

Silver Springs Conservation Area
Unit Management Plan
Marion County Parks & Recreation
Marion County, Ocala, Florida
FINAL DRAFT



water & air
RESEARCH, INC.

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18-5929-01

6821 Southwest Archer Road
Gainesville, Florida 32608

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	Sect. 1.1, p. 1
2.	The land acquisition program, if any, under which the property was acquired.	18-2.018 & 18-2.021	Executive Summary, p. EX-1; Sect. 1.1, p. 1
3.	Degree of title interest held by the Board, including reservations and encumbrances such as leases.	18-2.021	Executive Summary, p. EX-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	Figure 1, Figure 7
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	Section 1.2, Management Coordination p. 3; Section 7.5, p. 43
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	Section 1.2, Management Coordination p. 3; Sect. 7.5, p. 43, Exec. Summary, p. EX-1
8.	Identification of adjacent land uses that conflict with the planned use of the property, if any.	18-2.021	Section 1.1, p. 2
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)	Exec. Summary p. EX-1; Section 1.1, p. 1
10.	Proximity of property to other significant State, local or federal land or water resources.	18-2.021	Section 1.3, p. 5, Figure 1

Section B: Use Items

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
11.	The designated single use or multiple use management for the property, including use by other managing entities.	18-2.018 & 18-2.021	Section 1.1, p. 1
12.	A description of past and existing uses, including any unauthorized uses of the property.	18-2.018 & 18-2.021	Section 1.4, p. 5-6
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	Section 1.1, p. 1
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	Sect. 1.2, p. 3
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	Sect. 1.2, p. 3; Sect. 3.3, p. 26
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	Sect. 1.2, p. 3; Section 1.1, p. 1
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)	Section 1.1, p. 1; Sect. 1.2, p. 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	Sect. 1.2, p. 3
19.	Letter of compliance from the local government stating that the LMP is in compliance with the Local Government Comprehensive Plan.	BOT requirement	Appendix E
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	Section 2.1.3, p. 9-10
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	NA, less than 1,000 acres
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	Section 1.1, p. 2-3
23.	A statement regarding incompatible use in reference to Ch. 253.034(10).	253.034(10)	Section 1.1, p. 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	Section 1.1, p. 2; Section 1.2, p. 3
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)	Section 1.1, p. 3 and 4, Appendix B
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)	Section 1.1, p. 3 and 4, Appendix B
27.	Summary of comments and concerns expressed by the advisory group for parcels over 160 acres.	18-2.021	Section 1.2, p. 3. Appendix B
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)	Section 1.2, p. 3; Appendix B
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	No review

30.	Summary of comments and concerns expressed by the management review team, if required by Section 259.036, F.S.	18-2.021	None; Appendix B
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	None; Appendix B

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	Sect. 2.1.2, p. 8-9, Fig. 2
33.	Insert FNAI based natural community maps when available.	ARC consensus	Figure 3
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	Sect. 2.2.1, p. 10-13; Sect 2.3, p. 13-14
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	Sect. 2.2.1, p. 10-13, Figures 5 and 7
36.	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding beaches and dunes.	18-2.021	NA
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	Sect. 2.1.1, p. 7
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	Sect. 2.4.1, p. 14-19
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	Sect. 2.5, p. 19-21
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	Sect. 2.2.1, p. 10-13; Sect. 2-5, p. 19, 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)	Sects. 2.2, 2.3, 2.4, 2.5, pgs. 11-14 and pgs. 19-21
42.	Habitat Restoration and Improvement	259.032(10) & 253.034(5) ↓	
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.		Sect. 6.0, p. 38; Sect. 5, p. 30-37
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.		Sect. 5.5, p. 35-37 Section 8.0, p. 43-44
42-C.	The associated measurable objectives to achieve the goals.		Sect. 5.5, p. 36-37
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>		Appendix D.
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.		Sect. 7.2, p. 41
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)	Table 2.2

