.aspx?id=1360
<i>Cocos nucifera</i>	coconut palm	S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1490
<i>Crassocephalum crepidioides</i>	redflower ragleaf	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=321
<i>Cryptostegia madagascariensis</i>	Madagascar rubbervine	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=238
<i>Cyperus involucrat</i>	umbrella plant	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=19
<i>Cyperus proflifer</i>	dwarf papyrus; miniature flatsedge	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=471
<i>Dactyloctenium aegyptium</i>	Durban crowfootgrass	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=429
<i>Dalbergia sissoo</i>	Indian rosewood; sissoo	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1447
<i>Dalechampia scandens</i>	spurgecreeper	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=4204
<i>Distimake tuberosus</i> (<i>Merremia tuberosa</i>)	Spanish arborvine; yellow morning-glory; wood rose	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1531
<i>Dracaena hyacinthoides</i> (<i>Sansevieria hyacinthoides</i>)	bowstring hemp; mother-in-law's tongue	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=148
<i>Elaeagnus pungens</i>	silverthorn; thorny olive	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1558
<i>Elaeagnus umbellata</i>	silverberry; autumn olive	N	https://florida.plantatlas.usf.edu/Plant.aspx?id=1557
<i>Epipremnum aureum</i>	golden pothos	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=195
<i>Eulophia graminea</i>	Chinese crown orchid	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=4276
<i>Ficus altissima</i>	council tree	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1940
<i>Flacourtia indica</i>	Governor's plum	S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1482
<i>Hemarthria altissima</i>	limpgrass	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=23
<i>Heteropterys brachiata</i>	Beechey's withe; redwing	S	https://florida.plantatlas.usf.edu/Plant.aspx?id=4362
<i>Hyparrhenia rufa</i>	jaragua	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=74
<i>Ipomoea carnea</i> subsp. <i>fistulosa</i>	bush morning-glory	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1342
<i>Kalanchoe pinnata</i>	cathedral bells; life plant	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1571
<i>Kalanchoe x houghtonii</i>	mother-of-millions	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=4246
<i>Koeleruteria elegans</i> subsp. <i>formosana</i>	flamegold rain tree	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1692
<i>Landoltia punctata</i> (<i>Spirodela punctata</i>)	dotted duckweed	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1680
<i>Leucaena leucocephala</i>	white leadtree	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1397
<i>Limnophila sessiliflora</i>	Asian marshweed	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1480
<i>Livistona chinensis</i>	Chinese fan palm	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=90
<i>Macroptilium lathyroides</i>	wild bushbean	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1541
<i>Melaleuca viminalis</i> (<i>Callistemon viminalis</i>)	bottlebrush	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=40
<i>Melia azedarach</i>	Chinaberrytree	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1691
<i>Melinis minutiflora</i>	molassesgrass	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1333
<i>Mikania micrantha</i>	mile-a-minute	S	https://florida.plantatlas.usf.edu/Plant.aspx?id=4361
<i>Momordica charantia</i>	balsampear	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1390
<i>Muraya paniculata</i>	orange jessamine	S	https://florida.plantatlas.usf.edu/Plant.aspx?id=184
<i>Myriophyllum spicatum</i>	Eurasian watermilfoil	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1829
<i>Noronhia emarginata</i>*	Madagascar olive	C, S	https://florida.plantatlas.usf.edu/Plant/species/4418
<i>Passiflora biflora</i>	two-lobed passionflower	S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1045
<i>Phoenix reclinata</i>	Senegal date palm	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=395
<i>Phyllostachys aurea</i>	golden bamboo	N, C	https://florida.plantatlas.usf.edu/Plant.aspx?id=1951
<i>Pittosporum pentandrum</i>	Taiwanese cheesewood	S	https://florida.plantatlas.usf.edu/Plant.aspx?id=313
<i>Platycerium bifurcatum</i>	staghorn fern	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=4189
<i>Praxelis clematidea</i>	praxelis	C	https://florida.plantatlas.usf.edu/Plant.aspx?id=4272
<i>Pteris tripartita</i>	giant brake	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1511
<i>Pteris vittata</i>	Chinese ladder brake	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1365
<i>Ptychosperma elegans</i>	Alexander palm; solitary palm	S	https://florida.plantatlas.usf.edu/Plant.aspx?id=41
<i>Richardia grandiflora</i>	largeflower Mexican clover	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=79
<i>Ricinus communis</i>	castorbean	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1860
<i>Rotala rotundifolia</i>	dwarf rotala; roundleaf toothcup	S	https://florida.plantatlas.usf.edu/Plant.aspx?id=4136
<i>Ruellia blechum</i>	Browne's blechum; green shrimp plant	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=119
<i>Selenicereus pteranthus</i>	princess-of-the-night	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1573
<i>Sesbania punicea</i>	rattlebox	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=110
<i>Sida planicaulis</i>	flatstem sida; mata-pasto	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=4314
<i>Solanum diphyllum</i>	twoleaf nightshade	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1760
<i>Solanum torvum</i>	turkeyberry	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1524
<i>Spermacoce verticillata</i> ³	shrubby false buttonweed	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1530

