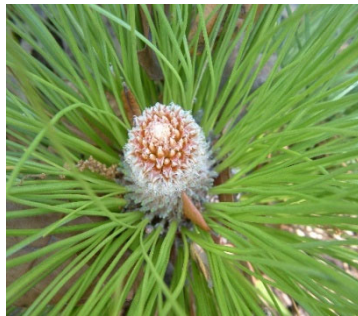


Silver Springs Sandhill
Unit Management Plan
Marion County Parks & Recreation
Marion County, Ocala, Florida
DRAFT



water & air
RESEARCH, INC.

6821 Southwest Archer Road
Gainesville, Florida 32608

May 2019

18-5929-02

LAND MANAGEMENT PLAN COMPLIANCE

CHECKLIST

→ Required for State-owned conservation lands over 160 acres ←

Instructions for managers:

Complete each item and fill in the applicable correlating **page numbers and/or appendix** where the item can be found within the land management plan (LMP). If an item does not apply to the subject property, please describe that fact on a correlating page number of the LMP. Do not mark an "N/A" for any items below.

For more information, please visit the stewardship portion of the Division of State Lands' website at: <http://www.dep.state.fl.us/lands/stewardship.htm>.

Section A: Acquisition Information Items

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
1.	The common name of the property.	18-2.018 & 18-2.021	EX-1, 1
2.	The land acquisition program, if any, under which the property was acquired.	18-2.018 & 18-2.021	EX-1, 1
3.	Degree of title interest held by the Board, including reservations and encumbrances such as leases.	18-2.021	EX-1, 1
4.	The legal description and acreage of the property.	18-2.018 & 18-2.021	Appendix A
5.	A map showing the approximate location and boundaries of the property, and the location of any structures or improvements to the property.	18-2.018 & 18-2.021	Figures 1-1, 2-3
6.	An assessment as to whether the property, or any portion, should be declared surplus. <i>Provide information regarding assessment and analysis in the plan, and provide corresponding map.</i>	18-2.021	60
7.	Identification of other parcels of land within or immediately adjacent to the property that should be purchased because they are essential to management of the property. <i>Please clearly indicate parcels on a map.</i>	18-2.021	60
8.	Identification of adjacent land uses that conflict with the planned use of the property, if any.	18-2.021	60
9.	A statement of the purpose for which the lands were acquired, the projected use or uses as defined in 253.034 and the statutory authority for such use or uses.	259.032(10)	EX-1, 1, 3, 59
10.	Proximity of property to other significant State, local or federal land or water resources.	18-2.021	EX-1, Figures 1-1, 2-4, 2-5, 14, 15

Section B: Use Items

Item #	Requirement	Statute/Rule	Page Numbers and/or
11.	The designated single use or multiple use management for the property, including use by other managing entities.	18-2.018 & 18-2.021	EX-1, 1, 3
12.	A description of past and existing uses, including any unauthorized uses of the property.	18-2.018 & 18-2.021	3, 34
13.	A description of alternative or multiple uses of the property considered by the lessee and a statement detailing why such uses were not adopted.	18-2.018	1, 2,
14.	A description of the management responsibilities of each entity involved in the property's management and how such responsibilities will be coordinated.	18-2.018	1, 2, 44 – 52
15.	Include a provision that requires that the managing agency consult with the Division of Historical Resources, Department of State before taking actions that may adversely affect archeological or historical resources.	18-2.021	35, 36
16.	Analysis/description of other managing agencies and private land managers, if any, which could facilitate the restoration or management of the land.	18-2.021	56
17.	A determination of the public uses and public access that would be consistent with the purposes for which the lands were acquired.	259.032(10)	37- 43, Figures 4-1, 4-2 and 4-3

18.	A finding regarding whether each planned use complies with the 1981 State Lands Management Plan, particularly whether such uses represent “balanced public utilization,” specific agency statutory authority and any other legislative or executive directives that constrain the use of such property.	18-2.021	60
19.	Letter of compliance from the local government stating that the LMP is in compliance with the Local Government Comprehensive Plan.	BOT requirement	Appendix C
20.	An assessment of the impact of planned uses on the renewable and non-renewable resources of the property, including soil and water resources, and a detailed description of the specific actions that will be taken to protect, enhance and conserve these resources and to compensate/mitigate damage caused by such uses, including a description of how the manager plans to control and prevent soil erosion and soil or water contamination.	18-2.018 & 18-2.021	7, 15, 24, 35, 36, 41, 44, 59 - 60
21.	*For managed areas larger than 1,000 acres, an analysis of the multiple-use potential of the property which shall include the potential of the property to generate revenues to enhance the management of the property provided that no lease, easement, or license for such revenue-generating use shall be entered into if the granting of such lease, easement or license would adversely affect the tax exemption of the interest on any revenue bonds issued to fund the acquisition of the affected lands from gross income for federal income tax purposes, pursuant to Internal Revenue Service regulations.	18-2.021 & 253.036	The Sandhill Is < 1,000 acres - NA
22.	If the lead managing agency determines that timber resource management is not in conflict with the primary management objectives of the managed area, a component or section, prepared by a qualified professional forester, that assesses the feasibility of managing timber resources pursuant to section 253.036, F.S.	18-021	13
23.	A statement regarding incompatible use in reference to Ch. 253.034(10).	253.034(10)	2

*The following taken from 253.034(10) is not a land management plan requirement; however, it should be considered when developing a land management plan: The following additional uses of conservation lands acquired pursuant to the Florida Forever program and other state-funded conservation land purchase programs shall be authorized, upon a finding by the Board of Trustees, if they meet the criteria specified in paragraphs (a)-(e): water resource development projects, water supply development projects, storm-water management projects, linear facilities and sustainable agriculture and forestry. Such additional uses are authorized where: (a) Not inconsistent with the management plan for such lands; (b) Compatible with the natural ecosystem and resource values of such lands; (c) The proposed use is appropriately located on such lands and where due consideration is given to the use of other available lands; (d) The using entity reasonably compensates the titleholder for such use based upon an appropriate measure of value; and (e) The use is consistent with the public interest.

Section C: Public Involvement Items

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
24.	A statement concerning the extent of public involvement and local government participation in the development of the plan, if any.	18-2.021	2, Appendix D
25.	The management prospectus required pursuant to paragraph (7)(c) shall be available to the public for a period of 30 days prior to the public hearing.	259.032(8)(b)	2
26.	LMPs and LMP updates for parcels over 160 acres shall be developed with input from an advisory group who must conduct at least one public hearing within the county in which the parcel or project is located. <i>Include the advisory group members and their affiliations, as well as the date and location of the advisory group meeting.</i>	259.032(10)	To be inserted in Final Draft
27.	Summary of comments and concerns expressed by the advisory group for parcels over 160 acres	18-2.021	To be inserted in Final Draft
28.	During plan development, at least one public hearing shall be held in each affected county. Notice of such public hearing shall be posted on the parcel or project designated for management, advertised in a paper of general circulation, and announced at a scheduled meeting of the local governing body before the actual public hearing. <i>Include a copy of each County's advertisements and announcements (meeting minutes will suffice to indicate an announcement) in the management plan.</i>	253.034(5) & 259.032(10)	2, Appendix D
29.	The manager shall consider the findings and recommendations of the land management review team in finalizing the required 10-year update of its management plan. <i>Include manager's replies to the team's findings and recommendations.</i>	259.036	This is year 1 of a new 10-yr plan

30.	Summary of comments and concerns expressed by the management review team, if required by Section 259.036, F.S.	18-2.021	This is year 1 of a new 10-yr plan
31.	If manager is not in agreement with the management review team's findings and recommendations in finalizing the required 10-year update of its management plan, the managing agency should explain why they disagree with the findings or recommendations.	259.036	This is year 1 of a new 10-yr plan

Section D: Natural Resources

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
32.	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding soil types. <i>Use brief descriptions and include USDA maps when available.</i>	18-2.021	5-7, Figure 2-1
33.	Insert FNAI based natural community maps when available.	ARC consensus	Figure 2-2
34.	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding outstanding native landscapes containing relatively unaltered flora, fauna and geological conditions.	18-2.021	10-12, 14, 15, Figure 2-2
35.	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding unique natural features and/or resources including but not limited to virgin timber stands, scenic vistas, natural rivers and streams, coral reefs, natural springs, caverns and large sinkholes.	18-2.018 & 18-2.021	14, Figure 2-2
36.	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding beaches and dunes.	18-2.021	Figure 2-2
37.	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding mineral resources, such as oil, gas and phosphate, etc.	18-2.018 & 18-2.021	6
38.	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding fish and wildlife, both game and non-game, and their habitat.	18-2.018 & 18-2.021	15 - 25, Figure 2-2, Figure 2-3, Tables 2-4 and 2-5
39.	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding State and Federally listed endangered or threatened species and their habitat.	18-2.021	23 - 25, Figure 2-3, Tables 2-3, 2-4 and 2-5
40.	The identification or resources on the property that are listed in the Natural Areas Inventory. <i>Include letter from FNAI or consultant where appropriate.</i>	18-2.021	23, Table 2-5
41.	Specific description of how the managing agency plans to identify, locate, protect and preserve or otherwise use fragile, nonrenewable natural and cultural resources.	259.032(10)	10- 12, 16, 23-25, 35, 36, 64-66
42.	Habitat Restoration and Improvement	259.032(10) & 253.034(5) ↓	1, 2, 44- 58
42-A.	Describe management needs, problems and a desired outcome and the key management activities necessary to achieve the enhancement, protection and preservation of restored habitats and enhance the natural, historical and archeological resources and their values for which the lands were acquired.		1, 2, 44- 58
42-B.	Provide a detailed description of both short (2-year planning period) and long-term (10-year planning period) management goals, and a priority schedule based on the purposes for which the lands were acquired and include a timeline for completion.		52-58, 64-66, Tables 6-1, 7-1a, 7-1b
42-C.	The associated measurable objectives to achieve the goals.		8 -14
42-D.	The related activities that are to be performed to meet the land management objectives and their associated measures. <i>Include fire management plans - they can be in plan body or an appendix.</i>		15, 16, 23 - 25, 44-52
42-E.	A detailed expense and manpower budget in order to provide a management tool that facilitates development of performance measures, including recommendations for cost-effective methods of accomplishing those activities.		Table 7-2
43.	***Quantitative data description of the land regarding an inventory of forest and other natural resources and associated acreage. <i>See footnote.</i>	253.034(5)	Tables 1-1 through 2-5

44.	Sustainable Forest Management, including implementation of prescribed fire management	18-2.021, 253.034(5) & 259.032(10) ↓	8 - 14, 44-58
44-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		8 - 14, 44-58
44-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		8 - 14, 44-58
44-C.	Measurable objectives (see requirement for #42-C).		8 - 14, 44-58
44-D.	Related activities (see requirement for #42-D).		8 - 14, 44-58
44-E.	Budgets (see requirement for #42-E).		59-60, Table 7-2
45.	Imperiled species, habitat maintenance, enhancement, restoration or population restoration	259.032(10) & 253.034(5) ↓	16 – 25, 47-58
45-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		16 – 25, 47-58
45-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		16 – 25, 64-66
45-C.	Measurable objectives (see requirement for #42-C).		16 – 25, 47-58
45-D.	Related activities (see requirement for #42-D).		16 – 25, 47-58
45-E.	Budgets (see requirement for #42-E).		58, Table 7-2
46.	***Quantitative data description of the land regarding an inventory of exotic and invasive plants and associated acreage. <i>See footnote.</i>	253.034(5)	Tables 1-1 through 2-5
47.	Place the Arthropod Control Plan in an appendix. If one does not exist, provide a statement as to what arrangement exists between the local mosquito control district and the management unit.	BOT requirement via lease language	45 -46
48.	Exotic and invasive species maintenance and control	259.032(10) & 253.034(5) ↓	45 - 47
48-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		45 - 47
48-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		45- 47, 64-66
48-C.	Measurable objectives (see requirement for #42-C).		45 - 47
48-D.	Related activities (see requirement for #42-D).		45 - 47
48-E.	Budgets (see requirement for #42-E).		58, Table 7-2

Section E: Water Resources

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
49.	A statement as to whether the property is within and/or adjacent to an aquatic preserve or a designated area of critical state concern or an area under study for such designation. <i>If yes, provide a list of the appropriate managing agencies that have been notified of the proposed plan.</i>	18-2.018 & 18-2.021	14-15, Figure 2-5
50.	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding water resources, including water classification for each water body and the identification of any such water body that is designated as an Outstanding Florida Water under Rule 62-302.700, F.A.C.	18-2.021	Figure 2-2
51.	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding swamps, marshes and other wetlands.	18-2.021	Figure 2-2
52.	***Quantitative description of the land regarding an inventory of hydrological features and associated acreage. <i>See footnote.</i>	253.034(5)	Table 2-2
53.	Hydrological Preservation and Restoration	259.032(10) & 253.034(5) ↓	14-15
53-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		14-15
53-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		14-15

53-C.	Measurable objectives (see requirement for #42-C).		14-15
53-D.	Related activities (see requirement for #42-D).		14-15
53-E.	Budgets (see requirement for #42-E).		14-15

Section F: Historical, Archeological and Cultural Resources

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
54.	**Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding archeological and historical resources. <i>Include maps of all cultural resources except Native American sites, unless such sites are major points of interest that are open to public visitation.</i>	18-2.018, 18-2.021 & per DHR's request	31 – 36, Appendix B
55.	***Quantitative data description of the land regarding an inventory of significant land, cultural or historical features and associated acreage.	253.034(5)	31 - 36
56.	A description of actions the agency plans to take to locate and identify unknown resources such as surveys of unknown archeological and historical resources.	18-2.021	31 - 36
57.	Cultural and Historical Resources	259.032(10) & 253.034(5) ↓	31 - 36
57-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		31 - 36
57-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		31 - 36
57-C.	Measurable objectives (see requirement for #42-C).		31 - 36
57-D.	Related activities (see requirement for #42-D).		31 - 36
57-E.	Budgets (see requirement for #42-E).		Table 7-2

**While maps of Native American sites should not be included in the body of the management plan, the DSL urges each managing agency to provide such information to the Division of Historical Resources for inclusion in their proprietary database. This information should be available for access to new managers to assist them in developing, implementing and coordinating their management activities.

Section G: Facilities (Infrastructure, Access, Recreation)

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
58.	***Quantitative data description of the land regarding an inventory of infrastructure and associated acreage. <i>See footnote.</i>	253.034(5)	3, Figure 2-3, Table 2-2
59.	Capital Facilities and Infrastructure	259.032(10) & 253.034(5) ↓	37-43, 50 - 54
59-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		37-43
59-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		37-43, 50 - 54
59-C.	Measurable objectives (see requirement for #42-C).		37-43
59-D.	Related activities (see requirement for #42-D).		37-43
59-E.	Budgets (see requirement for #42-E).		Table 7-2
60.	*** Quantitative data description of the land regarding an inventory of recreational facilities and associated acreage.	253.034(5)	Figure 2-3
61.	Public Access and Recreational Opportunities	259.032(10) & 253.034(5) ↓	37-43, Figures 4-2, 4-3
61-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		37-43, Figures 4-2, 4-3
61-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		50 - 54
61-C.	Measurable objectives (see requirement for #42-C).		50 - 54
61-D.	Related activities (see requirement for #42-D).		50 - 54
61-E.	Budgets (see requirement for #42-E).		Table 7-2

Section H: Other/ Managing Agency Tools

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
62.	Place this LMP Compliance Checklist at the front of the plan.	ARC and managing agency consensus	
63.	Place the Executive Summary at the front of the LMP. Include a physical description of the land.	ARC and 253.034(5)	EX-1
64.	If this LMP is a 10-year update, note the accomplishments since the drafting of the last LMP set forth in an organized (categories or bullets) format.	ARC consensus	Not a 10-yr update
65.	Key management activities necessary to achieve the desired outcomes regarding other appropriate resource management.	259.032(10)	1, 2, 45- 47, 64-66
66.	Summary budget for the scheduled land management activities of the LMP including any potential fees anticipated from public or private entities for projects to offset adverse impacts to imperiled species or such habitat, which fees shall be used to restore, manage, enhance, repopulate, or acquire imperiled species habitat for lands that have or are anticipated to have imperiled species or such habitat onsite. The summary budget shall be prepared in such a manner that it facilitates computing an aggregate of land management costs for all state-managed lands using the categories described in s. 259.037(3) which are resource management, administration, support, capital improvements, recreation visitor services, law enforcement activities.	253.034(5)	Table 7-2
67.	Cost estimate for conducting other management activities which would enhance the natural resource value or public recreation value for which the lands were acquired, include recommendations for cost-effective methods in accomplishing those activities.	259.032(10)	Table 7-2
68.	A statement of gross income generated, net income and expenses.	18-2.018	

*** = The referenced inventories shall be of such detail that objective measures and benchmarks can be established for each tract of land and monitored during the lifetime of the plan. All quantitative data collected shall be aggregated, standardized, collected, and presented in an electronic format to allow for uniform management reporting and analysis. The information collected by the DEP pursuant to s. 253.0325(2) shall be available to the land manager and his or her assignee.

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List of Acronyms

BA	Basal Area
BMAP	Basin Management Action Plan
FAC	Florida Archaeological Council
FDEP	Florida Department of Environmental Protection
FDHR	Florida Division of Historical Resources
FLEPPC	Florida Exotic Pest Plant Council
FWC	Florida Fish and Wildlife Conservation Commission
FFS	Florida Forest Service
FNAI	Florida Natural Area Inventory
FAS	Forest Area Supervisor
FLUM	Future Land Use Map
ILSF	Indian Lake State Forest
LMP	Land Management Plan
MCCP	Marion County Coehadjoe Park
MCPR	Marion County Parks and Recreation
MCWF	Marion County decommissioned wastewater facility
MU	Management Unit
MVM	Mechanical Vegetation Management
NWCG	National Wildfire Coordinating Group
NRCS	Natural Resource Conservation Service
OLIT	Ocala Longleaf Local Implementation Team
OFW	Outstanding Florida Water

Contents (continued)

RPA	Register of Professional Archeologists
The Sandhill	Silver Springs Sandhill
SHPO	State Historic Preservation Office
S.R.	State Road
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
WCPR	Wildlife Conservation, Prioritization, and Recovery Program

Figures

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Executive Summary

The Silver Springs Sandhill (The Sandhill), was purchased by the State of Florida in August 2017 as part of the Florida Forever Program through the Florida Department of Environmental Protection (FDEP), Bureau of Land Acquisition. This 470-acre property, comprised of five parcels, is one of the largest intact, undeveloped privately-owned tracts less than a mile from the Silver Springs headspring in Silver Springs State Park, a first magnitude spring and located in the most vulnerable aquifer recharge zone. This land management plan (LMP) is associated with a 60-acre decommissioned wastewater treatment site owned by Marion County. The 60-acre parcel and proposed facilities are not included in the State review. The Sandhill property was acquired for the express goals of preserving and protecting land around the spring and the Floridan Aquifer from the effects of commercial, residential, and agricultural runoff; clear-cutting and mining; and unsupervised recreation (Board of Trustees of the Internal Improvement Trust Fund, May 2005).

The State of Florida subsequently entered into a 50-year lease with Marion County for management of The Sandhill property with the requirement that a management plan be prepared and approved by the State of Florida. This document is the first 10-year LMP prepared for The Sandhill for the State of Florida. This document serves as the preliminary draft plan and is being submitted to Marion County. A key component of the plan is for the subject property to be developed, managed, and maintained as a passive park providing protection to the Silver Springs springshed while providing compatible recreational elements that are complementary to other activities in the region. Because of its close proximity to Marion County's Coehadjoe Park (MCCP), Indian Lake State Forest (ILSF), Silver Springs State Park and other notable parks in the region, The Sandhill is an important connector in the Marion County Parks and Recreation Master Plan trail system.

Upland communities on the site include sandhill, sinkhole, successional hardwood forest, pasture (semi-improved), and pine plantation. The majority of the site contains well-drained soils and karst geology and protection of the recharge of groundwater resources is of top priority. These communities support a diverse array of plant and animal species. Most of the site is disturbed by cattle grazing, varying degrees of fire suppression and historical timbering. Partnerships with other entities will be explored to continue prescribed fire and other management tools for the duration of this plan. A prescribed fire plan must take into account the challenges presented with a complex urban interface.

Recreation use is projected to increase in the near future with the implementation of the proposed components of the Marion County Parks and Recreation Master Plan. This LMP will recommend development of a trail system on The Sandhill to connect MCCP through the site to the ILSF Connector Trail taking the user into ILSF to the north and Silver Springs State Park to the south and beyond. This will require a multiuse paved designation to allow biking through the site connecting to the other biking facilities. Other complementary passive recreation elements this LMP will include a disc golf course and the potential for an outdoor archery facility (primarily located on Marion County decommissioned wastewater facility [MCWF] parcel).

This LMP addresses the items on the Management Plan Compliance Checklist found at the beginning of this document, per Florida Statutes and the Florida Administrative Code provided by the FDEP, Office of Environmental Services, Division of State Lands, and is organized accordingly.

1.0 General Information

Silver Springs Sandhill Land Management and Plan Information Summary

Lead Agency	Marion County Parks and Recreation Department (MCPR), Office of Environmental Services
Common Name:	Silver Springs Sandhill (The Sandhill)
Location:	Marion County, Florida
Acreage Total:	470 acres
Acreage Breakdown:	Land Cover Classification Acreages (Table 2-2)
Use:	Conservation to protect water resources (aquifer protection), Limited Passive Resource based Recreation, Preservation
Management Responsibilities:	The Marion County Parks and Recreation Department will be the agency charged with managing the subject property and implementing the management plan. Other agencies that may provide assistance to the long term management include the Florida Department of Agriculture and Consumer Services, Florida Forestry Service (FFS) and FDEP.
Designated Land Use:	Conservation.
Subleases:	None.
Contracts:	None.
Encumbrances:	None.
Type of Acquisition:	Florida Forever, Fee Simple.
Unique Features:	Longleaf Pine Sandhill, located in Marion County's Primary Springs Protection Zone.
Archaeological/Historical:	Several known and numerous expected sites.
Management Needs:	Prescribed fire, exotic plant control, site security, trash removal, recreational trail and facility development, and ecological restoration.
Acquisition Needs/Acreage:	There are no adjacent properties that could be purchased to enhance the site.

Surplus Lands/Acreage: None.

Public Involvement: For current plan: **XXXX**, 2018 (Appendix D)

Management Coordination

The MCPR will be the agency charged with managing the subject property and implementing the management plan. Other agencies that may provide assistance to the long term management include the Florida Department of Agriculture and Consumer Services, FFS, and FDEP.

Public Participation

Statement of Incompatible Uses The following prohibitions or incompatible uses are addressed in the lease between Marion County and the State of Florida:

- No removal of trees other than nonnative species is allowed without prior written approval of the State of Florida.
- No major land alterations may be done without written permission from the State of Florida.
- All buildings, structures, improvements, and signs will be constructed in accordance with professional designers and require written permission of the State of Florida prior to construction.
- No generation, storage, treatment, or discharge of hazardous, toxic materials, or chemicals are allowed on the property.
- No development or physical alterations are allowed without the State of Florida's written permission until the management plan is approved (except those necessary for security and maintenance of the property).

1.1 Location of Silver Springs Sandhill

The Sandhill is located in central Marion County, near the northeastern corner of the City of Ocala city limits (Figure 1-1). The property is adjacent to and north of Northeast 35th Street and bounded on the west by M CCP, the north and northeast by ILSF, and the southeast by various residential communities (Lindale manufactured home community and Silver Springs Terrace Subdivision). The MCWF is incorporated within the northeast corner of the property and its access road makes up the eastern boundary south of ILSF. The decommissioned wastewater facility remains in Marion County ownership. The property is associated with addresses 4801 and 4811 Northeast 35th Street in Silver Springs, Marion County, Florida. The 470-acre property is located in Sections 35 and 36, Township 14 South and Range 22 East. Figure 1-1 shows the location of the property and depicts the boundary and surrounding landscape including a number of nature based parks and property in the vicinity. Appendix A provides the legal description of the property.

1.2 History and Objectives

The Sandhill is one of the remaining large undeveloped, publicly-owned parcels within the Silver Springs Basin Management Action Plan (BMAP) area and within the Marion County Primary Springs Protection Zone. It also lies in the 2-year Capture Zone for Silver Springs. Silver Springs and Silver River are Outstanding Florida Waters. In close proximity to the property, are the Ocklawaha River Aquatic Preserve, Silver Springs State Park, The Cross Florida Greenway,

and the aforementioned ILSF. Prior to purchase, the site had approval for 1,900 residential units.

The Sandhill is not currently developed with structures or other major improvements. The western portion is a pasture (semi-improved) with scattered oak trees and the eastern portion is heavily wooded land with off-road trails. The Property appeared with several structures in the 1895 topographic map and by the 1940s and 1950s, there was only one structure shown in the central portion of the property. In the 1960s, an additional structure was depicted nearby the other structure. Additional structures appeared in the same area during the 1970s through the 1990s. In the mid-2000s, only one structure was visible in the central area of the property and clearing activity was occurring on the western portion of the property. The structure was no longer shown by the 2010s (PSI, 2017).

The two primary objectives of the acquisition of the Sandhill are 1) to remove the threat of future development (conservation to protect water resources [aquifer protection]), and 2) to enhance public access to public lands for limited passive resource based recreation.

Marion County is committed to providing for the protection of water resources and viable outdoor recreation opportunities in the community. Over 500,000 acres of publicly-owned lands are in the vicinity of Silver Springs, and Marion County has developed a recreation vision that includes trails, open space and water connections to Silver Springs. Preservation of The Sandhill and development of its potential for various passive recreation opportunities is part of this LMP.

Past Uses of the Property

The two major existing conditions of The Sandhill site are indicative of the current and past uses. The current use of the semi-improved pasture on the western half is cattle grazing, primarily as a part of a cow/calf operation, along with very limited hunting. The cattle lease is year-to-year and will expire when grazing and public use conflicts. The unmanaged forested areas on the eastern half have limited jeep trails that have not been used until the recent debris removal efforts undertaken by the last owner. Also, within the forested area, are remnants from an old homestead, mounds of debris and rubbish, and obvious land alterations such as a borrow area and associated soil mounds. It is unclear why the borrow area was created. Prior to the selective timbering of both areas, the property was used for harvesting of turpentine.

Existing Physical Features and Improvements

Existing features and improvements include perimeter fencing and limited interior fencing in the semi-improved pasture, and various jeep trails and woods roads (Figure 2-3). A borrow area is located at the most recent home site. A defunct powerline running southeast connects this home site to a main line along the eastern property boundary.

1.3 Previous Management Plans

There are no previous management plans.

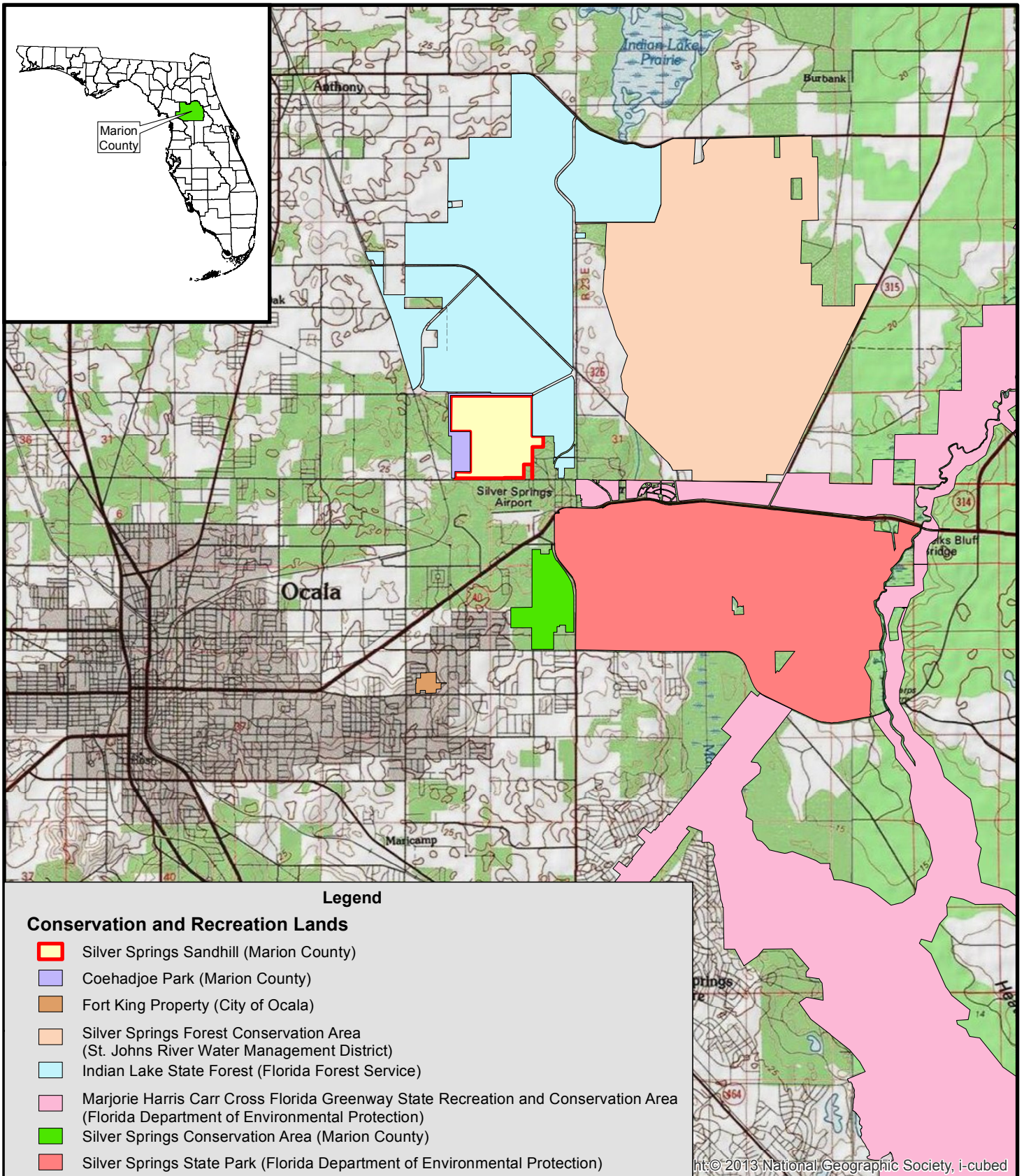
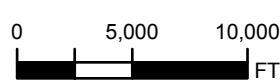


Figure 1-1.
 Location of Silver Springs Sandhill and other Nearby
 Conservation and Recreation Lands and Managing Agency
 Marion County, Florida

Source: FNAI, 2018; Water & Air Research, Inc., 2018.



2.0 Natural Resources

The two primary objectives of the acquisition of The Sandhill were to remove the threat of future development (conservation to protect water resources and aquifer protection) and to enhance public access to public lands for limited passive resource based recreation. Additional objectives include the protection of the area's valuable natural and cultural resources. The site is unique in providing recreational use, conservation of a valuable sandhill natural community and environmental education opportunities to inform users about the sandhill community and aquifer protection. The Sandhill also provides a buffer between urbanization and important conservation resources such as the ILSF and M CCP.

Updates to plant and animal lists, exotic species management requirements, and application of prescribed fire will be on going.

The preferred result of The Sandhill LMP is to maximize the conservation and recreation values relative to the management objectives and achievable management goals. For this to occur, achievable and measurable site-specific ecological criteria were identified to determine the best management practices and habitat restoration needs for The Sandhill.

2.1 Soils and Topography

2.1.1 Soil Distribution

The U.S. Department of Agriculture's (USDA) Natural Resource Conservation Service (NRCS) Soil Survey of Marion County identifies a single dominant soil type and potentially two secondary soil types within The Sandhill site (NRCS 2018). The soils within The Sandhill are relatively intact with conspicuous evidence of historical excavating (borrow area), interior jeep trails, pasturage, and localized disturbances associated with previous land uses. Table 2-1 presents soils and surface acreage coverage within The Sandhill. The distribution of the soils is exhibited in Figure 2-1.

The majority of The Sandhill site (eastern forested half and southern portion of the semi-improved pasture) occurs as a relatively flat upland. Sloping knolls and low ridges are characteristic of the northwestern pasture (semi-improved). The Sandhill site averages 70 feet elevation with the highest elevation (90 feet above sea level) in the northwestern corner and lowest elevation of 62 feet in a central area of the site. The northern portion of The Sandhill generally slopes interior to the site from the north to the east.

The landscape consists of the Candler-Apopka Soil Association, a broad, non-hydric, upland soil complex that is nearly level and excessively drained. The entire site consists of Candler fine sand, a nearly level to gently sloping upland soil series (Figure 2-1). This soil series is an excessively well-drained soil that has a depth to the water table of 72 inches or more.

The Pine/Sandhill natural community typically occurs throughout the upland ridges associated with this soil type. At much smaller, unmapped scales, there may be very limited inclusions of the non-hydric soil series, Tavares Sand or Arredondo Sand. These typically occur as knolls or small depressions in sandhills important in aquifer recharge hydrology as isolated, non-wetland areas.

There are no known mineral resources (oil, gas, phosphate) on the property and there are no extractive activities proposed for the property. Since the State of Florida holds the title to The Sandhill, it is not known whether the deed includes mineral rights.

Table 2-1. Silver Springs Sandhill Soils Distribution, Marion County, Florida

Soil Type	Acreage	Percent
Candler sand, 0 to 5 percent slope	469.8740	99.9647
Tavares	0.1620	0.0345
Arredondo, 0 to 12 percent slope	0.0040	0.0009
Totals	470.0400	

2.1.2 Soil Description

Almost 100 percent of The Sandhill site is comprised of Candler sand. The Tavares and Arredondo soils are virtually non-existent on The Sandhill and as mapped, are confined to very small portions of the eastern boundary (Figure 2-1).

Candler Sand (22)

This soil series comprises over 99 percent of The Sandhill site. It is characterized as broadly rolling sandhill and small, sand-bottom depressions. These are deep sandy areas intermixed with smaller areas of sandy slopes and near level excessively drained and well drained sandy soils, some with thin sandy lamellae at depth of 60 to 80 inches and others, loamy at depth of 40 to 80 inches. Candler soils are excessively drained, gray surface soils with yellow and brown sands below 67 inches. Minor soil type inclusions may be extant throughout the Candler sands and associated with non-hydric, upland depressions (sinkholes in the semi-improved pasture) and low knolls important in aquifer recharge hydrology. Natural state vegetation is turkey oak (*Quercus laevis*), bluejack oak (*Quercus incana*), sand post oak (*Q. margarettae*) and longleaf pine (*Pinus palustris*); sand pine (*Pinus clausa*) or slash pine (*Pinus elliotii*) may be artifact of previous land use. With limited fire management, a secondary understory of various oaks and other hardwoods is conspicuous and groundcover limited (becomes successional hardwood forest).

Occasionally, mixed throughout the Candler sand, the Tavares sand and Arredondo sand series comprise 1 percent of The Sandhill, at much smaller, unmapped scales and as limited inclusions of non-hydric soil types.