44.	Sustainable Forest Management, including implementation of prescribed fire management	18-2.021, 253.034(5) & 259.032(10) ↓	Sect. 5.3, p. 32-33
44-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		Sect. 5.3.2, p. 32-33
44-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		Sect. 5.5.1, p. 36-37
44-C.	Measurable objectives (see requirement for #42-C).		Sect. 5.5.1, p. 36-37 Sect. 5.3, p. 32-33
44-D.	Related activities (see requirement for #42-D).		Sect. 5.3.2, p. 32-33
44-E.	Budgets (see requirement for #42-E).		Sect. 7.2, p. 40
45.	Imperiled species, habitat maintenance, enhancement, restoration or population restoration	259.032(10) & 253.034(5) ↓	
45-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		Sect. 2.5, p. 19-20
45-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		Sect. 2.5, p. 19-21
45-C.	Measurable objectives (see requirement for #42-C).		Sect. 5.5, p. 36-37
45-D.	Related activities (see requirement for #42-D).		Appendix D
45-E.	Budgets (see requirement for #42-E).		Sect. 7.2, p. 40
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)	Sect. 5.2.1, p. 30-31, Table 2-3
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	To Be Provided
48.	Exotic and invasive species maintenance and control	259.032(10) & 253.034(5) ↓	
48-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		Sect. 5.2.1, p. 30-31
48-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		Sect. 5.5, p. 36-37
48-C.	Measurable objectives (see requirement for #42-C).		Sect. 5.5, p. 36-37
48-D.	Related activities (see requirement for #42-D).		Appendix D
48-E.	Budgets (see requirement for #42-E).		Sect. 7.2, p. 40

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	Sect. 2.3.1, p. 14
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	Sect. 2.3.1, p. 14 Figure 5
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	Table 2-2 p. 10, Depression Marsh, p. 12-13
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, p. 10, Sect. 2.3, p. 13-14
53.	Hydrological Preservation and Restoration	259.032(10) & 253.034(5) ↓	
53-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		Sect. 2.3.2, p. 14
53-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		Sect. 2.3.2, p. 14

53-C.	Measurable objectives (see requirement for #42-C).		Sect. 2.3.2, p. 14
53-D.	Related activities (see requirement for #42-D).		Sect. 2.3.2, p. 14
53-E.	Budgets (see requirement for #42-E).		Sect. 7.2, p. 40

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	Sect. 3.2.1, p. 25-26 Appendix C
55.	***Quantitative data description of the land regarding an inventory of significant land, cultural or historical features and associated acreage.	253.034(5)	Sect. 3.2.1, p. 25-26
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	Sect. 3.3, p. 26
57.	Cultural and Historical Resources	259.032(10) & 253.034(5) ↓	
57-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		Sect. 3.3, p. 26
57-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		Sect. 8.0, p. 44-45
57-C.	Measurable objectives (see requirement for #42-C).		Sect. 3.3, p. 26
57-D.	Related activities (see requirement for #42-D).		Sect. 3.2.1, p. 25-26
57-E.	Budgets (see requirement for #42-E).		Sect. 7.2, p. 40

**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)	Sect. 8.0 p. 44
59.	Capital Facilities and Infrastructure	259.032(10) & 253.034(5) ↓	
59-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		Sect. 5.5, p. 36-37
59-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		Sect. 5.5, p. 36-37
59-C.	Measurable objectives (see requirement for #42-C).		Sect. 5.5, p. 36-37
59-D.	Related activities (see requirement for #42-D).		Sect. 8.0, p. 44-45
59-E.	Budgets (see requirement for #42-E).		Sect. 7.2, p. 40
60.	*** Quantitative data description of the land regarding an inventory of recreational facilities and associated acreage.	253.034(5)	Sect. 1.4, p. 5-6; Figure 7
61.	Public Access and Recreational Opportunities	259.032(10) & 253.034(5) ↓	
61-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		Sect. 4.2, p. 28-29
61-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		Sect. 5.5, p. 36-37
61-C.	Measurable objectives (see requirement for #42-C).		Sect. 5.5, p. 36-37
61-D.	Related activities (see requirement for #42-D).		Sect. 8.0, p. 44-45
61-E.	Budgets (see requirement for #42-E).		Sect. 7.2, p. 40