<i>Sphagneticola trilobata</i> (<i>Wedelia triloba</i>)	creeping oxeye; wedelia	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1820
<i>Stachytarpheta cayennensis</i>	nettleleaf velvetberry	S	https://florida.plantatlas.usf.edu/Plant.aspx?id=215
<i>Syagrus romanzoffiana</i>	queen palm	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1130
<i>Syzygium jambos</i>	Malabar plum; rose apple	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=434
<i>Tabebuia heterophylla</i>	pink tabebuia; white cedar	S	https://florida.plantatlas.usf.edu/Plant.aspx?id=316
<i>Talipariti tiliaceum</i> var. <i>tiliaceum</i>	sea hibiscus; mahoe	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1661
<i>Terminalia catappa</i>	West Indian almond; tropical almond; sea almond	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1473
<i>Terminalia muelleri</i>	Australian almond	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1305
<i>Thelypteris dentata</i> (<i>Christella dentata</i>)	downy maiden fern; downy shield fern	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1871
<i>Tradescantia zebrina</i>*	inchplant; wandering-jew	N, C, S	https://florida.plantatlas.usf.edu/plant/species/509
<i>Tribulus cistoides</i>	burr nut; Jamaican feverplant; puncture vine	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1737
<i>Urochloa maxima</i> (<i>Panicum maximum</i>)	Guineagrass	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1431
<i>Vernicia fordii</i>	tung oil tree	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=97
<i>Vitex trifolia</i>	simpleleaf chastetree	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=1484
<i>Washingtonia robusta</i>	Washington fan palm	C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=269
<i>Wisteria sinensis</i>	Chinese wisteria	N, C	https://florida.plantatlas.usf.edu/Plant.aspx?id=1354
<i>Xanthosoma sagittifolium</i>	arrowleaf elephant's ear	N, C, S	https://florida.plantatlas.usf.edu/Plant.aspx?id=216

New species added since 2023 list

¹ Plant names are those published in the Atlas of Florida Plants on 6/24/25 (<http://florida.plantatlas.usf.edu/>). Some frequently used common names have been added. footnote 2 is with Cat 1

³ Does not include the native endemic *Spermacoce neoterminalis*.

* Added to the FISC List of Invasive Plant Species in 2025

Table G1: Invasive and Non Native Plant Species Documented at Morningside Nature Center

Common Name	Scientific Name	FISC Category	Notes
Air potato	<i>Dioscorea bulbifera</i>	FISC Category I	
Alamo vine	<i>Merremia dissecta</i>		
Alligatorweed	<i>Alternanthera phylloxeroides</i>	FISC Category II	
Annual blue-eyed grass	<i>Sisyrinchium rosulatum</i>		
Annual sedge	<i>Cyperus compressus</i>		
Arrasa Con Todo	<i>Gomphrena serrata</i>		
Asian spikesedge	<i>Kyllinga squamulata</i>		
Bahiagrass	<i>Paspalum notatum</i>		
Barnyard grass	<i>Echinochloa crusgalli</i>		
Benghal dayflower	<i>Commelina benghalensis</i>		
Bracken fern	<i>Pteridium aquilinum</i>		
Brazilian vervain	<i>Verbena brasiliensis</i>		
Camphor tree	<i>Cinnamomum camphora</i>	FISC Category I	
Centipede grass	<i>Eremochloa ophiuroides</i>		
Chamberbitter	<i>Phyllanthis urinaria</i>		
Chinese privet	<i>Ligustrum sinense</i>	FISC Category I	
Chinese tallow tree	<i>Sapium sebiferum</i>		
Chinese wisteria	<i>Wisteria sinensis</i>	FISC Category II	
Climbing Hempvine	<i>Mikania scandens</i>		
Columbia waxweed	<i>Cuphea carthagenensis</i>		
Common chickweed	<i>Stellaria media</i>		
Common mullein	<i>Verbascum thapsus</i>		
Common Sowthistle	<i>Sonchus oleraceus</i>		non native but not invasive
Creeping beggarweed	<i>Desmodium incanum</i>		
Creeping indigo	<i>Indigofera spicata</i>		
Cypress vine	<i>Ipomoea quamoclit</i>		
Dandelions	<i>Taraxacum officianale</i>		non native but not invasive
Danglepod	<i>Sesbania herbacea</i>		
Doveweed	<i>Murdannia nudiflora</i>		
Durban crowfootgrass	<i>Dactyloctenium aegyptium</i>	FISC Category II	
Elegant cudweed	<i>Gamochaeta coarctata</i>		non native but not invasive
Flatop mille graines	<i>Oldenlandia corymbosa</i>		
Florida beggarweed	<i>Desmodium tortuosum</i>		
Florida betony	<i>Stachys floridana</i>		native but invasive
Florida pusley	<i>Richardia scabra</i>		
Glossy privet	<i>Ligustrum lucidum</i>	FISC Category I	
Guinea grass	<i>Megathyrsus maximus</i>		
Hairy indigo	<i>Indigofera hirsuta</i>		
Henbit deadnettle	<i>Lamium amplexicaule</i>		
Hidden bittercress	<i>Cardamine occulta</i>		
Indian hemp or teaweed	<i>Sida rhombifolia</i>		
Italian rye grass	<i>Lolium perenne</i>		non native but not invasive
Japanese climbing fern	<i>Lygodium japonicum</i>	FISC Category I	
Japanese honeysuckle	<i>Lonicera japonica</i>	FISC Category I	
Johnsongrass	<i>Sorghum halepense</i>		
Ladder brake	<i>Pteris vittata</i>		
Lantana	<i>Lantana camara</i>	FISC Category I	
Large flower richardia	<i>Richardia grandiflora</i>		
Lawn orchid	<i>Zeuxine strateumatica</i>		non native but not invasive
Lilac tasselflower	<i>Emilia sonchifolia</i>		
Loquat	<i>Eriobotrya japonica</i>		