Tavares Sand (69)

The Tavares series consists of very deep, moderately well-drained soils situated within upland knolls. Slopes range from 0 to 8 percent. The water table is between depths of 106 to 183 centimeters (42 to 72 inches) for more than 6 to 10 months during most years but, recedes to depths greater than 183 centimeters (72 inches) during periods of drought. The natural state vegetation consists of slash pine, longleaf pine, a few scattered blackjack oak (*Quercus*

marilandica), turkey oak, and post oak (*Quercus stellata*) with a groundcover of pineland three awn (*Aristida beyrichiana*).

Arredondo Sand (9)

The Arredondo series consists of well drained soils that are rapidly permeable in the thick sandy surface and subsurface layers and moderate to very slow in the subsoil. These sands are well drained, with slow runoff. Permeability is rapid in the sandy layer and moderate to very slow in the subsoil. Natural state vegetation consists of slash pine, longleaf pine, and loblolly pine (*Pinus taeda*), magnolia (*Magnolia grandiflora*); red oak (*Quercus falcata*), live oak (*Quercus virginiana*), laurel oak (*Quercus laurifolia*) and water oak (*Quercus nigra*); hickory (*Carya spp.*), sweetgum (*Liquidambar styraciflua*) and dogwood (*Cornus florida*).

2.1.3 Soils Management Measurements

No additional management is needed to maintain existing soil conditions on The Sandhill. To protect the integrity of existing native soils, however, the importation of non-native soils (e.g., road maintenance and culvert installation) should be minimized. Potential issues with imported substrates include the spread of exotic invasive species' seeds or propagules and potential to change the chemistry of native soils. The goals and objectives of other components of this LMP protect the integrity of the native soils by applying appropriate management of the natural communities and preventing erosion during planned management and development tasks such as: fire line development, trail construction, road development, and development of the various other recreation resources. To the greatest extent practicable, all management tasks using vehicles should limit travel to established trails and fire lines to prevent soil compaction and rutting.

Fire lines created during wildfires, should they occur, shall be rehabilitated to natural elevations. Potential management tasks that are not included in this plan and that may require earthwork will be conducted in a manner to protect soil integrity and elevations such as using erosion protection and rehabilitating natural soil elevations when unavoidable soil impacts do occur.

Soil erosion can occur along heavily used trails, in areas where runoff is inadequately controlled and along steep slopes. The site will be periodically monitored for erosion, especially around the sinkholes and where trails are established on slopes, and management strategies implemented to reduce any observed erosion problems. A good time to survey for erosion issues would be after large rain events.

2.2 Natural Communities

2.2.1 Vegetation Community and Land Cover Descriptions and Management Needs

A summary of the biological resources on The Sandhill is outlined below including natural vegetation communities and land cover mapping (Figure 2-2), observed plant and animal species (Tables 2-3 and 2-4), as well as listed plant and animal species that potentially may occur within The Sandhill site (Table 2-5). The Florida Natural Areas Inventory (FNAI) was queried for listed or rare species that may have been documented on site, there are FNAI documented listed species occurrences for The Sandhill area (Tables 2-3 and 2-4). Gopher tortoise was observed on site in 2018 and is the only listed species (Table 2-3) observed (including plants).

Land use cover has been categorized and mapped according the FNAI nomenclature (http://fnai.org/PDF/FNAI-Natural-Community-Classification-Guide-2010_20150218.pdf). Natural vegetation communities include the sandhill habitat and altered land cover types include; the borrow area, clearing/regeneration, pasture-semi-improved, pine plantation – sand pine and successional hardwood forest. All of the mapped land uses and communities were historically sandhill habitat.

Table 2-2. Silver Springs Sandhill Natural and Altered Land Covers, Marion County, Florida

FNAI Land Cover	Acres	Percent
Pasture (semi-improved)	213.46	40.91
Successional hardwood forest	203.05	38.91
Sandhill	51.56	9.88
Clearing/regeneration	37.93	7.27
Pine plantation- sand pine	14.46	2.77
Borrow area	1.36	0.26
Sinkhole		
Total Acres	470.04	

Notes: FNAI 2010.

2.2.2 Vegetation Community Description and Management Needs Pasture (Semi-Improved)

The western 213 acres, approximately half of The Sandhill site, is semi-improved pasture and is characterized by open herbaceous areas with clusters of trees and shrub species, some preexisting prior to clearing (between 1995 and 1998) and some recruited. The most common trees include live, laurel, and turkey oaks, persimmon (*Diospyros virginiana*) and some sand pine. Common shrubs include beautyberry (*Callicarpa americana*), winged sumac (*Rhus copallinum*) and saplings of the previously mentioned tree species. The southern half of the semi-improved pasture is nearly level with the northern half with rolling hills, open vistas, fewer tree clusters and topographical relief approaching 20 feet. Groundcover species are dominated by the planted non-native bahiagrass (*Paspalum notatum*) and the native sensitive pea (*Chamaecrista nictitans*). Other common groundcovers include the exotic species Bermudagrass (*Cynodon dactylon*), hairy indigo (*Indigofera hirsuta*), Caesarweed (*Urena lobata*) and the Florida Exotic Pest Plant Council (FLEPPC) category I species rose natalgrass (*Melinis repens*) and FLEPPC (II) tropical soda apple (*Solanum viarum*).

Management Needs for the Pasture - semi-improved

- Removal of interior fencing
- Prescribed fire
 - Development of a prescribed fire plan
 - Creation of fire breaks/lines
 - Implementation of prescribed fire
- Exotic species management
- Restoration
 - Restoration plan development
 - Protection of desired stands of trees.
 - Bahiagrass chemical treatment
 - Longleaf pine planting
 - Groundcover planting or seeding

Desired Future Condition of the Pasture - semi-improved

The desired future condition of the semi-improved pasture would be to establish a sandhill community with the understanding that it would not have the groundcover or shrub diversity of a natural sandhill. It would also be desirable to maintain the open vistas and some of the clustered tree groupings.

Successional Hardwood Forest

The successional hardwood forest is the largest community on The Sandhill property (203 acres) and is considered by FNAI to be an altered land cover type. The canopy, sub-canopy, shrub layer, and groundcover components of this community have been heavily disturbed by decades of fire suppression and previous clearing as is some limited areas within the Sandhill, but to such a degree such that the hardwood invasion almost completely eliminates the use of prescribed fire for enhancement and restoration. Historically, this community was sandhill, but very few, if any, areas of this community contain fine fuels that would carry fire.

The successional hardwood forest is characterized by a dense canopy of invasive oak species, punctuated with some open canopy sand patches with remnant sandhill species (not enough to carry fire), some areas of dense sand pine and very few scattered long leaf pine.

Predominant tree species include laurel oak, water oak, live oak, and some turkey oak with dense occasional patches of sand pine. Longleaf pine is extremely limited in extent. Carolina laurelcherry (*Prunus caroliniana*) and black cherry (*P. serotina*), and the exotic species mimosa (*Albizia julibrissin*) are common. Predominant shrub species in the northern area are saw palmetto (*Serenoa repens*), American beautyberry, and muscadine (*Vitis rotundifolia*).

Typical groundcovers include greenbriar (*Smilax* sp.), Virginia creeper (*Parthenocissus quinquefolia*), poison oak (*Toxicodendron pubescens*), tailed bracken (*Pteridium aquilinum* var. *pseudocaudatum*), and dwarf huckleberry (*Gaylussacia dumosa*).

Management Needs for the Successional hardwood forest

- Prescribed fire
- Exotic species management
- Hardwood management (chemical treatment and/or mechanical removal)
- Restoration
 - Restoration plan development
 - Longleaf pine planting
 - Groundcover planting or seeding

Restoration of this forest will require mechanical and or herbicide based tree removal and the reintroduction of fire. Where characteristic herbaceous species (e.g., wiregrass) have been lost, reintroduction via seed or plants may be necessary to restore natural species composition and community function.

Desired Future Condition of the Successional Hardwood Forest

The desired future condition of the successional hardwood forest would be to establish a sandhill community with the understanding that it would not have the groundcover or shrub diversity of a natural sandhill.

Sandhill

The 52-acre sandhill is the only natural community on The Sandhill site and is reasonably intact despite disturbance from historical fire suppression and land clearing/timbering, prior to 1999. The sandhill community is listed by FNAI as global rank G3 (either very rare and local throughout its range or found locally in a restricted range or vulnerable to extinction from other factors) and state rank S2 (imperiled in state because of rarity or because of vulnerability to extinction due to some natural or man-made factor). This community occurs in the northern portion of the forested eastern half of the site adjacent to and west of the old spray fields (management unit [MU] 5) and south of the spray fields in MU 7. It is located on well-drained Candler soils. All other land uses and communities mapped on The Sandhill site were historically this sandhill community.

Table 2-3 contains all observed plant species within the sandhill. Predominant tree species in the sandhill include longleaf pine, turkey oak, live oak and sand post oak. Portions contain laurel and water oaks, especially at the interfaces with the successional hardwood forest. Evidence of longleaf pine timbering was observed (15- to 30-inch diameter trees), clearing (pre 1999 via aerial photography) and the lack of fire allowed the oak species, especially the turkey oak, to become much more prevalent than in a sandhill with a natural or prescribed fire regime.

The shrub layer is sparse throughout the sandhill although there are occasional blueberries such as sparkleberry (*Vaccinium arboreum*), deerberry (*V. stamineum*), and blueberry (*V. myrsinites*). More abundant shrubs include three pawpaw species (*Asimina angustifolia*, *A. incana*, *A. reticulata*), occasional saw palmetto, and the saplings sized laurel, water, and turkey oaks.

The groundcover component of the sandhill has some diversity considering the lack of fire and the historical clearing. The predominant species include wiregrass which is very important for

carrying fire across the landscape, gopher apple (*Geobalanus oblongifolius*) occasional tailed bracken, poison oak, narrowleaf silkgrass (*Pityopsis graminifolia*), and many other desirable sandhill species.

On site habitat diversity, quality of the sandhill (despite some disturbance due to historical fire suppression), and proximity to the Silver Springs State Park to the south provide good wildlife habitat value on the subject property.

Animals characteristic of sandhill that were observed in the 2018 field survey are tabulated in Table 2-4.

Management Needs for The Sandhill

- Prescribed fire
- Exotic species management
- Hardwood management (chemical treatment and/or mechanical removal)

Desired Future Condition of The Sandhill

(From FNAI 2010)

Sandhills generally are characterized by a scattered open tree canopy over a dense, grassy and herbaceous understory. Longleaf pine is the primary overstory tree species with various oak species such as turkey oak or sand post oak interspersed (Basal Area [BA] ≤ 10 square feet per acre (ft²/ac). The longleaf pine stands are uneven-aged, generally containing at least three age classes including large old trees, with an average BAs ranging from 60 to 80 ft²/ac. This BA goal is for fully stocked stands (fully stocked stands are stands in which all the growing space is effectively occupied but which still have ample room for development of the trees). At different forest growth stages, the average BA can be less, such as: young stands undergoing regeneration and stands thinned to spur regeneration and growth. Typical sandhill midstory is patchy, with a mix of longleaf regeneration (saplings and seedlings), and hardwoods in varying densities. Species that should not be present including atypical sandhill species such as: sand pine, slash pine, loblolly pine, and laurel and water oaks. Exotic species should not be present.

Fire is a dominant environmental factor in sandhill ecology (Myers 1990). Frequency, intensity, and season are important fire characteristics that influence community structure and species composition (Myers 1990). Frequent low-intensity ground fires in the growing season reduce hardwood competition and perpetuate pines and grasses (Platt et al. 1988; Robbins and Myers 1992). Provencher et al. (2003) found that herbaceous and faunal species diversity in sandhill increases with application of prescribed fires in areas where fire had long been excluded. The natural or historic frequency of fire in sandhill is every 1 to 3 years (Frost 1998).

The continuous, grassy understory includes: wiregrass, lopsided indiagrass (*Sorghastrum secundum*), and pineywoods dropseed (*Sporobolus junceus*). Common herbaceous species are blazing star (*Liatris spp.*), deer tongue (*Carphephorus spp.*), blackroot (*Pterocaulon pycnostachyum*), and Florida elephant's-foot (*Elephantopus*

elatus) and have flowering triggered by growing season fires. Occasional patches of woody shrubs also occur.

Sandhill animals are dispersed throughout the community type in healthy, sustainable populations. Species such as gopher tortoise (*Gopherus polyphemus*), gopher frog (*Lithobates capito*), eastern indigo snake (*Drymarchon corais couperi*), striped newt (*Notophthalmus perstriatus*), pocket gophers (*Geomys pinetis*), Sherman's fox squirrel (*Sciurus niger shermani*), Eastern diamondback rattlesnake (*Crotalus adamanteus*), Florida pine snake (*Pituophis melanoleucus mugitus*), Bachman's sparrow (*Aimophila aestivalis*), and red cockaded woodpecker (*Picoides borealis*) can be located with reasonable ease. Microhabitats such as large trees, stump holes, bare sand, and logs contain the appropriate associated fauna. Brown-headed nuthatches (*Sitta pusilla*) are frequently heard calling during the day, indicating good fire history and site quality.

Clearing/regeneration

Two areas on The Sandhill site have been classified as clearing/regeneration using the FNAI altered land use type. The remnant home site near the borrow area near the center of the eastern halves successional hardwood forest is approximately 3 acres and the cleared portions of the MCWF parcel in the northeast corner of The Sandhill site is approximately 35 acres.

The 3-acre historical home site has regenerated with assorted native weedy species and oaks and contains the most diverse assortment of non-native and exotic/invasive species. At some point in the past, the area may have been a small plant nursery as evidenced by plant containers and irrigation debris and the diverse array of non-native species. Table 2-3 contains the plant species list for this area. Remnant fencing and trash will be removed.

The 35-acre clearing on the MCWF portion of The Sandhill site has regenerated in various herbaceous Florida native weedy species with some exotics. The outer fringe of the MCWF land is made up of successional hardwood forest and is within the 6-foot chain-link fence that delineates the MCWF. Unlike the successional hardwood forest outside of the chain-link fence, this forested area contains large longleaf pine and a more diverse array of remnant sandhill species mixed in with the weedy oak species. The remnant sandhill species remain, as this area was not logged in the late 1990s (prior to 1999) when the rest of The Sandhill site was. The wastewater facility was built just prior to 1999.

Management Needs for the Clearing/regeneration (old homesite)

- Exotic species management
- Trash removal
- Restoration
 - Restoration plan development
 - Longleaf pine planting
 - Groundcover planting or seeding
- Prescribed fire

Management Needs for the Clearing/regeneration (MCWF parcel)

Central Cleared Portion

- Mowing to prevent woody species invasion
- Archery site development

Forested fringe

- Exotic species management
- Hardwood removal
- Prescribed fire

Desired Future Condition for the Old Home Site Clearing/Regeneration

The desired future condition would be a reduction of exotic/invasive species to <5% and to remove all trash and remnant fencing.

Desired Future Condition of the Clearing/regeneration (MCWF parcel)

The desired future condition of the MCWF clearing/regeneration area would be a multi-use archery facility with the periphery left wooded. The wooded fringe could contain a meandering 3D archery field course (see Section 4.2). Periodic fire and exotic/invasive species management would likely be required.

Pine Plantation – Sand Pine

Approximately 15 acres of dense sand pine plantation is located along the eastern boundary of The Sandhill site (Figure 2-2). The area was cleared and planted prior to the early 1990s (historical aerial photography). Sand pine mortality and storm damage (blown over trees) was observed during the Fall 2018 site visit. Although some desirable native remnant sandhill species currently occur (wiregrass, Virginia snakeroot [*Aristolochia serpentaria*], netted pawpaw, chaffhead [*Carphephorus corymbosus*], spurred butterfly pea [*Centrosema virginianum*], gopher apple and tailed bracken they are in low numbers and limited distribution. Pyrogenic fire carrying herbaceous species are not common and are in low numbers. Non-sand pine tree species are present in low numbers and are predominantly laurel and turkey oaks, blackcherry and camphor (*Cinnamomum camphora*) (FLEPPC [1]).

Groundcover species have been severely impacted by logging and mechanical site preparation for the sand pine planting. It is possible than some of the remnant sandhill groundcover species can be partially restored by frequent burning, although some planting of perennial grasses such as wiregrass may be required. As sand pine can be a weedy species in sandhill ecosystems, its removal and replanting with long leaf pine is recommended. Detrimental impacts to existing desirable groundcover species will be an issue during sand pine removal and replanting and should be mitigated to every extent possible.

Management Needs for the Pine Plantation – Sand Pine

- Sand pine removal
- Restoration
 - Restoration plan development
 - Longleaf pine planting

- Groundcover planting or seeding
- Prescribed fire
- Exotic species management

Desired Future Condition of the Pine plantation – Sand Pine

The desired future condition of the sand pine plantation would be to establish a sandhill community with the understanding that it would not have the groundcover and shrub diversity of a natural sandhill.

Borrow Area

The less than 1.5-acre steep-sided dry borrow area was excavated prior to 1996 for unknown reasons and it appears as if at least some of the spoil is still on site and adjacent to the borrow pit. The borrow pit area adjacent to the old home site (clearing/regeneration) contains household garbage and an abundance of car tires. Some common Florida native species include maiden fern (*Thelypteris* spp.), woodsgrass (*Oplismenus* spp.), muscadine and pokeweed (*Phytolacca americana*). The most common species, however, are FLEPPC category I and II exotic invasive species including, mimosa, air potato (*Dioscorea bulbifera*), Cogongrass (*Imperata cylindrica*), popcorn tree (*Triadica sebifera*), and Chinese wisteria (*Wisteria sinensis*).

Management Needs for the Borrow Area

- Exotic species management
- Trash removal
- Determination of potential alternative uses

Desired Future Condition of the Borrow Area

The desired future condition of the borrow area would be the complete removal of trash and the reduction of exotic/invasive species to <5 percent cover. Alternative uses to be determined.

Sinkhole

Two shallow, small, dry sinkholes occur on the western half of The Sandhill site in the semi-improved pasture (Figure 2-4). The largest of the sinkholes is near the northeast corner of MCCP and is impacted by cattle grazing and the exotic/invasive species tropical soda apple and popcorn tree.

Management Needs for the Borrow Area

- Exotic species management
- Limiting cattle influenced erosion

Desired Future Condition of the Borrow Area

The desired future condition would be the elimination of erosion and exotic/invasive species.

2.3 Water Resources

Water Resources – Hydrology

The property lies within the Strouds Creek Ocklawaha River drainage (Figure 2-4) within the physiographic area of the Central Valley along peninsular Florida. There are no surface water features on The Sandhill due to a dominance of well-drained sands on the property.

In the western semi-improved pasture near the northeast corner of MCCP is a small gently sloped sinkhole. There was no evidence of standing water in the karst feature. A few other depressions on the site appear to indicate karst activity, but they are not as prominent as this approximately 20-foot sinkhole depression near the western boundary.

Water Resources – Geology

Studies by a team of scientists delineated the areas of water recharge that feed Silver Springs, including the land now known as ILSF and The Sandhill (Farrell and Upchurch 2005, Shoemaker, et. al 2004). The Sandhill site is within the delineated area and is in Silver Spring's 2-year capture zone. The 2-year capture zone represents the distance a particle in the aquifer travels in a 2-year period before reaching Silver Springs.

Geological formations in the region consist of Holocene deposits (undifferentiated sand, shell, clay, marl, and peat), the Hawthorn formation (clay, clayey sand, and sand), and Ocala limestone (porous, brittle calcium carbonate with some chert nodules). A shallow water table aquifer and the deeper Floridan Aquifer occur on the property. The aquifer is typically confined by Miocene clays east of Silver Springs.

Due to the soil types and geology of the Sandhill, it lies within the Silver Springs BMAP area and within the Marion County Primary Springs Protection Zone. The Sandhill is also in the highest aquifer vulnerability zone as per the Marion County Aquifer Vulnerability Assessment.

2.3.1 Aquatic Preserves and Outstanding Florida Waters

The adjacent Silver Springs State Park contains Silver Springs, which is an Outstanding Florida Water. The Sandhill is also in close proximity to the Ocklawaha River Aquatic Preserve, also an Outstanding Florida Water Way. The Sandhill site is in Marion County's highest recharge area (Watershed and Aquifer Vulnerability). Figure 2-5 depicts Outstanding Florida Waters and Aquatic Preserves in the vicinity of The Sandhill.

2.3.2 Water Resource Management Measures

The majority of The Sandhill site contains well-drained soils and geology conducive to both surficial and Floridan Aquifer recharge. Sinkholes and karst depressions indicate the site's sensitivity to groundwater contamination and value for aquifer recharge. Protection of the recharge potential of the site is a priority and will be accomplished by limiting impervious surfaces and containing any stormwater for recharge on site.

Protection of groundwater resources from possible sources of contamination will be accomplished by prohibiting storage of hazardous materials, toxic substances, and chemicals on the property. The only exception allowed is the temporary handling of small quantities of herbicides used to control exotic invasive plants. Best management practices will be employed when using herbicides on site; widespread application of herbicides is discouraged. Regular monitoring and early intervention to prevent widespread infestations of exotic invasive plants is essential to limiting possible adverse effects to groundwater resources by herbicide application.

The Sandhill will be periodically monitored, especially the perimeter, for signs of dumping. Any illegal dumping will be reported and actions taken to reduce the likelihood of continued dumping. Any evidence of dumping that has the potential for contaminating groundwater resources will be reported and mitigated upon discovery.

2.4 Fish and Wildlife Resources

2.4.1 Existing Conditions

Tables 2-3 and 2-4 depict the plant and animal species observed during the Fall 2018 survey, including listed and exotic species. Table 2-5 contains listed animal and plant species that may potentially occur on The Sandhill based on literature reviews and source data (Humphrey 1992; Kale and Maehr 1990; Mole 1992; Rodgers, et al 1996; Wunderlin and Hansen 2011; ILSF 2011). Web-based reviews (e.g., FNAI Biodiversity Matrix Query; Wunderlin, 2018) were also conducted and the results are also included in Table 2-5. The FNAI inquiries and biota listings shall be updated periodically as new species are documented on The Sandhill. Sources of information reviewed include:

- The 2018 biological surveys of The Sandhill,
- The FNAI Biodiversity Matrix Query,
- E Bird Hotspots- Silver Springs State Park, Ocala National Forest <https://ebird.org>

To date, the initial survey (Water & Air 2018) of The Sandhill has documented five species of reptiles including one listed species (gopher tortoise); 25 species of birds; 6 mammal species including 2 non-natives (exotic) (nine-banded armadillo, cow) and 14 invertebrates including two introduced species (Tables 2-3 and 2-4).

2.4.2 Management Measures for Fish and Wildlife

Management Measures for All Imperiled Species

Marion County is committed to the management and protection of endangered and threatened species that are residents or transients on The Sandhill. Various management activities will be implemented to protect listed species and improve the habitat that they use. Strategies include:

- Continued and enhanced use of prescribed burning on the property to enhance and restore the function of the fire dependent communities.
- Survey for endangered and threatened species in proposed construction areas prior to development activities.
- Take steps to develop a natural resource monitoring program on the property to document vegetation and wildlife, and to track invasive exotic species, and evaluate impacts of management.
- Preserve and protect endangered and threatened species habitat by sensitive site planning, adequate monitoring and inventory, and resource-based management.
- Consideration will be given to a multi-season, listed plant species survey to assist with the prioritization of prescribed fire.

The primary land management goals and objectives focus on habitats and natural communities utilized by listed plant and animal species, rather than individual species themselves. The prescribed burn program and the management of exotic invasive plants and animals are the primary management tasks used to improve habitats and, subsequently, plant and animal populations. The implementation of these programs will be ongoing on The Sandhill site (exotic

Table 2-3. Observed Flora in 2018 on the Silver Springs Sandhill, Marion County, Florida

		Florida Natural Areas Inventory Natural and Altered Land Cover Types								
Scientific Name	Common Name	Exotic/Listed Ranking	Comments	Sandhill	Pine	Successional	Pasture -	Borrow area	Clearing/ regeneration	
					Plantation - Sand pine	hardwood forest	semi-improved			
<i>Acalypha gracilens</i>	Threeseed mercury					X				
<i>Acer rubrum</i>	Southern red maple					X				
<i>Agalinis setacea</i>	Threadleaf false foxglove			X			X			
<i>Albizia julibrissin</i>	Mimosa	FLEPPC(I)	Eradication underway	X		X		X	X	
<i>Amanita spp.</i>	Agaric		Fungus		X					
<i>Andropogon gyrans</i> var. <i>gyrans</i>	Elliott bluestem			X						
<i>Andropogon virginicus</i>	Broomsedge bluestem			X	X	X	X			
<i>Ardisia crenata</i>	Coral ardisia	FLEPPC(I)						X		
<i>Aristida beyrichiana</i>	Wiregrass			X	X	X				
<i>Aristida condensata</i>	Threeawn			X		X				
<i>Aristida purpurascens</i>	Feather threeawn			X						
<i>Aristolochia serpentaria</i>	Virginia snakeroot				X	X				
<i>Asclepias humistrata</i>	Pinewoods milkweed			X						
<i>Asimina angustifolia</i>	Pawpaw					X				
<i>Asimina incana</i>	Pawpaw			X		X				
<i>Asimina reticulata</i>	Netted pawpaw			X	X	X				
<i>Asparagus aethiopicus</i>	Sprenger's asparagus-fern	FLEPPC(I)							X	
<i>Baccharis halimifolia</i>	Groundsel tree					X			X	
<i>Balduina angustifolia</i>	Coastal honeycomb			X		X				
<i>Berlandiera subacaulis</i>	Florida greeneyes			X						
<i>Bidens alba</i>	Beggar needles				X	X	X	X		
<i>Broussonetia papyrifera</i>	Paper mulberry	FLEPPC(II)				X		X		
<i>Bulbostylis wari</i>	Ware's hairsedge			X						
<i>Buxus sp.</i>	Boxwood	Exotic							X	
<i>Callicarpa americana</i>	American beautyberry				X	X	X			
<i>Campsis radicans</i>	Trumpet creeper					X				
<i>Carphephorus corymbosus</i>	Chaffhead			X	X	X				
<i>Carya tomentosa</i>	Mockernut hickory					X				
<i>Catalpa bignonioides</i>	Southern catalpa									
<i>Cenchrus echinatus</i>	Southern sandbur					X			X	
<i>Centrosema virginianum</i>	Spurred butterfly pea				X	X				
<i>Chaerophyllum tainturieri</i>	Hairy chervil					X			X	
<i>Chamaecrista nictitans</i>	Sensitive pea			X			X			
<i>Chamaesyce hyssopifolia</i>	Sandmat					X			X	
<i>Chapmannia floridana</i>	Florida alicia					X				
<i>Chenopodium ambrosioides</i>	Mexican tea	Exotic		X						
<i>Chrysopsis scabrella</i>	Coastal plain goldenaster			X		X			X	
<i>Chrysopsis subulata</i>	Shrubland goldenaster			X		X				
<i>Cinnamomum camphora</i>	Camphortree	FLEPPC(I)		X	X	X			X	
<i>Citrus sinensis</i>	Sweet orange	Exotic							X	
<i>Cladonia evansii</i>	Cup lichen		Lichen			X				
<i>Cladonia leporina</i>	Cup lichen		Lichen	X		X				
<i>Cladonia rappii</i>	Cup lichen		Lichen			X				
<i>Cladonia spp.</i>	Cup lichen		Lichen			X				
<i>Cladonia subtenuis</i>	Cup lichen		Lichen			X				
<i>Clerodendrum sp.</i>	Glorrybower	Exotic							X	
<i>Cnidocolus stimulosus</i>	Tread-softly			X	X	X	X			
<i>Commelina erecta</i>	Whitemouth dayflower					X				
<i>Cornus florida</i>	Flowering dogwood					X				
<i>Crataegus flava</i>	Hawthorn					X	X			
<i>Crataegus michauxii</i>	Hawthorn				X	X				
<i>Crocanthemum corymbosum</i>	Pinebarren frostweed			X		X				
<i>Crotalaria pallida</i>	Smooth rattlebox						X			
<i>Crotalaria rotundifolia</i>	Rabbitbells					X				
<i>Croton argyranthemus</i>	Healing jack			X		X				
<i>Crotonopsis michauxii</i>	Michaux's croton			X		X	X			
<i>Cynodon dactylon</i>	Bermudagrass	Exotic		X			X			
<i>Cyperus retrorsus</i>	Pine barren flatsedge					X				
<i>Dactyloctenium aegyptium</i>	Durban Crowfootgrass	Exotic					X			
<i>Dalea pinnata</i>	Summer farewell			X						
<i>Desmodium floridanum</i>	Florida ticktrefoil					X				
<i>Desmodium lineatum.</i>	Sand ticktrefoil					X				
<i>Desmodium paniculatum.</i>	Panicled ticktrefoil					X			X	
<i>Desmodium rotundifolium</i>	Prostrate ticktrefoil					X				
<i>Dichanthelium aciculare</i>	Panicoid					X				
<i>Dichanthelium dichotomum</i>	Cypress panicgrass				X	X				
<i>Dichanthelium ensifolium</i>	Cypress panicgrass			X		X				
<i>Digitaria ciliaris</i>	Southern crabgrass					X	X		X	
<i>Dioscorea bulbifera</i>	Air potato	FLEPPC(I)						X	X	
<i>Diospyros virginiana</i>	Common persimmon			X	X	X	X			
<i>Distimake dissectus</i>	Noyau vine					X				
<i>Dolichandra unguis-cati</i>	Catclawvine	FLEPPC(I)							X	
<i>Echinochloa muricata</i>	Rough barnyardgrass					X			X	
<i>Elephantopus carolinianus</i>	Carolina elephantsfoot					X				
<i>Elephantopus elatus</i>	Elephantsfoot					X			X	
<i>Eragrostis elliotii</i>	Elliott's lovegrass			X		X			X	
<i>Eragrostis spectabilis</i>	Purple lovegrass						X			
<i>Erechtites hieracifolia</i>	Fireweed				X	X				
<i>Erigeron strigosa</i>	Fleabane					X				
<i>Eriobotrya japonica</i>	Loquat	Exotic							X	
<i>Eriogonum tomentosum</i>	Dogtongue wild buckwheat			X	X	X				
<i>Eryngium aromaticum</i>	Fragrant Erygo			X		X				
<i>Erythrina herbacea</i>	Coralbean					X				

Table 2-3. Observed Flora in 2018 on the Silver Springs Sandhill, Marion County, Florida

Florida Natural Areas Inventory Natural and Altered Land Cover Types									
Scientific Name	Common Name	Exotic/Listed Ranking	Comments	Sandhill	Pine Plantation - Sand pine	Successional hardwood forest	Pasture - semi-improved	Borrow area	Clearing/ regeneration
<i>Eupatorium capillifolium</i>	Dogfennel			X		X	X		
<i>Eupatorium compositifolium</i>	Yankee weed					X	X		
<i>Euphorbia commutata</i>	Wood spurge					X			
<i>Euphorbia cyathophora</i>	Paintedleaf					X			X
<i>Eustachys petraea</i>	Pinewood fingergrass					X	X		X
<i>Galium aparine</i>	Bedstraw					X			
<i>Gamochaeta americana</i>	Everlast						X		
<i>Ganoderma lucidum</i>	Reishi		Fungus			X			
<i>Geastrum saccatum</i>	Rounded earthstar		Fungus	X		X			
<i>Gelsemium sempervirens</i>	Yellow jessamine				X	X			
<i>Geobalanus oblongifolius</i>	Gopher apple			X	X	X			
<i>Geranium carolinianum</i>	Carolina cranesbill					X			X
<i>Gymnopogon ambigua</i>	Skeleton grass			X					
<i>Helenium amarum</i>	Sneezeweed					X			
<i>Hypericum hypericoides</i>	St. Andrew's cross					X			
<i>Ilex ambigua</i>	Carolina holly					X			
<i>Ilex opaca</i>	American holly					X			
<i>Imperata cylindrica</i>	Cogongrass	FLEPPC(I)				X		X	X
<i>Indigofera caroliniana</i>	Carolina indigo			X					
<i>Indigofera hirsuta</i>	Hairy indigo	Exotic				X	X		
<i>Juniperus virginiana</i>	Red cedar					X			
<i>Lagerstroemia indica</i>	Crape myrtle	Exotic							X
<i>Lantana camara</i>	Lantana	FLEPPC(I)				X			X
<i>Lechea sessiflora</i>	Pinewood pinweed					X			
<i>Lespedeza repens</i>	Creeping lespedeza					X			
<i>Ligustrum sp.</i>	Privet	FLEPPC(I)							X
<i>Lonicera japonica</i>	Japanese honeysuckle	FLEPPC(I)				X			X
<i>Lygodium japonicum</i>	Japanese climbing fern	FLEPPC(I)				X			
<i>Magnolia grandiflora</i>	Southern magnolia					X			
<i>Melia azedarach</i>	Chinaberrytree	FLEPPC(II)				X			
<i>Melinis repens</i>	Rose natalgrass	FLEPPC(I)				X	X		
<i>Mirabilis jalapa</i>	Four-O'clock	Exotic							X
<i>Monarda punctata</i>	Spotted beebalm					X			
<i>Morella cerifera</i>	Wax myrtle					X			
<i>Nothoscordum bivalve</i>	False garlic				X				
<i>Nyssa sylvatica</i>	Blackgum					X			
<i>Oenothera laciniata</i>	Cutleaf eveningprimrose						X		
<i>Opismenus setarius</i>	Woodsgrass							X	
<i>Opuntia humifusa</i>	Pricklypear			X	X	X	X		X
<i>Oxalis corniculata</i>	Common yellow woodsorrel					X			X
<i>Panicum anceps</i>	Beaked panicum					X			
<i>Panicum repens</i>	Torpedograss	FLEPPC(I)							X
<i>Paronychia rugelii</i>	Ole Rugel's nailwort					X			
<i>Parthenocissus quinquefolia</i>	Virginia creeper					X			
<i>Paspalum notatum</i>	Bahiagrass	Exotic					X		X
<i>Paspalum setaceum</i>	Hairy thin paspalum				X	X			
<i>Philadelphus inodorus</i>	Scentless Mockorange	Exotic							X
<i>Phoenix dactylifera</i>	Date plum	Exotic							X
<i>Phoradendron leucarpum</i>	Oak mistletoe					X			
<i>Phytolacca americana</i>	American pokeweed						X	X	X
<i>Pinus clausa</i>	Sand pine			X	X	X	X		
<i>Pinus palustris</i>	Longleaf pine			X		X			
<i>Pinus taeda</i>	Loblolly pine					X			
<i>Pitopsis graminifolia</i>	Narrowleaf silkgrass			X		X			
<i>Polygonum polygamum var. polygamum</i>	Jointweed					X	X		
<i>Polypremum procumbens</i>	Rustweed					X			
<i>Populus deltoides</i>	Eastern cottonwood								X
<i>Prunus angustifolia</i>	Chickasaw plum					X		X	
<i>Prunus serotina</i>	Black cherry				X	X			
<i>Prunus umbellata</i>	Flatwoods plum					X			
<i>Pseudognaphalium obtusifolium</i>	Rabbit tobacco					X			X
<i>Pteridium aquilinum</i>	Bracken fern				X	X			
<i>Pterocaulon pycnostachyum</i>	Blackroot					X			
<i>Pyrrhopappus carolinianus</i>	Caroline's desert chickory					X			
<i>Quercus chapmanii</i>	Chapman's oak			X					
<i>Quercus geminata</i>	Sand live oak			X		X			
<i>Quercus incana</i>	Bluejack oak					X			
<i>Quercus laevis</i>	Turkey oak			X	X	X	X		
<i>Quercus laurifolia</i>	Laurel oak			X	X	X	X		
<i>Quercus margarettae</i>	Sand post oak			X		X			
<i>Quercus nigra</i>	Water oak					X			
<i>Quercus shumardii</i>	Shumard's oak								X
<i>Quercus virginiana</i>	Virginia live oak					X	X		
<i>Rhus copallinum</i>	Winged sumac			X	X	X	X		
<i>Rhynchosia difformis</i>	Doubleform snoutbean					X			
<i>Rhynchospora grayi</i>	Asa'a beaksedge			X		X			
<i>Richardia scabra</i>	Rough mexican clover	Exotic							X
<i>Rubus cuneifolius</i>	Sand blackberry					X	X		
<i>Rubus trivialis</i>	Southern dewberry					X			
<i>Rumex hastatulus</i>	Hastateleaved Dock					X			
<i>Sabal palmetto</i>	Cabbage palm					X			
<i>Senna occidentalis</i>	Coffee senna	Exotic							X
<i>Serenoa repens</i>	Saw palmetto			X		X			