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	Front of Plan
63.	Place the Executive Summary at the front of the LMP. Include a physical description of the land.	ARC and 253.034(5)	Ex Sum, p. EX-1-2
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	Ex Sum, p. EX-1 Table 7-1, Sect. 8.0, p. 44-45
65.	Key management activities necessary to achieve the desired outcomes regarding other appropriate resource management.	259.032(10)	Sect. 5.5, p. 36-37
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)	Sect. 7.2, p. 40
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)	Sect. 7.2, p. 40
68.	A statement of gross income generated, net income and expenses.	18-2.018	Sect. 7.2, p. 40

*** = 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 and Abbreviations

ARC	Acquisition and Restoration Council
BMAP	Basin Management Action Plan
FAC	Florida Archaeological Council
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FMSF	Florida Master Site File
FWC	Florida Fish and Wildlife Conservation Commission
FFS	Florida Forest Service
FWS	U.S. Fish and Wildlife Services
FNAI	Florida Natural Area Inventory
FAS	Forest Area Supervisor
LMP	Land Management Plan
MCPR	Marion County Parks and Recreation
MU	Management Unit
MVM	Mechanical Vegetation Management
NGVD	National Geodetic Vertical Datum
NWCG	National Wildfire Coordinating Group
NRCS	Natural Resource Conservation Service
OLIT	Ocala Longleaf Local Implementation Team
PRAC	Parks and Recreation Advisory Committee
PSI	Professional Services Industries
RPA	Register of Professional Archeologists
Conservation Area	Silver Springs Conservation Area
SHPO	State Historic Preservation Office
TAC	Technical Advisory Committee
TIITF	Trustees of the Internal Improvement Trust Fund
USDA	U.S. Department of Agriculture

APPENDICES

Appendix A	Lease and Legal Description
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Executive Summary

The Silver Springs Conservation Area, (Conservation Area), formerly known as the Seldin-Korman Tract, was purchased by the State of Florida in May 2005 as part of the Florida Forever Program through the Florida Department of Environmental Protection (FDEP), Bureau of Land Acquisition. This 330-acre property was one of the largest intact, undeveloped privately-owned tract of land adjacent to Silver Springs State Park. The property was acquired for the express goals of preserving and protecting land around the spring and 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 [TIITF], May 2005).

The State of Florida subsequently entered into a lease with Marion County in 2006 for management of the Conservation Area property with the requirement that a management plan be prepared and approved by the State of Florida. This document is the second 10-year Land Management Plan (LMP) prepared for Conservation Area for the State of Florida.

A key component of the plan is for the subject property to be developed, managed, and maintained as a passive park. Because of its adjacency to Silver Springs State Park and other notable conservation lands and parks in the region, the Conservation Area is an important connector in the Marion County Parks and Recreation Master Plan trail system.

Upland and wetland communities on the site include sandhill, sinkhole, successional hardwood forest, and depression marsh. Most of the site contains well-drained soils and karst geology, therefore, protection of groundwater recharge is the top priority. These natural communities support a diverse array of plant and animal species and are relatively undisturbed by historical land uses. Most of the site is disturbed by 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. Because of the urban interface, the management team has had very few ideal weather conditions to apply prescribed fires. Exotic invasive species eradication efforts have been ongoing since 2007 and will continue.

Recreation use is projected to increase in the near future with the implementation of the proposed components of the Marion County Recreation Master Plan. This plan will recommend expansion of the trail system on the Conservation Area to link the Downtown Connector Trail to Silver Springs State Park. This will require a short multiuse paved trail designed to allow biking through the site, connecting to the other biking facilities.

Management tasks accomplished over the duration of the last LMP include:

- 40 acres of prescribed fire in Fire Management Unit (MU) 2
- Exotic invasive plant and animal species surveys have been conducted twice per year.
- Exotic invasive plant species that have been observed are all under maintenance status and continued monitoring and maintenance has been an ongoing task.
- Most of the trails recommended in the 2007 LMP were established and have been regularly maintained, some proposed neighborhood trail connections have yet to be established.
- Entrance and way-finding signage has been added or upgraded.