Manyspike flatsedge	<i>Cyperus polystachyos</i>		
Marsh parsley	<i>Cyclospermum leptophyllum</i>		
Marsh purslane	<i>Ludwigia palustris</i>		
Mexican tea	<i>Chenopodium ambrosioides</i>		
Mimosa tree	<i>Albizia julibrissin</i>	FISC Category I	
Narrowleaf purple everlasting	<i>Gamochaeta falcata</i>		
Natal grass	<i>Rhynchelytrum repens</i>		
Oriental false hawksbeard	<i>Youngia japonica</i>		
Paper mulberry	<i>Broussonetia papyrifera</i>	FISC Category II	
Peruvian primrosewillow	<i>Ludwigia peruviana</i>	FISC Category I	
Pindo palm	<i>Butia capitata</i>		non native but not invasive
Poison hemlock	<i>Cicuta maculata</i>		
Ragweed	<i>Ambrosia artemisiifolia</i>		
rattlebox	<i>Sesbania punicea</i>	FISC Category II	
Salmon tasselflower	<i>Emilia fosbergii</i>		
Saltmarsh morning glory	<i>Ipomoea sagittata</i>		
Silktree	<i>Albizia julibrissin durazz</i>		
Smooth rattlebox	<i>Crotalaria pallida var. obovata</i>		
Smut grass	<i>Sporobolus indicus</i>		
Southern rockbell	<i>Wahlenbergia marginata</i>		non native but not invasive
Spadewort	<i>Centella asiatica</i>		
Swamp flatsedge	<i>Cyperus distinctus</i>		
Sweet autumn clematis	<i>Clematis terniflora</i>		
Sweet tanglehead	<i>Heteropogon melanocarpus</i>		
Sweetbroom	<i>Scoparia dulcis</i>		
Threeflower ticktrefoil	<i>Desmodium triflorum</i>		non native but not invasive
Thymeleaf sandwort	<i>Arenaria serpyllifolia</i>		non native but not invasive
Torpedograss	<i>Panicum repens</i>	FISC Category I	
Tropical bushmint	<i>Hyptis mutabilis</i>		
Tropical Mexican clover	<i>Richardia brasiliensis</i>		non native but not invasive
Tropical soda apple	<i>Solanum viarum</i>	FISC Category I	
Tung oil tree	<i>Vernicia fordii</i> □	FISC Category II	
Variable flatsedge	<i>Cyperus difformis</i>		
Vaseygrass	<i>Paspalum urvillei</i>		
Virginia buttonweed	<i>Diodia virginiana</i>		
Wax begonia	<i>Begonia cucullata</i>	FISC Category II	
White sweet clover	<i>Melilotus albus</i>		
Wild radish	<i>Raphanus raphanistrum</i>		
Wild taro	<i>Colocasia esculenta</i>	FISC Category I	
Winged yam	<i>Dioscorea alata</i>	FISC Category I	

Appendix G

Fire Management Plan



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Fire Management Plan

Prescribed Burning

DRAFT

Nature Operations Division:

The primary directive of the City of Gainesville's Nature Operations Division (NOD) is to restore, preserve, and protect Gainesville's natural areas. NOD is equally charged with providing environmental and culturally significant interpretive and educational opportunities to the citizens of Gainesville. These objectives are to be met by the most ecologically sound and environmentally sensitive means available.

Ecology of Fire:

Wildland fire is a global phenomenon and is not isolated to Florida or the Southeastern United States. The unique geological and spatial character of Florida however has created the conditions that make this state the lightning capital of the world. Under these conditions, and with the introduction of human ignited fires dating to the earliest migrations of humans to the region, it is no wonder that fire has shaped Florida's landscapes for thousands of years. The aesthetics and diversity of Florida's natural communities have all been developed by the presence or exclusion of wildland fire.

Wildland fire has an ecological effect on air quality, soil composition and character, water quality, hydrology, plants, animals, human health and safety, and in short on the entire ecosystem. Understanding the history of wildland fire in Florida and the interdependence Florida's ecosystems have with fire is a key function of implementing NOD's prescribed fire program. According to the Florida Natural Areas Inventory, of the 42 natural communities represented in Florida, more than half are influenced by fire and 16 are actually fire dependent. With this in mind, and in an effort to reduce the cost and long-term ecological impacts of chemical or mechanical vegetation control, NOD will be utilizing prescribed fire as a resource management tool.

Fire as a Resource Management Tool:

Prescribed fire provides a powerful tool to meet a wide variety of resource management objectives for NOD. Used correctly and responsibly, this tool will greatly benefit NOD and the lands under its management. Used poorly, this tool could endanger public health and safety, as well as the very natural systems it is being used to benefit. NOD will conduct two primary classifications of prescribed fire: 1) Ecological Management and 2) Hazard Reduction.

- Ecological Management burns will be conducted to achieve one or more of the following objectives:
 - Restoration or preservation of fire adapted natural communities.
 - Restoration or preservation of habitat for rare plant and animal species.
 - Enhancement of ecotones and natural community transitions.
 - Stimulation of flowering and seed production.
 - Site preparation for planting and restoration projects.
 - Improved aesthetics in natural areas.
 - Improved access to natural areas.
 - Restoration of natural growing season burn regime.
 - Promotion of prescribed fire as a resource management tool through education and interpretation.
- Hazard Reduction burns will be conducted to achieve one or more of the following objectives:
 - Reduction of wildfire threat by removing accumulated fuels.
 - Reduction of smoke management problems associated with heavy fuels and duff.
 - Control of insect pests and disease.
 - Improved public safety.