Table 2-3. Observed Flora in 2018 on the Silver Springs Sandhill, Marion County, Florida

Florida Natural Areas Inventory Natural and Altered Land Cover Types										
Scientific Name	Common Name	Exotic/Listed Ranking	Comments	Sandhill	Pine Plantation - Sand pine	Successional hardwood forest	Pasture - semi-improved	Borrow area	Clearing/ regeneration	
<i>Sericocarpus tortifolius</i>	Whitetop aster					X				
<i>Setaria parviflora</i>	Yellow foxtail grass					X	X			
<i>Sida ulmifolia</i>	Common wireweed					X			X	
<i>Sideroxylon tenax</i>	Tough bully					X				
<i>Silphium compositum</i>	Kidneyleaf rosen weed			X						
<i>Smilax auriculata</i>	Earleaf greenbrier					X				
<i>Smilax bona-nox</i>	Saw greenbrier				X	X				
<i>Smilax pumila</i>	Sarsaparilla vine					X				
<i>Solanum americanum</i>	American black nightshade							X		
<i>Solanum viarum</i>	Tropical soda apple	FLEPPC(II)					X			
<i>Solidago fistulosa</i>	Goldenrod					X				
<i>Solidago sempervirens</i>	Goldenrod					X				
<i>Sonchus asper</i>	Shiny sowthistle	Exotic							X	
<i>Sorghastrum secundum</i>	Lopsided Indiangrass			X						
<i>Stachys floridana</i>	Florida betony					X			X	
<i>Stillingia sylvatica</i>	Queensdelight					X				
<i>Stylisma patens</i>	Coastal dawnflower					X				
<i>Tephrosia chrysophylla</i>	Scruffy hoarpea					X				
<i>Thelypteris sp.</i>	Maiden Fern							X		
<i>Tillandsia recurvata</i>	Ballmoss					X				
<i>Tillandsia usneoides</i>	Spanish moss					X				
<i>Toxicodendron pubescens</i>	Eastern poison oak					X				
<i>Triadica sebifera</i>	Popcorn tree	FLEPPC(I)						X	X	
<i>Urena lobata</i>	Caesarweed	Exotic				X	X		X	
<i>Vaccinium arboreum</i>	Sparkleberry					X				
<i>Vaccinium darrowii</i>	Darrow's blueberry					X				
<i>Vaccinium elliotii</i>	Elliott's blueberry					X				
<i>Vaccinium stamineum</i>	Deerberry					X				
<i>Vitis rotundifolia</i>	Muscadine				X	X		X		
<i>Vitis vulpina</i>	Fox grape					X				
<i>Wisteria sinensis</i>	Chinese wisteria	FLEPPC(II)						X	X	
<i>Xanthosoma sagittifolium</i>	Arrowleaf elephant's ear							X		
<i>Yucca filamentosa</i>	Adam's needle					X				
<i>Zingiber zerumbet</i>	Bitter ginger	Exotic							X	

Notes:

Florida Exotic Pest Plant Council
(FLEPPC, 2017)
FLEPPC (I) - Category I Invasive
FLEPPC (II) - Category II Invasive

Table 2-4. Observed Fauna on the Silver Springs Sandhill

Scientific Name	Common Name
None	n/a
<i>Antrastomus carolinensis</i>	Chuck-will's-widow
<i>Buteo lineatus</i>	Red-shouldered hawk(call)
<i>Buteo platypterus</i>	Broad-winged hawk
<i>Circus hudsonius</i>	Northern harrier
<i>Colinus virginianus</i>	Bobwhite Quail
<i>Coragyps atratus</i>	Black vulture
<i>Corvus brachyrhynchos</i>	American crow
<i>Cyanocitta cristata</i>	Blue jay
<i>Falco sparverius</i>	American kestrel
<i>Hylatomus pileatus</i>	Pileated woodpecker
<i>Leuconotopicus villosus</i>	Hairy woodpecker
<i>Melanerpes carolinus</i>	Red-bellied woodpecker
<i>Meleagris gallopavo</i>	Wild turkey
<i>Parus bicolor</i>	Tufted titmouse
<i>Poecile carolinensis</i>	Carolina chickadee
<i>Poliophtila caerulea</i>	Blue-gray gnatcatcher
<i>Quiscalus quiscula</i>	Common grackle
<i>Sayornis phoebe</i>	Eastern phoebe
<i>Setophaga coronata</i>	Yellow-rumped warbler
<i>Setophaga dominica</i>	Yellow-throat warbler
<i>Setophaga pinus</i>	Pine warbler
<i>Thryothorus ludovicianus</i>	Carolina wren
<i>Toxostoma rufum</i>	Brown thrasher
<i>Vireo griseus</i>	White eyed vireo
<i>Vireo olivaceus</i>	Red eyed vireo
<i>Zenaida macroura</i>	Mourning dove
<i>Sylvilagus floridanus</i>	Eastern cottontail
<i>Sciurus carolinensis</i>	Eastern gray squirrel
<i>Dasyus novemcintus</i>	Nine-banded armadillo
<i>Sciurus niger shermani</i>	Sherman's fox squirrel
<i>Thomomys umbrinus</i>	Southern pocket gopher
<i>Odocoileus virginianus</i>	White tailed deer
<i>Bos taurus</i>	Domestic bovine
<i>Aedes albopictus</i>	Asian tiger mosquito
<i>Agraulis vanillae</i>	Gulf fritillary
<i>Chrysops spp.; Family:</i>	
<i>Tabanidae</i>	Deer fly
<i>Cicadoidea spp.</i>	Cicada
<i>Colias philodice</i>	Clouded sulfur
<i>Family: Halictidae</i>	Halictid bee
<i>Hermetia illucens</i>	Black soldier fly
<i>Junonia coenia</i>	Common buckeye
<i>Papilio glaucus</i>	Tiger swallowtail
<i>Pogonomyrmex badius</i>	Florida harvester ant
<i>Polistes exclamans</i>	Guinee wasp
<i>Protographium marcellus</i>	Zebra swallowtail
<i>Solenopsis invicta</i>	Imported fire ant
<i>Sphecius hogardii</i>	Digger wasp

Table 2-4. Observed Fauna on the Silver Springs Sandhill

Scientific Name	Common Name
<i>Anolis carolinensis</i>	Green anole
<i>Coluber constrictor priapus</i>	Southern black racer
<i>Gopherus polyphemus</i>	Gopher tortoise
<i>Masticophis flagellum</i>	Coachwhip snake (reported)
<i>Sceloporus undulatus</i>	Fence lizard

Notes:

FWC = Florida Fish and Wildlife Conservation Commission

T = Threatened

Table 2-5. Listed Plant and Animal Species that Potentially may occur on the Silver Springs Sandhill Area, Marion County, Florida.**

Scientific Name	Common Name	Community	FWC/FDA*	FWS*
Plants				
<i>Agrimonia incisa</i>	Incised Groove-bur	Sandhill	T	
<i>Arnoglossum diversifolium</i>	Variable-leaved Indian-plantain	Sandhill	T	
<i>Asclepias curtissii</i>	Curtis' milkweed	Sandhill	E	
<i>Carex chapmanii</i>	Chapman's sedge	Succession Forest	T	
<i>Centrosema arenicola</i>	Sand butterfly pea	Sandhill	E	
<i>Erigonium longifolium var. gnaphalifolium</i>	Scrub Buckwheat	Sandhill	E	T
<i>Garberia heterophylla</i>	Garberia	Sandhill	T	
<i>Matelea floridana</i>	Florida Milkvine	Succession Forest	E	
<i>Monotropis reynoldsiae</i>	Pygmy Pipes	Sandhill	E	
<i>Nolina atopocarpa</i>	Florida Beargrass	Sandhill	T	
<i>Orbexilum virgatum</i>	Pineland Scurfpea	Sandhill	E	
<i>Pteroglossaspis ecristata</i>	Giant Orchid	Sandhill	T	
<i>Pycnanthemum floridanum</i>	Florida Mountain-mint	Sandhill	T	
<i>Sideroxylon alachuense</i>	Silver Buckthorn	Succession Forest	E	
<i>Spigelia loganioides</i>	Pinkroot	Succession Forest	E	
<i>Warea amplexifolia E</i>	Clasping Warea	Sandhill	E	E
Birds				
<i>Athene cunicularia</i>	Florida Burrowing Owl	Sandhill	T	
<i>Falco sparverius paulus</i>	Southeastern American kestrel	Forest, Hammock	T	
<i>Grus canadensis pratensis</i>	Florida Sandhill Crane	Sandhill, Depression marsh	T	
Reptiles				
<i>Drymarchon corais couperi</i>	Eastern indigo snake	Successional Forest, Sandhill		T
<i>Gopherus polyphemus</i>	Gopher tortoise	Sandhill	T	
<i>Lampropeltis extenuatum</i>	Short-tailed snake	Sandhill	T	
<i>Pituophis melanoleucus mugitus</i>	Florida pine snake	Sandhill	T	
<i>Plestiodon reynoldsi</i>	Sand skink	Sandhill		T

Notes:

** = Potential Species List Originated From FNAI Biomatrix Query

FDA = Florida Department of Agriculture (State Listed Plants in Weaver and Anderson 2010)

FWC = Florida Fish and Wildlife Conservation Commission (State Listed Wildlife)

FWS = United States Fish and Wildlife Service

E = Endangered

T = Threatened

C = Commercially exploited

Observed

Sources: FWC, December 2018; Weaver and Anderson 2010 (FDA); Wunderlin et al 2018

plant management has already commenced) and are proactively prioritized by Marion County. Other tasks that benefit wildlife populations, are being employed, including maintenance of site security to prevent trespassing, poaching, and the control of exotic wildlife, such as feral cats, dogs, and other feral animals. Feral hogs are not currently documented on site, but the presence of these and other exotic or feral animals shall be documented as encountered and subsequent management considered accordingly. Another aspect of listed species protection incorporates public education as to the values of the biodiversity within The Sandhill site and the particular species and habitats that occur there. Information will be provided at kiosks, as printed material and via the internet so citizens are informed about importance of listed species and the activities that disturb or harm imperiled species. Collected information regarding imperiled species will be recorded in FNAI report forms and submitted to the FNAI as appropriate.

2.5 Special Status Species

Population and distribution information on special status species utilizing The Sandhill site was obtained from the 2018 survey, FNAI data inquiries, the staff of Marion County, local experts and consultants, and relevant literature. State and/or federally listed plant and animal species observed on the site or in the vicinity are listed in Tables 2-3 and 2-4. These species and their habitat requirements are discussed in this section. Table 2-5 contains species that may occur on The Sandhill property based on natural community types and condition.

No imperiled plants have been documented to date. One vertebrate, the gopher tortoise , designated as a threatened species, has been observed on The Sandhill. The population sizes and distributions of these species, either on The Sandhill, its proximities or adjacent lands has not been determined. The occurrence of the gopher tortoise within The Sandhill site is common (Figure 2-3). Appropriate surveys are required to estimate the number of individuals and their distribution on The Sandhill site and the quality and size of available suitable habitat to sustain and expand current populations. Surveys of populations and habitats, and consultation with Florida Wildlife Commission's (FWC) Wildlife Conservation, Prioritization, and Recovery (WCPR) program, will take place during the short-term 2-year planning period. After consulting with FWC and determining the feasibility of maintaining viable populations of these and any particularly imperiled species, the necessary habitat management and strategic maintenance tasks will be initiated and completed during the remaining 8 years of this management plan.

To date, there have been ongoing activities intended to protect the habitats present on The Sandhill. These actions include maintaining the integrity of fencing and access gates, limiting access to the public, and removing exotic invasive plant species. Game hunting is prohibited, as is the collection of plants within The Sandhill site.

2.5.1 Description of Special Status Species and Management Measures

Gopher Tortoise

Ample gopher tortoise habitat exists on The Sandhill sites and the semi-improved pasture but will necessitate future rehabilitation efforts for population viability. Soils and water table are conducive for population utilization. Currently, rehabilitation measures and systematic natural community improvements are planned to provide expanded habitat quality and population health throughout The Sandhill. Formal surveys to estimate the size of the resident gopher tortoise population and map the distribution of burrows in the uplands of The Sandhill site have

not been conducted but Figure 2-3 depicts the location of gopher tortoise burrows located during the Fall 2018 survey, likely a fraction of which exist on site.

Management Measures for Gopher Tortoise

Marion County can conduct tortoise surveys using the new “Line Transect Distance Sampling” method being adopted by FWC (Smith and Howze 2013). In addition to surveys for estimating the size of the tortoise population, the quality of suitable gopher tortoise habitat on the site (semi-improved pasture and sandhill) needs assessment using the vegetation monitoring methods described in FWC’s gopher tortoise permitting guidelines (FWC 2017d).

Because of limited habitat quality to support current populations of gopher tortoise in perpetuity, surveys should be conducted to optimize efficiency of long-term management planning. Surveys for gopher tortoise will be conducted systematically and taking advantage of conditions such as those immediately following prescribed burns or wildfire and prior to significant management manipulations. In addition, lichen gaps where sandy habitats in the successional hardwood forest exist, should be checked periodically for tortoise recruitment and vegetative structure improvements.

Listed Plants

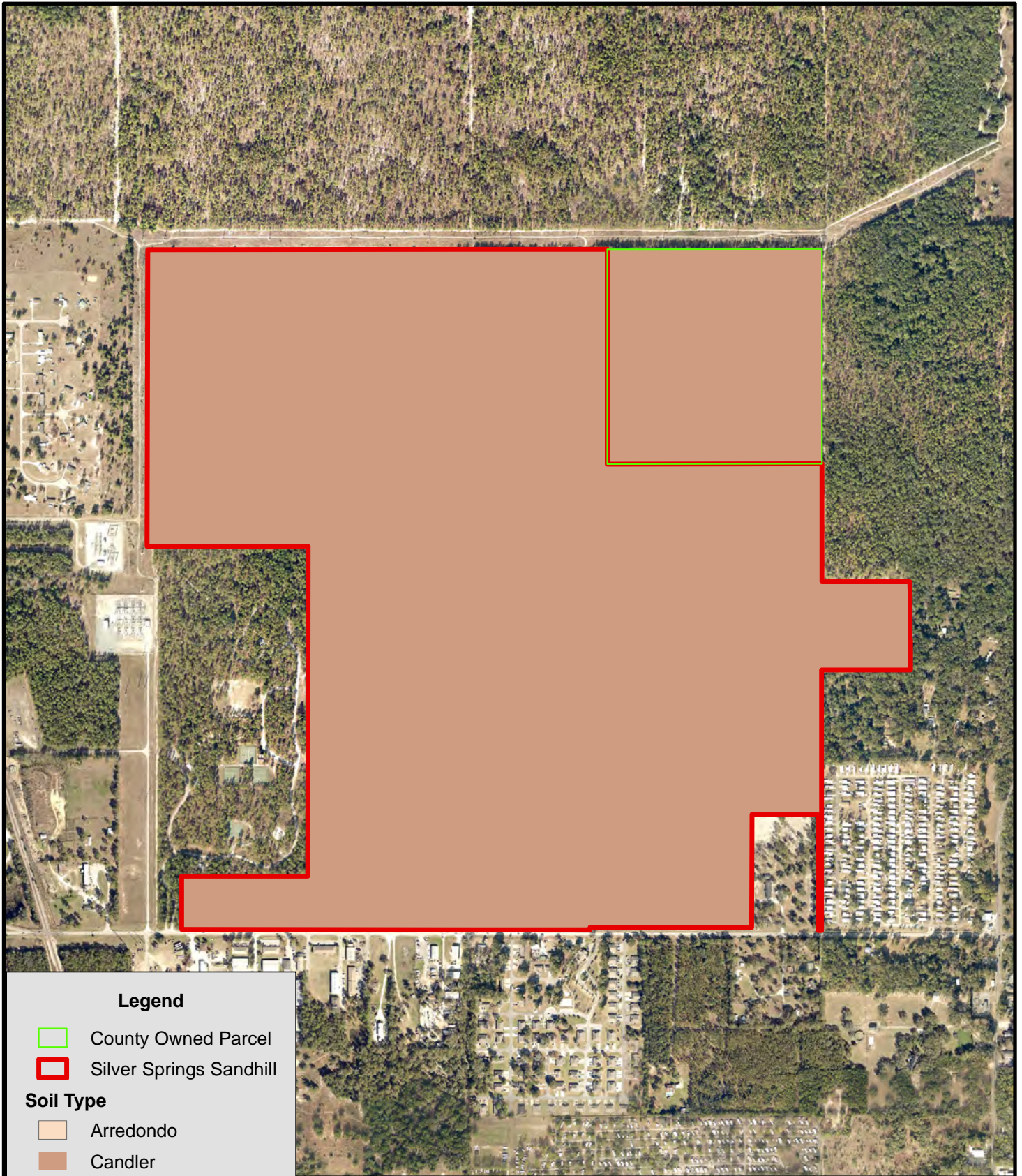
No imperiled plants have been documented within The Sandhill site to date. Multi-season, listed plant species survey will provide utility in long-term planning, particularly as the occurrence and distribution of listed species (if found to occur) within The Sandhill site are documented and the size of potential populations become better understood.

Management Measures for Listed Plants

General policies and practices for the protection of imperiled plant species as well as state-listed commercially exploited species have been implemented and include the enforcement of rules prohibiting unauthorized plant collection within The Sandhill site, exclusion of off-road vehicular traffic and pedestrian access to sensitive areas, and continued control of invasive exotic plant species. Habitat-specific management practices will be conducted in a manner that is consistent with the natural life cycle of each documented imperiled plant species (if such a species is found to occur) within The Sandhill site. Management of the natural communities will continue using scheduled and planned prescribed fire regimes. Additionally, portions of the successional hardwood forest and the semi-improved pasture will be rehabilitated/restored as budgeting and resources allow.

If listed plant species are documented on The Sandhill site, various protocols may be implemented. In the vicinity of each listed species occurrence, thorough surveys of suitable habitat should be conducted to determine if additional individuals persist, especially after mechanical disturbance, management manipulations or exposure to fire. Thus, natural community maps, aerial photography, and habitat characteristics will be valuable to delineate the best habitat for similar occurrence within The Sandhill site. Surveys to determine general locations of each imperiled species that may be present, can be included as part of the general vegetation surveys conducted to assess plant communities and exotic/invasive species infestations. Seasonal surveys can be conducted as dictated by the physiology of each listed species and conducted within its average bloom period. Collection permits can be obtained and vouchering (submitting to a recognized institutional herbarium) and proper identification of each imperiled species found at The Sandhill site is critical and will be conducted as long as field collection does not jeopardize the integrity of the population. If necessary, Marion County shall develop and maintain a close working relationship with the University of Florida, and

representative listed plants from The Sandhill site and other parks will be deposited at the University of Florida Herbarium.



Legend

- County Owned Parcel
- Silver Springs Sandhill

Soil Type

- Arredondo
- Candler
- Tavares

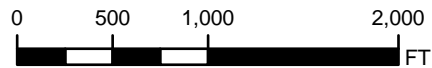


Figure 2-1.
Soils Map of Silver Springs Sandhill
Marion County, Florida

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Source: NRCS, 2017; Water & Air Research, Inc., 2018.

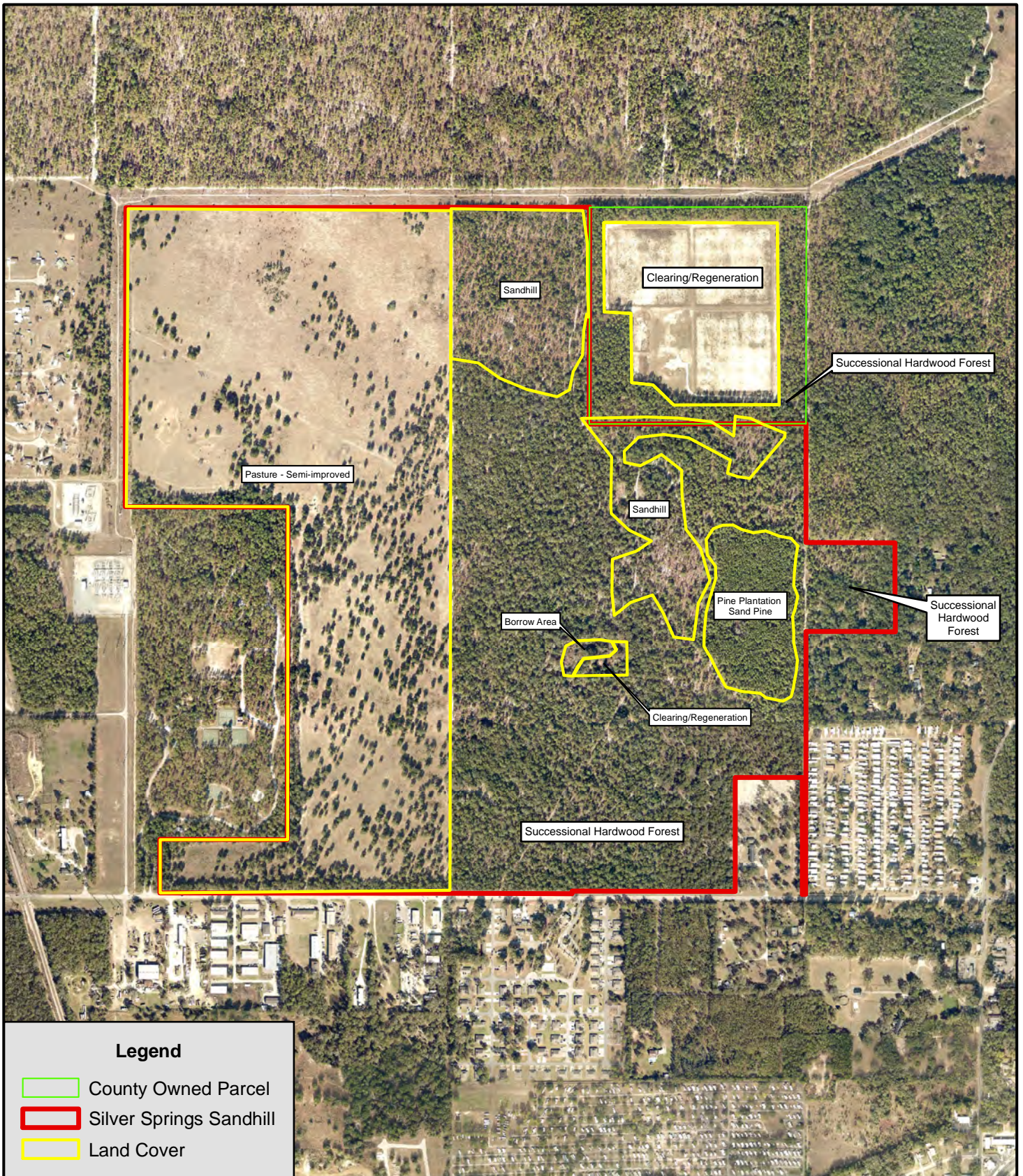
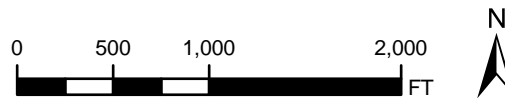


Figure 2-2.
 Florida Natural Areas Inventory Natural and Altered Communities
 Land Cover Map of Silver Springs Sandhill
 Marion County, Florida

Source: FDOT, 2017; Marion County, Florida, 2018; FNAI, 2018; Water & Air Research, Inc., 2018.



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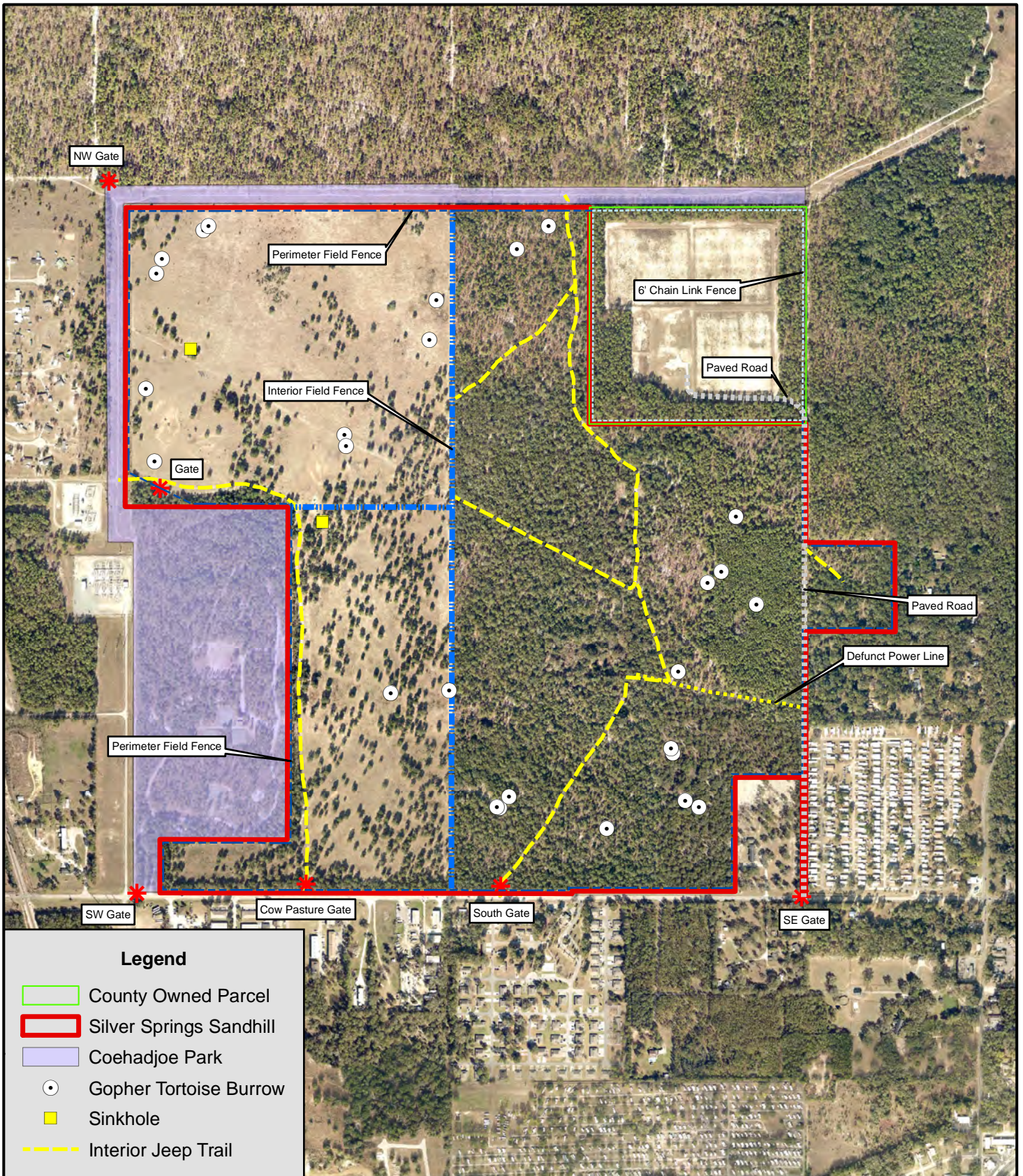


Figure 2-3.
 Notable Existing Features on Silver Springs Sandhill
 Marion County, Florida

Source: FDOT, 2017; Marion County, Florida, 2018; Water & Air Research, Inc., 2018.

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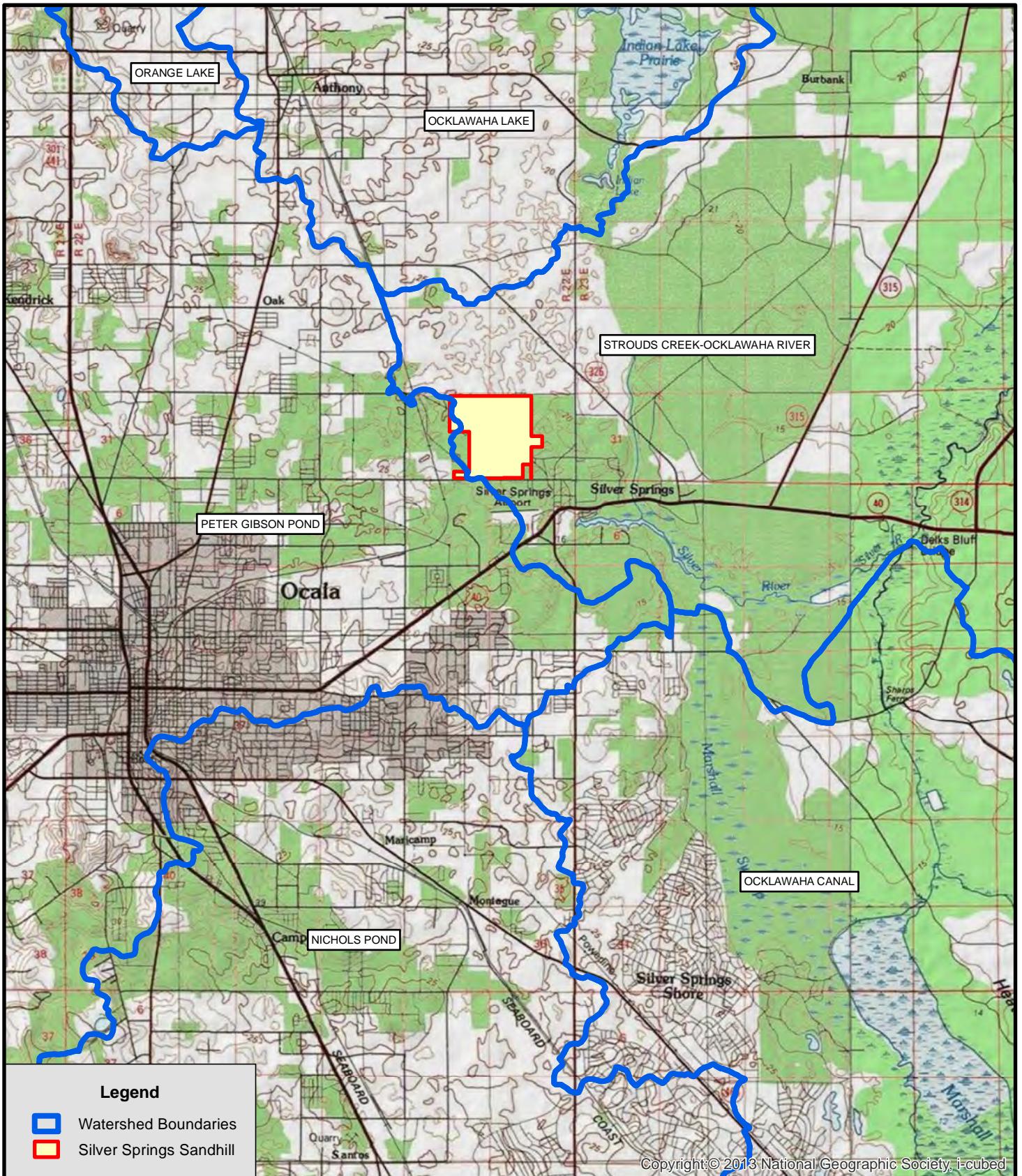
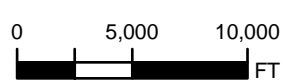


Figure 2-4.
Watershed Boundary Map in the Vicinity of Silver Springs Sandhill
Marion County, Florida



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Source: U.S.G.S., 2005; Water & Air Research, Inc., 2018.

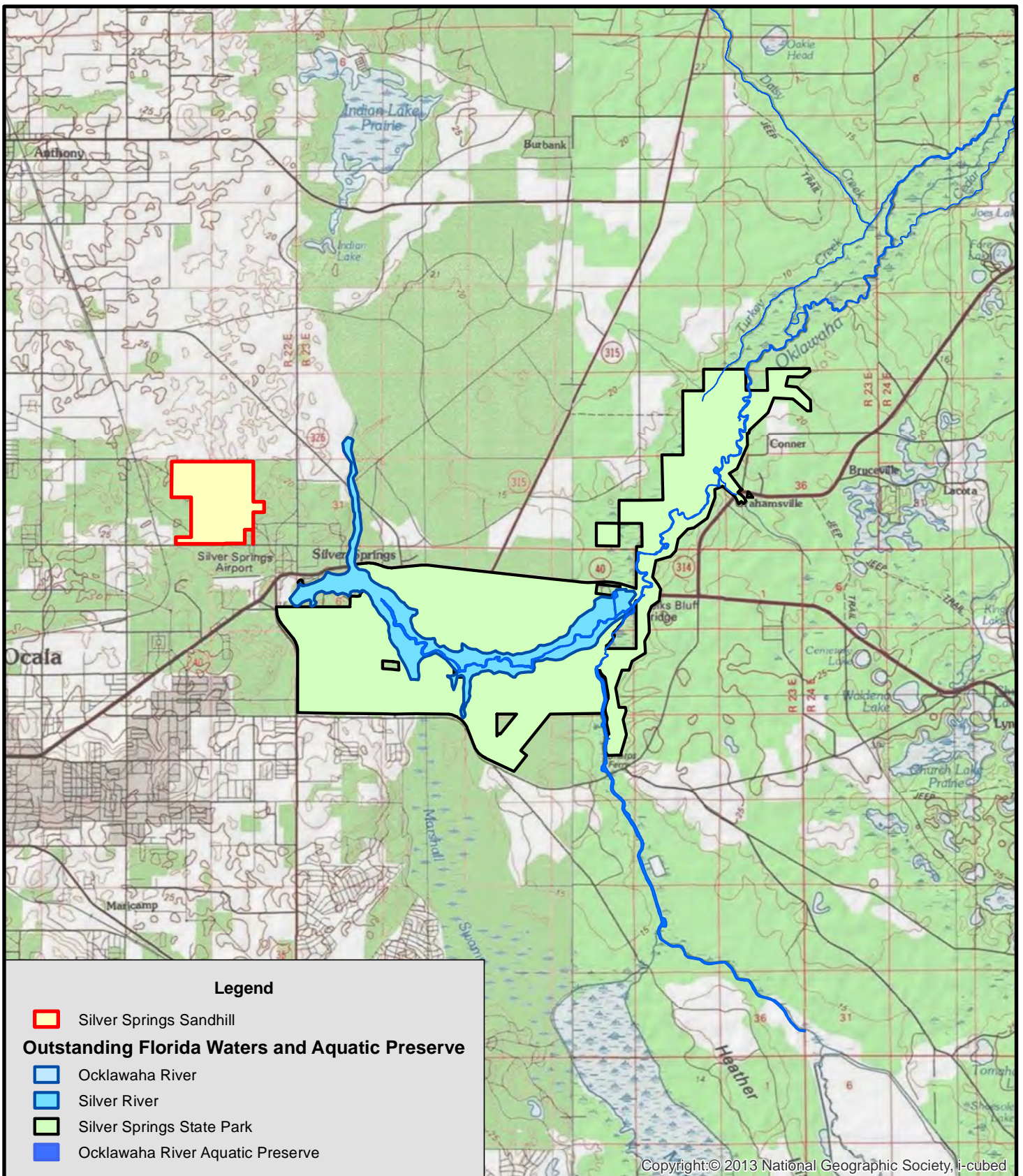
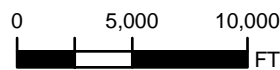


Figure 2-5.
 Outstanding Florida Waters and Aquatic Preserves
 in the Vicinity of Silver Springs Sandhill
 Marion County, Florida

Source: FGDL, 2017; Water & Air Research, Inc., 2018.