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

1.1 Silver Springs Conservation Area Land Management and Plan Information Summary

Lead Agency	Marion County Parks and Recreation Department (MCPR), Office of Environmental Services
Common Name:	Silver Springs Conservation Area (Conservation Area)
Location:	Marion County, Florida
Acreage Total:	330.42 acres
Acreage Breakdown:	Land Cover Classification Acreages: sandhill (221.70 acres), successional hardwood forest (104.78 acres), depression marsh (3.94 acres).
Use:	Conservation to protect water resources (aquifer protection), limited passive resource-based recreation, preservation.
Management Responsibilities:	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 Transportation (FDOT), 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 the Marion County's Primary Springs Protection Zone, sinkhole.
Archaeological/Historical:	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:	None
Surplus Lands/Acreage:	None.
Public Involvement:	For current plan: Technical Advisory Committee (TAC) Meeting and Noticed Public Hearing, September 12, 2019 and October 1, 2019 (Appendix B)

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

Two noticed public hearings: TAC Meetings, September 12, 2019 and October 1, 2019. (Documentation in Appendix B). The Silver Springs Conservation Area FINAL DRAFT Land Management Plan was available on County's website for public review and comments in July-October 2019.

Statement of Incompatible Uses

The following prohibitions or incompatible uses are acknowledged by Marion County in compliance with the State of Florida guidelines:

- 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).
- No ground-disturbing activities are to be conducted without the proposed impact areas being subjected to subsurface survey by a professional archaeologist. All surveys need to be fully documented and reviewed by the State Historic Preservation Office (SHPO).

1.2 Introduction and Overview

The Conservation Area is leased by Marion County from the State of Florida, Board of TIITF, and managed by the MCPR, to protect the property's resources as well as provide recreational opportunities to the citizens of Marion County. Marion County is required as part of its lease to develop a management plan subject to approval by the State of Florida that meets the requirements for management plans in Florida Administrative Code, Chapter 18-2, Management of Uplands Vested in the Board of Trustees and complies with uses consistent with the 1981 State Lands Management Plan. This document meets these requirements and provides policy and guidance for the use, management, and development of the property to protect its valuable resources while providing compatible opportunities for outdoor recreation and environmental education. The management plan will be updated in 10 years. A legal description is provided in the State of Florida, Board of TIITF lease with Marion County (Appendix A).

Management Authority

The MCPR is the agency charged with managing the Conservation Area and implementing this LMP. Other agencies that will contribute to long-term management include the FDOT, FFS, and Florida Department of Environmental Protection (FDEP).

Management Coordination

The Conservation Area was purchased consistent with §187.201(9), Florida Statutes, the Natural Systems and Recreational Lands section of the State Comprehensive Plan. Further, each planned use as outlined in Section 4.0 is consistent with the State Lands Management Plan as enforced by FDEP.

Marion County will coordinate with FDOT regarding its 1.5-acre adjacent easement; the City of Ocala due to the shared boundary on the southern portion of the subject property; FDEP for consistency with the State Lands Management Plan and for coordination of management activities with Silver Springs State Park; FFS regarding prescribed burns; and the Department of State, Division of Archives, History, and Records Management, prior to taking any actions that may adversely impact archaeological or historical resources.

No portion of the Conservation Area should be declared surplus and there are no parcels within or adjacent to the Conservation Area as potential additions that are essential to management of the property.

A Letter of Compliance was obtained from the Marion County Planning Department stating that the Conservation Area is compliant with the Marion County Comprehensive Plan (Appendix E).

Public Participation

The Technical Advisory Committee (TAC) reviewed and provided comments (Appendix B) on the LMP at a duly-noticed public meetings held on September 12, and October 1, 2019. The TAC is comprised of representatives of local government, property owners, and special interest groups. Each member of the TAC is appointed by the Marion County Board of County Commissioners. A County Commissioner was appointed by the BOCC to participate at the TAC public meeting. The draft LMP was provided to each County Commissioner and was posted on Marion County's website in PDF format for easy review and downloading by the public at least

30 days prior to the meetings. All LMP public meetings were properly noticed at least 14 days in advance in the local newspaper (Ocala Star Banner) and on the County's website.

Based upon input from the TAC meeting and any comments received by Marion County from the public, the draft LMP was presented for public comment and discussion at TAC public hearing held October 1, 2019.

Following the local public hearings, the LMP was transmitted to FDEP for review (90 days required) by the Acquisition and Restoration Council (ARC) by November 15th, 2019. At a public hearing in February 2020, ARC will review the LMP and determine if the plan should be forwarded to the Board of Trustees of the Internal Improvement Trust Fund for final action.