Fire Regime:

The Fire Regime is a combination of the Fire Return Interval and the Seasonal Timing of burns within a particular unit or natural community. The Fire Return Interval plays a key role in shaping and maintaining many of Florida's natural communities. The fire dependant natural communities represented on NOD properties require the following fire return interval for proper maintenance and health.

- Mesic Flatwoods 3-8 years
- Wet Flatwoods 3-10 years
- Wet Prairie 2-4 years
- Depression Marsh 2-10 years stretching to 150 years
- Sandhill 2-5 years
- Scrubby Flatwoods 5-8 years
- Scrub 20-80 years
- Dome swamp 3-5 years along the ecotone, out to 150 within the interior

Burn Season is just as important to the natural community as the Fire Return Interval. Fall burns in pine forests can result in high mortality due to needle scorch during this critical period in the tree's yearly cycle. Winter burns tend to encourage palmetto seed production, and increase the number of hardwood stems per acre. Early growing season burns promote grasses, while later growing season burns promote forbs. With all the variables, it is essential that the Burn Planner has an in-depth understanding of the seasonal effects of fire on the communities NOD manages. In determining the burn regime for a particular burn unit or property, the following resource management objectives should be considered.

- Dormant season burns:
 - Hazard fuel reduction.
 - Reduced smoke impact.
 - Midstory hardwood reduction.
- Growing season burns:
 - Hardwood reduction.
 - Increased grasses and forbs.
 - Improved health and regeneration of longleaf pines.
 - Improved wildlife habitat.
 - Increased species diversity.
 - Restoration of natural Fire Regime.

Firing Techniques:

In determining the correct firing technique, it is essential that the Burn Planner have a thorough understanding of the interrelationship between weather, fuels, and specific site conditions. The skill and experience of the crew and the efficiency of available equipment must also play a part in the planning process. Finally, the planner must consider the desired burn objectives and natural communities involved to determine the possible effects of these different techniques.

There are 4 general firing techniques available to the prescribed burner within NOD:

- 1) Backing fire, which is ignited along an anchor line and allowed to burn into the wind.
 - Backing fires produce low intensity flames, travel slowly, and consume the largest amounts of surface and ground fuels.
 - These fires however tend to have a longer residence time and thus deliver more heat to the soil. This increase in soil temperature can result in damage to the shallow feeder roots of mature pines, and can even lead to pine mortality.
- 2) Strip-head fire, a series of lines ignited across the wind such that the flames are pushed by the wind into the previously ignited line.
 - Strip heads generate high intensity flames, travel quickly, and can produce large amounts of visible smoke.
 - The rapid rate of spread reduces residence time and soil heating.
- 3) Flanking fire, a series of strips ignited into the wind in such a way that flame spread is across the wind.

- Flanking fires can become unpredictable in changing winds, but are often helpful in protecting or installing firelines.
- 4) Point source or grid ignition, where igniters string a series of points across the wind allowing each point to spread until contained by previously ignited points.
 - Point source fires spread as head fires, flanking fires, and backing fires at the same time.
 - These fires generate more intensity than standard backing fires, and less than that produced by strip heads.
 - Point source fires result in reduced residence times, and increased mosaic within the unit.

Prescribed burners should use a combination of these ignition patterns based on an analysis of predicted and observed weather, fuel characteristics, and desired objectives. Burners must be able to adjust firing techniques to meet changing conditions encountered during the burn.

Public Relations:

Good public relations are a prerequisite to the success of NOD's burn program. Communication is the key to good public relations. It is only when the public understands the mission and trusts the staff that they will fully support the program.

The communication elements of this program will focus on the following themes:

1. Dear Neighbor letters. (*Sample attached*)
 - Sent semiannually to preserve neighbors to inform and solicit comments.
 - Can also be sent out during special situations such as times of drought, unusual burns, or to announce public meetings.
2. Press releases.
 - Semiannual to announce burn season plans for growing and dormant season burning.
 - PR pieces to inform the public on the intent, goals, and successes of the program.
3. Interpretation.
 - Regularly scheduled walks and presentations to classes and summer camps.
 - Integration of burn sites into hands-on programs and fire ecology themes in existing and new curricula.
 - All members of the burn team should be confident and well versed in the practice of burning so that they can provide information and answer questions when asked.
4. Professionalism.
 - The program will constantly be evaluated by the public based on the performance of the team members.
 - Condition and appearance of burn equipment and burn personnel are the visual assurance of competence.
 - Professional decorum, efficient utilization of resources, and maintenance of calm and controlled speech and behavior all generate trust in the eyes of the public.

Safety:

Safety must comprise the foundation of any burn plan or operation. Public safety must be carefully considered in all planning processes. The very existence of NOD's burn program is dependent on its safety record and performance.

Staff:

- All staff will receive safety training and be evaluated on safe performance of duties regularly.
- All personnel should be familiar with standard "Fire Orders" and "Watch Out Situations".
- All Division burns will be staffed by a minimum of six (6) qualified personnel.
- All personnel accessing the burn unit must be wearing approved PPE.

Day of Burn:

- All NOD burns will be authorized by the Division of Forestry (DOF)
- Alachua County and City of Gainesville Fire Rescue will be notified of all NOD burns.
- DOF will be on standby and if possible will have a plow unit or brush truck on site for each NOD burn.

Burn operations:

- All burn operations; firing techniques, crew assignments, equipment deployment, ignition operations, suppression efforts, and mop-up operations will be conducted with safety as the primary goal.
- Order of priority for safety considerations during burn operations: public safety, crew safety, protection of private property, and protection of natural/cultural resources.