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3.0 Cultural Resources

In addition to managing the natural resources of the Sandhill tract, any cultural (human-made) resources should also be properly managed. Marion County has been occupied by man for as much as 10,000 years. All of these humans have left traces of their activities on the land, both as archaeological remains which are not always visible, and more noticeable changes such as landscape features and structures. While there are no previously identified archaeological or historic sites within the Sandhill tract, there are numerous known sites to the southeast in Silver Springs State Park (FMSF 2018). This suggests that the Sandhill tract has some potential to contain cultural resources, but since the property has never been formally surveyed (FMSF 2018) this has not been determined. This section will introduce the regulations and some definitions for cultural resources, and then discuss the nature of potential resources within the Sandhill tract and the recommended management measures for the area. Appendix B contains associated maps.

3.1 Regulations and Definitions

There are a number of state regulations which govern cultural resources in Florida, all of which are based on the primary federal cultural resources regulations. While the federal regulations specifically apply only to federal property, they provide overall guidance for cultural resource management within the United States. Federal law also established the State Historic Preservation Office (SHPO) for each state.

Federal Regulations

National Historic Preservation Act of 1966, as amended. This act and its implementing regulations are the primary federal laws concerning cultural resources. The law mandated establishment of a SHPO in each state. It also establishes the criteria for eligibility to the *National Register of Historic Places*.

Archaeological and Historic Preservation Act of 1974. This law provides procedures for management of cultural resources and establishes standards.

Archaeological Resources Protection Act of 1979. This law primarily governs removal of archaeological resources from federal land and release to the public of information on such resources.

Archeology and Historic Preservation: The Secretary of the Interior's Standards and Guidelines. These guidelines provide technical advice on archaeological and historic preservation, as well as the standards which must be met by cultural resource practitioners in terms of education and experience.

National Register of Historic Places. Established by the *National Historic Preservation Act*, this is a list maintained by the Secretary of the Interior of all sites, buildings, districts, structures and objects of significance in American history, architecture, archaeology, landscape, engineering and culture. The *National Register* and its criteria are used by the states to assess the significance of cultural resources.

State Regulations

Chapter 267, Florida Statutes—The Florida Historical Resources Act. This is the key state law for cultural resources. It closely parallels the *National Historic Preservation Act of 1966*, as amended. One key clause is that it contributes to the preservation of non-state owned resources and it assists local government in managing such resources.

Chapter 163, Florida Statutes—Intergovernmental Programs . This law provides requirements for County Comprehensive Plans, including protection of historic resources.

Chapter 872, Florida Statutes—Offenses Concerning Dead Bodies and Graves. This law protects human remains, and its implementing rule provides procedures to follow if human remains are encountered. The law applies to both public and private property.

*Chapter 1A-46, Florida Administrative Code—*This regulation provides guidelines for archaeological and historical studies within the state, including documentation requirements.

Definitions

Archaeology—the scientific discipline responsible for studying the social and cultural past through material remains, with the goal of ordering and describing the events of the past and explaining the meaning of those events.

Archaeological assessment—an evaluation of the archaeological resources present in an area, their scientific significance, their eligibility to the *National Register of Historic Places*, and the cost of protecting or properly investigating them.

Archaeological data—information embodied in material remains, artifacts, structures, refuse, etc., produced purposely or accidentally by human beings, and embodied in the spatial relationships among such remains.

Archaeological site—location containing archaeological materials. May be prehistoric (prior to European contact with the New World) or historic (post-contact).

Artifact—a material object made or modified in whole or in part by man. Among the most common artifacts are fragments of broken pottery (sherds), lithic (stone) tools, chips of stone (debitage), glass, metal, animal bone or shell, and botanical remains.

Chert—flint stone. Found on many Marion County sites and used for toolmaking.

Cultural resource—any building, district, site, structure or object of historical, archaeological, architectural, engineering or cultural significance.

Cultural resource professional—an anthropologist, archaeologist, architectural historian, historian, historical architect or other professional with specialized training and experience in work required to comply with cultural resources legislation.

Cultural resources protection—not always the same as preservation, it includes routine maintenance and security, consideration of effects of any undertaking on the resources, and formal, documented consultation with the SHPO.

Cultural resources survey—the systematic process of locating and identifying cultural resources.

Determination of eligibility—decision as to whether or not a property meets the criteria for eligibility to the *National Register of Historic Places*.

Effect—the results of an undertaking which modify the characteristics of a property which make it significant.

Environmentally sensitive area—any location containing endangered or protected plants, animals or archaeological resources.

Florida Archaeological Council (FAC)—state organization of professional archaeologists who meet the criteria for membership in the FAC based on education and experience. Members are also generally eligible for or members of the national Register of Professional Archaeologists.

Florida Division of Historical Resources (FDHR)—state division which oversees all cultural resources activities in Florida. Includes the SHPO, Review and Compliance, Architectural Preservation, Survey and Registration, Master Site File, State Archaeologist and State Grants administration.

Florida Master Site File—office which maintains records of all cultural resources within the state, including *National Register of Historic Places* properties, as well as any cultural resource studies submitted to the state.

Historic preservation—management of historic (cultural) resources, including identification, evaluation, documentation, restoration and preservation.

Historic site or historic property—a location where a historic event or activity took place. Includes related artifacts, records and cultural remains.

Midden—an accumulation of debris which results from human activities.

Register of Professional Archaeologists (RPA)—a national register of archaeologists who meet specific criteria in terms of education and experience for membership.

Significance—the importance of a cultural resource as determined by application of the criteria for eligibility to the *National Register of Historic Places*. A resource does not need to be formally listed on the *National Register* in order to be considered significant or eligible.

State Archaeologist—senior archaeologist in charge of research on state-owned lands, state shipwreck salvage program, and implementation of Chapter 872, *Florida Statutes*.

SHPO/Officer—federally mandated office, appointed by governor. Manages the Division of Historical Resources. The SHPO Officer is responsible for conducting an approved state historic preservation program as mandated by the *National Historic Preservation Act of 1966*, as amended.

3.2 Cultural Resources and the Silver Springs Sandhill Area

Florida has been divided into a number of prehistoric cultural regions based on differences in the nature of the sites and the artifacts within the region. Marion County falls within the North Central cultural region (Milanich and Fairbanks 1980; Milanich 1994):

Paleoindian	10,000 to 7,500 B.C.
Early and Middle Archaic	7,500 to 3,000 B.C.

Late Archaic	3,000 to 2,000 B.C.
Orange	2,000 to 1,000 B.C.
Transitional	1,000 to 500 B.C.
Deptford/Cades Pond	500 B.C. to A.D. 750
Hickory Pond/Alachua	A.D. 750 to 1565
Potano	A.D. 1565 to 1715
Seminole	A.D. 1715 to 1842

The historic period of occupation is defined as beginning with European settlement of Florida in A.D. 1565, and continuing to the present. In terms of cultural resources, any resource over 50 years in age is considered to be historic.

Marion County has both Paleoindian and Archaic sites, with the Paleoindian sites primarily near major rivers and springs. Both periods are classified as migratory hunter-gatherers, probably exploiting seasonally available resources. Paleoindian sites are marked by large, well-made lithic (stone) points, while Archaic sites have a more diverse tool kit. The primary tool markers for Archaic sites are stemmed projectile points. The Orange period marks the first appearance of ceramics in Florida, in the form of slab constructed vessels tempered with plant fibers. This suggests a somewhat more sedentary occupation pattern, although subsistence was still based on hunting-gathering. The following periods are marked by increasing populations, more sedentary occupations, variations in ceramic types, the appearance of ceremonial sites such as mounds, and in the Hickory Pond/Alachua periods, the introduction of horticulture. The Potano were the Native Americans present in Marion County when Spanish settlement of Florida began. As Native Floridian populations decreased due to disease and warfare, the Spaniards encouraged the Creeks of Georgia and Alabama to migrate to Florida, where they became known as the Seminole. Seminole settlement of Marion County increased after the first Seminole War and the establishment of a reservation in this region.

Euro-American settlement of Marion County primarily dates to the period following the second Seminole War of 1835 to 1842, particularly due to the Armed Occupation Act which provided homesteads in the state. The County's economy was primarily based on cattle and citrus cultivation. Settlement remained slow until the 1880s when railroads were constructed. The 1920s brought increasing importance for the timber and naval stores industry. Throughout much of the 20th century the County remained highly dependent on agriculture, particularly cattle ranching and commercial horse breeding. More recently, the County has seen increased growth through major residential developments. Silver Springs State Park, adjacent to the project area, has been a tourist attraction since the late 19th century, when steamboats travelled there via the St. Johns and Ocklawaha Rivers.

In 1981, Marion County, like many Florida counties, attempted to develop models for cultural resource locations within the county (Jones 1981; WRPC 1981a, b; ACI 1987). Like most models from that time period, the information was based primarily on previously recorded resources, informant information and correlation of environmental characteristics with known site locations. Basically, these models come down to defining high or well-drained ground close to water as high potential for prehistoric sites, while historic sites tend to be located in proximity to transportation routes. While models such as this have lost their popularity due to the lack of field testing to refine the models and the lack of updates based on the numerous survey results

since that time period, archaeologists still tend to rely heavily on topography, soil types, ecological communities and water sources to determine the likelihood for prehistoric sites. Historic site potential is generally defined through historic research.

3.2.1 Silver Springs Sandhill Area Site Potential

There have been no previous surveys within the Sandhill tract, but there have been surveys immediately adjacent and nearby (FMSF 2018). These surveys have resulted in identification of several archaeological sites and historic structures, particularly in and around Silver Springs State Park. The park itself is considered an historic district (FMSF 2018). The Silver Springs State Park sites are the closest known archaeological sites and historic structures to the project area. The CSX Railroad corridor to the west is the closest recorded historic linear resource.

All of the Sandhill tract contains excessively-drained Candler sand, which—as indicated by the property name—supports the sandhills environment (USDA 2018). The sandhills offered limited resources for prehistoric people due to the droughty nature of the environment. In addition, there are no water sources in or close to the project area (USGS 1991). Silver Springs and the Silver River, approximately 1 mile to the southeast, would have been the closest water source. Historic occupation was probably also limited by the low fertility of the soils. A 1940 aerial photograph shows limited activity within the property. There appears to be one agricultural field in the southeast quarter (USDA 1940). The topographic map (USGS 1991) shows structures in the area of the field visible in the 1940 aerial photograph, but these structures have since been removed. The west half of the tract has been partially cleared since 1940, but an unpaved road running northwest to southeast across the tract remains. In recent years, the tract adjacent to the northeast quarter was developed as a water treatment facility but has now been abandoned. This heavily disturbed tract may be used for infrastructure associated with The Sandhill tract.

Based on the known sites and the environmental characteristics of the property, The Sandhill tract has limited potential for prehistoric archaeological sites due to the sandhill environment and lack of water sources. The area of the former field and structures has potential for historic sites related to the structures. The former water treatment facility has no potential for intact resources due to the extensive disturbance.

3.3 Management Measures for Cultural Resources

Since the Sandhill tract has never been surveyed for cultural resources, the ideal initial management task would be a complete Phase I survey of the tract, which would consist of a stratified program of subsurface testing combined with surface inspection throughout the tract. Such a survey would identify any cultural resources within the tract and provide information for long-term planning for such resources. It is possible that Marion County could obtain a survey grant from the FDHR to conduct such a study.

If a complete survey cannot be conducted, then prior to any ground disturbing activity, proposed impact areas should be subjected to subsurface survey by a professional archaeologist. All surveys need to be fully documented and reviewed by the SHPO's office.

Should archaeological material (artifacts) be encountered at any time within the property, the FDHR or a professional archaeologist should be contacted to determine the nature and significance of such a find. Finds should be properly recorded and reported to the Florida Master Site File.

If human remains are ever found within the property, the requirements of Chapter 872, Florida Statutes, must be met. This includes notification of local law enforcement, and if the remains are classified as archaeological, then the State Archaeologist.

All cultural resources activities within The Sandhill tract should be conducted by professionals who meet the criteria outlined by the Secretary of the Interior. Archaeologists should be members of or eligible for membership in the RPA.

4.0 Recreational Resources

Due to its adjacency to large areas of public lands to the north and east, The Sandhill is located in a low densely developed area of Marion County. However, it is within close proximity (approximately 2 miles) to medium to high densely populated area of the City of Ocala. The Sandhill is a component of a number of land acquisitions that have provided increased passive recreation that complement other significant regional recreational resources. Figures 1-1, 4-1, and 4-2 provide the context of nearby land and water resources offering resource-based recreational opportunities.

Conservation and preservation of the Silver Spring Springshed and the natural and cultural resources of The Sandhill site are the primary focus of activity on the property. The secondary focus of the next 10 years is to improve public access for passive recreation on The Sandhill.

Improved public access and use of The Sandhill can be facilitated by interconnecting the site with the existing and proposed regional hiking and biking trails, especially utilizing amenities at the adjacent MCCP and ILSF. Proposed passive recreation improvements will include designating internal hiking and biking trails that interconnect with regional trails and providing way-finding and interpretive facilities at The Sandhill. Recreational use and site improvements must simultaneously preserve important aquifer recharge function and habitat value. Other proposed recreation program elements include, disc golf and archery.

Public Access

Public access is essential to allowing the outdoor recreation industry to grow. Initially, direct access to The Sandhill may be routed through two adjacent lands: MCCP to the west and the paved road to the MCWF land to the east. MCCP has existing improvements that are suited to serve as a primary access point into The Sandhill site including a network of park roadways, parking areas and restrooms. Access from the north is limited due to the isolation of the northern boundary although regional paved trails may run parallel to the north boundary and would enable easy access into the site. Preliminary recreation planning maps indicate the potential of constructing a trailhead within the southern portion of ILSF. This trailhead would serve as a secondary hub connecting paved trails between Silver Springs State Park, ILSF and MCCP (Figures 4-2 and 4-3). The proposed archery facility on the MCWF land in the northeast corner will also provide access, parking and restroom facilities.

Public access will be limited until the access points are established and the site is deemed safe for the public to enter. Ideally this would happen within the first year of management. A preliminary schedule for improvements, which will facilitate public access, is included in this LMP. (Marion County 2015).

4.1 Existing Recreational Facilities and Site Improvements

Currently, there are no existing recreational facilities on site. Existing site improvements include perimeter fencing and limited interior fencing in the semi-improved pasture, and various jeep trails and woods roads. A paved single lane road runs along the eastern border of the site up to the future archery facility on the MCWF site. The existing fencing will be supplemented or repaired to ensure site security where needed. In addition, it will be removed where it interferes with ecological and recreational flows, likely where adjacent to the ILSF (Figure 2-3).

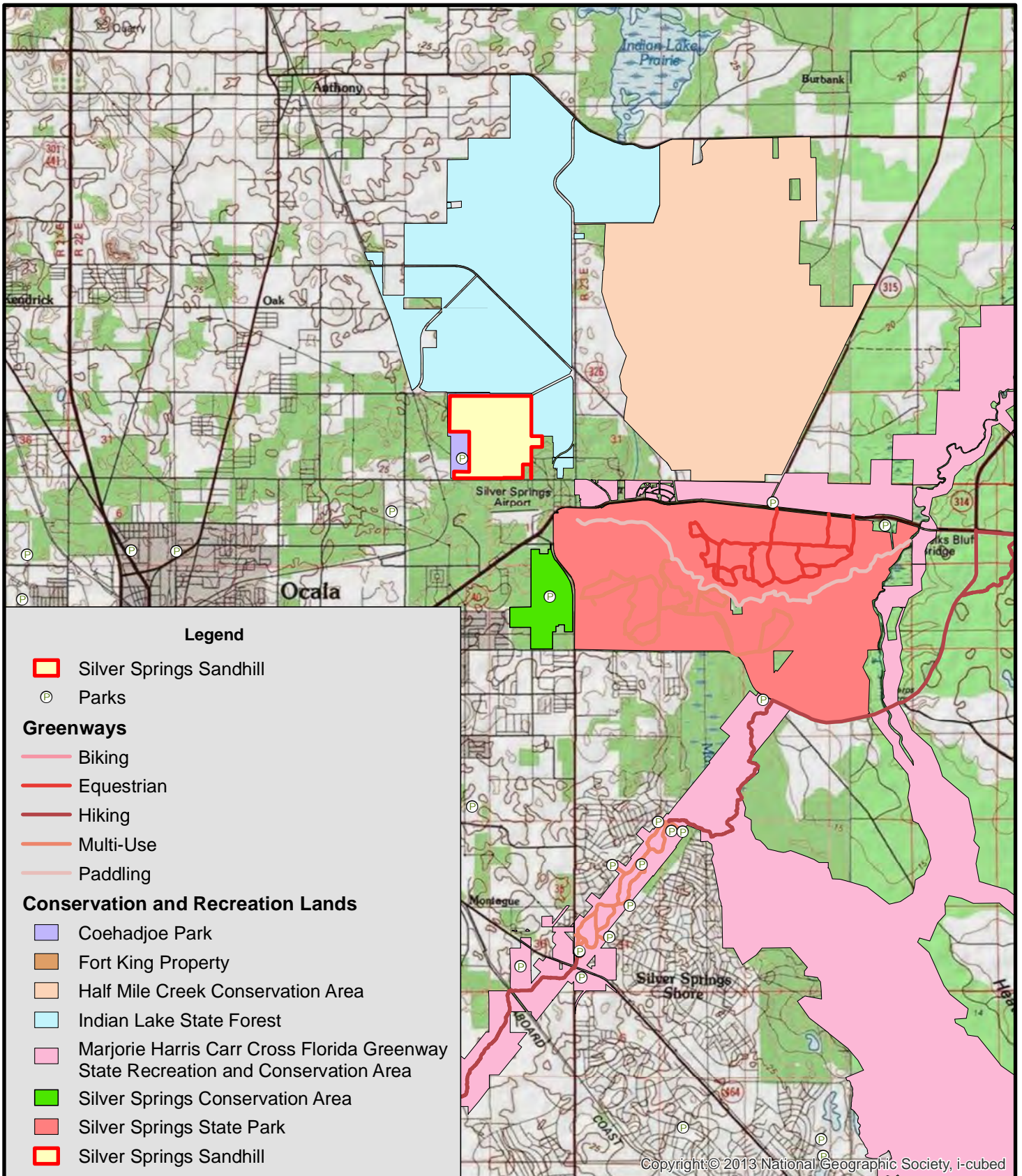


Figure 4-1.
Trails, Parks and Greenways in the Vicinity of
Silver Springs Sandhill
Marion County, Florida

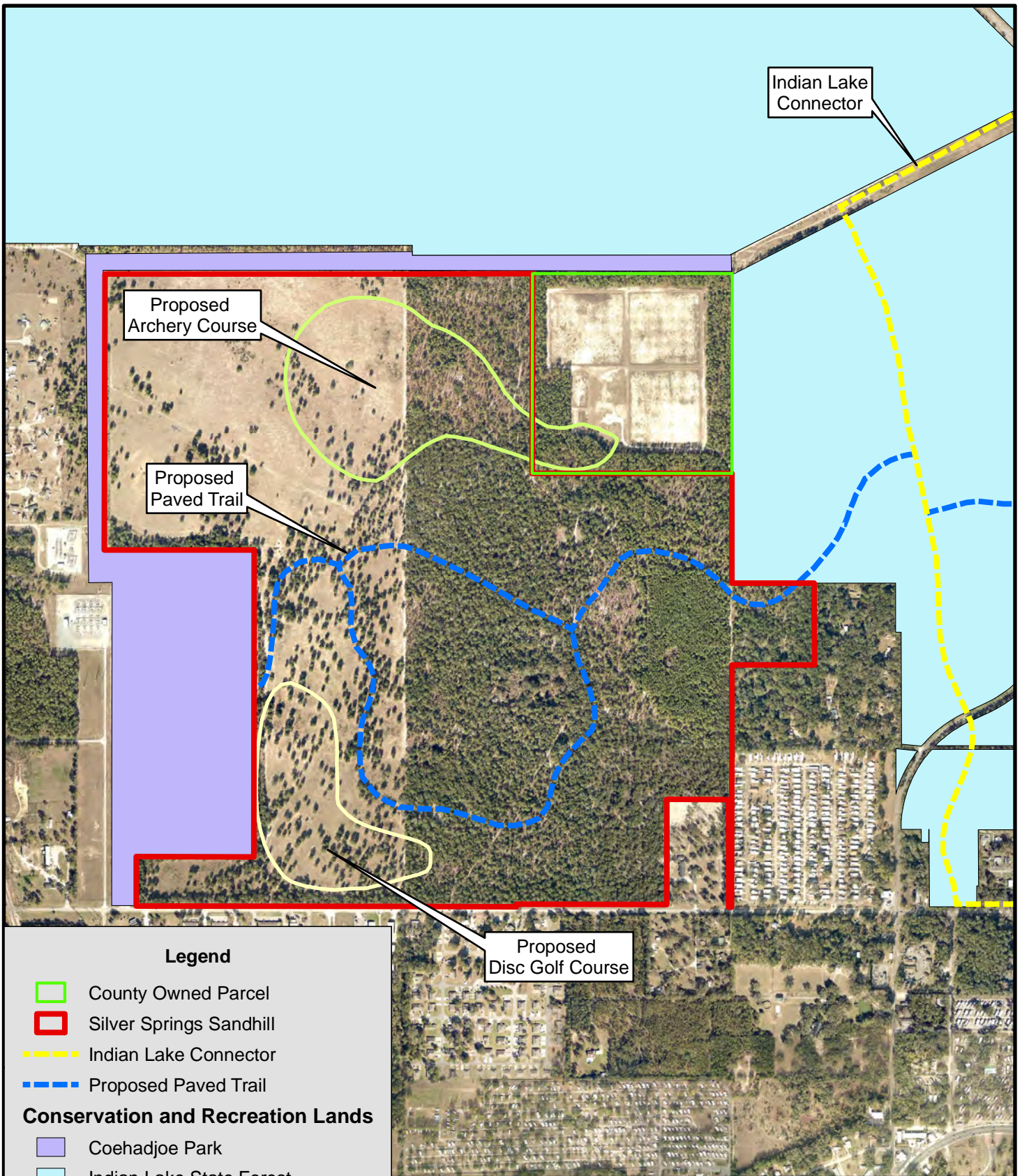
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Source: FNAI, 2018; FDEP, Office of Greenways & Trails, 2012; Water & Air Research, Inc., 2018.

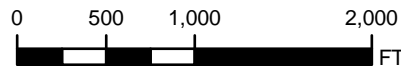


Legend

- County Owned Parcel
- Silver Springs Sandhill
- Indian Lake Connector
- Proposed Paved Trail

Conservation and Recreation Lands

- Cohadjoe Park
- Indian Lake State Forest



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Figure 4-2.
Marion County Concept Plan
for Silver Springs Sandhill
Marion County, Florida

Source: FDOT, 2017; Marion County, Florida, 2018; Water & Air Research, Inc., 2018.

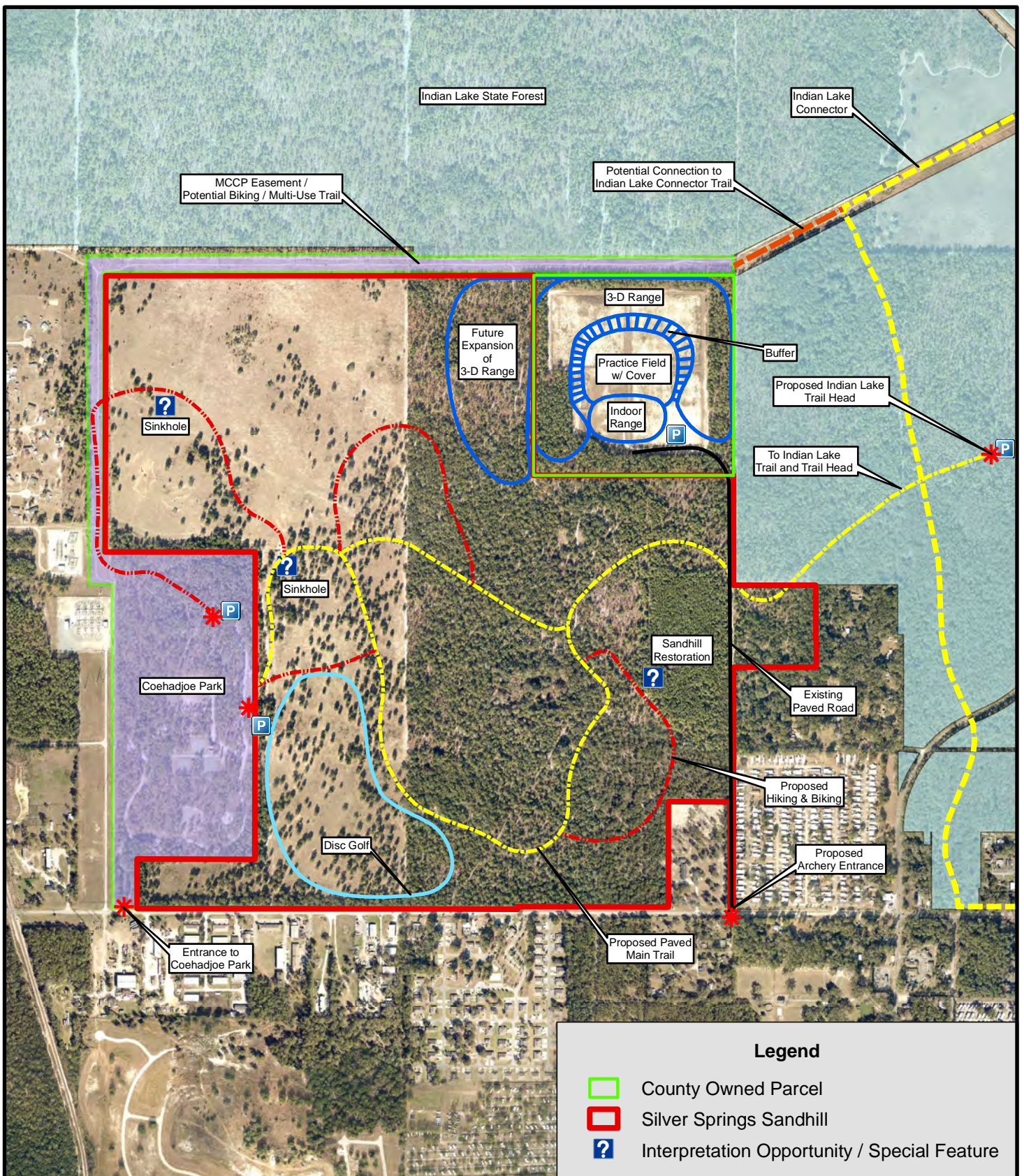
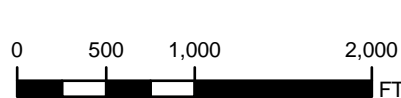


Figure 4-3.
 Proposed Recreation Concept Plan
 for Silver Springs Sandhill
 Marion County, Florida

Source: FDOT, 2017; Marion County, Florida, 2018; Water & Air Research, Inc., 2018.



4.2 Proposed Improvements

The property will be developed as a passive recreation park (a conceptual site design developed by MCPR is provided in Figure 4-2). The site will be improved to allow public access and connectivity to other publicly owned lands. It is the goal of this LMP to propose program elements that will complement recreational facilities available regionally. Because of its significance as a component of the site's recreation plan, the 60-acre MCWF site located at the northeast corner (Parcel Number 15864-001-00) is included in this LMP (Figure 4-3).

The Sandhill is ideal for multiple-use activities defined in Section 253.034, Florida Statutes. The proposed uses of recreation, habitat, cultural preservation and the protection of water resources emphasize the multiple-uses of the site. Any significant geologic features, or karst features such as sinkholes, will be buffered to provide for public safety and protect them from contamination and soil erosion. It is a goal to manage this site to conserve the lands and natural resources for enjoyment of the public. (MCPR April 2016). Trail design will take advantage of existing dirt track roads with educational signage describing the natural systems of The Sandhill, and its ecological value to the region's water resources. Other facilities, including trail connections to MCCP and ILSF, will have minimal impacts to the ecological structure and function of the site. This management plan will outline list of appropriate outdoor recreational uses below. Adjacent recreation lands provide an array of recreational activities. It is the objective of this plan to complement these programs by providing activities not available in the area. ILSF provides hiking, picnic pavilions, wildlife viewing, and equestrian trails. MCCP's amenities include passive and active recreation; basketball, hiking/walking, horseshoes, picnic pavilion, picnic tables, playground, restrooms, tennis, volleyball, and wildlife viewing (MCCP, <https://www.marioncountyfl.org/Home/Components/FacilityDirectory/FacilityDirectory/30/663>, Retrieved from URL 11/2018).

A preliminary list of improvements for The Sandhill includes:

- Paved, multi-use trail; connecting adjacent public land and other paved trails
- Parking area
- Restroom facility
- Hiking trails (unpaved)
- Biking trails
- Multi-use archery course
- Discgolf course
- Nature viewing areas
- Interpretive amenities

(MCPR April 2016)

Entrance Road, Parking and Restrooms

Parking is proposed at the MCWF area in northeast portion of the site convenient to the proposed archery facility. An access entrance to this area of the site will follow the paved road on the eastern boundary. A restroom facility is also proposed at this node.

Other parking is currently located on MCCC convenient to the proposed main trail trailhead entrance connecting other trail facilities and disc golf course, option two, in the southwest portion of the site. Currently, there are 60 spaces on MCCC. If, in the future, these spaces cannot accommodate use, extra parking is recommended on site adjacent to 35th Street convenient to most of the proposed facilities potentially using the MCCC entrance road. Also, there are other facilities such as restrooms, picnic pavilions and hiking on MCCC that the public can take advantage of prior to the completed improvements on The Sandhill.

Trail System and Regional Connectivity

A main paved trail (Main Trail) connecting MCCC (west of the site) to the Indian Lake Connector (5 mile paved trail) to the east, incorporating a large loop, is proposed. The trail will continue through ILSF to a proposed trailhead and parking area on the east boundary located on S.R. 35 in the southern portion of the ILSF. This is a multi-use trail that will allow cyclists and hikers alike to connect to a regional network of future trails as illustrated in the Marion County Recreation Master Plan. Unpaved trails are also proposed for the site taking the user through a representative array of interesting natural features utilizing existing unimproved roads and future fire lines. These trails will provide off road cycling and hiking, possibly separating uses on some of the trails. All trails will connect proposed facilities on site and offer varying levels of difficulty. Approximate length of the paved trail is 2.15 miles. Approximate lengths of the unimproved trails are 1.45 miles.

Education Interpretation

The main theme of the interpretation and on site education is aquifer recharge and water resources of the Silver Springs Springshed. The site was primarily acquired to preserve these resources and provide public access and opportunities to interpret how important land preservation is to the Floridan Aquifer in this region. Secondary interpretive themes can include the sandhill natural community and the species it supports including the protected species gopher tortoise. There will also be opportunities to interpret the different stages of restoration and management activities as they occur. A 15 acre patch of sand pine located in the central eastern portion of the property will be restored to a sandhill (longleaf pine) community and is a prime opportunity for interpretation. Trail alignments should take into consideration special features of the site that would be conducive to viewing areas that illustrate the interpretive goals of The Sandhill in addition to existing and historical jeep trails.

Archery Facility and Field Course and Disc Golf Course

MCCP is charged with providing a wide array of desirable recreation facilities and programs. A multi-use archery facility and disc golf course are determined to be complementary recreational elements to the area. These two activities require a diverse range of forest densities. Because of the cattle grazing (semi-improved pasture) and decommissioned wastewater site (MCWF area) are adjacent to heavy canopied areas, The Sandhill site makes for an interesting experience for both activities. The design of these passive recreation activities shall take into consideration the restoration goals of this plan.

Archery

Currently there are two indoor archery ranges in or near the City of Ocala and no field ranges available in the area. The proposed archery range may be located in the north end of the property with a safety buffer as not to conflict with other proposed recreational elements. The

facility will include a multi-use outdoor range as well as a field course. The archery facility may be sited on the 60-acre MCWF site located at the northeast corner and take advantage of the open disturbed area for an associated outdoor range. A separate entrance to the archery area is proposed on the east side of the property off of 35th Street, across from Northeast 52 Court, on an existing paved service road. A small parking area should be planned for expansion if need be. The size of the parking area will be determined by the size of the facility design. Facility size will be determined through a series of public meetings separate from the approval of this LMP and following guidelines of said facilities. A practice field should be centrally located to allow ample area for the archery 3-D field course to include a buffer between the different activities. A majority of the 3-D field course should be sited on the MCWF site's forested perimeter (approximately 30 acres) where there is a variety of forest densities and topography. Future expansion of the 3-D field course can occur to the west into the wooded area and thus be reserved for that purpose unless other uses are more feasible.

There are four disc golf courses in and near the City of Ocala. The Sawmill Disc Golf Course is located 1.3 miles east of the project area on Northeast 60th Court in Silver Springs. Because there are a variety of courses available to the public, it is the recommendation of this plan to keep the course a maximum of 50 acres and locate a majority of the course in the semi-improved pasture. Furthermore, a smaller course will allow for fewer conflicts with management and allow for a variety of other recreational activities. Ideally, a course should require 1 acre per hole depending on tree density. The Disc Golf Association's website provides design standards for the layout of the course. (Disc Golf Association Website, <https://www.discgolf.com/disc-golf-education-development/disc-golf-course-design/pdga-disc-golf-course-design-standards/>, retrieved from URL 11/2018.)

An ideal location for a disc golf course is in the semi-improved pasture in the southwestern portion of The Sandhill adjacent to MCCP. The combination of open and treed areas will make for an interesting and challenging course.. This area is convenient to the MCCP entrance and parking providing easy access off of Northeast 35th Street. A feasibility study should be conducted within the first 2 years of this LMP to determine the most suitable site for optimal experience, access, size and compatibility to all other management and recreation activities.

Off Site Improvements

Sixty parking spaces are available on MCCP and are conveniently located near the entrance to the proposed Main Trail on the west side of The Sandhill. For access, the disc golf course in the southwest corner of The Sandhill is near the southernmost parking area in MCCP which could be expanded if needed.