Personal Protective Equipment (PPE) required for all burn personnel:

- Hardhat w/Nomex neck protector.
 - Wildland fire approved and in good working order.
- Safety glasses/goggles.
- Nomex long sleeve shirt and pants or jumpsuit.
 - Wear cotton undergarments and tee shirt.
 - Do *not* wear other work clothing under or over Nomex to avoid heat stress or diminish the fire protection.
- All leather boots w/cotton or wool socks.
- Flame resistant gloves, such as all leather work gloves.
- Respiratory protection.
 - Bandana or other all cotton-filtering device.
 - All NOD staff must have approved filtration mask with them on NOD burns, and must utilize them during periods of heavy smoke exposure (as required by City of Gainesville Risk Management).
- Fire Shelter.
 - All burn personnel, NOD or otherwise who participate on NOD burns, must have a shelter with them at all times during a Prescribed burn.
 - All burn personnel must be knowledgeable and efficient in the care, deployment, and proper use of their shelter.
 - NOD shelters must be inspected regularly, and replaced when necessary.
- Chainsaw Chaps.
 - Must be worn by chainsaw operators and spotters during chainsaw operation.

Hazards during burn operations:

- All burn plans will list hazards including site-specific conditions, which may be encountered during a burn.
- Burn personnel should be familiar with hazards that may be encountered as well as measures to avoid them and first aid to treat them.
- The Burn Boss will contact 911 (Emergency Medical Services) in the case of medical emergencies.
- Any burn personnel with special medical conditions such as allergies must make these conditions known to the safety officer.

Burn Prescription:

All burns conducted on NOD properties must be conducted under an approved Prescribed Burn Plan. The burn prescription must be approved by the Burn Manager and the Program Coordinator – Habitat, and authorized by the Nature Operations Manager.

All plans must be formatted according to the approved plan attached to this document, and can only be modified at the direction of the Burn Manager and Program Coordinator – Habitat. This format will be reviewed periodically by the burn staff and modified to comply with updated science, observed fire behavior, and NOD or DOF policy.

(See attached Rx Burn Plan for Unit 1 East, Morningside Nature Center).

Smoke Management:

Smoke management is a critical part of the prescribed burn planning process. With all the positive benefits of prescribed burning, this tool could be lost through negative public opinion. The Burn Planner must conduct a complete smoke management screening (such as “Smoke Management Guidelines for Prescribed Burning in the Southeast” found at http://www.pfmt.org/fire/smoke_guide/default.htm) to insure public health and safety during and following the burn. A smoke management plan must be included in each Prescribed Burn Plan implemented on NOD property.

(See attached Rx Burn Plan for Unit 1 East, Morningside Nature Center).

ESCAPE FIRES:

Escape fires would include any instance where the fire crosses the boundaries set forth in the Prescribed Burn Plan. This could include anything from a simple spot-over to a wind-driven head fire crossing a control line. If an escape fire is declared, **all ignitions will cease** on the burn unit. The Burn Boss and Crew Boss will evaluate the escape fire and assign appropriate resources. **The main fire will never be left alone.** If the burn crew is able to contain the escape with on-hand resources, then they should do so. If the escape fire is too large to directly extinguish, burn crews may, at the discretion of the Burn Boss, allow the fire to burn-out within the adjoining unit using the unit’s control lines as holding lines. Backfires will be ignited on control lines to contain the escape fire. This contingency may only be utilized if there is an approved burn plan for the additional unit on site, and DOF is contacted and approves the operation.

If on-hand resources cannot contain the fire, or if the Burn Boss otherwise determines conditions to warrant it, DOF will take control of the fire and crew.

ORDER TO EXTINGUISH BURN:

At any time during the burn the Burn Boss may give the Order to Extinguish for any of the following:

- DOF red flag or other regulatory requirements.
- Extreme onsite weather or fire behavior.
- The Burn Boss becomes uncomfortable with fire behavior, crew performance, or any other conditions.

In the event that it becomes necessary to extinguish the burn, the following procedures are to be followed.

- Burn Boss will issue the Order to Extinguish.
- All Crew Bosses, and through them all burn personnel, will acknowledge the order.
- **All ignitions will cease immediately.**
- The Burn Boss will confer with Crew Bosses to devise the most effective course of action.
- Priority concerns at this time will be public safety, crew safety, protection of public and private property, protection of the resource, and finally public nuisance (smoke).
- Fire will be contained and allowed to burn out within a reduced perimeter by the use of water, backfires and existing control lines.
- In the event the fire cannot safely be extinguished, and public safety/property are at risk, then heavy equipment may be deployed by DOT to contain the fire.
- Once the fire is contained, normal mop-up procedures will be followed.
- Burn Boss will remain on site following demobilization to insure burn perimeter is secure, and will only leave the burn when fully satisfied that all control lines are secure.

MOP-UP:

Crew Bosses may direct personnel to remove snags and push larger fuels into the unit, should conditions and safety allow, during the ignition phase. All burn crew personnel will officially begin mop-up when the Burn Boss declares ignition operations complete. The Burn Boss may choose to allow the burn crew a break at this point to allow a more complete consumption of available fuels within the unit. Adequate personnel must remain on the burn to insure safety and containment.

Once mop-up begins, large smoldering fuels within 30ft of the unit boundary will be pushed into the unit or completely extinguished. Any open flames within 30ft of the unit boundary will be allowed to burn out then extinguished. Burn Boss will remain on site following demobilization to insure buffer strip is secure, and will only leave the burn when fully satisfied that all control lines are secure. The following day, both AM and PM, the Burn Boss will inspect the unit for residual smoke. The prescribed burn will be declared extinguished only after an inspection fails to detect any residual smoke.

In the event of impending weather changes, approaching frontal systems, National Weather Service prediction change, DOF instructions, or unfavorable onsite observations, the Burn Boss may decide that all residual smoke will have to be extinguished. Suppression equipment (tractor, trucks with water tanks, and off-road vehicles) may be permitted to enter the unit, however, special care must be taken to insure that sensitive resources are not adversely affected. Any special sensitive resources contained within the unit should be indicated on the planning maps.

Evaluation and Monitoring:

Postfire evaluation is important to help guide fire management in the future. Carefully documented observations of fire behavior and effects can be used to improve NOD's prescribed fire program, and to help NOD achieve its management objectives.

It is important to distinguish burn objectives from the long-term management objectives for an area. Management objectives refer to the long-term desired condition of an area, while burn objectives are the shorter-term effects of a particular burn. In many cases, management objectives cannot be achieved with a single burn, and they may not even be achievable after several burns without resorting to other land management techniques in addition to fire. Long-term management objectives can best be evaluated through in-depth monitoring, which is discussed in NOD's monitoring plan (currently under revision). However, it is still important to collect information about individual burns to determine whether the objectives for the burn were met. Guidelines for postfire evaluation are given below.

Photopoints

Photopoints are excellent for documenting fire effects. Photopoints should be taken prior to a burn whenever possible, in addition to after the burn. In many cases, photopoints will already exist in the unit to be burned; if these have been taken within a year before the burn, it may not be necessary to retake them. If not, the photopoints can be installed and/or retaken at the beginning of each burn season in preparation for whatever burns are planned. Photopoints should always be taken as soon as practical after a burn, as well as one year after the burn; they may also be taken at 3 months and/or 6 months after the burn.

NOD currently uses the Sony digital camera on a tripod for taking photopoints. Photopoints are taken in pre-determined compass directions with the tripod legs fully extended and with the camera lens zoomed all the way out. Photopoint files should be saved in the Park specific\[park name]monitoring\ folder with any other photopoints from that point. When a new photopoint is installed, the location of the photopoint should be GPSed and a description of the location entered in the monitoring database in the "photopoints" table. Whenever photos are taken, the filename and file location should be entered in the "photopoint data" table in the monitoring database.

Fire Evaluation Datasheet

The NOD fire evaluation datasheet includes a variety of information about the burn, including site preparation, fire behavior, and postfire observations.

The following information about site preparation should be recorded:

- Any site prep to protect catfaced trees
- Any site prep to protect snags
- Any site prep to protect mature trees
- Any other noteworthy site preparation

Observations to be noted about fire behavior include:

- Flame height
- Type of ignition (mostly backing, heading, spot-grid, other)
- Residual ground combustion (how much, how long)
- Any escapes or spotovers, their size, and the fuel type.
- Any other appropriate observations

The following information is to be collected at least a week but not more than 30 days after the burn:

- Estimated percent of unit burned (important if burn is stopped due to conditions or if some of unit will not carry fire)
- Estimated percent of surface fuels consumed (within the burned area)
- Estimated percent crown scorch of canopy trees
- Estimated average char height
- Estimated percent hardwood topkill
- Estimated percent of snags destroyed
- Estimated percent of catfaced trees killed
- Any other observations of note

The following observations are recorded one year after the fire:

- Estimated percent overstory mortality
- Estimated percent kill of hardwoods
- Any other observations of interest

Burn Personnel:

The following NOD burn personnel positions are provided for a guideline in determining appropriate duties, training, and qualifications. Burn personnel may hold simultaneous positions during a prescribed fire event, such a Burn Manager and Line Crew member.

Administrative positions:

1) Nature Operations Manager

- Authorizes NOD's Burn Program.
- Authorizes each prescribed burn.
- Authorizes prescribed burn operations.
- Authorizes wildfire response operations.
- Managerial authority over NOD's Burn Program and all NOD staff involved with the program.

- 2) Program Coordinator – Habitat
 - Oversees NOD's Burn Program.
 - Approves each prescribed burn.
 - Appoints NOD Burn Manager.
 - Authority to modify specific fire management guidelines as recommended by the Burn Manager.
 - Program oversight and supervisory authority of burn operations and personnel.
- 3) Program Coordinator – Education
 - Coordinates between Burn Manager and Education staff during planning process.
 - Coordinates educational activities that may occur during prescribed burn operations.
 - Authorizes Educational staff participation in prescribed burn operations.
- 4) Staff Assistant
 - Distributes burn notifications and maintains contact list.
 - Coordinates offsite communications during burn activities if requested by the Burn Boss.
- 5) Burn Manager
 - Develops and implements NOD Burn Program.
 - Implements prescribed burn and wildfire programs and activities.
 - Evaluates and approves prescribed burn plans.
 - Recommends modifications to specific fire management guidelines.
 - Evaluates and designates Burn Boss.
 - Conducts or recommends training for burn crew personnel.
 - Insures that prescribed burns are planned and conducted in a safe and professional manor.

Qualifications:

Must be an experienced Burn Planner and Burn Boss. Must be familiar with fuel types and nature parks managed by NOD. Must have a demonstrated ability to evaluate and direct people and programs, as well as successfully handle potential problems.

- Designated by Program Coordinator – Habitat.
- Fire Fighter 2 (FFT2) under the NWCG system.
- Successful completion of the Interagency Basic Prescribed Fire course.
- Certification by DOF as Prescribed Burn Manager.
- 4 years experience in professional prescribed burn operations (public or private).
- Participation in at least 20 prescribed burns.
- Successful completion of 5 burns as Burn Boss independently or under the direction of a qualified Burn Boss.