5.0 Resource Management

Management Policy

The primary goals of management of The Silver Springs Sandhill are: to protect water resources; to aid in the restoration of Silver Springs; to conserve, protect, restore and manage important ecosystems, landscapes and ecosystems; to provide areas for resource-based recreation; and to preserve areas for the enjoyment of future generations. (Marion County 2015.)

5.1 Site Security

Site protection starts with effective park planning strategies. Fortunately, due to the prior use of The Sandhill, the perimeter is fenced with minimal gates and access points. A proper assessment will be conducted to determine where fences can be removed to encourage ecological connectivity, especially between adjacent public lands such as ILSF. Some east/west cross fencing occurs in the semi-improved pasture because of the cattle lease, this fencing will be removed when the lease is terminated.

Access to The Sandhill site will continue to be controlled daily by opening and closing of the entrance gate according to posted hours of operation. The site perimeter shall be inspected periodically to identify unauthorized access points and if observed, management strategies will be implemented to stop the problem. Any illegal dumping will be reported and actions taken to reduce the likelihood of illegal dumping. Any evidence of dumping that has the potential for contaminating groundwater resources will be reported and mitigated upon discovery.

The park will be opened, closed, and monitored by MCPR personnel. The Marion County Sheriff's Department shall provide security for the site by monitoring the trailhead area regularly and providing other support as conditions warrant. There are no resident security personnel on The Sandhill property, but there are at the adjacent MCCP

Proposed security improvements include posting safety and emergency information at hiking trail entrances and signage.

5.2 Exotic Species Management

The management and control of exotic invasive plant and animal species is one of the most important tasks in maintaining and restoring natural communities. Exotic invasive plant and animals 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. Exotic invasive plants can alter natural processes such as fire frequency or intensity and water flow. http://www.fleppc.org/FLEPPC_main.htm

In addition to herbicide applications for exotic invasive plant species and other control methods (hand pulling, prescribed fire, and biological controls), the long-term control of these species must include periodic surveys of the property for new infestations and monitoring areas previously targeted with eradication measures. Routine surveys of natural communities help discover new infestations before they spread extensively. Monitoring historical eradication efforts help determine the effectiveness of herbicide formulations, herbicide application timing and overall eradication efforts.

Currently, Marion County is actively managing the mimosa and camphor species on site. Monitoring and surveying methodology may follow the procedures described in the Bureau of Land Management's Technical Reference, Measuring & Monitoring Plant Populations (Elzinga, et al. 1998). Exotic animal species surveys will be included. Species-specific sampling methods may be necessary on a case-by-case basis.

Exotic species control is time consuming and expensive. Resources include the commitment of staff time for surveys, monitoring, and exotic invasive species control or sufficient funds and staff time for hiring and managing qualified contractors.

5.2.1 Invasive Exotic Vegetation and Management

The spread of invasive and exotic plants reduces biodiversity, alters the integrity of native plant communities, and adversely affects wildlife habitat. Invasive plants are regulated by FDEP, the Florida Department of Agriculture and Consumer Services, and the U.S. Department of Agriculture. The FLEPPC has compiled a list of plant species that are invading and disrupting native plant communities (Category I, FLEPPC [I]) and species that have the potential to invade and disrupt natural communities (Category II, FLEPPC [II]). A list of these species can be found at <http://www.fleppc.org/list/05List.htm>.

Exotic invasive plant species observed within the Sandhill site commonly occur throughout all natural and altered communities and pastures (Figure 3) with varying degrees of establishment and proliferation (Table 2-3). Thirty-five non-native (exotic) plants have been documented on The Sandhill site with 14 designated as FLEPPC (I) and 4 as FLEPPC (II) invasive exotic plants. The predominant exotic invasive species observed on the forested portions of The Sandhill site include mimosa and camphor tree. The other exotic and exotic invasive species on the FLEPPC list were observed in limited areas and quantities in the forested areas. Bahiagrass is the dominant exotic species observed in the semi-improved pastures. Invasive exotic plants observed on site are listed in the Table 2-3. In general, mimosa is the most prevalent exotic invasive species and it occurs in localized areas in the sandhill and successional hardwood forest communities. Also, camphor tree seedlings are common in portions of the successional hardwood forest.

At present, only relatively low levels of most invasive species are present (except possibly the mimosa and camphor tree); however, they have the potential to spread rapidly and damage on site communities. Techniques to control invasion of exotic plants species include regular monitoring and rapid response to infestations with herbicide and mechanical treatments. Exotic invasive plant treatments occur two times per year, once in the growing season and once when plants begin preparing to go dormant. Spot herbicide spraying following the best management practices for the chemicals used (found on the labels) are recommended to control the exotic invasive plant populations. Every effort shall be made to avoid impacts to desirable native tree, shrub, and groundcover vegetation.

Specific locations within The Sandhill site support increased consolidations, densities and occurrences of multiple, non-native plant species; notably, most historical disturbances (borrow area and adjacent clearing/regeneration [old homesites]), log harvesting and associated impact points, unauthorized trash disposal areas (successional hardwood forest east of the paved road), utility rights-of-way, jeep trails, and roads.

Evidence of current control measures by Marion County is conspicuous within the successional hardwood forest as the program maintains an active and aggressive non-native invasive

species control program within the eastern forested portion of The Sandhill site. Early documentation and treatment is the most effective method for controlling exotic invasive plant infestations. MCPR personnel periodically checks The Sandhill site during routine visits to identify new or untreated infestations and recurrences of exotic plants, and if observed, they initiate appropriate actions to address the problem. Adjacent lands are a source for exotic invasive species through landscaping practices or harboring seed sources. Cooperation and consultation with adjoining property owners, power companies, and land managers is effective in achieving mutual benefit. Early detection through surveys and rapid control/treatment followed by monitoring are part of the exotic invasive plant management effort at The Sandhill. Mapping and documenting the locations of new and ongoing infestations are an important part of the exotic invasive plant management program.

Various resources describe methods for controlling exotic invasive plants using chemical herbicides and biological treatments. Exotic invasive plant species control is an evolving science and FLEPPC updates guidelines as new information becomes available. Marion County is committed to using the most appropriate and effective methodologies available to reduce existing infestations and to develop site-specific methodologies for managing species. Some online resources include:

- University of Florida, Center for Aquatic and Invasive Plants Web site <http://plants.ifas.ufl.edu>.
- Florida Exotic Plant Pest Council Web site <http://fleppc.org>.
- Identification and Biology of Non-Native Plants in Florida's Natural Areas. K.A. Langeland and K. Craddock Burks. 165 pp. 1998. IFAS Publication SP 257.
- Control of Non-Native Plants in Natural Areas of Florida. K.A. Langeland and R.K. Stocker. 34 pp. 2001. IFAS Publication SP 242.

5.2.2 Invasive Exotic Animals and Management

Feral animals can disrupt native plant communities and animal populations. No major damage from non-native (exotic) animals was observed during the 2018 site visits, other than the cattle on the semi-improved pasture and minimal disturbance from nine-banded armadillos.

Marion County staff engaged in routine management tasks (such as mowing, firebreak maintenance, and exotic invasive plant management) will document exotic animal species occurrences; however, systematic surveys using accepted methodologies will support assessment of exotic species infestations. The objectives of exotic fauna surveys are to document exotic species while populations are controllable (if possible) and to implement control measures, as applicable. Marion County shall periodically monitor for the presence of species such as feral pigs, cats, and dogs. An important part of the feral animal management is education outreach that will concentrate on the harm by domestic pets such as cats and dogs to native wildlife populations. The outreach should be directed to neighbors of The Sandhill site and visitors. Education is important since fencing will not prevent small dogs and cats from entering the property.

Although not currently surveyed for, pathogenic organism infestations may influence The Sandhill. Marion County will remain vigilant and responsive to damaging occurrences of pathogenic organisms affecting native species on site. As example, laurel wilt (*Raffaelea lauricola*), a lethal pathogen, mortally infects plant species of the laurel family (*Lauraceae*). No

native species in the laurel family were documented within the Sandhill site but, the exotic, camphor tree, is extant. Adaptive and rapid responses to local forest pathogens and destructive insects will be addressed by Marion County if needed.

Feral Animals Removal and Management

Feral hogs have not been documented at The Sandhill however, the risk of an infestation is likely. The Sandhills remoteness and adjacency to other large remote public lands provides challenges to the timely discovery of a feral hog infestation. Marion County will remain vigilant to feral hog signs and conduct periodic feral hog surveys. Feral hogs inflict serious destruction and impact to rare species, natural plant communities, fossorial animals and established populations of reptiles and amphibians. Marion County will consider contracting professional hog removal agents as the need is determined.

5.3 Prescribed Fire

Prescribed Fire Management Plan

The uplands on The Sandhill are fire dependent. Fire suppression has occurred on the site for at least several decades prior to purchase and has resulted in significant hardwood invasion in the sandhill community and the former sandhill community now mapped as successional hardwood forest. The lack of fire has caused hardwood invasion within these communities and has also caused an abnormally high cover of hardwoods and some groundcover reduction in the sandhill community.

A site-specific fire management plan shall be developed by Marion County for The Sandhill tract.

5.3.1 Importance of Fire

Prescribed fire is a land management tool used to restore and maintain fire-dependent ecosystems, enhance forest health, improve wildlife habitat, and prevent dangerous, uncontrolled wildfire by reducing hazardous fuels loads. Fire promotes healthy ecosystems by stimulating pyrophytic vegetation, inhibiting non-pyrophytic vegetation and many species of exotic plants, releasing nutrients into the soil and enhancing food production for wildlife (<https://www.freshfromflorida.com/Divisions-Offices/Florida-Forest-Service/Wildland-Fire/Prescribed-Fire/The-Natural-Role-of-Fire>).

Wildfire has historically not been a concern at The Sandhill site although the potential is there because of proximity to roads and neighborhoods (urban interface) and relatively high levels of burnable fuels in the sandhill and portions of the successional hardwood forest communities. A safety benefit of prescribed fire is that it reduces fuels that have built up on the forest floor over time to manageable levels, reducing the potential for catastrophic wildfire. If fuels are not reduced every few years, wildfires can become destructive and harder 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 on periodic fire to remain healthy. Prescribed fire is a vital tool for managing and enhancing sandhill communities and restoring the successional hardwood forest. Gopher populations require periodic fire to maintain open communities that enhance forage suitable plants. Listed plants

species that may have historically occurred in these two communities would also benefit from periodic fire.

5.3.2 Management Measures for Fire

Prescribed burning is the single most important land management task carried out by Marion County. Heavy fuel loads in some areas coupled with adjacent or nearby urban conditions and roads make prescribed fire at The Sandhill site difficult. The use of prescribed fire is dependent on ecological needs, seasonal timing and scheduling, available resources, and appropriate weather conditions. Preparation for prescribed fire includes the creation or maintenance of fire lanes, surveying pre-burn conditions, preparing a prescribed burn plan, and notifying adjacent property owners.

The Sandhill is divided into nine separate MUs based on the type of habitat and the appropriate burn schedule (Figure 5-1). For example, prescribed fire within The Sandhill should occur on 2- to 4-year intervals to reduce hardwood species encroachment and to maintain the health of pyrophytic sandhill plant species. Prescribed fire burn plans will be developed prior to the use of prescribed fire. Marion County will prioritize prescribed fire for MUs that contain listed species or natural communities dependent on fire (e.g., gopher tortoises, sandhill) and to mitigate wildfire by reducing fuel loads (e.g., MUs adjacent to urban areas).

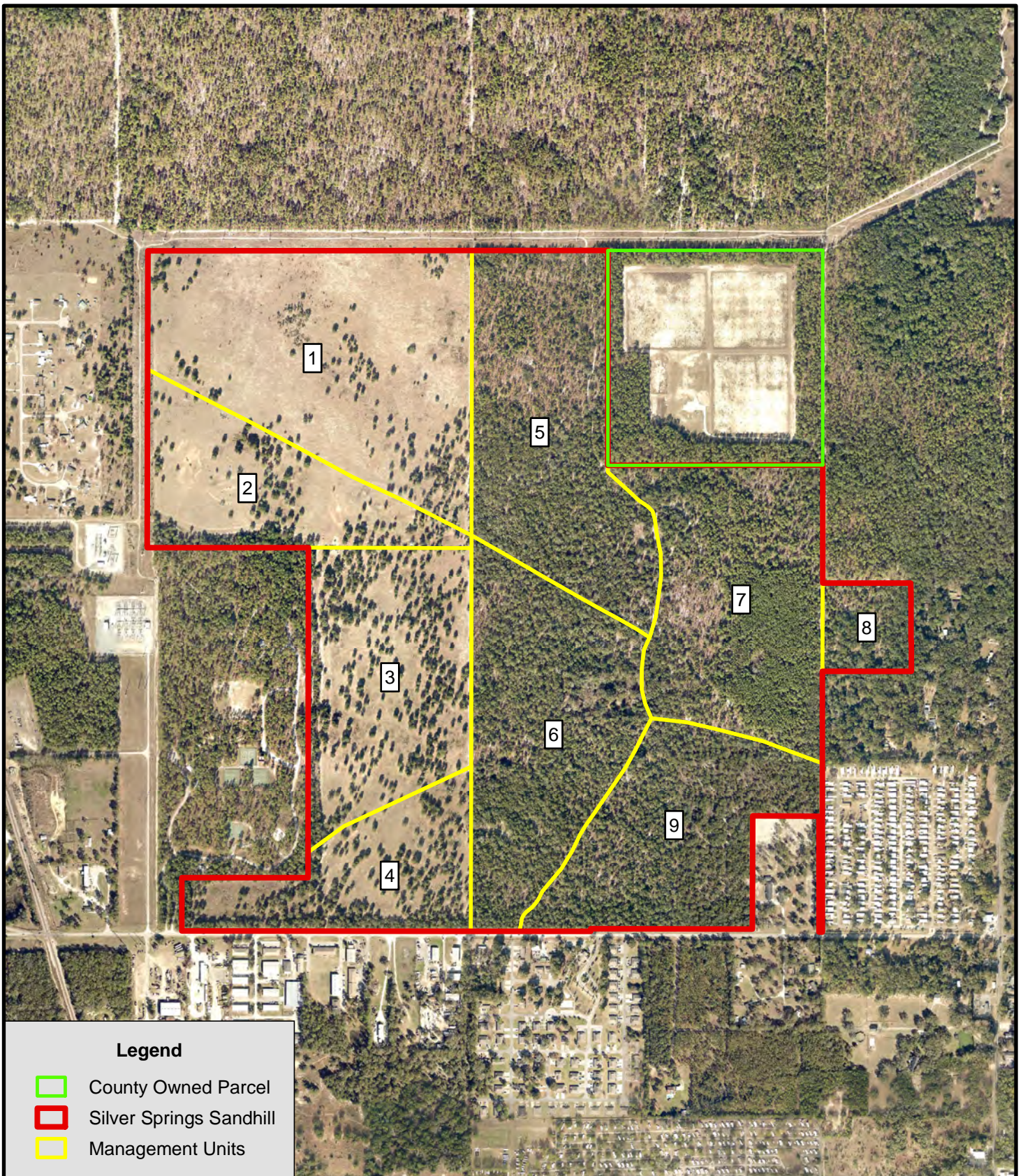
Prescribed fire as a management tool raises concerns regarding the health and safety of nearby residents and their property. Some safety concerns are reduced by following standard prescribed fire procedures. The management of smoke is a serious and difficult issue, especially when conducting prescribed fire in urban areas, and adjacent to busy roads and low-lying areas. Formulating prescribed fire prescriptions to increase smoke dispersal and reduce smoke on nearby roads and urban areas can help alleviate smoke-related health issues. 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. Initially, heavy loads of fuel within a fire-suppressed MU require specific weather and wind conditions (e.g., wind speed and direction). Whereas, lighter fuels (after several prescribed fires) will generate less smoke and may allow for burning over a wider range of weather and wind conditions.

The long-term goal is to reach the “maintenance” phase for The Sandhill. Sandhill communities in “maintenance” phase are easier and safer to burn which allows for more growing season burns to stimulate native plants. The maintenance phase of the sandhill community is defined as the ecological conditions that result from a natural fire regime (e.g., few hardwoods, reduced shrub heights, reduced fuel loads, etc.).

Prescribed Fire Training

Prescribed burns will be conducted by certified Marion County prescribed burn staff. FFS may be requested to participate on burns, or at times, conduct certain high-risk burns under the supplemental prescribed burning contract. All department field staff participating on burns are certified through the FFS with National Wildfire Coordinating Group (NWCG) courses S-130/S-190/L-180, at a minimum.

All prescribed burn managers (burn bosses) are certified through the FFS via the Certified Prescribed Burn Manager course. After successfully completing the course, potential prescribed



Legend

- County Owned Parcel
- Silver Springs Sandhill
- Management Units

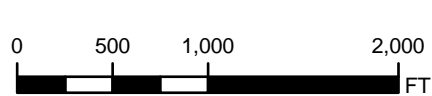


Figure 5-1.
Management Units at Silver Springs Sandhill
Marion County, Florida



Source: FDOT, 2017; Marion County, Florida, 2018; Water & Air Research, Inc., 2018.

burn managers must submit a burn plan to the local FFS Forest Area Supervisor (FAS), do an onsite pre-burn inspection with the FAS, then successfully conduct two prescribed burns with FAS (or their designated representative) present.

Marion County staff with less experience is teamed up with more experienced members to ensure both safety and to enhance learning. As they progress through their training, they are allowed to operate more independently.

Marion County maintains all prescribed burn equipment (brush trucks, UTVs, spray tanks, chainsaws, etc.). Periodic refresher training is done to ensure Department staff knows how to operate the equipment. Pre-burn equipment checks are done the morning of each burn. Any equipment issues that may arise during the burns, if they cannot be corrected by Marion County staff immediately, are documented at the end of the day at the post-burn debrief and addressed upon return to the home office.

5.4 General Management Needs

The desired outcome for The Sandhill site dictates the various management and restoration strategies. Due to two general land cover types at The Sandhill site, non-forested semi-improved pasture on the western half and forested sandhill and successional hardwood forest on the eastern half, two different management and restoration strategies with varying intensities will be implemented. The following briefly outlines preliminary needs (note, that some of the topics will be covered in more detail in Section 6 – Restoration.).

Semi-Improved Pasture

The semi-improved pasture areas will undergo a phased restoration to a sandhill community (longleaf/wiregrass ecosystem) using various methods to remove the bahiagrass and plant longleaf pine and associated groundcover species.

- Removal of interior fencing
- Prescribed fire
- Development of a prescribed fire plan
- Creation of fire breaks/lines
- Implementation of prescribed fire
- Exotic species management
- Restoration
- Restoration plan development
- Protection of desired stands of trees
- Bahiagrass chemical treatment
- Longleaf pine planting
- Groundcover planting or seeding

Xeric uplands (sandhill, successional hardwood forest, and altered land cover uses)

The use of prescribed fire in conjunction with other management tools such as mechanical and chemical hardwood removal will help transition the successional hardwood forest into a manageable sandhill natural community.

- Prescribed fire
- Development of a prescribed fire plan
- Creation of fire breaks/lines

- Implementation of prescribed fire
- Exotic species management
- Removal of any remnant items from the homesite (clearing/regeneration area near the borrow area on Figure 2-2) and borrow areas
- Soil testing in disturbed areas
- Restoration
- Restoration plan development
- Hardwood management (chemical treatment and/or mechanical removal)
- Longleaf pine planting
- Groundcover planting or seeding

Note: Restoration of the successional hardwood forest will require mechanical and or herbicide based tree removal and the reintroduction of fire. Where characteristic herbaceous species (e.g., wiregrass) have been lost, reintroduction via seed or plants may be necessary to restore natural species composition and community function.

Detailed Management needs for the Sandhill Community

From (FNAI 2010)

Management Considerations for the Sandhill Natural Community:

Frequent fires are essential for the conservation of native sandhill flora and fauna. In order to maintain (or restore) natural historic conditions, prescribed fire should be applied in sandhill on a 1- to 3-year interval. Variability in the season, frequency, and intensity of fire is also important for preserving species diversity, since different species in the community flourish under different fire regimes (Myers 1990; Robbins and Myers 1992). Frequent fires reduce ground litter and prevent hardwood and shrub encroachment into the midstory, thereby allowing ample sunlight to reach the forest floor. This is essential for the regeneration and maintenance of longleaf pines, as well as the native grasses, herbs, and low shrubs that characterize sandhill communities. It is important to recognize, however, that too many years of closely spaced burns (≤ 1 year) may decrease species diversity.

By comparison, fires that consistently trend toward longer burn intervals (> 3 years) can allow for a build-up of fuel loads and a greater potential for lethal heat-release temperatures. When fuel loads are increased by an additional 2 to 3 years of accumulation, studies of fire physics show an exponential gain in heat-release rates which can be lethal to longleaf pine (Rothermel 1983; Thompson, pers. comm. 2006). Unnaturally high tree mortality, particularly of larger, older trees, can be a concern when fire is reintroduced in long-unburned sites with dense midstory and high duff accumulation (Varner et al. 2005). Reducing dense vegetation and removing duff around larger pines is one option for protecting canopy trees. Application of multiple low-intensity fires over a series of years is another effective means for gradually reducing accumulations of duff and heavier fuels while minimizing tree mortality. These considerations are particularly important in locations where older canopy trees are rare due to past timbering or fire exclusion practices (Varner et al. 2005).

Avoiding widespread soil disturbance, such as mechanical roller chopping, can prevent the establishment of weedy species and protect the existing, established native groundcover (Provencher et al. 2001). This groundcover, especially wiregrass, is unlikely

to recover if it is lost (Myers 1990; Cox et al. 2004) and may require reintroduction through seeding or direct planting, both of which are labor-intensive and expensive.

In areas where fire exclusion has resulted in heavy midstory hardwood and shrub encroachment, reduction of the midstory by fire, or a combination of fire and mechanical or chemical treatment may be appropriate (Hay-Smith and Tanner 1994). In a study comparing three hardwood midstory removal techniques in sandhill (fire alone, mechanical + fire, herbicide + fire), (Provencher et al. 1999) found that prescribed fire alone in the growing season was the most cost effective method at Eglin Air Force Base. The use of herbicides (ULW® form of hexazinone), while more expensive, has also been effective on hardwood mortality (Hay-Smith and Tanner 1999) especially when followed with prescribed fire (Provencher et al. 1999). This method, however, had negative effects on several understory species in Eglin sandhill, including legumes (*Fabaceae*), gopher apple, huckleberry, and little bluestem, reduced the overall richness of groundcover species (Provencher et al. 1999), and reduced the biomass of wiregrass due to an initial top-kill (Hay-Smith and Tanner 1999). Provencher also found that mechanical midstory removal (chainsaw felling of oaks) reduced woody species density but was no more effective at increasing groundcover diversity than burning alone.

Invasive exotic plants are another management concern in sandhill. Cogon grass; Van (Loan et al. 2002), centipedegrass (*Eremochloa ophiuroides*), mimosa, and natalgrass (*Melinis repens*) are especially problematic invaders of sandhill. Lippincott (1997) found that cogongrass invasion in sandhill reduced soil moisture and increased fuel loads. This ultimately led to higher intensity fires that resulted in greater mortality of juvenile longleaf pine as compared to non-invaded sandhill.

5.5 2- and 10-Year Management Planning

Management planning is part of the short and long term planning for The Sandhill site. The following outlines existing and proposed management needs over the next 10 years.

5.5.1 2-Year Management Objectives

Tasks/Capital Improvements

Physical Assets

- Install perimeter and MU fire lines
- Install/remove rehabilitate perimeter fencing in selected areas if needed
- Install public use and recreational facilities
 - Public entrances (MCCP entrance and Archery facility entrance)
 - Public use signage with map
 - Public use and information kiosk
- Install non-paved internal site trails with signage
- Develop plans for
 - Paved Ocala connector trail
 - ILSF connector trail
 - Archery facilities
 - Disc golf facilities
 - Public information kiosks
 - Sandhill restoration
 - Sinkhole/karst aquifer recharge importance

- Prescribed fire importance
- Listed species (gopher tortoise)

Resource Management

- Continue exotic/invasive plant surveys and eradication efforts
 - Focus on mimosa and Cogongrass
 - Borrow area
 - Old home site (clearing/regeneration)
 - Successional hardwood forest east of paved entrance road
- Remove trash from old home site (clearing/regeneration), borrow area and successional hardwood forest east of paved entrance road
- Develop the prescribed fire management plan
- Begin the prescribed fire program
- Develop and implement environmental monitoring plan for
 - Listed plant and animal species
 - Exotic/invasive species
- Develop restoration plans that address hardwood removal and restoration plantings for
 - Successional hardwood forest
 - Hardwood removal
 - Supplemental longleaf pine planting
 - Pine plantation – sand pine
 - Remove sand pine
 - Prepare for planting longleaf pine
 - Groundcover supplemental planting or seeding
 - Sandhill
 - Prescribed fire

Support and Maintenance

- Maintain existing jeep trails that are to be utilized as service roads and trails
- Maintain perimeter and interior fire lines
- Maintain public use facilities
 - Entrance and trail signage
 - Trails
 - Parking areas
 - Jeep trails/service roads

Administration and Law Enforcement

- Administration and Law Enforcement

5.5.2 10-Year Management Objectives

Tasks/Capital Improvements

Physical Assets

- Rehabilitate perimeter and MU fire lines
- Rehabilitate perimeter fencing in selected areas if needed
- Install additional public use and recreational facilities;
 - Public entrances (northwest entrance and southern entrance)
 - Additional public use signage at new entrances
 - Additional public use and information kiosks
 - Additional parking facilities

- Install additional public use and recreational facilities
 - Paved Ocala connector trail
 - ILSF connector trail
 - Archery facilities
 - Disc golf facilities
 - Public information kiosks
 - Sandhill restoration
 - Sinkhole/karst aquifer recharge importance
 - Prescribed fire importance
 - Listed species (gopher tortoise)

Resource Management

- Continue exotic/invasive plant surveys and eradication efforts
- Continue prescribed fire management
- Continue environmental monitoring plan for
 - Listed plant and animal species
 - Exotic/invasive species
- Implement restoration plans that address hardwood removal and restoration plantings for
 - Pasture-semi-improved
 - Remove bahiagrass – herbicide treatment
 - Plant longleaf pine
 - Successional hardwood forest
 - Hardwood removal
 - Supplemental longleaf pine planting
 - Pine plantation – sand pine
 - Remove sand pine
 - Prepare for planting longleaf pine
 - Groundcover supplemental planting or seeding
 - Sandhill
 - Prescribed fire

Support and Maintenance

- Maintain existing jeep trails and service roads
- Maintain perimeter and interior fire lines
- Maintain fencing

Administration and Law Enforcement

- Administration and Law Enforcement

6.0 Habitat Restoration

Figure 2-2 depicts the various natural communities and land covers requiring restoration on The Sandhill site. Detailed restoration information is included in Section 2.2.1 in the Management Needs and Desired Future Conditions (for the various land cover types) sections. Table 6-1 briefly tabulates restoration needs and Tables 6-2 and 6-3 outline the management goals for the 2-year and 10-year planning periods, respectively. Additional management/restoration information is also included in Section 5.3 - Prescribed Fire, Section 5.4 - General Management Needs, and Section 5.5 - 2 and 10-Year Management Planning. Summarized management/restoration information is provided in Section 8 - Summary of Management Objectives.

Prescribed Fire - Sandhill Community

The sandhill natural community is relatively intact with a diversity of fine fuels (mainly wiregrass and pine needle cast) and an abundance of longleaf pine. Hardwood invasion within this community is evident with various non-xeric oaks as well as turkey oak. The sandhill natural community (Figure 2-2, Section 2.2) within The Sandhill Tract can be enhanced and restored with prescribed fire. It makes up the northern portion of MU 5 and most of MU 7 (Figure 8). It is estimated that with two or three winter burns and several growing season burns, the sandhill natural community will be in the maintenance phase where periodic growing season burns will be sufficient as a land management tool. Detailed restoration information for the sandhill community is included as an excerpt from FNAI, 2010 in the Desired Future Condition of the Sandhill in Section 2.2.1 and Management Considerations for the Sandhill Natural Community on page 45 in Section 5.4 - General Management Needs.

Successional Hardwood Forest

The altered community mapped as successional hardwood forest is currently lacking fine fuels (either groundcover or pine needle cast), a predominance of longleaf pine, and it is characterized as unburnable due to the previous issues as well as an abundance of oak tree duff and bare sand in some areas. This community will need some sort of hardwood removal/harvesting and possibly long leaf pine planting to facilitate burning. It is likely that in the current condition, a few scattered areas may respond to prescribed fire under certain weather conditions. This unburnable community occurs in MUs 6, 8, and 9, and the southern portions of MU 5. Detailed restoration information for the successional hardwood forest is included in the Desired Future Condition of the Successional hardwood forest in Section 2.2.1.

Sandpine

In the east central portion of The Sandhill tract, is a 14.5-acre pine plantation planted prior to 1994 in sandpine. To restore this area to historic sandhill, the sandpine will need to be logged and longleaf pine planted. This community lies in the eastern portion of MU 7.

Mechanical/Chemical Vegetation Management Information

A pressing management need for the portions of the sandhill and most of the successional hardwood forest community is the reduction of hardwoods. This goal can be accomplished using mechanical vegetation management (MVM), the chemical treatment of hardwoods and possibly prescribed fire in limited areas. Portions of the sandhill in MU 5 and portions of MU 7 (Figure 2-2) and most all of the successional hardwood forest in MUs 5 through 9 will require extensive hardwood removal.

Restoration Resources

Ocala Longleaf Local Implementation Team (OLIT)

<https://www.longleafalliance.org/olit>

The mission of OLIT is to promote the restoration and maintenance of the longleaf pine ecosystem in central Florida in a region anchored by the Ocala National Forest, by bringing together governmental agencies, nongovernmental organizations, private landowners, practitioners and other stakeholders to provide strategic leadership, resource sharing, collaboration, and applied learning. This organization is potential funding source for hardwood removal, longleaf pine planting and prescribed fire assistance.

Primary OLIT Contact:

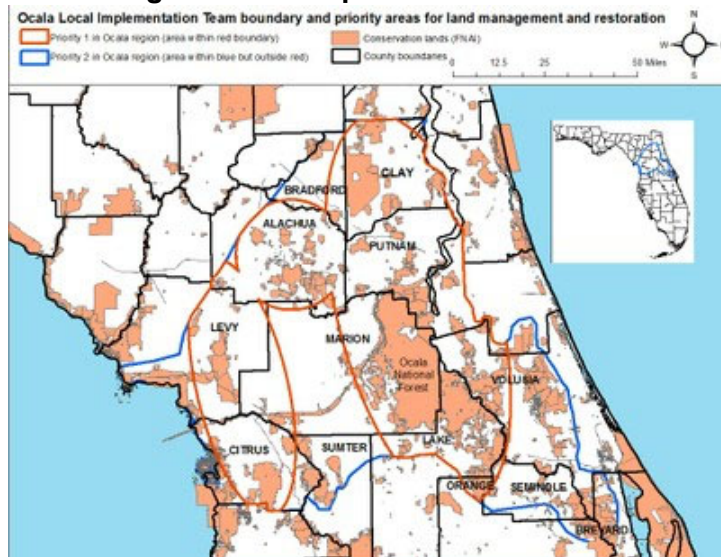
Ivor Kincaid, Ocala LIT Coordinator
Alachua Conservation Trust
act.landmanager@gmail.com

Other Resources and Links

Florida Forest Service County Foresters (Contact your county forester to find out more about longleaf technical and financial assistance and click the link near the top of the page to find your county's forester)

NRCS Florida- Find an office near you!

Ocala Longleaf Local Implementation Team Boundary and Priority Areas



Biomass Harvesting – Hardwood Removal Information

Utilizing a biomass harvester for hardwood reduction may be a cost effective way to remove hardwoods in portions of the sand hill and a majority of the successional hardwood forest.

Table 6-1. Summary of Proposed Restoration Tasks for The Sandhill Site

Existing Condition	Prescription for Restoration
Sandhill – Restorable. Uneven aged natural stand with relatively intact groundcover – 52 acres	This community will be burned on a 1- to 3-year fire return interval (burn rotation may be longer in areas with pine regeneration). Dormant season fuel reduction burns will be followed by growing season burns (April to August) in future years. Some areas will need oak-killing herbicides applied in order to allow fire to carry across the stand. Natural longleaf pine regeneration should be encouraged within and adjacent to these stands. Invasive/exotic plants will be controlled.
Semi-improved pasture – 213 acres.	This area requires prescribed burning and planting in longleaf pine. Sod harvest, scalping, mowing, single drum chopping and or band- spray herbicide treatments may be necessary in areas to facilitate survival of planted seedlings. Invasive exotic plants will be controlled. Existing tree clusters will be evaluated and retained in many areas. The cattle lease will be kept until restoration commences.
Successional hardwood forest – 203 acres	This area will be evaluated for restoration potential. Potential recreation sites will be left in oak-dominated, while areas targeted for restoration will be treated with fuel-wood sales/mechanical hardwood removal, herbicide and prescribed fire. Many portions of this community have problems with invasive, upland exotic plants and will continue to be controlled.
Pine plantation- sandpine -14 acres	This area was planted in sand pine in the 1990s. The pine will be harvested and the area re-planted with longleaf pine and sandhill groundcover species. Prescribed fire and exotic/invasive species management will be ongoing.
Clearing/revegetation	Remove trash and maintain exotic/invasive species.

Goals of the 2-year Planning Period

Short-term management goals for The Sandhill site include continued exotic/invasive species management, prescribed fire, trash removal and the implementation of preliminary recreation based facilities such as public entrances, parking and trails. Other immediate management and information gathering tasks include planning to address long-term management goals.

Goals of the 10-year Planning Period

The 10-year planning period focuses on maintenance of intact habitats, restoration of degraded habitats and implementation of various recreation plan components. Management tasks will address continued exotic/invasive species eradication efforts, hardwood removal and continued implementation of prescribed fire. Monitoring efforts will continue, along with opportunistic plant and animal surveys.

7.0 Compliance

7.1 Priority Schedule

Table 7-1 outlines the scheduling priorities for various proposed improvements and management activities. Improvements to the site and management of the natural and cultural resources will initially be based on health and safety issues. Of primary importance, is protection of the site, adjacent properties, and citizens from the adverse effects of wildfire by maintaining firebreaks and implementing the prescribed fire plan.

Second level priorities will be to continue to manage known infestations of Category I exotic plants to prevent further spread and the need for more extensive management. In addition, establishing basic infrastructure to allow public access to the site is important. These include:

- Determining the most suitable entrance to and alignment of the Main Trail and Loop should be the initial charge for trail development and access to the site.
- Designing main interpretive theme for entrance kiosk(s).
- Identifying the most suitable areas for the recreation program elements (disc golf and archery facility) is critical at this level of infrastructure development.

Third level priorities include:

- Paving the Main Trail and Loop.
- Establishing the multi-use trail through the site to link MCCP to the proposed ILSF Connector Trail, ultimately linking to regional recreation facilities such as Silver Springs State Park.
- Beginning the first phases of the disc golf course layout.
- Conceptual design of the archery facility .
- Designing trails within the site to all of the program elements including hiking and biking.
- Establishing remote interpretive stations throughout the site and provide other public amenities such as a pavilion, picnic area, and benches.