The Burn Manager will represent NOD at public meetings, working group sessions, and fire council meetings whenever possible. The burn Manager will also respond in person to any public complaints, smoke incidents, or inquiries from the press. This individual should continually seek training in prescribed burning, public relations, and habitat management.

- 6) Burn Planner
 - Prepares Prescribed Burn Plans.
 - Prepares Burn Monitoring Plans.
 - Assists the Burn Manager and Burn Boss in the burn planning and monitoring process.

Qualifications:

Must be familiar with fuel types and nature parks in which burns are conducted. Must demonstrate strong technical writing skills. Familiar with burn operations and monitoring procedures.

- Designated by Burn Manager.
- Participation in 5 prescribed burns.
- Fire Fighter 2 (FFT2) under the National Wildfire Coordinating Group (NWCG) system.
- Successful completion of the Interagency Basic Prescribed Fire course.
- 1-year experience in professional prescribed burn operations (public or private).

Field positions:

All field personnel must successfully complete the annual DOF administered physical fitness test at a level of “intermediate” or higher. In addition, all field personnel must hold current certifications in First Aid and CPR.

1) Burn Boss

- Directs specific prescribed burn operations and staff.
- Coordinates fire suppression activities.
- May develop and review Prescribed Burn Plans.
- Authorized to implement approved Prescribed Burn Plans.
- Trains and organizes burn crew.
- Responsible for implementing safe and effective prescribed burns.
- Designates prescribed burn field crew positions.

Qualifications:

Must be familiar with fuel types and nature parks in which burns are planned and conducted. Must have a demonstrated ability to evaluate and direct people and projects, as well as successfully handle potential problems.

- Designated by Burn Manager.
- Fire Fighter 2 (FFT2) under the NWCG system.
- Successful completion of the Interagency Basic Prescribed Fire course.
- Certification by DOF as Prescribed Burn Manager.
- 1-year experience in professional prescribed burn operations (public or private).
- Participation in at least 10 prescribed burns.
- Successful completion of 3 burns as Burn Boss independently or under the direction of a qualified Burn Boss.

The Burn Boss will be assigned one of the NOD trucks for the duration of each prescribed burn to aid in call back and unit monitoring.

Training should be an ongoing process and it is recommended that all those holding Burn Boss status with NOD should pursue RxB² classification under the NWCG system.

2) Crew Boss

- Directs line crew during ignition, holding, and mop-up operations on prescribed burns.
- Conducts line crew duties as required.

Qualifications:

Must be familiar with fuel types and nature parks in which burns are conducted. Must have a demonstrated ability to evaluate and direct people and teams, as well as successfully handle potential problems.

- Assigned by Burn Boss.
- Participation in 5 prescribed burns at any field crew level.
- Fire Fighter 2 (FFT2) under the NWCG system.
 - S-190 Introduction to Wildland Fire Behavior.
 - S-130 Firefighter Training.
 - SFS Standards for Survival.
 - I-100 Introduction to Incident Command.

It is recommended that all NOD Crew Boss personnel pursue FFT1/Squad Boss classification under the NWCG system. It is further recommended that Crew Boss personnel strive to achieve a fitness level of “arduous” as they may be called upon to extract a downed crewmember in the event of an emergency.

3) Line Crew

- Participates in implementation of prescribed burn operations.
- Ignition, suppression, and mop-up.
- Chainsaw operation.
- Suppression equipment and pump operation.
- Weather observer.
- Safety officer.

Qualifications:

Must be familiar with fuel types and nature parks in which burns are conducted. Must work well as part of a team, be willing to take direction, and handle themselves in a controlled and professional manner at all times.

- Assigned by Burn Boss.
- Fire Fighter 2 (FFT2) under the NWCG system.
 - S-190 Introduction to Wildland Fire Behavior.
 - S-130 Firefighter Training.
 - SFS Standards for Survival.
 - I-100 Introduction to Incident Command.
- S-212 Wildfire Powersaws. For any personnel operating chainsaws during burn operations.
- NOD equipment operator check-off. For any personnel operating suppression equipment and pumps during burn operations.

Line Crew members are encouraged to pursue additional training and experience when possible.

All positions are subject to approval and not automatic based on fulfillment of minimum qualifications.

Conclusion:

It is not the intention of this document to be all inclusive of the many aspects involved in conducting a Prescribed Burn Program. Rather, this is simply an outline of the key factors that must be thoroughly understood and implemented by the burn personnel. With the volumes of resource material and training opportunities available, it becomes the personal responsibility of each member of the burn team to constantly strive to better their knowledge and skills. Training, experience, and professional execution of duties are all key factors in the NOD Prescribed Fire Management Plan.

Utilizing this tool in our resource management program is a privilege which must be earned by each of the staff involved, and which can be lost if our performance should fall below the level of excellent.

Appendix H

DHR Management



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

(revised June 2021)

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

A. Historic Property Definition

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

B. Agency Responsibilities

Per Chapter 267, F.S. and state policy related to historic properties, state agencies of the executive branch must provide the Division of Historical Resources (Division) the opportunity to comment on any undertakings with the potential to affect historic properties that are listed, or eligible for listing, in the National Register of Historic Places, whether these undertakings directly involve the state agency, i.e., land management responsibilities, or the state agency has indirect jurisdiction, i.e. permitting authority, grants, etc. No state funds should be expended on the undertaking until the Division has the opportunity to review and comment on the undertaking. (267.061(2)(a))

State agencies must consult with the Division when, as a result of state action or assistance, a historic property will be demolished or substantially altered in a way that will adversely affect the property. State agencies must take timely steps to consider feasible and prudent alternatives to the adverse effect. If no feasible or prudent alternatives exist, the state agency must take timely steps to avoid or mitigate the adverse effect. (267.061(2)(b))

State agencies must consult with Division to establish a program to locate, inventory and evaluate all historic properties under ownership or controlled by the agency. (267.061(2)(c))

State agencies are responsible for preserving historic properties under their control. State agencies are directed to use historic properties available to the agency when that use is consistent with the historic property and the agency’s mission. State agencies are also directed to pursue preservation of historic properties to support their continued use. (267.061(2)(d))

C. Statutory Authority

The full text of Chapter 267, F.S. and additional information related to the treatment of historic properties is available at:

<https://dos.myflorida.com/historical/preservation/compliance-and-review/regulations-guidelines/>

D. Management Implementation

Although the Division sits on the Acquisition and Restoration Council and approves land management plans, these plans are conceptual and do not include detailed project information. Specific information for individual projects must be submitted to the Division for review and comment.

Managers of state lands must coordinate any land clearing or ground disturbing activities with the Division to allow for review and comment on the proposed project. The Division's recommendations may include, but are not limited to: approval of the project as submitted, recommendation for a cultural resource assessment survey by a qualified professional archaeologist, and modifications to the proposed project to avoid or mitigate potential adverse effects.

Projects such as additions or alterations to historic structures as well as new construction must also be submitted to the Division for review. Projects involving structures fifty years of age or older must be submitted to the Division for a significance determination. In rare cases, structures under fifty years of age may be deemed historically significant.

Adverse effects to historic properties must be avoided when possible, and if avoidance is not possible, additional consultation with the Division is necessary to develop a mitigation plan. Furthermore, managers of state property should make preparations for locating and evaluating historic properties, both archaeological sites and historic structures.

E. Archaeological Resource Management (ARM) Training

The ARM Training Course introduces state land managers to the nature of archaeological resources, Florida archaeology, and the role of the Division in managing state-owned archaeological resources. Participants gain a better understanding of the requirements of state and federal laws with regard to protecting and managing archaeological sites on state managed lands. Participants also receive a certificate recognizing their ability to conduct limited monitoring activities in accordance with the Division's Review Procedure, thereby reducing the time and money spent to comply with state regulations. Additional information regarding the ARM Training Course is available at:

<https://dos.myflorida.com/historical/archaeology/education/arm-training-courses/>

F. Matrix for Ground Disturbance on State Lands

The matrix is a tool designed to help streamline the Division's Review Procedure. The matrix allows state land managers to make decisions about balancing ground disturbance and stewardship of historic resources. The matrix establishes types of undertakings that are either minor or major disturbances and then guides the land manager to consult the Division, conduct ARM-trained project monitoring, or proceed with the project. Additional information regarding the matrix is available at:

<https://dos.myflorida.com/historical/archaeology/education/dhr-matrix-for-ground-disturbance-on-state-lands/>

G. Human Remains Treatment

Chapter 872, *Florida Statutes* makes it illegal to willfully and knowingly disturb human remains. In the event human remains are discovered, cease all activity in the area that may disturb the remains. Leave the bones and nearby items in place. Immediately notify law enforcement or the local district medical examiner of the discovery and follow the provisions of Chapter 872, FS. Additional information regarding the treatment of human remains and cemeteries is available at:

<https://dos.myflorida.com/historical/archaeology/human-remains/>
<https://dos.myflorida.com/historical/archaeology/human-remains/abandoned-cemeteries/what-are-the-applicable-laws-and-regulations/>

H. Division of Historical Resources Review Procedure

Projects on state owned or controlled properties may submit projects to the Division for review using the streamlined State Lands Consultation Form. The form provides instructions to submit projects for review and outlines the necessary information for the Division to complete the review process. The State Lands Consultation Form and additional information about the Division's review process is available at:

<https://dos.myflorida.com/historical/preservation/compliance-and-review/state-lands-review/>

* * *

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

Compliance and Review Section
Bureau of Historic Preservation
Division of Historical Resources
R. A. Gray Building
500 South Bronough Street
Tallahassee, FL 32399-0250

StateLandsCompliance@dos.myflorida.com

Phone: (850) 245-6333
Toll Free: (800) 847-7278
Fax: (850) 245-6435

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Appendix I

Florida Master Site File



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This record search is for informational purposes only and does **NOT** constitute a project review. This search only identifies resources recorded at the Florida Master Site File and does **NOT** provide project approval from the Division of Historical Resources. Contact the Compliance and Review Section of the Division of Historical Resources at CompliancePermits@dos.myFlorida.com for project review information.

May 28, 2025



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In response to your request of May 27, 2025, a search of the Florida Master Site File inventory shows no previously recorded cultural resources located on the Morningside Nature Center subject property, Fla.

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

- This search area may contain *unrecorded* archaeological sites, historical structures or other resources even if previously surveyed for cultural resources.
- Federal, state and local laws require formal environmental review for most projects. This search DOES NOT constitute such a review. If your project falls under these laws, you should contact the Compliance and Review Section of the Division of Historical Resources at CompliancePermits@dos.myFlorida.com

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

Sincerely,

Eman M. Vovsi, PhD.
Data Base Analyst/Records Specialist
Florida Master Site File
Eman.Vovsi@DOS.MyFlorida.com

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