7.2 Cost Estimate

Table 7-2 outlines the estimated costs to install various improvements and conduct management activities. Costs reflect labor and material costs for improvements and services that will not be provided by the MCPR personnel. For example, it is anticipated that the park personnel will be involved in the control of invasive exotic plants; therefore, expenditures shown reflect equipment and chemicals costs only, rather than labor expenses (in 2018 dollars). However, the proposed Main Trail and Loop, and other development costs include both material and labor provided by outside vendors. It is the recommendation of this plan to explore partnership with an outside entity to develop and operate the archery facility, so those costs were not reflected in this plan. Because the size of the disc golf course has not been determined, the costs involved in the development of the course cannot be calculated. However, MCPR can provide personnel and equipment to develop this facility at a reasonable cost.

M CPR personnel will provide prescribed fire, exotic plant species control, and environmental monitoring services at The Sandhill using trained park personnel. They provide similar services at other Marion County parks; therefore, outside vendor use for these management services is not anticipated. Costs especially for prescribed fire services, would be high from private vendors. However, should important resource management activities fall behind schedule due to unavailability of Parks and Recreation personnel, these management services could be contracted to qualified vendors.

7.3 Policies and Ordinances

Policy 2.1.25 of the Marion County Comprehensive Plan pertaining to Preservation Designation (PR), states: "This land use is intended to recognize publicly or privately owned properties intended for conservation purposes and operated by contractual agreement with or managed by a federal, state, regional or local governments or non-profit agency. Development for recreation, scientific research, education and training facilities, public facilities or services, etc. in this designation shall be limited to result in minimal impact to the preservation of the area as allowed under the contractual agreement or management plan, as further defined in the land development code. This land use designation is allowed in the Urban and Rural Area." Marion County, <https://www.marioncountyfl.org/Home/ShowDocument?id=30247.2> , Retrieved from URL 11/2018.

7.4 Compliance with Comprehensive Plans

A letter of compliance from the Marion County Planning Department with the County Comprehensive Plan can be found in Appendix C. This plan is in accordance with the policies set forth by the Marion County Comprehensive Plan pertaining to Parks, Recreation and Open Space, Appendix C Marion County, <https://www.marioncountyfl.org/home/showdocument?id=5918>, Retrieved from URL 11/2018.

The site is currently zoned as R1, however its designation in the 2035 Future Land Use Map (FLUM) is Preservation. Marion County, Florida, Future Land Use Map 2035 Marion County, <https://www.marioncountyfl.org/home/showdocument?id=5367> , Retrieved from URL 11/2018.

7.5 Proposed Expansion Opportunities

There are vast amounts of conservation lands in the immediate area with many other land uses adjacent to The Sandhill. Therefore, there are few opportunities to expand the site. Conservation lands include the 4,460-acre ILSF to the north and east, MCCP on the southwestern boundary with an easement surrounding the site on the west and north boundary, and Marion County 60-acre lot (included in this plan) located in the northeast portion, residential developments to the west, south and east, and industrial/commercial land use west of the site. There is an easement connecting the north boundary MCCP easement to the ILSF targeted for acquisition by Marion County to connect regional trails to The Sandhill and MCCP. There are no lands within this project that would be suitable for surplus.

Table 7-1a. 2-Year Priority Schedule for Silver Springs Sandhill, Marion County, Florida

Tasks/Capital Improvements		2019	2020
Physical Assets			
·	Install perimeter and MU fire lines	Priority 1	Priority 1
·	Install/remove rehabilitate perimeter fencing in selected areas if needed	Priority 1	
·	Install public use and recreational facilities;		
o	Public entrances (Coehadjoe Park entrance, Archery facility entrance)	Priority 2	
o	Public use signage with map	Priority 2	
o	Public use and information kiosk		Priority 2
o	Parking facilities	Priority 2	
·	Install non-paved internal site trails with signage	Priority 2	Priority 2
·	Develop plans for;		
o	Paved Ocala connector trail		Priority 3
o	ILSF connector trail		Priority 3
o	Archery facilities		Priority 3
o	Disc golf facilities		Priority 3
o	Public information kiosks		
§	Sandhill restoration		Priority 3
§	Sinkhole/karst aquifer recharge importance		Priority 3
§	Prescribed fire importance		Priority 3
§	Listed species (gopher tortoise)		Priority 3
Resource Management			
·	Continue exotic/invasive plant surveys and eradication efforts		
o	Focus on mimosa and cogongrass	Priority 2	Priority 2
o	Borrow area	Priority 2	Priority 2
o	Old home site (clearing/regeneration)	Priority 2	Priority 2
o	Successional hardwood forest east of paved entrance road	Priority 2	Priority 2
·	Remove trash from old home site (clearing/regeneration), borrow area and successional hardwood forest east of paved entrance road	Priority 2	Priority 2
·	Develop the prescribed fire management plan	Priority 2	
·	Begin the prescribed fire program	Priority 2	Priority 2
·	Develop and implement environmental monitoring plan for;		
o	Listed plant and animal species		Priority 2
o	Exotic/invasive species	Priority 2	Priority 2
·	Develop restoration plans that address hardwood removal and restoration plantings for;		
o	Pasture-semi-improved		
§	Remove bahiagrass – herbicide treatment		Priority 2
§	Plant longleaf pine		Priority 2
o	Successional hardwood forest		
§	Hardwood removal	Priority 2	
§	Supplemental longleaf pine planting	Priority 2	
o	Pine plantation – sand pine		
§	Remove sand pine		Priority 2
§	Prepare for planting longleaf pine		Priority 2
§	Groundcover supplemental planting or seeding		Priority 2
o	Sandhill		
§	Prescribed fire	Priority 1	Priority 1
Visitor Services/Education Program			
·	Enhanced interpretive material and trail signage		
Support and Maintenance			
·	Maintain existing jeep trails that are to be utilized as service roads and trails	Priority 2	Priority 2
·	Maintain perimeter and interior fire lines	Priority 2	Priority 2
·	Maintain public use facilities	Priority 2	Priority 2
o	Entrance and trail signage	Priority 2	Priority 2
o	Trails	Priority 2	Priority 2
o	Parking areas	Priority 2	Priority 2
o	Jeep trails/service roads	Priority 2	Priority 2
Administration and Law Enforcement			
·	Administration and law enforcement	Priority 1	Priority 1

Notes:

Silver Springs Sandhill Unit Management Plan - DRAFT

Table 7-1b. 10-Year Priority Schedule for Silver Springs Sandhill, Marion County, Florida

Tasks/Capital Improvements	2021	2022	2023	2024	2025	2026	2027	2028
Physical Assets								
• Rehabilitate perimeter and MU fire lines		Priority 1		Priority 1		Priority 1		Priority 1
• Rehabilitate perimeter fencing in selected areas if needed	Priority 1		Priority 1		Priority 1		Priority 1	
• Install additional public use and recreational facilities;								
o Public entrances (North entrance, southern entrance)		Priority 2						
o Additional public use signage at new entrances			Priority 2					
o Additional public use and information kiosks				Priority 2				
o Additional parking facilities					Priority 2			
• Install additional public use and recreational facilities;								
o Paved Ocala connector trail						Priority 2		
o ILSF connector trail						Priority 3		
o Archery facilities	Priority 3							
o Disc golf facilities				Priority 3				
o Public information kiosks								
▪ Sandhill restoration						Priority 3		
▪ Sinkhole/karst aquifer recharge importance		Priority 3						
▪ Prescribed fire importance		Priority 3						
▪ Listed species (gopher tortoise)		Priority 3						
Resource Management								
• Continue exotic/invasive plant surveys and eradication efforts	Priority 2	Priority 2	Priority 2	Priority 2	Priority 2	Priority 2	Priority 2	Priority 2
• Continue prescribed fire management	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1
• Continue environmental monitoring plan for;								
o Listed plant and animal species		Priority 2		Priority 2		Priority 2		
o Exotic/invasive species	Priority 2		Priority 2		Priority 2		Priority 2	
• Implement restoration plans that address hardwood removal and restoration plantings for;								
o Pasture-semi-improved								
▪ Remove bahiagrass – herbicide treatment						Priority 2	Priority 2	
▪ Plant longleaf pine								Priority 2
o Successional hardwood forest								
▪ Hardwood removal		Priority 2		Priority 2				
▪ Supplemental longleaf pine planting					Priority 2	Priority 2		
o Pine plantation – sand pine								
▪ Remove sand pine		Priority 2						
▪ Prepare for planting longleaf pine		Priority 2						
▪ Groundcover supplemental planting or seeding			Priority 2			Priority 2		
o Sandhill								
▪ Prescribed fire	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1
Visitor Services/Education Program								
• Enhanced interpretive material and interpretive trail signage		Priority 3	Priority 3	Priority 3	Priority 3	Priority 3	Priority 3	Priority 3
Support and Maintenance								
• Maintain existing jeep trails and service roads		Priority 2		Priority 2		Priority 2		Priority 2
• Maintain perimeter and interior fire lines	Priority 1		Priority 1		Priority 1		Priority 1	
• Maintain fencing		Priority 1		Priority 1		Priority 1		Priority 1
Administration and Law Enforcement								
Administration and Law Enforcement	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1

Notes:

Table 7-2. Estimated Annual Costs for Implementation of the Unit Plan for Silver Springs Sandhill, Marion County, Florida

Task/Capital Improvements	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Sub-Totals
Physical Assets											
Fire break/line construction, including a perimeter fire line	\$ 48,000.00										\$ 48,000.00
Site Security (Install additional perimeter fencing in selected areas if needed, locks, gates)	\$ 23,000.00										\$ 23,000.00
Install enhanced entrance parking, landscaping											\$ -
Install entrance road, gate, sign, parking, landscaping	\$ 42,000.00										\$ 42,000.00
Install trailhead and hiking trails											\$ -
Enhance interpretive kiosk and spur hiking trails											\$ -
Install ADA hardened trail (Ocala connector)											\$ -
Install picnic tables, bike rack, trash receptacles, secondary interpretive kiosks											\$ -
Install picnic pavilion											\$ -
Visitor Services/Education Program											
Visitor Services/Education Program											\$ -
Enhance interpretive material and interpretive trail signage											\$ -
Support and Maintenance											
Maintain existing roads and trails (as needed)											\$ -
Maintain perimeter and interior fire lines											\$ -
Administration and Law Enforcement											
											\$ -
Resource Management											
Soil Testing	\$ 7,300.00										\$ 7,300.00
Implementation of prescribed fire	\$ 3,200.00										\$ 3,200.00
Continue prescribed fire program											\$ -
Continue exotic/invasive plant eradications (as needed)											\$ -
Develop and implement an environmental monitoring program											\$ -
Site cleanup (trash and debris removal)	\$ 15,000.00										\$ 15,000.00
Conduct additional Cultural Resource Assessments along road/parking area											\$ -
Total	\$138,500.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 138,500.00
Contingency (10 percent)	\$ 13,850.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 13,850.00
Grand Total	\$152,350.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 152,350.00

8.0 Summary of Management Objectives

Management Policy

The primary goals of management of The Silver Springs Sandhill are: to protect water resources; to aid in the restoration of Silver Springs; to conserve, protect, restore and manage important ecosystems, landscapes and ecosystems; to provide areas for resource-based recreation; and to preserve areas for the enjoyment of future generations. (Marion County 2015).

The following are general goals and objectives created by reference to the Marion County Comprehensive Plan and the Marion County Parks and Recreation Department Master Plan, Protect the recharge potential of the site as it lies within 1 mile from Silver Springs, a Florida first magnitude spring, and protect the site from groundwater contamination.

- Establish and operate a conservation area for resource-based recreation.
- Identify, protect, and preserve archeological or historical resources occurring on the property.
- Offer high quality, cost-effective maintenance and resource management of conservation lands.
- Improve recreational opportunities to satisfy current and future demands.
- Protect, conserve, appropriately use and enhance the quality and natural function of environmentally sensitive lands, natural reservations and locally significant resources.
- Assist in the development of partnership programs with other local, state and federal agencies.
- Maintain the current level of biological diversity and integrity of the natural systems.

Specific Management Goals and Desired Outcomes

Ensure that the management goals of The Sandhill site are aligned with the proposed uses:

- Manage the land to preserve high quality aquifer recharge.
- Protect, restore and manage the habitat for native species and endangered and threatened species.
- Restore important forest ecosystems (restore the pasture-semi-improved, remnant sandhill and successional hardwood forest back to a functional sandhill natural community that existed historically).
- Provide public access for resource-based outdoor recreation.

The desired outcome of the management includes:

- The majority of the semi-improved pasture is re-forested.
- Exotic invasive species are removed from the entire site.
- The remnant sandhill natural community is thriving and expanding.
- Public access areas are created opening the site to a mix of recreational opportunities.

- Spaces are created for hiking trails, multi-purpose trails, nature viewing, disc golf, archery, picnicking, and limited hunting.
- Regional trail networks are accessed from the site.

Intensity of Management

The desired outcome for The Sandhill site dictates the various management and restoration strategies. Due to two general land covers at The Sandhill site, non-forested pasture-semi-improved on the western half and forested sandhill and successional hardwood forest on the eastern half, two different management and restoration strategies with varying intensities will be implemented. The following briefly outlines preliminary needs

Semi-Improved Pasture

The pasture-semi-improved areas will undergo a phased restoration to a sandhill community (longleaf/wiregrass ecosystem) using various methods to remove the bahiagrass and plant longleaf pine and associated groundcover species.

- Removal of interior fencing
- Prescribed fire
 - Development of a prescribed fire plan
 - Creation of fire breaks/lines
 - Implementation of prescribed fire
- Exotic species management
- Restoration
 - Restoration plan development
 - Protection of desired stands of trees.
 - Bahiagrass chemical treatment
 - Longleaf pine planting
 - Groundcover planting or seeding

Xeric uplands (Sandhill, Successional Hardwood Forest and Altered Land Cover Uses)

The use of prescribed fire in conjunction with other management tools such as mechanical and chemical hardwood removal will help transition the successional hardwood forest into a manageable sandhill natural community.

- Prescribed fire
 - Development of a prescribed fire plan
 - Creation of fire breaks/lines
 - Implementation of prescribed fire
- Exotic species management
- Removal of any remnant items from the homesite (clearing/regeneration area near the borrow area on Figure 2-2) and borrow areas
- Soil testing in disturbed areas
- Restoration
 - Restoration plan development
 - Hardwood management (chemical treatment and/or mechanical removal)

- Longleaf pine planting
- Groundcover planting or seeding

Note: Restoration of the successional hardwood forest will require mechanical and or herbicide based tree removal and the reintroduction of fire. Where characteristic herbaceous species (e.g., wiregrass) have been lost, reintroduction via seed or plants may be necessary to restore natural species composition and community function.

A preliminary list of improvements includes:

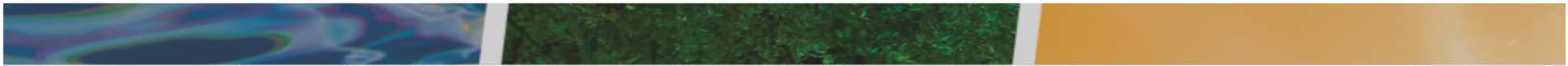
- Paved trails; connecting adjacent public lands and other paved trails
- Parking area
- Restroom facility
- Hiking trails
- Field archery course
- Disc golf course
- Nature viewing areas
- Interpretive amenities

9.0 References

- Aerial photograph, Marion County, Florida. 1940. PALMM website, Map Library, University of Florida, Gainesville.
- Archaeological Consultants, Inc. 1987. Archaeological Survey of Marion County, Florida. With Florida Preservation Services. Sarasota, Florida.
- Coile, Nancy C. and Mark A. Garland. 2004. Notes on Florida's Endangered and Threatened Plants, Florida Department of Agriculture and Consumer Services, Division of Plant Industry, Bureau of Entomology, Nematology and Plant Pathology-Botany Section, Contribution No. 38, 4th edition, Gainesville, Florida
<http://www.doacs.state.fl.us/pi/enpp/botany/images/Notes2003.pdf>
- Langeland, K.A. and Stocker, R.K. 2001. Control of Non-Native Plants in Natural Areas of 34 pp. 2001. IFAS Publication SP 242.
- E Bird Hotspots- Silver Springs State Park, Ocala National Forest <https://ebird.org>.
- Elzinga, et al. 1998. Bureau of Land Management's Technical Reference, Measuring & Monitoring Plant Populations.
- Fish and Wildlife Conservation (FWC 2017a) Objective Based Vegetation Management Program.
- Florida Department of Agriculture and Consumer Services Division of Forestry. 2011. Ten-Year Resource Management Plan for the Indian Lake State Forest Marion County Florida.
- Florida Department of Environmental Protection. 2002. Silver River State Park Unit Management Plan, Tallahassee, Florida.
- Florida Department of State, Division of Historical Resources. April 2006. Florida Master Site File, Tallahassee, Florida.
- Florida Exotic Pest Plant Council's list of most invasive species (FLEPPC, 2017)
http://www.fleppc.org/FLEPPC_main.htm
- Florida Fish and Wildlife Conservation Commission. 2004. Florida's Endangered Species, Threatened Species and Species of Special Concern. Tallahassee, Florida.
<http://myfwc.com/imperiledspecies/pdf/Endangered-Threatened-Special-Concern-2004.pdf>
- Florida Master Site File. 2018. Township, Range, Section GIS database search. Florida Division of Historical Resources, Tallahassee, Florida.
- Florida Natural Areas Inventory. April 2006. Records Search for Listed or Rare Species, Tallahassee, Florida.
- Florida Natural Areas Inventory (FNAI). 2010. Guide to the natural communities of Florida: 2010 edition. Florida Natural Areas Inventory, Tallahassee, Florida.
<https://www.freshfromflorida.com/Divisions-Offices/Florida-Forest-Service/Wildland-Fire/Prescribed-Fire/The-Natural-Role-of-Fire>.

- Hay-Smith, L. and G.W. Tanner. 1999. Restoring longleaf pine sandhill communities with an herbicide. Publication Document WEC-131. University of Florida, Department of Wildlife Ecology and Conservation, Institute of Food and Agricultural Sciences, Gainesville, Florida.
- Humphrey, Stephen R. (ed.) 1992. Rare and Endangered Biota of Florida. Volume I, Mammals. Florida Committee of Rare and Endangered Plants and Animals, University Press of Florida, Gainesville, Florida.
- Jones, Joe S. 1981 An Archaeological Site Location Predictive Model for Marion County, Florida. MA thesis, Department of Anthropology, University of Florida, Gainesville.
- Kale, H.W. and D.S. Maehr. 1990. Florida Birds. Pineapple Press, Sarasota, Florida.
- Langeland, K.A. and Craddock Burks, K. 1998. Identification and Biology of Non-Native Plants in Florida's Natural Areas. 165 pp. IFAS Publication SP 257.
- Lippincott, C.L. 1997. Ecological consequences of *Imperata cylindrica* (cogongrass) invasion in Florida sandhill. Dissertation, University of Florida, Gainesville.
- Marion Country Parks and Recreation, Office of Environmental Services, Silver Springs Sandhill – A Springs Protection and Outdoor Recreation Project – Management Prospectus and Policy Statement, 2015.)
- Milanich, Jerald T. 1994. Archaeology of Precolumbian Florida. University Presses of Florida, Gainesville, Florida.
- Milanich, Jerald T. and Charles H. Fairbanks 1980. Florida Archaeology. Academic Press, New York, New York.
- Moler, Paul E., Ray E. Ashton. 1992. Rare and Endangered Biota of Florida Volume III. Amphibians and Reptiles, University Press of Florida, Gainesville, Florida.
- Myers, R.L. 1990. Scrub and high pine. 150-193 in Myers, R.L. and J.J. Ewel. Ecosystems of Florida. University of Central Florida Press, Orlando.
- Professional Services Industries, Inc. 2005. Phase I Environmental Assessment Florida First Magnitude Springs, Sections 1 & 12, Township 15 South, Range 22 East, Marion County, Florida prepared for Florida Department of Environmental Protection, FDEP contract No. PL079, Tallahassee, Florida.
- Provencher, L., K.E.M. Galley, B.J. Herring, J.P. Sheehan, N.M. McAdoo, S.J. Gobris, A.R. McAdoo, A.R. Litt, G.W. Gordon, G.W. Tanner, L.A. Brennan, and J.L. Hardesty. 1999. Effects of Hardwood Reduction on Trees and Community Similarity and Sand Pine Harvest on Groundcover Vegetation in Longleaf Pine Sandhills at Eglin Air Force Base. Science Division, The Nature Conservancy, Gainesville, Florida. 334.
- Provencher, L., A.R. Litt, K.E.M. Galley, D.R. Gordon, G.W. Tanner, L.A. Brennan, N.M. Gobris, S.J. McAdoo, J.P. McAdoo, and B.J. Herring. 2001. Restoration of fire suppressed longleaf pine sandhills at Eglin Air Force Base, Florida. Final report to the Natural Resources Management Division, Eglin Air Force Base. The Nature Conservancy, Gainesville, Florida.

- Robbins, L.E. and R.L. Myers. 1992. Seasonal effects of prescribed burning in Florida: a review. Miscellaneous Publication No. 8. Tall Timbers Research Station, Tallahassee, Florida. Rothermel 1983; Thompson, pers. comm. 2006
- Rodgers, James A., H.W. Kale and H.T. Smith. 1996. Rare and Endangered Biota of Florida Volume V. Birds, University Press of Florida, Gainesville, Florida.
- U.S. Department of Agriculture Soil Conservation Service. 1979. Soil Survey of Marion County Area, Florida.
- U.S. Department of Agriculture. Natural Resources Conservation Service. 2018. Soils Map, Silver Springs Conservation Area, Marion County, Florida. Web Soil Survey, National Cooperative Soil Survey, Washington, DC.
- U.S. Geological Survey. 1991. Ocala East, Florida 7.5-minute topographic quadrangle map. Washington, DC.
- University of Florida, Center for Aquatic and Invasive Plants Web site <http://plants.ifas.ufl.edu>.
- Varner, J.M., D.R. Gordon, F.E. Putz, and J.K. Hiers. 2005. Restoring fire to long-unburned *Pinus palustris* ecosystems: novel fire effects and consequences for long-unburned ecosystems. *Restoration Ecology* 13:536-544.
- White, William A. 1970. The Geomorphology of the Florida Peninsula, Published for Bureau of Geology, Division of Interior Resources, Florida Department of Natural Resources, Tallahassee, Florida.
- Withlacoochee Regional Planning Council. 1981a. Historical and Archaeological Survey of Marion County. Ocala, Florida.
- Wunderlin, R.P. 1998. Guide to the Vascular Plants of Florida. University Press of Florida, Gainesville, Florida.
- Wunderlin, R.P., B. K. Hansen. 2011. Guide to the Vascular Plants of Florida. University of Florida Gainesville, Florida.
- Wunderlin, R. P., B. F. Hansen, A. R. Franck, and F. B. Essig. 2018. Atlas of Florida Plants (<http://florida.plantatlas.usf.edu/>). [S. M. Landry and K. N. Campbell (application development), USF Water Institute.] Institute for Systematic Botany, University of South Florida, Tampa.
- U.S. Department of Agriculture. Natural Resources Conservation Service. 2018. Soils Map, Silver Springs Conservation Area, Marion County, Florida. Web Soil Survey, National Cooperative Soil Survey, Washington, DC.



APPENDIX A
LEGAL DOCUMENTS

Appendix A. Legal Descriptions of Silver Springs Sandhill (The Sandhill) Parcels, Marion County, Florida

There are five parcels that make up The Sandhill that are owned by BOARD OF Trustees of the Internal Improvement Trust Fund (TIITF) STATE OF FLORIDA.

<http://www.pa.marion.fl.us/PRC.aspx?key=302228&YR=2018&mName=False&mSitus=False>, Retrieved on 11/2018 from the above URL.

Parcel Number 15855-000-00 (221.96 Acres)

SEC 35 TWP 14 RGE 22

COM AT SW COR OF SE 1/4 OF SEC 35 TH N 00-35-53 E 30 FT TO N ROW OF NE 35TH ST TH S 89-24-35 E 475 FT TO POB TH N 00-35-53 E 400 FT TH S 89-24-35 E 950 FT TH N 00-35-53 E 2480 FT TH N 89-24-35 W 1214 FT TO E BDY OF SEMINOLE ELEC COOP ROW EASEMENT TH N 00-35-53 E 2231.32 FT TO S ROW LINE OF SEMINOLE ELECTRIC COOP ROW EASEMENT TH S 89-33-43 E ALG S ROW 2439.24 MOL TO E BDY OF NE 1/4 OF SEC 35 TH S ALG E BDY OF NE 1/4 OF TO W 1/4 COR OF SEC 35 TH PROCEED S ALG E BDY OF SE 1/4 OF SEC 35 TH N 89-24-35 W 2173.80 FT MOL TO POB.

Parcel Number 15864-000-00 (181.87 Acres)

SEC 36 TWP 14 RGE 22

COM AT SW COR OF SAID SEC 36 TH N 00-08-35 E 30 FT SAID PT BEING POB TH N 00-07-06 E 2618.22 FT TH N 00-06-19 E 2500.12 FT TH N 89-57-01 E 1021.76 FT TH S 00-02-35 W 1616.68 FT TH N 89-57-22 E 1616.68 FT TH S 00-03-46 W 887.44 FT TH S 89-56-05 E 661.07 FT TH S 00-03-10 E 663.10 FT TH N 89-56-40 W 662.26 FT TH S 00-03-01 W 1959.14 FT TH S 89-56-34 W 25.09 FT TH N 00-03-20 E 1933.85 FT TH S 89-47-56 W 1296.92 FT TH N 89-52-44 W 659.81 FT TH S 00-04-30 W 330.02 FT TH S 89-53-14 E 240.54 FT TH S 00-03-40 W 1596.06 FT TH N 89-52-45 W 902.43 FT TO POB.

Parcel Number 15864-003-00 (61.57 Acres)

SEC 36 TWP 14 RGE 22

COM AT THE SE COR OF SW 1/4 OF SEC 36 TH N 00-33-01 E 30 FT TH N 89-22-18 W 525 FT TH N 00-33-01 E 25 FT TO THE POB TH N 89-22-18 W 1216.19 FT TH N 00-33-01 E 1571.09 FT TH S 89-24-46 E 419.23 FT TH N 00-34-44 E 329.33 FT TH S 89-42-03 E 1296.82 FT TH S 00-33-01 W 1062.57 FT TH N 89-22-18 W 500 FT TH S 00-33-01 W 846.21 FT TO THE POB
Parent Parcel: 15864-000-00

Parcel Number 15866-000-00 (4 Acres)

SEC 36 TWP 14 RGE 22

COM AT SW COR TH RUN N ALG W BDRY 1956 FT TH E 660 FT FOR POB TH E 660 FT TH S 330 FT TH W 660 FT TH N 330 FT TO POB LESS AND EXCEPT COM AT SW COR 36-14-22 TH N ALG W BDRY 1626 FT TH E 660 FT FOR POB TH E 210 FT TH N 210 FT T W 210 FT TH S 210 FT TO POB

Parcel Number 15866-002-00 (1 Acre)

SEC 36 TWP 14 RGE 22

COM SW COR N 1626 FT E 660 FT FOR POB

E 210 FT N 210 FT W 210 FTS 210 FT TO POB
TOGETHER WITH A 20 FT WIDE EASEMENT FOR INGRESS AND
EGRESS LYING 10 FT ON EITHER SIDE OF THE FOLLOWING
DESC LINE: COM SW COR TH N 1626 FT TH E 670 FT TO
POB TH S 06-39-53 E 136.97 FT TH S 69-04-09 E 277.80 FT
TH S 73-24-29 E 302.61 FT TH S 13-44-01 W 192.15 FT TH
S 34-47-21 W 667.53 FT TH S 25-15-01 W 270.39 FT TH
S 37-07-51 W 546.98 FT TH S 02-12-51 W 80.04 FT TO A
PT ON THE CENTERLINE OF NE 35TH ST SUBJECT TO A CTY RD
ROW

Also included in the LMP (but not under review by the State) is the Marion County decommissioned wastewater facility (MCWF) parcel.

Parcel Number 15864-001-00 (60 Acres)

SEC 36 TWP 14 RGE 22

N 1766.66 FT OF E 1616.66 FT OF NW 1/4 EX N 150 FT THEREOF
TOGETHER WITH AN EASEMENT FOR INGRESS AND EGRESS AND FOR A
UTILITY EASEMNT OVER E 25 FT OF NW 1/4 AND SW 1/4 OF SEC 36
BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: PERMANENT
25 FT SEWER LINE EASEMENT AND INGRESS AND EGRESS EASEMENT
OVER E 25 FT OF S 3509.91 FT OF W 1/2 OF SEC 36 FROM
N ROW 35TH ST TO S BDY OF SUBJ PROPERTY



**FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION**

MARJORY STONEMAN DOUGLAS BUILDING
3900 COMMONWEALTH BOULEVARD
TALLAHASSEE, FLORIDA 32399-3000

RICK SCOTT
GOVERNOR

CARLOS LOPEZ-CANTERA
LT. GOVERNOR

NOAH VALENSTEIN
SECRETARY

September 13, 2017

Marion County, Florida
attn: Mr. Jim Couillard
601 SE 25th Avenue
Ocala, Florida 34471

**RE: Lease Agreement Number 4807
Silver Springs Sandhill**

Dear Mr. Couillard:

Enclosed is a fully executed Original of the above referenced Lease Agreement Number 4807 for your records.

If you have any questions, please contact me at (850) 245-2720 extension 2752 or by emailing me at david.fewell@dep.state.fl.us.

Sincerely,

A handwritten signature in blue ink that reads "David Fewell".

David Fewell
Closing Agent
Bureau of Public Land Administration
Division of State Lands

dlf/
Enclosures (Instrument)
#34713

This Lease was prepared by:
Brad Richardson,
Bureau of Public Land Administration
Division of State Lands
Department of Environmental Protection, MS 130
3900 Commonwealth Boulevard,
Tallahassee, Florida 32399-3000
AID# 34713

OAL2
[465 acres +/-]

**BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT
TRUST FUND OF THE STATE OF FLORIDA**

LEASE AGREEMENT

Lease Number 4807

THIS LEASE AGREEMENT, made and entered into this 7th day of September 2017 by and between the **BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA** hereinafter referred to as "LESSOR," and **MARION COUNTY, A POLITICAL SUBDIVISION OF THE STATE OF FLORIDA** hereinafter referred to as "LESSEE."

LESSOR, for and in consideration of mutual covenants and agreements hereinafter contained, does hereby lease to said LESSEE, the lands described in paragraph 2 below, together with the improvements thereon, and subject to the following terms and conditions:

1. **DELEGATIONS OF AUTHORITY:** LESSOR'S responsibilities and obligations herein shall be exercised by the Division of State Lands, State of Florida Department of Environmental Protection.

2. **DESCRIPTION OF PREMISES:** The property subject to this lease contains approximately 465 acres, is situated in the County of Marion, State of Florida and is more particularly described in Exhibit "A" attached hereto and hereinafter called the "leased premises".

3. **TERM:** The term of this lease shall be for a period of **fifty (50)** years commencing on September 7, 2017, and ending on September 6, 2067, unless sooner terminated pursuant to the provisions of this lease.

4. **PURPOSE:** LESSEE shall manage the leased premises only for the conservation and protection of natural and historical resources and for resource based public outdoor activities and education which are compatible with the conservation

and protection of these public lands, as set forth in subsection 259.032(11), Florida Statutes, along with other related uses necessary for the accomplishment of this purpose as designated in the Management Plan required by paragraph 8 of this lease.

5. **QUIET ENJOYMENT AND RIGHT OF USE**: LESSEE shall have the right of ingress and egress to, from and upon the leased premises for all purposes necessary to the full quiet enjoyment by said LESSEE of the rights conveyed herein.

6. **UNAUTHORIZED USE**: LESSEE shall, through its agents and employees, prevent the unauthorized use of the leased premises or any use thereof not in conformity with this lease.

7. **ASSIGNMENT**: This lease shall not be assigned in whole or in part without the prior written consent of LESSOR, which consent shall not be unreasonably withheld. Any assignment made either in whole or in part without the prior written consent of LESSOR shall be void and without legal effect.

8. **MANAGEMENT PLAN**: LESSEE shall prepare and submit a Management Plan for the leased premises in accordance with Section 253.034, Florida Statutes and subsection 18-2.021(4), Florida Administrative Code. The Management Plan shall be submitted to LESSOR for approval through the Division of State Lands, State of Florida Department of Environmental Protection. The leased premises shall not be developed or physically altered in any way other than what is necessary for security and maintenance of the leased premises without the prior written approval of LESSOR until the Management Plan is approved. LESSEE shall provide LESSOR with an opportunity to participate in all phases of preparing and developing the Management Plan for the leased premises. The Management Plan shall be submitted to LESSOR in draft form for review and comments within ten months of the effective date of this lease. LESSEE shall give LESSOR reasonable notice of the application for and receipt of any state, federal or local permits as well as any public hearings or meetings relating to the development or use of the leased premises. LESSEE shall not proceed with development of said leased premises including, but not limited to, funding, permit applications, design or building contracts until the Management Plan required herein has been submitted and approved. Any financial commitments made by LESSEE which are not in compliance with the terms of this lease shall be done at LESSEE'S own risk. The Management Plan shall emphasize the original management concept as approved by LESSOR at the time of acquisition which established the primary public purpose for which the leased premises were acquired. The approved Management Plan shall provide the basic guidance for all management activities and shall be reviewed jointly by LESSEE and LESSOR. LESSEE shall not use or alter the leased premises except as provided for in the approved Management Plan without the prior written approval of LESSOR. The Management Plan prepared under this lease shall identify management strategies

for exotic species, if present. The introduction of exotic species is prohibited, except when specifically authorized by the approved Management Plan.

9. **EASEMENTS**: All easements of any nature including, but not limited to, utility easements are required to be granted by LESSOR. LESSEE is not authorized to grant any easements of any nature and any easement granted by LESSEE shall be void and without legal effect.

10. **SUBLEASES**: This lease is for the purposes specified herein and subleases of any nature are prohibited, without the prior written approval of LESSOR. Any sublease not approved in writing by LESSOR shall be void and without legal effect.

11. **RIGHT OF INSPECTION**: LESSOR or its duly authorized agents, representatives or employees shall have the right to reasonably inspect the leased premises and the works and operations of LESSEE in any matter pertaining to this lease.

12. **PLACEMENT AND REMOVAL OF IMPROVEMENTS**: All buildings, structures and improvements shall be constructed at the expense of LESSEE in accordance with plans prepared by professional designers and shall require the prior written approval of LESSOR as to purpose, location and design. Further, no trees, other than non-native species, shall be removed or major land alterations done by LESSEE without the prior written approval of LESSOR. Removable equipment and removable improvements placed on the leased premises by LESSEE which do not become a permanent part of the leased premises will remain the property of LESSEE and may be removed by LESSEE before or upon termination of this lease.

13. **INSURANCE REQUIREMENTS**: During the term of this lease LESSEE shall procure and maintain policies of fire, extended risk, and liability insurance coverage. The extended risk and fire insurance coverage shall be in an amount equal to the full insurable replacement value of any improvements or fixtures located on the leased premises. The liability insurance coverage shall be in amounts not less than \$200,000 per person and \$300,000 per incident or occurrence for personal injury, death, and property damage on the leased premises. During the term of this lease, if Section 768.28, Florida Statutes, or its successor statute is subsequently amended to increase the amount of the liability coverages specified herein, LESSEE shall immediately obtain liability coverage for the increased amounts. Such policies of insurance shall name LESSOR and the State of Florida as additional insureds. LESSEE shall submit written evidence of having procured all insurance policies required herein prior to the effective date of this lease and shall submit annually thereafter, written evidence of maintaining such insurance policies to the Bureau of Public Land Administration, Division of State Lands, State of Florida Department of Environmental Protection, Mail Station 130, 3800 Commonwealth Boulevard, Tallahassee, Florida 32399-3000. LESSEE shall purchase all policies of insurance from a financially-responsible insurer duly authorized to do business in the State of Florida. In lieu of

purchasing insurance, LESSEE may elect to self-insure these coverages. Any certificate of self-insurance shall be issued or approved by the Chief Financial Officer, State of Florida. The certificate of self-insurance shall provide for casualty and liability coverage. LESSEE shall immediately notify LESSOR and the insurer of any erection or removal of any building or other improvement on the leased premises and any changes affecting the value of any improvements and shall request the insurer to make adequate changes in the coverage to reflect the changes in value. LESSEE shall be financially responsible for any loss due to failure to obtain adequate insurance coverage and the failure to maintain such policies or certificate in the amounts set forth shall constitute a breach of this lease.

14. **LIABILITY:** LESSEE shall assist in the investigation of injury or damage claims either for or against LESSOR or the State of Florida pertaining to LESSEE'S respective areas of responsibility under this Lease or arising out of LESSEE'S respective management programs or activities and shall contact LESSOR regarding the legal action deemed appropriate to remedy such damage or claims. LESSEE is responsible for, and, to the extent allowed by law, shall indemnify, protect, defend, save and hold harmless LESSOR and the State of Florida, its officers, agents and employees from any and all damages, claims, costs, expense, including attorney's fees, demands, lawsuits, causes of action or liability of any kind or nature arising out of all personal injury and property damage attributable to the negligent acts or omissions of LESSEE, and its officers, employees, and agents. Nothing contained in this Lease shall be construed as imposing any contractual indemnity on LESSEE that is not otherwise provided by law. Nothing herein shall be construed as a waiver of sovereign immunity enjoyed by any party hereto, as provided in Section 768.28, Florida Statutes, as amended from time to time, or any other law providing limitations on claims. In the event LESSEE subcontracts any part or all of the work performed in the leased premises, the LESSEE shall require each and every subcontractor to identify the LESSOR as an additional insured on all insurance policies required by the LESSEE. Any contract awarded by LESSEE for work in the leased premises shall include a provision whereby the LESSEE'S subcontractor agrees to indemnify, pay on behalf, and hold the LESSOR harmless for all injuries and damages arising in connection with the LESSEE'S subcontract.

15. **PAYMENT OF TAXES AND ASSESSMENTS:** LESSEE shall assume full responsibility for and shall pay all taxes, assessments, liens or other similar liabilities that accrue to the leased premises or to the improvements thereon arising after this lease commences including any and all ad valorem taxes and drainage and special assessments or personal property taxes of every kind and all construction or materialman's liens which may be hereafter lawfully assessed and levied against the leased

premises subsequent to the effective date of this lease. In no event shall the LESSEE be held liable for such liabilities which arose prior to the effective date of this lease.

16. **NO WAIVER OF BREACH:** The failure of LESSOR to insist in any one or more instances upon strict performance of any one or more of the covenants, terms and conditions of this lease shall not be construed as a waiver of such covenants, terms or conditions, but the same shall continue in full force and effect, and no waiver of LESSOR of any of the provisions hereof shall in any event be deemed to have been made unless the waiver is set forth in writing, signed by LESSOR.

17. **TIME:** Time is expressly declared to be of the essence of this lease.

18. **NON-DISCRIMINATION:** LESSEE shall not discriminate against any individual because of that individual's race, color, religion, sex, national origin, age, handicap, or marital status with respect to any activity occurring within the leased premises or upon lands adjacent to and used as an adjunct of the leased premises.

19. **UTILITY FEES:** LESSEE shall be responsible for the payment of all charges for the furnishing of gas, electricity, water and other public utilities to the leased premises and for having the utilities turned off when the leased premises are surrendered.

20. **MINERAL RIGHTS:** This lease does not cover petroleum or petroleum products or minerals and does not give the right to LESSEE to drill for or develop the same.

21. **RIGHT OF AUDIT:** LESSEE shall make available to LESSOR all financial and other records relating to this lease, and LESSOR shall have the right to audit such records at any reasonable time during the term of this lease. This right shall be continuous until this lease expires or is terminated. This lease may be terminated by LESSOR should LESSEE fail to allow public access to all documents, papers, letters or other materials made or received in conjunction with this lease, pursuant to the provisions of Chapter 119, Florida Statutes.

22. **CONDITION OF PREMISES:** LESSOR assumes no liability or obligation to LESSEE with reference to the condition of the leased premises. The leased premises herein are leased by LESSOR to LESSEE in an "as is" condition, with LESSOR assuming no responsibility for the care, repair, maintenance or improvement of the leased premises for the benefit of LESSEE.

23. **COMPLIANCE WITH LAWS:** LESSEE agrees that this lease is contingent upon and subject to LESSEE obtaining all applicable permits and complying with all applicable permits, regulations, ordinances, rules, and laws of the State of Florida or the United States or of any political subdivision or agency of either.

24. **NOTICE:** All notices given under this lease shall be in writing and shall be served by certified mail including, but not limited to, notice of any violation served pursuant to Section 253.04, Florida Statutes, to the last address of the party to whom notice is to be given, as designated by such party in writing. LESSOR and LESSEE hereby designate their address as follows:

LESSOR: State of Florida Department of Environmental Protection
Division of State Lands
Bureau of Public Land Administration, MS 130
3800 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

LESSEE: Marion County
601 SE 25th Avenue
Ocala, FL, 34471

25. **BREACH OF COVENANTS, TERMS, OR CONDITIONS:** Should LESSEE breach any of the covenants, terms, or conditions of this lease, LESSOR shall give written notice to LESSEE to remedy such breach within sixty days of such notice. In the event LESSEE fails to remedy the breach to the satisfaction of LESSOR within sixty days of receipt of written notice, LESSOR may either terminate this lease and recover from LESSEE all damages LESSOR may incur by reason of the breach including, but not limited to, the cost of recovering the leased premises or maintain this lease in full force and effect and exercise all rights and remedies herein conferred upon LESSOR.

26. **DAMAGE TO THE PREMISES:** (a) LESSEE shall not do, or suffer to be done, in, on or upon the leased premises or as affecting said leased premises or adjacent properties, any act which may result in damage or depreciation of value to the leased premises or adjacent properties, or any part thereof. (b) LESSEE shall not generate, store, produce, place, treat, release or discharge any contaminants, pollutants, or pollution, including, but not limited to, hazardous or toxic substances, chemicals or other agents on, into, or from the leased premises or any adjacent lands or waters in any manner not permitted by law. For the purposes of this lease, "hazardous substances" shall mean and include those elements or compounds defined in 42 USC Section 9601 or which are contained in the list of hazardous substances adopted by the United States Environmental Protection Agency (EPA) and the list of toxic pollutants designated by the United States Congress or the EPA or defined by any other federal, state or local statute, law, ordinance, code, rule, regulation, order or decree regulating, relating to, or imposing liability or standards of conduct concerning any hazardous, toxic or dangerous waste, substance, material, pollutant or contaminant. "Pollutants" and "pollution" shall mean those products or substances defined in Chapters 376 and 403, Florida Statutes, and the rules promulgated thereunder, all as amended or updated from time to time. In the event of LESSEE's failure to comply with

this paragraph, LESSEE shall, at its sole cost and expense, promptly commence and diligently pursue any legally required closure, investigation, assessment, cleanup, decontamination, remediation, restoration and monitoring of (1) the leased premises, and (2) all off-site ground and surface waters and lands affected by LESSEE's such failure to comply, as may be necessary to bring the leased premises and affected off-site waters and lands into full compliance with all applicable federal, state or local statutes, laws, ordinances, codes, rules, regulations, orders and decrees, and to restore the damaged property to the condition existing immediately prior to the occurrence which caused the damage. LESSEE'S obligations set forth in this paragraph shall survive the termination or expiration of this lease. This paragraph shall not be construed as a limitation upon LESSEE'S obligations as set forth in paragraph 14 of this lease, nor upon any other obligations or responsibilities of LESSEE as set forth herein. Nothing herein shall relieve LESSEE of any responsibility or liability prescribed by law for fines, penalties and damages levied by governmental agencies, and the cost of cleaning up any contamination caused directly or indirectly by LESSEE'S activities or facilities. Upon discovery of a release of a hazardous substance or pollutant, or any other violation of local, state or federal law, ordinance, code, rule, regulation, order or decree relating to the generation, storage, production, placement, treatment, release or discharge of any contaminant, LESSEE shall report such violation to all applicable governmental agencies having jurisdiction, and to LESSOR, all within the reporting periods of the applicable governmental agencies. This paragraph shall not be deemed to apply to any conditions existing prior to the effective date of this lease.

27. **ENVIRONMENTAL AUDIT:** At LESSOR'S discretion, LESSEE shall provide LESSOR with a current Phase I environmental site assessment conducted in accordance with the State of Florida Department of Environmental Protection, Division of State Lands' standards prior to termination of this lease, and if necessary a Phase II environmental site assessment.

28. **SURRENDER OF PREMISES:** Upon termination or expiration of this lease, LESSEE shall surrender the leased premises to LESSOR. In the event no further use of the leased premises or any part thereof is needed, LESSEE shall give written notification to the Bureau of Public Land Administration, Division of State Lands, State of Florida Department of Environmental Protection ("Division"), Mail Station 130, 3800 Commonwealth Boulevard, Tallahassee, Florida 32399-3000, at least six months prior to the release of any or all of the leased premises. Notification shall include a legal description, this lease number, and an explanation of the release. The release shall only be valid if approved by LESSOR through the execution of a release of lease instrument with the same formality as this lease. Upon release of all or any part of the leased premises or upon termination or expiration of this lease, all improvements, including both physical structures and modifications to the leased premises, shall become the property of LESSOR, unless LESSOR gives written notice to LESSEE to remove any or all such improvements at

the expense of LESSEE. The decision to retain any improvements upon termination or expiration of this lease shall be at LESSOR'S sole discretion. Prior to surrender of all or any part of the leased premises a representative of the Division shall perform an on-site inspection and the keys to any building on the leased premises shall be turned over to the Division.

29. **BEST MANAGEMENT PRACTICES:** LESSEE shall implement applicable Best Management Practices for all activities conducted under this lease in compliance with paragraph 18-2.018(2)(h), Florida Administrative Code, which have been selected, developed, or approved by LESSOR, LESSEE or other land managing agencies for the protection and enhancement of the leased premises.

30. **PUBLIC LANDS ARTHROPOD CONTROL PLAN:** LESSEE shall identify and subsequently designate to the respective arthropod control district or districts within one year of the effective date of this lease all of the environmentally sensitive and biologically highly productive lands contained within the leased premises, in accordance with Section 388.4111, Florida Statutes and Chapter 5E-13, Florida Administrative Code, for the purpose of obtaining a public lands arthropod control plan for such lands.

31. **PROHIBITIONS AGAINST LIENS OR OTHER ENCUMBRANCES:** Fee title to the leased premises is held by LESSOR. LESSEE shall not do or permit anything to be done which purports to create a lien or encumbrance of any nature against the real property contained in the leased premises including, but not limited to, mortgages or construction liens against the leased premises or against any interest of LESSOR therein.

32. **PARTIAL INVALIDITY:** If any term, covenant, condition or provision of this lease shall be ruled by a court of competent jurisdiction to be invalid, void, or unenforceable, the remainder of the provisions shall remain in full force and effect and shall in no way be affected, impaired or invalidated.

33. **ARCHAEOLOGICAL AND HISTORIC SITES:** Execution of this lease in no way affects any of the parties' obligations pursuant to Chapter 267, Florida Statutes. The collection of artifacts or the disturbance of archaeological and historic sites on state-owned lands is prohibited unless prior authorization has been obtained from the State of Florida Department of State, Division of Historical Resources. The Management Plan prepared pursuant to Chapter 18-2 Florida Administrative Code, shall be reviewed by the Division of Historical Resources to insure that adequate measures have been planned to locate, identify, protect and preserve the archaeological and historic sites and properties on the leased premises.

34. **SOVEREIGNTY SUBMERGED LANDS:** This lease does not authorize the use of any lands located waterward of the mean or ordinary high water line of any lake, river, stream, creek, bay, estuary, or other water body or the waters or the air space thereabove.

35. **ENTIRE UNDERSTANDING:** This lease sets forth the entire understanding between the parties and shall only be amended with the prior written approval of LESSOR.

36. **MAINTENANCE OF IMPROVEMENTS:** LESSEE shall maintain the real property contained within the leased premises and the improvements located thereon, in a state of good condition, working order and repair including, but not limited to, removing all trash or litter, maintaining all planned improvements as set forth in the approved Management Plan, and meeting all building and safety codes. LESSEE shall maintain any and all existing roads, canals, ditches, culverts, risers and the like in as good condition as the same may be on the effective date of this lease.

37. **GOVERNING LAW:** This lease shall be governed by and interpreted according to the laws of the State of Florida.

38. **SIGNS:** LESSEE shall ensure that the area is identified as being publicly owned and operated as a public facility in all signs, literature and advertising. If federal grants or funds are used by LESSEE for any project on the leased premises LESSEE shall erect signs identifying the leased premises as a federally assisted project.

39. **SECTION CAPTIONS:** Articles, subsections and other captions contained in this lease are for reference purposes only and are in no way intended to describe, interpret, define or limit the scope, extent or intent of this lease or any provisions thereof.

40. **ADMINISTRATIVE FEE:** LESSEE shall pay LESSOR an annual administrative fee of \$300 pursuant to subsection 18-2.021(8), Florida Administrative Code. The initial annual administrative fee shall be payable within thirty days from the date of execution of this lease agreement and shall be prorated based on the number of months or fraction thereof remaining in the fiscal year of execution. For purposes of this lease agreement, the fiscal year shall be the period extending from July 1 to June 30. Each annual payment thereafter shall be due and payable on July 1 of each subsequent year.

41. **RIGHT OF TERMINATION:** Anything contained in this lease to the contrary notwithstanding, LESSOR shall have the right and option to terminate this lease, at will, for any reason whatsoever, by giving the LESSEE written notice of such election to terminate at least six (6) months prior to the effective date of such termination. LESSEE shall continue to honor its obligations under the lease until the effective date of the termination, including LESSEE's obligations concerning surrender of the leased premises.

42. **SPECIAL MANAGEMENT CONDITON**: LESSEE agrees to pay any and all costs associated with the relocation of the easement Grantee's facilities as further outlined in the Easement recorded in the Official Records of Marion County, Book 2245, Page 1998, provided, however, LESSEE shall not be liable for costs associated with any relocation of the easement Grantee's facilities required by LESSOR without the consent of LESSEE.

[Remainder of page intentionally left blank; Signature page follows]

IN WITNESS WHEREOF, the parties have caused this Lease to be executed on the day and year first above written.

WITNESSES:

David Fewell

Original Signature

DAVE FEWELL

Print/Type Name of Witness

Terri D. Gross

Original Signature

Terri D. Gross

Print/Type Name of Witness

**BOARD OF TRUSTEES OF THE INTERNAL
IMPROVEMENT TRUST FUND OF THE STATE
OF FLORIDA**

(SEAL)

BY: Cheryl C. McCall

Cheryl C. McCall, Chief, Bureau of Public Land Administration,
Division of State Lands, State of Florida Department of
Environmental Protection, as agent for and on behalf of the
Board of Trustees of the Internal Improvement Trust Fund of the
State of Florida

“LESSOR”

**STATE OF FLORIDA
COUNTY OF LEON**

The foregoing instrument was acknowledged before me this 7th day of SEPTEMBER, 2017, by Cheryl C. McCall, Chief, Bureau of Public Land Administration, Division of State Lands, State of Florida Department of Environmental Protection, as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida. She is personally known to me.

APPROVED SUBJECT TO PROPER EXECUTION:

KACU [Signature] 08/24/17

DEP Attorney

Date

David Lee Fewell

Notary Public, State of Florida

Printed, Typed or Stamped Name

My Commission Expires:

Commission/Serial No. _____



WITNESSES:

[Signature]
Original Signature

NADIA M. GRIFFIS
Typed/Printed Name of Witness

[Signature]
Original Signature

Jim Cowler
Typed/Printed Name of Witness

MARION COUNTY, a political subdivision
of the State of Florida
By its Board of County Commissioners

BY: [Signature] (SEAL)
Carl Zalak, III, Chairman

Attest: [Signature]
David R. Ellspermann, Clerk of the Court

Approved as to form and legal sufficiency:
[Signature]
Elizabeth Alt, Senior Assistant County Attorney

"LESSEE"

STATE OF FLORIDA

COUNTY OF MARION

The foregoing instrument was acknowledged before me this 30th day of August,
2017, by Carl Zalak, III, as Chairman, for and on behalf of Marion County. He/she is personally known
to me or has produced personally known as identification.

[Signature]
Notary Public, State of Florida

Stacy Farrell
Printed, Typed or Stamped Name

Commission/Serial No.

My Commission Expires. **STACY FARRELL**
MY COMMISSION #FF177195
EXPIRES November 18, 2018
(407) 398-0153 FloridaNotaryService.com

EXHIBIT "A"

PARCEL 1:

A PORTION OF SECTION 36, TOWNSHIP 14 SOUTH, RANGE 22 EAST, MARION COUNTY, FLORIDA BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE S.W. CORNER OF SAID SECTION 36; THENCE ALONG THE WEST BOUNDARY OF THE S.W. 1/4 OF SAID SECTION 36, N.00°08'35"E., A DISTANCE OF 30.00 FEET TO A POINT ON THE NORTH RIGHT OF WAY LINE OF N.E. 35TH STREET (RIGHT OF WAY WIDTH VARIES), SAID POINT ALSO BEING THE POINT OF BEGINNING. THENCE CONTINUE ALONG THE WEST BOUNDARY OF THE S.W. 1/4 OF SAID SECTION 36, N.00°07'06"E., A DISTANCE OF 2618.22 FEET TO THE WEST 1/4 CORNER OF SAID SECTION 36; THENCE ALONG THE WEST BOUNDARY OF THE N.W. 1/4 OF SAID SECTION 36, N.00°06'19"E., A DISTANCE OF 2500.12 FEET TO POINT THAT IS 150 FEET SOUTH OF THE NORTH BOUNDARY OF SAID SECTION 36; THENCE ALONG A LINE PARALLEL WITH AND 150 FEET SOUTH OF AS MEASURED AT RIGHT ANGLES TO THE NORTH BOUNDARY SAID SECTION 36, N.89°57'01"E., A DISTANCE OF 1021.76 FEET TO THE N.W. CORNER OF LANDS DESCRIBED IN OFFICIAL RECORDS BOOK 2203, PAGE 778 OF THE PUBLIC RECORDS OF MARION COUNTY, FLORIDA; THENCE ALONG THE WEST BOUNDARY OF SAID LANDS, S.00°02'35"W., A DISTANCE OF 1616.68 FEET TO THE S.W. CORNER OF SAID LANDS; THENCE ALONG THE SOUTH BOUNDARY OF SAID LANDS, N.89°57'22"E., A DISTANCE OF 1616.68 FEET TO A POINT ON THE EAST BOUNDARY OF THE N.W. 1/4 OF SAID SECTION 36; THENCE ALONG SAID EAST BOUNDARY, S.00°03'46"W., A DISTANCE OF 887.44 FEET TO THE CENTER OF SAID SECTION 36; THENCE ALONG THE NORTH BOUNDARY OF THE N.W. 1/4 OF THE N.W. 1/4 OF THE S.E. 1/4 OF SAID SECTION 36, S.89°56'05"E., A DISTANCE OF 661.07 FEET TO THE N.E. CORNER OF SAID N.W. 1/4 OF THE N.W. 1/4 OF THE S.E. 1/4 OF SAID SECTION 36; THENCE ALONG THE EAST BOUNDARY OF SAID N.W. 1/4 OF THE N.W. 1/4 OF THE S.E. 1/4 OF SAID SECTION 36, S.00°03'10"E., A DISTANCE OF 663.10 FEET TO THE S.E. CORNER OF SAID N.W. 1/4 OF THE N.W. 1/4 OF THE S.E. 1/4 OF SAID SECTION 36; THENCE ALONG THE SOUTH BOUNDARY OF SAID N.W. 1/4 OF THE N.W. 1/4 OF THE S.E. 1/4 OF SAID SECTION 36, N.89°56'40"W., A DISTANCE OF 662.26 FEET TO THE S.W. CORNER OF SAID N.W. 1/4 OF THE N.W. 1/4 OF THE S.E. 1/4 OF SAID SECTION 36; THENCE ALONG THE EAST BOUNDARY OF THE S.W. 1/4 OF SAID SECTION 36, S.00°03'01"W., A DISTANCE OF 1959.14 FEET TO A POINT ON THE AFOREMENTIONED NORTH RIGHT OF WAY LINE OF N.E. 35TH STREET; THENCE ALONG SAID NORTH RIGHT OF WAY LINE, S.89°56'34"W., A DISTANCE OF 25.09 FEET TO THE S.E. CORNER OF LANDS DESCRIBED IN OFFICIAL RECORDS BOOK 3577, PAGE 128 OF THE PUBLIC RECORDS OF MARION COUNTY, FLORIDA; THENCE DEPARTING SAID NORTH RIGHT OF WAY LINE, ALONG A LINE PARALLEL WITH AND 25 FEET WEST OF AS MEASURED AT RIGHT ANGLES TO THE EAST BOUNDARY OF THE S.W. 1/4 OF SAID SECTION 36, N.00°03'20"E., A DISTANCE OF 1933.85 FEET TO THE N.E. CORNER OF LANDS DESCRIBED IN OFFICIAL RECORDS BOOK 3418, PAGE 1941 OF THE PUBLIC RECORDS OF MARION COUNTY, FLORIDA; THENCE ALONG THE NORTH BOUNDARY OF SAID

Florida's First Magnitude Springs
Silver Springs Sandhill
Marion County

BSM
BY SK
Date: 8.24.2017

LANDS S.89°47'56"W., A DISTANCE OF 1296.92 FEET TO THE N.E. CORNER OF LANDS DESCRIBED IN OFFICIAL RECORDS BOOK 4093, PAGE 1775 OF THE PUBLIC RECORDS OF MARION COUNTY, FLORIDA; THENCE ALONG THE NORTH BOUNDARY OF SAID LANDS, N.89°52'44"W., A DISTANCE OF 659.81 FEET TO THE N.W. CORNER OF SAID LANDS; THENCE ALONG THE WEST BOUNDARY OF SAID LANDS, S.00°04'30"W., A DISTANCE OF 330.02 FEET TO THE S.W. CORNER OF SAID LANDS; THENCE ALONG THE SOUTH BOUNDARY OF SAID LANDS, S.89°53'14"E., A DISTANCE OF 240.54 FEET TO A POINT ON THE WESTERLY BOUNDARY OF LANDS DESCRIBED IN OFFICIAL RECORDS BOOK 3418, PAGE 1941 OF THE PUBLIC RECORDS OF MARION COUNTY, FLORIDA; THENCE DEPARTING SAID SOUTH BOUNDARY ALONG THE WESTERLY BOUNDARY OF THE AFOREMENTIONED LANDS AS RECORDED IN OFFICIAL RECORDS BOOK 3418, PAGE 1941 AND THE SOUTHERLY PROJECTION THEREOF, S.00°03'40"W., A DISTANCE OF 1596.06 FEET TO A POINT ON THE AFOREMENTIONED NORTH RIGHT OF WAY LINE OF N.E. 35TH STREET; THENCE ALONG SAID NORTH RIGHT OF WAY LINE, N.89°52'45"W., A DISTANCE OF 902.43 FEET TO THE POINT OF BEGINNING.

PARCELS 2, 3 & 4:

A PARCEL OF LAND LYING IN SECTION 36, TOWNSHIP 14 SOUTH, RANGE 22 EAST, MARION COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE SOUTHEAST CORNER OF THE SOUTHWEST 1/4 OF SAID SECTION 36; THENCE NORTH 00°33'01" EAST, ALONG THE EAST LINE OF SAID SOUTHWEST 1/4 OF SECTION 36, A DISTANCE OF 30.00 FEET TO AN INTERSECTION WITH THE NORTH RIGHT-OF-WAY LINE OF NE 35TH STREET; THENCE NORTH 89°22'18" WEST, ALONG THE NORTH RIGHT-OF-WAY LINE OF SAID NE 35TH STREET, A DISTANCE OF 525.00 FEET; THENCE NORTH 00°33'01" EAST, DEPARTING SAID NORTH RIGHT-OF-WAY LINE OF SAID NE 35TH STREET, A DISTANCE OF 25.00 FEET TO THE POINT OF BEGINNING; THENCE NORTH 89°22'18" WEST, PARALLEL WITH AND 25 FEET NORTH OF THE NORTH RIGHT-OF-WAY LINE OF SAID NE 35TH STREET, A DISTANCE OF 1216.19 FEET; THENCE NORTH 00°33'01" EAST, A DISTANCE OF 1571.09 FEET; THENCE SOUTH 89°24'46" EAST, A DISTANCE OF 419.23 FEET; THENCE NORTH 00°34'44" EAST, A DISTANCE OF 329.93 FEET; THENCE SOUTH 89°42'03" EAST, A DISTANCE OF 1296.82 FEET; THENCE SOUTH 00°33'01" WEST, A DISTANCE OF 1062.57 FEET; THENCE NORTH 89°22'18" WEST, A DISTANCE OF 500.00 FEET; THENCE SOUTH 00°33'01" WEST, A DISTANCE OF 846.21 FEET TO THE POINT OF BEGINNING.

THIS PARCEL BEING A PORTION OF PARCEL 1 OF THOSE LANDS DESCRIBED IN OFFICIAL RECORD BOOK 4896, PAGE 1762, MARION COUNTY PUBLIC RECORDS.

AND

COMMENCING 636 FEET NORTH AND 660 FEET EAST OF THE SW CORNER OF THE NW 1/4 OF THE SW 1/4, THENCE EAST 660 FEET, SOUTH 330 FEET. WEST 660 FEET, NORTH 330 FEET, EXCEPT HIGHWAY RIGHT-OF-WAY AND EXCEPT SOUTH 30 FEET OF S 1/2

Florida's First Magnitude Springs
Silver Springs Sandhill
Marion County

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BY SK
Date: 8.24.2017

AND SW 1/4 FOR ROAD, ALL LYING IN SECTION 36, TOWNSHIP 14 SOUTH, RANGE 22 EAST.

THIS PARCEL BEING A PORTION OF THOSE LANDS DESCRIBED IN OFFICIAL RECORD BOOK 4896, PAGE 1762 AND OFFICIAL RECORD BOOK 6623, PAGE 744, MARION COUNTY PUBLIC RECORDS.

PARCEL 5:

COMMENCE AT THE SOUTHWEST CORNER OF THE SOUTHEAST 1/4 OF SECTION 35, TOWNSHIP 14 SOUTH, RANGE 22 EAST, MARION COUNTY, FLORIDA; THENCE NORTH 00 DEGREE 35'53" EAST, ALONG THE WEST BOUNDARY OF THE SOUTHEAST 1/4 OF SAID SECTION 35, TOWNSHIP 14 SOUTH, RANGE 22 EAST, 30.00 FEET, TO THE NORTH RIGHT OF WAY LINE OF NORTHEAST 35TH STREET (BEING 60.00 FEET WIDE); THENCE SOUTH 89 DEGREES 24'35" EAST, ALONG THE NORTH RIGHT OF WAY LINE OF SAID NORTHEAST 35TH STREET, 475.00 FEET TO THE POINT OF BEGINNING; THENCE NORTH 00 DEGREE 35'53" EAST, DEPARTING SAID NORTH RIGHT OF WAY LINE, 400.00 FEET; THENCE SOUTH 89 DEGREES 24'35" EAST, 950.00 FEET; THENCE NORTH 00 DEGREES 35'53" EAST, 2480.00 FEET; THENCE NORTH 89 DEGREES 24'35" WEST, 1214.00 FEET; TO THE EAST BOUNDARY OF A SEMINOLE ELECTRIC COOPERATIVE, INC. RIGHT OF WAY EASEMENT, AS LOCATED IN OFFICIAL RECORDS BOOK 1028 PAGE 1877, PUBLIC RECORDS OF MARION COUNTY, FLORIDA; THENCE NORTH 00 DEGREES 35'53" EAST, ALONG THE EAST BOUNDARY OF SAID RIGHT OF WAY EASEMENT, 2231.32 FEET TO THE SOUTH RIGHT OF WAY LINE OF THE AFORESAID SEMINOLE ELECTRIC COOPERATIVE, INC., RIGHT OF WAY EASEMENT; THENCE SOUTH 89 DEGREES 33'43" EAST, ALONG SAID SOUTH RIGHT OF WAY EASEMENT, +/-2439.24 FEET TO THE EAST BOUNDARY OF THE NORTHEAST 1/4 OF THE AFORESAID SECTION 35; THENCE SOUTH, ALONG SAID EAST BOUNDARY OF THE NORTHEAST 1/4, TO THE EAST 1/4 CORNER OF AFORESAID SECTION 35; THENCE PROCEED SOUTH, ALONG THE EAST BOUNDARY OF THE SOUTHEAST 1/4 OF AFORESAID SECTION 35 TO THE NORTH RIGHT OF WAY LINE OF AFORESAID NORTHEAST 35TH AVENUE; THENCE NORTH 89 DEGREES 24'35" WEST, ALONG SAID NORTH RIGHT OF WAY LINE, +/-2173.80 FEET TO THE POINT OF BEGINNING.

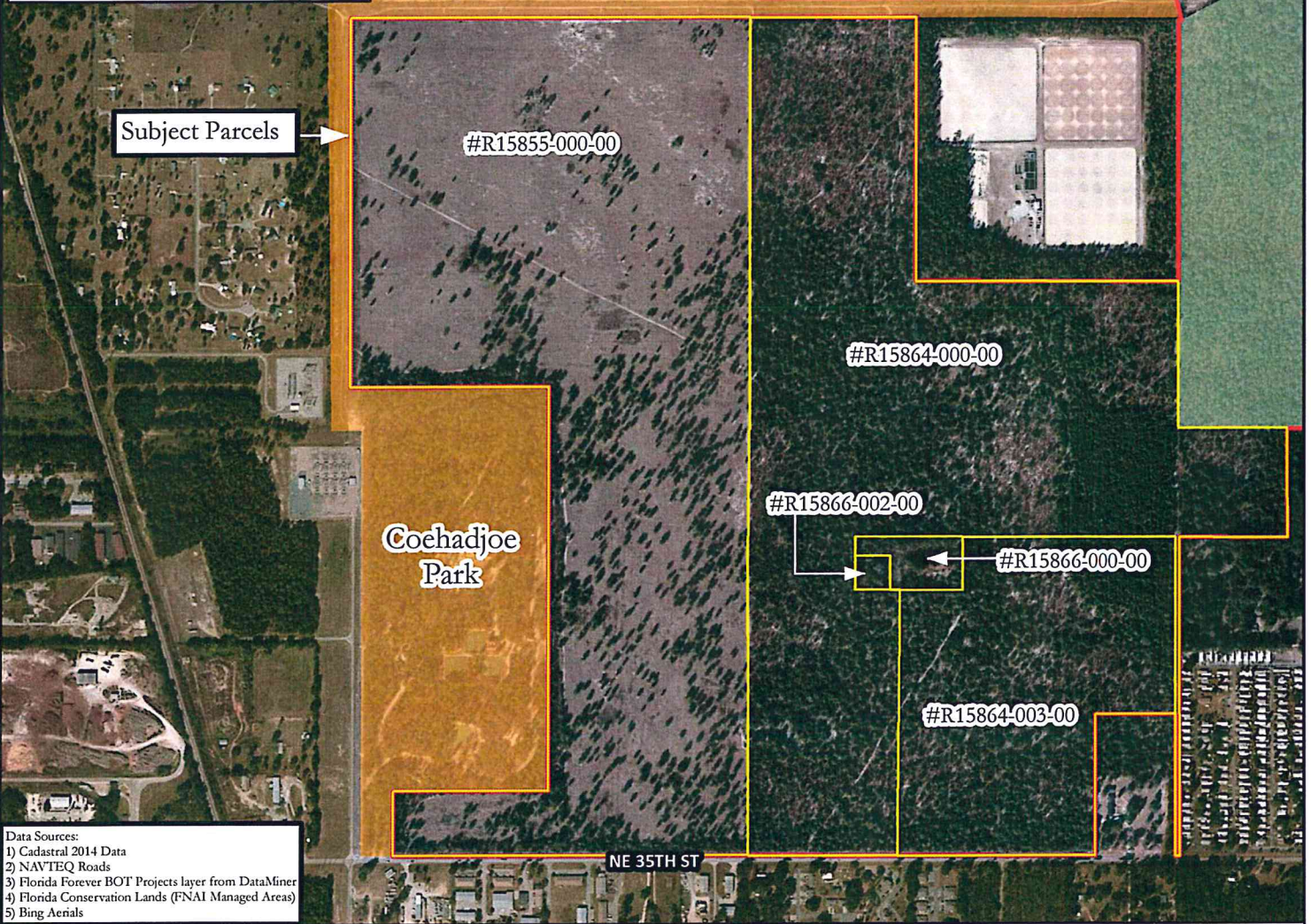
Florida's First Magnitude Springs
Silver Springs Sandhill
Marion County

BSM
BY SK
Date: 8.24.2017



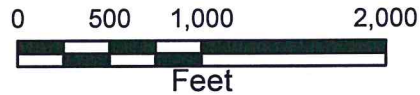
Indian Lake State Forest

*Florida's First Magnitude Springs
Florida Forever BOT Project
- Silver Springs*



Data Sources:
 1) Cadastral 2014 Data
 2) NAVTEQ Roads
 3) Florida Forever BOT Projects layer from DataMiner
 4) Florida Conservation Lands (FNAI Managed Areas)
 5) Bing Aerials

- Subject Parcels
- Florida Forever Project
- State Managed Conservation Lands
- City/County Managed Conservation Lands



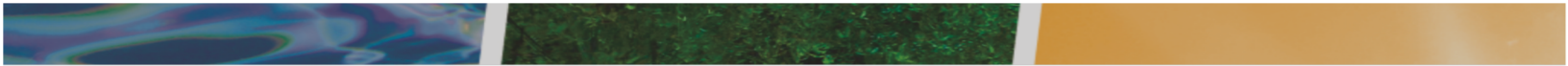
FL First Magnitude Springs FF / Silver Springs Sandhill

Conservation Trust for Florida, Inc.

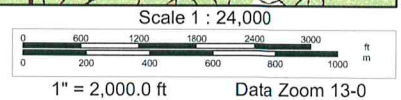
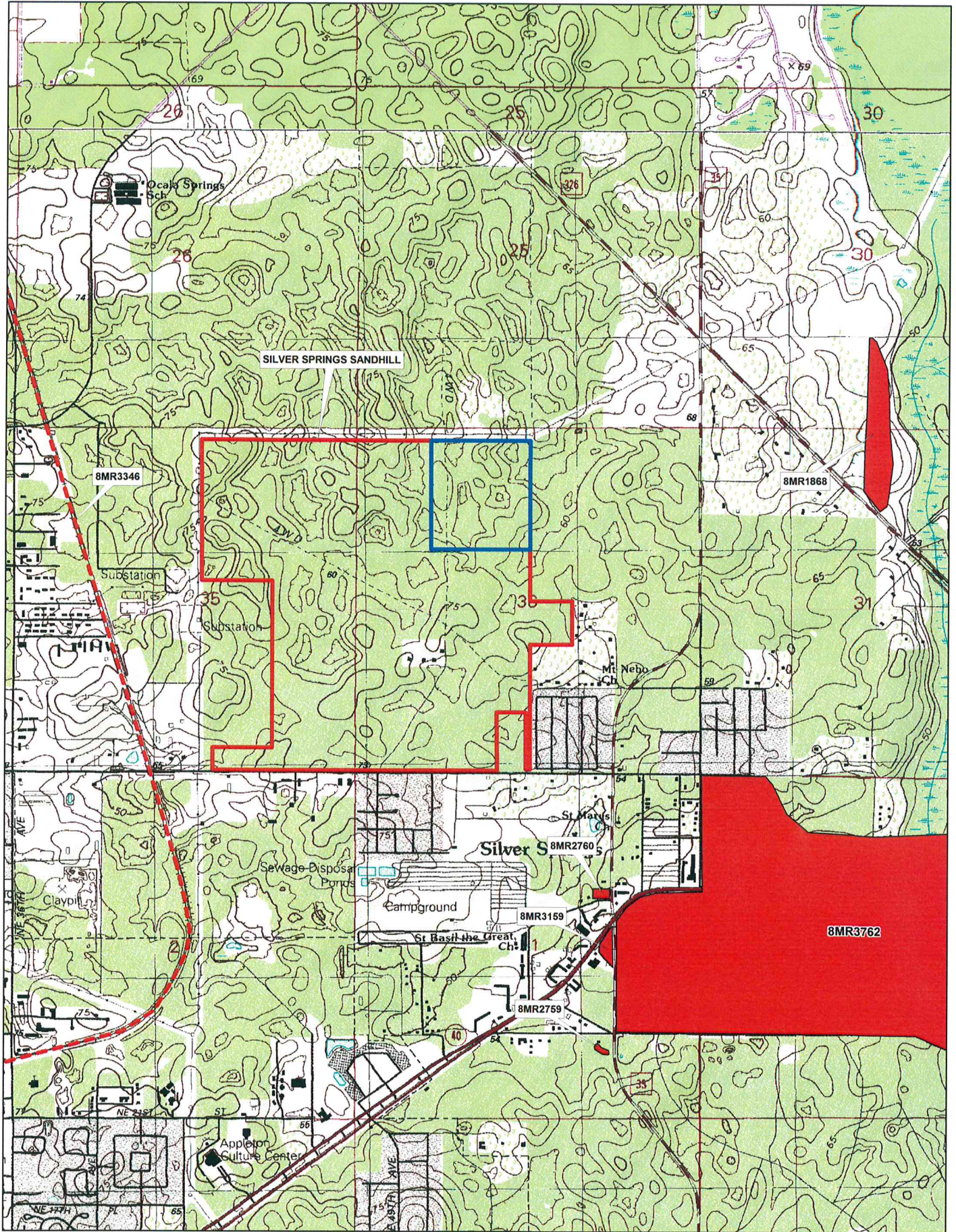
Owners: Silver Springs Ocala, LLC, Edgewood Ocala, LLC, & Edgewood Ocala II, LLC

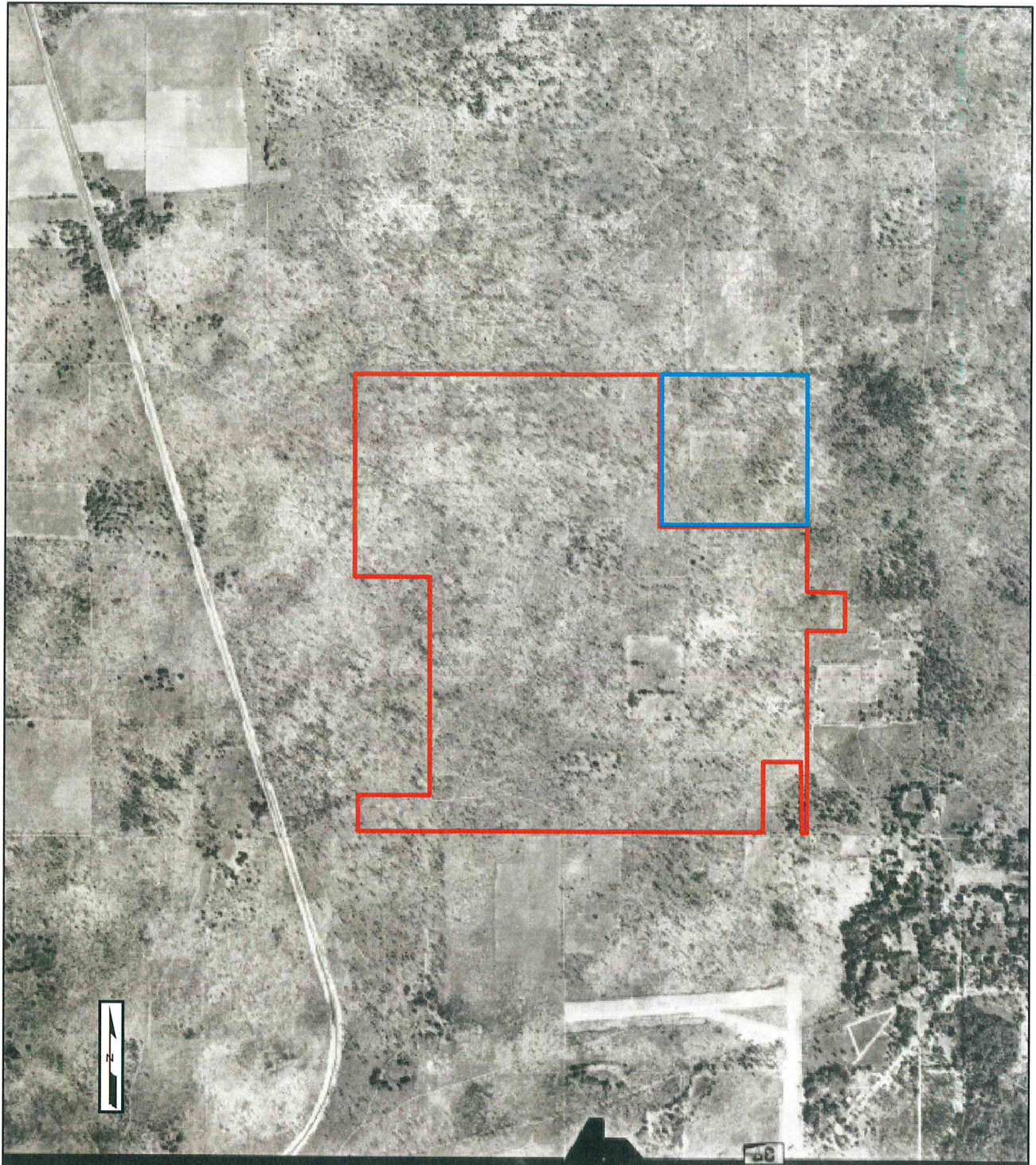
Marion County, Florida

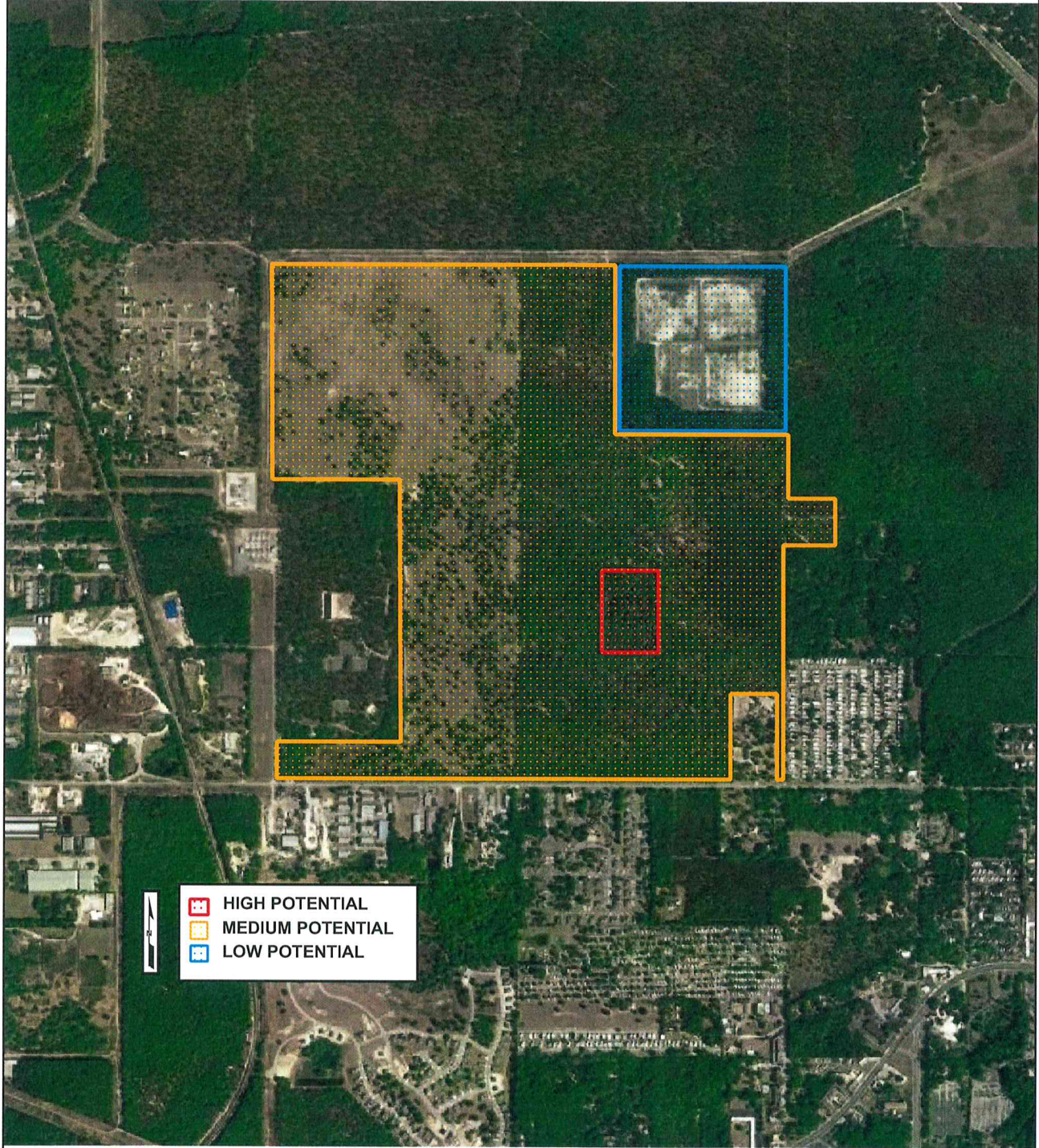


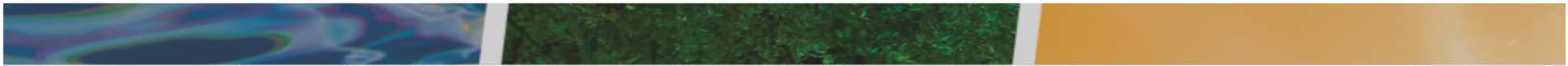


APPENDIX B
CULTURAL RESOURCE MAPS









APPENDIX C

COMPLIANCE WITH COMPREHENSIVE PLAN AND SENSITIVE LANDS ORDINANCE

1 **GOAL 1: The County shall maintain, protect, and enhance the diversity and integrity of the**
2 **County's natural resources and provide stewardship to maintain the County's quality of life**
3 **and economic vitality through the management and conservation of natural resources.**

4 **OBJECTIVE 1.1:** The County shall designate environmentally sensitive and locally significant
5 natural resources for conservation, protection, and enhancement, and Land Development Code
6 (LDC) provisions shall be maintained to implement this Objective and its Policies.

7 **Policy 1.1.1:** The County shall include the following as environmentally sensitive natural resources
8 requiring special protection to avoid adverse impacts to these resources:

- 9 a. Waterbodies designated as Outstanding Florida Waters, Aquatic Preserves, Scenic Rivers, and/or
10 other similar designations for protection by a local, state, and/or federal program;
- 11 b. Navigable waterways as designated by the state and/or federal government;
- 12 c. Wetlands as defined by the state and implemented by the applicable water management district;
- 13 d. 100-year floodplains and floodways as identified by the Federal Emergency Management Agency
14 Flood Insurance Rate Maps (FEMA FIRM);
- 15 e. State and/or federal owned natural reservation lands used for conservation and/or recreation
16 purposes such as State Parks, State Forests, Wildlife Management Areas, and the Ocala National
17 Forest;
- 18 f. Habitat containing listed flora and fauna identified as protected species by the state and/or
19 federal government;
- 20 g. Rivers, lakes, and springs with a defined Minimum Flows and Level (MFL), as designated by local,
21 state, or federal agencies, particularly in conjunction with local and regional Water Supply Plans;
22 and
- 23 h. Those areas identified as High and Prime Groundwater Aquifer Recharge Areas ($\geq 12''$ annually as
24 identified by the applicable water management district; H/PARA) and Springs Protection Zones
25 (SPZ), as established in the Future Land Use Element (FLUE) and LDC.

26 **Policy 1.1.2:** The County shall include the following as locally significant natural resources due special
27 protection to minimize adverse impacts to these resources:

- 28 a. Surface waters of the State;
- 29 b. Native vegetative communities as identified by the State of Florida's Natural Areas Inventory
30 (FNAI) Program;
- 31 c. Commercially valuable mineral resources as defined by the state;
- 32 d. Soils, particularly those identified as prime farmland and locally important farmland as defined by
33 the United States Department of Agriculture (USDA) Natural Resources Conservation Service
34 (NRCS) which include the following soil series: Blitchton, Kanapaha, Micanopy, Fellowship,
35 Kendrick, Flemington, Gainesville, Lochloosa, Hague, and Zuber);
- 36 e. Good quality air, focusing on dust/debris and noxious odors;
- 37 f. Good quality and sufficient quantities of groundwater, particularly addressing potable,
38 agricultural, recreational, and other economically beneficial uses;

- 1 g. Wellhead and wellfields serving centralized potable water systems for municipal and local
2 governments or private systems regulated by the State of Florida Public Service Commission;
- 3 h. Fisheries, wildlife, and wildlife habitat;
- 4 i. Migratory wildlife routes and ecological corridors; and County-owned and/or managed regional
5 and/or resource-based parks.

6 **Policy 1.1.3:** The County shall require the identification of environmentally sensitive and locally significant
7 natural resources as part of the review process for development applications, focusing on land use, zoning,
8 subdivision, improvement plan, and site plan applications. The detail of the data in early development
9 review stages may be from generalized county, state, and/or federal sources, while later development
10 review stages will require more detailed site specific information to be generated by the applicant.

11 **Policy 1.1.4:** The County may utilize resources developed by federal, state, regional, and/or local sources
12 to identify and evaluate environmental characteristics and development potential, including, but not
13 limited to, the following sources:

- 14 a. USDA NRCS (f/k/a Soil Conservation Service) *Soil Survey of Marion County*;
- 15 b. FEMA FIRM, as amended;
- 16 c. Florida Department of Environmental Protection Florida Natural Areas Inventory (FDEP FNAI)
17 Program, including the *Natural Areas Inventory of Marion County, Florida*;
- 18 d. FDEP Florida Fish and Wildlife Conservation Commission (FWC) publications including, but not
19 limited to, Species Richness Maps, species management plans, etc.;
- 20 e. FDEP Basin Management Action Plans (BMAP);
- 21 f. Florida Department of Agriculture and Consumer Services (FDACS) and its jurisdictional agencies’
22 best management practices manuals;
- 23 g. St. Johns River Water Management District (SJRWMD) and Southwest Florida Water Management
24 District (SWFWMD) publications and programs including but not limited to, Well/Wellfield
25 Capture Zones Maps, High & Prime Aquifer Recharge Area Maps, and Karst Sensitive Areas Maps;
- 26 h. Withlacoochee Regional Water Supply Authority Water Supply Plan (WRWSA-WSP);
- 27 i. Marion County produced publications including, but not limited to, the Marion County Water
28 Supply Plan (MC-WSP), Marion County Aquifer Vulnerability Assessment (MCAVA), Marion County
29 Springs Protection Zones (SPZs), and Marion County Environmentally Sensitive Overlay Zones
30 (ESOZs).

31 **Policy 1.1.5:** The County will make available to the public maps and other information to allow for the
32 general identification of environmentally sensitive and locally significant natural resources in the County
33 to the greatest extent practicable. When information is provided by non-county sources, the County will
34 facilitate providing that information to the public to the greatest extent practicable.

35 **OBJECTIVE 1.2:** The County shall protect, conserve, and enhance the quality and natural function
36 of environmentally sensitive and locally significant natural resources within the County, while
37 encouraging and supporting the appropriate use of such resources, as further defined in the LDC.

38 **Policy 1.2.1:** The County shall protect, conserve, and enhance environmentally sensitive and locally
39 significant natural resources from adverse impacts to the greatest extent practicable focusing on, but not
40 limited to, the following activities:

- 1 a. Protection of surface and ground water from activities that degrade and/or introduce pollutants
2 that may adversely affect its quality and/or quantity;
- 3 b. Protection of surface and navigable waters from activities that adversely impact their use,
4 capacity, quality and/or character;
- 5 c. Protection of flood storage and floodplain capacity from activities that materially impair
6 floodplain capacity or alter the characteristics of the existing one-percent (100-Year) Floodplain;
- 7 d. Protection of qualified central potable water system supply wells and/or wellfields from activities
8 that would adversely affect the public health and/or the ability to maintain such services;
- 9 e. Protection of identified habitats, such as wetlands, native vegetative communities, including
10 listed species, or critical migratory and/or estuarine habitats, from activities that destroy and/or
11 degrade such habitats from immediate or long-term effects from development, such as pollution,
12 siltation, and/or non-native invasive species;
- 13 f. Protection of natural reservations including federal, state, regional, and/or local government
14 owned conservation and/or recreation lands and facilities from activities that adversely impact
15 the intended purpose and/or use of those lands;
- 16 g. Protection of key soil types identified as prime and locally important farmlands and/or known to
17 include commercially valuable minerals from adverse impacts which would prevent and/or
18 discourage their continuing use and/or recovery when suitable environmental management and
19 best practices are used;
- 20 h. Protection of air quality from adverse impacts which would negatively affect other identified
21 resources and/or the quality and/or character of such resources or surroundings which would
22 create a public nuisance, such as wind-borne dust or odor.

23 **Policy 1.2.2:** The County shall require development design, construction, and management techniques to
24 protect environmentally sensitive and locally significant natural resources, including but not limited to the
25 following:

- 26 a. Compliance with stormwater management LOS standards as provided in the Stormwater Element
27 (SE) and reflected in the Capital Improvement Element (CIE);
- 28 b. The reduction of densities in specified habitats or areas when development is proposed within
29 those areas, unless development is clustered to protect and conserve the habitats, including those
30 adjusted densities provided in FLUE Objective 9.1;
- 31 c. The clustering of development to create open spaces that function to buffer and protect identified
32 resources on-site and off-site to development, and provide habitat linkages when possible;
- 33 d. The establishment and management of buffers and other land use controls between development
34 activities and identified resources, with emphasis on ensuring the buffer establishes a balance
35 between the scale and intensity of development and the scope, quality, and character of the
36 resource;
- 37 e. The use of Marion Friendly flora to prevent or discourage non-native invasive species;
- 38 f. The implementation of water conservation, irrigation, and fertilizer management provisions;
- 39 g. The implementation of design and development standards regarding setbacks, lot dimensions,
40 and building location/design, particularly when such sites abut or are determined to be
41 connected, such as but not limited to, hydrologically connected, to identified resources;

- 1 h. The use of mitigation for on-site resources through alternative on-site locations, off-site, or
2 monetary methods to ensure the protection/conservation of the resource; the intent of off-site
3 or monetary mitigation is to achieve a minimum of one-for-one mitigation/replacement, with
4 focus on maintaining the mitigation action within the County unless otherwise authorized,
- 5 i. The Transfer of Development Rights (TDR) and the Transfer of Vested Rights (TVR) Programs as
6 provided within the FLUE; and
- 7 j. The establishment of an Urban Growth Boundary (UGB) within which the provision of adequate
8 public facilities shall be provided to all developments.

9 **OBJECTIVE 1.3:** The County shall continue to encourage acquisition of environmentally sensitive
10 and/or locally important resources when such acquisition is determined to be in the public
11 interest and particularly when such acquisitions maintain and support the character and quality
12 of life of citizens and visitors, and may benefit economic diversity and development in the County.

13 **Policy 1.3.1:** The County shall participate to the greatest extent practicable in efforts to identify and
14 acquire environmentally sensitive and/or locally important resources for conservation and/or recreation
15 purposes. The County, upon affirmative determination by the Board of County Commissioners, may act
16 as a lead agency and/or participate in such resource identification and acquisition.

17 **Policy 1.3.2:** Funds for any land acquisition will be maximized to the fullest extent possible by bonding
18 funds when necessary and by actively seeking matching funds and grants through governmental (e.g., local,
19 regional, state, federal, etc.) or non-governmental (e.g., private and/or non-profit funds and/or trusts,
20 etc.) when available.

21 **Policy 1.3.3:** The purchase or acceptance of conservation easements in lieu of acquisition by fee simple
22 title will also be considered and supported when practicable.

23 **OBJECTIVE 1.4:** The County shall encourage and promote the appropriate and practicable use of
24 environmentally sensitive and locally important natural resources in a form which maintains the
25 character and quality of life of its citizens and supports economic development and diversity.

26 **Policy 1.4.1:** Recreation, agri-tourism, and eco-tourism activities which function to promote and support
27 natural resource conservation, protection, and enhancement, particularly when including an educational
28 component, shall be encouraged.

29 **Policy 1.4.2:** The County shall protect and provide for the extraction of commercially valuable mineral
30 resources, as may be authorized by the County through the LDC Special Use Permit process and/or other
31 regulating agencies (e.g., FDEP, SJRWMD, SWFWMD, etc.). Sites of commercially valuable minerals shall
32 be protected from the encroachment of incompatible land uses that would inhibit or preclude the
33 extraction of minerals, particularly uses that would increase the density of people in close proximity to a
34 mineral extraction operation. Land use changes on contiguous land areas that are incompatible with
35 mineral extraction operations shall be prohibited until extraction, mitigation, and reclamation or
36 restoration are completed where mineral extraction operations exist or can be reasonably predicted. LDC
37 provisions shall be maintained to implement this policy.

1 **GOAL 1: The County will develop a parks and recreation and open space system to ensure**
2 **adequate opportunity for public access to, and use of, activity and resource-based recreation**
3 **sites for active and passive recreation to maintain and improve the quality of life of its citizens**
4 **and support economic diversity and development.**

5 **OBJECTIVE 1.1:** The County shall provide and manage parks and recreation and open spaces
6 using a county-wide Level of Service (LOS) in a financially feasible manner, and consistent with
7 the Marion County Parks and Recreation Master Plan (PRMP), as amended.

8 **Policy 1.1.1:** The LOS standard for public outdoor parks and recreation facilities shall be two (2) acres per
9 1,000 persons. Marion County may develop and pursue intergovernmental and not-for-profit agency
10 partnerships to meet identified recreation needs, including, but not limited to, placing County-
11 owned/operated facilities on non-Marion County owned lands.

12 **Policy 1.1.2:** The County shall establish and maintain a Parks and Recreation Advisory Council (PRAC), or
13 equivalent authority, to provide recommendations to the Board of County Commissioners regarding parks
14 and recreation and open space needs such as land, facilities, and programs as well as costs/funding.
15 Duties of the PRAC shall be established by the Board of County Commissioners and may include, but not
16 be limited to, the following:

- 17 a. Review and make recommendations regarding the maintenance of, and revisions/updates to, the
18 Marion County Parks and Recreation Master Plan (PRMP);
- 19 b. Identify and provide guidance regarding opportunities to establish partnerships with other public
20 agencies (e.g., local, regional, state, or federal), quasi-governmental (e.g., community
21 development or special districts) and/or private entities (e.g., private trusts, non-profit trusts,
22 community groups, etc.) to meet parks and recreation and open space needs;
- 23 c. Identify and provide guidance regarding opportunities to obtain and/or develop funding and/or
24 funding mechanisms to maintain, provide, and meet current and identified parks and recreation
25 and open space needs such as lands, facilities, and/or programs;
- 26 d. Identify and provide guidance on location needs for parks and recreation and open space needs
27 in relation to the County's Future Land Use Map (FLUM), including identifying opportunities for
28 the use of existing public and/or private lands held for recreation and/or conservation purposes
29 or for surplus local, regional, state, or federal lands.

30 **Policy 1.1.3:** The County shall establish and maintain a Marion County Parks and Recreation Master Plan
31 (PRMP) which functions to inventory, assess, evaluate, and identify Marion County's existing and future
32 parks and recreation and open space needs and provide guidance on funding the maintenance,
33 improvement, and expansion of the existing and identified needs.

34 **Policy 1.1.4:** The County shall fund through a variety of mechanisms the maintenance, construction, and
35 operation of County-owned and/or operated parks and recreation facilities and open spaces along with
36 a variety of recreation programs through the Marion County Parks and Recreation Department (MCPRD),
37 or its equivalent.

1 **Policy 1.1.5:** The County shall provide reasonable public access to all County provided parks and
2 recreation and open space sites, facilities, and programs to the greatest extent practicable, in
3 conformance with applicable governmental requirements (e.g, state and federal disability standards) and
4 in a manner which will maintain and not create adverse impacts to such sites, facilities, and programs.

5 **OBJECTIVE 1.2:** The County shall plan for management, acquisition, facilities development, and
6 programs to meet the County's park and recreation and open space needs using the Marion
7 County Parks and Recreation Master Plan (PRMP) which will include and/or address, at a
8 minimum, the items identified by the policies of this Objective.

9 **Policy 1.2.1:** The PRMP shall be developed and maintained in a manner which encourages, supports, and
10 includes public participation in all components of the PRMP.

11 **Policy 1.2.2:** The PRMP shall include policies on the provision of lands, sites, facilities, and programs.

12 **Policy 1.2.3:** The PRMP shall include provisions which identify and support a sound financial plan for
13 acquisition, development, and operations.

14 **Policy 1.2.4:** The PRMP shall include the following data:

15 a. An inventory of parks and recreation and open space lands, facilities, and programs provided by
16 the County, and those which are established, operated, and/or funded parks and recreation and
17 open space lands, facilities, and programs, under interlocal or partnership agreements, including
18 a summary of the status of the applicable agreements. The PRMP may also include similar
19 information on non-County parks and recreation and open space lands, facilities, and programs
20 for the purpose of assessing their availability and suitability to the citizens of the County and
21 economic opportunities for recreation and eco-tourism related activities.

22 b. Current needs for parks and recreation and open space sites, facilities, and programs based on
23 estimated recreation demand, and an analysis of the availability, accessibility, and adequacy of
24 existing parks and recreation and open space sites to the public;

25 c. Projected future needs for parks and recreation and open space sites, facilities, and programs
26 based on the established LOS and the projection of the necessary availability, accessibility, and
27 adequacy of the need for those parks and recreation and open space sites, facilities, and
28 programs;

29 d. An annual capital improvement program and budget for five years of proposed acquisition and
30 development shall be developed, including anticipated operations impacts from such
31 improvements for the first year.

32 **Policy 1.2.5:** The County shall utilize the PRMP and identified public land locations, if any, to locate existing
33 public lands appropriate for desired recreation facilities first before purchasing additional new land. If
34 existing public lands are deemed inappropriate for desired recreation facilities, the County shall utilize the
35 PRMP and the FLUM to identify new properties for desired recreation facilities.

36 a. The County, through the MCPRD shall assist non-profit participants with establishing public
37 recreation facilities when feasible and when adequate resources are available. These facilities can
38 include schools and municipalities.

- 1 b. The MCPRD and PRAC shall identify potential sites within delineated recreation service areas in
2 the county, including an initial ranking based on environmental characteristics, location within the
3 service area, accessibility, and potential for meeting existing or future needs for the area. This
4 inventory and ranking shall be maintained as the PRMP is updated. In addition, the MCPRD shall
5 consider any identified Urban Growth Boundary (UGB), as noted in the FLUE, in the analysis for
6 potential parks and recreation sites.
- 7 c. The County shall encourage and provide access to public water bodies (e.g., Navigable waterways,
8 surface waters of the state, etc.) where feasible through land acquisition and development of
9 fishing and boating facilities.
- 10 d. The County shall encourage and support increasing the number of greenways connecting to
11 environmentally sensitive and locally important natural resources, which provide and promote
12 recreational opportunities, alternative transportation modes and wildlife corridors.
- 13 **Policy 1.2.6:** When the PRMP identifies any LOS deficiencies, the PRMP shall identify how resolution of
14 the deficiencies will be addressed and shall reflect any necessary funding needs appropriately in the PRMP
15 capital improvements component.
- 16 **Policy 1.2.7:** Opportunities to partner with public and private agencies and entities to productively and
17 economically operate and use County-owned and operated parks and recreation and open space sites and
18 facilities shall be evaluated by the PRMP.
- 19 **OBJECTIVE 1.3:** The County will utilize existing funding sources and develop new funding sources
20 to provide for parks and recreation and open space needs in a manner that seeks to comply with
21 the Comprehensive Plan LOS standards and any administrative standard established by the PRMP
22 (e.g., neighborhood, community, or regional parks, etc.).
- 23 **Policy 1.3.1:** The County shall annually review user and other appropriate fees to defray the operation
24 and maintenance costs of parks and recreational programs.
- 25 **Policy 1.3.2:** The County may utilize the information and data generated from the PRMP, as amended, to
26 identify deficiencies in parks and recreation facilities and correct such deficiencies using development
27 exactions, on-site dedication, fee-in-lieu payment, other funding programs, or other appropriate
28 methods.
- 29 **Policy 1.3.3:** The County may apply for financial assistance (e.g., grants, loans, etc.) to support funding
30 the acquisition and construction of parks and recreation and open space lands and facilities, as well as the
31 development and provision of recreation programs through the MCPRD to achieve and improve financial
32 feasibility and leverage County funds. In support of these efforts, a five year capital improvement plan
33 shall be created and annually adopted by the County Board of County Commissioners (BCC).
- 34 **Policy 1.3.4:** The LDC shall contain provisions requiring new residential developments (e.g., subdivisions
35 and particularly developments of regional impact) to provide minimum open space per dwelling unit
36 consistent with FLUE Policy 2.1.4 as a condition of approval.
- 37 a. Compliance with this provision may be satisfied by on-site development or, when on-site
38 provision is impractical or not selected by the developer, by providing for off-site development or

1 the payment of a fee-in-lieu to the County for off-site acquisition and/or development, consistent
2 with the PRMP. The LDC shall provide for of the determination of any fee-in-lieu for off-site
3 provision.

- 4 b. When on-site recreational sites and facilities are established to meet the open space requirement,
5 suitable mechanisms must be established to fund the management and maintenance of the
6 space, and the County may require the establishment of a municipal services taxing unit or
7 municipal services benefit unit for such, in addition to any private arrangements made by the
8 developer (e.g., property owners association, development district, etc.).

9 **OBJECTIVE 1.4:** The County will strive to ensure the design and development of parks and
10 recreation and open spaces provided within the County, whether public and/or private, serve as
11 a model for development to the greatest extent practicable and as further outlined in the policies
12 of this Objective.

13 **Policy 1.4.1:** Reasonable public access to all recreation sites and facilities shall be provided consistent with
14 applicable state and federal requirements (e.g., building codes, accessibility, etc.).

15 **Policy 1.4.2:** The County shall make the necessary provisions in location, design, and development of all
16 County-owned/operated recreation sites and facilities to ensure reasonable public access (e.g., building
17 codes, accessibility, etc.) for all new sites and facilities. For existing but access deficient sites and facilities,
18 the PRMP shall identify such deficiencies and propose/schedule improvements to address the
19 deficiencies.

20 **Policy 1.4.3:** All new sites and facilities planned and developed will be designed to minimize the impact to
21 the natural resources of the property. Existing sites and facilities shall be retrofitted when feasible and to
22 the greatest extent practicable when such facilities are renovated and/or expanded. Conformance with
23 local, regional, state, and/or federal best management practices applicable to the site will be a key focus
24 of the site design and development.

25 **Policy 1.4.4:** All new sites and facilities shall ensure connection to any available adequate public facility
26 consistent with the provisions of the LDRs and in a manner which meets the health and safety needs of
27 the public (e.g., centralized potable water, centralized sanitary sewer, roadway access improvements,
28 etc.). Existing sites and facilities shall be retrofitted to connect to or provide public facilities when feasible
29 and to the greatest extent practicable when such facilities are renovated and/or expanded.

30 **Policy 1.4.5:** All new sites and facilities shall be designed to provide connection to transportation facilities
31 and other developments. Existing sites and facilities shall be retrofitted where necessary and when
32 feasible and practicable to connect to transportation facilities and other developments when such
33 facilities are renovated and/or expanded. For sites within the Urban Growth Boundary, the design and
34 development shall address connection or future connection to non-automotive multi-modal
35 transportation methods such as but not limited to mass transit, sidewalks, bicycles, etc., including
36 addressing opportunities for integration with the *Ocala-Marion County Bicycle/Pedestrian Master Plan*
37 and any other "trail" plans within the County/UGB which will enhance/improve/maximize public access.

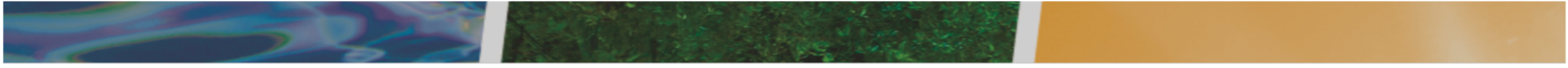
38 **Policy 1.4.6:** All new residential developments (e.g., subdivisions and particularly developments of
39 regional impact) shall be required to comply with the open space per dwelling unit standard established

1 by FLUE Policy 2.1.4, unless an alternative form of compliance is provided by the developer consistent
2 with Policy 1.3.4.

3 **OBJECTIVE 1.5:** The County recognizes the economic impact of parks and recreation and open
4 space areas and activities for both residents and visitors. The County shall continue to encourage
5 and develop economic opportunities for recreation and eco-tourism services.

6 **Policy 1.5.1:** The County shall collaborate with the public and private sectors in developing eco-tourism
7 opportunities using the public and private parks and recreation and open space lands within the County
8 and shall encourage and support efforts to market those opportunities.

9 **Policy 1.5.2:** The County LDC shall maintain provisions to address the establishment of private
10 conservation, eco-tourism, and recreation opportunities by government and/or private/non-profit sector
11 entities.



APPENDIX D

**PUBLIC MEETINGS AND COMMENTS
(TO BE INSERTED INTO FINAL LMP)**