Appendix B contains the public participation documentation.

Statement of Incompatible Uses, If Any

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 non-native 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).
- No ground-disturbing activities are to be conducted without the proposed impact areas being subjected to subsurface survey by a professional archaeologist. All surveys need to be fully documented and reviewed by the SHPO.

1.3 Location of Silver Springs Conservation Area

The Conservation Area is in central Marion County, along an eastern portion of the Ocala City limits. It is located south of State Road 40 and west of State Road 35 and lies within 0.5 mile of Silver Springs, a first magnitude spring. The 330-acre tract is bounded by State Road 35 (Baseline Road) on the east; City of Ocala property and Northeast 7th Street (County Road 314) on the south; a variety of private properties on the west, including Hunters Trace subdivision, Pine Ridge Estates, undeveloped property, and Wal-Mart; and private residential properties on the north. The Conservation Area is adjacent to the Silver Springs State Park across Baseline Road to the west. Figure 1 shows existing site features and the proximity of the Conservation Area to offsite landmarks and other conservation lands.

The Conservation Area is located within a Marion County's Primary Springs Protection Zone and is located near a State Aquatic Preserve. The Silver River is located within the adjacent Silver Springs State Park and is designated as a State Aquatic Preserve. Other nearby conservation land includes the Marjorie Harris Carr Florida Greenway State Recreation and Conservation Area located south and southwest of the site, Indian Lakes State Forest, Coehadjoe Park, and the recently County-acquired Silver Springs Sandhill located north of the Conservation Area.

1.4 History and Objectives

The Conservation Area was acquired by the State of Florida under its Florida First Magnitude Springs Project. The First Magnitude Springs Project boundary was amended to include the subject property on October 17, 2003. The Conservation Area was acquired as a Florida Forever Full Fee Project. The need for the acquisition of the Conservation Area was stated in the staff remarks on the property to the Board of TIITF agenda of May 17, 2005, when acquisition approval was granted. "The underlying geology and close proximity to the spring make this parcel of utmost importance to the health of the spring." (§187.201(9), Florida Statutes).

The following goals and objectives are compiled from a variety of sources including the lease agreement between the State of Florida and Marion County, the agenda from the meeting of the Board of the TIITF (May 17, 2005) to purchase the property, the MCPR goals, Marion County's Comprehensive Plan, and the State Land Management Plan. They include:

- Protect the recharge potential of the site as it is 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 passive recreation and cultural, historic, and natural interpretation.
- 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.

Past Uses of the Property

When the Conservation Area was acquired, the site was undeveloped and had no existing structures. Based on existing pine stumps observed on the property, longleaf pine (*Pinus palustris*) was harvested from the property prior to acquisition. The previous landowner, the Korman-Seldin River Development Company, had sought to change the land use designation from Medium Density Residential and Urban Reserve to Commercial in 2002, but this action was denied by Marion County.

A Phase I Environmental Site Assessment (ESA) was conducted in May 2005 prior to purchase by the State of Florida (Professional Services Industries [PSI], 2005). As part of the ESA, a review of various historical resources was conducted, including aerial photographs, land title records, and local street directories. PSI concluded that the property had not been previously developed based on property uses from 1951 to present.

Existing Physical Features and Improvements

The Conservation Area is currently undeveloped forest land consisting of natural communities: sandhill, depression marsh and successional hardwood forest (an altered land cover). Unpaved roads and trails occur throughout the property and are shown in Figure 7. Current public access to the property is through the park entrance on the southern boundary, and three service entrances occur on the eastern boundary (north gate, east gate and southeast gate). The service and maintenance entrances are located along State Road 35 in the northeast corner (North Gate), 0.2 miles north of the entrance to Silver Springs State Park (east gate) and on the southeast corner of the property (southeast gate). The Conservation Area is mostly fenced consistent with County Park standard fencing. Some sections of fence abut the property along the southern and western boundaries that have been erected by adjacent property owners.

Three wells occur on the Conservation Area: two are located along the western boundary in the northwest section of the site and one is located in the southwest portion of the property. The two monitoring wells in the northwest section of the property were installed by Kimley-Horn and Associates, Inc., as part of a potential rezoning of the property (PSI 2005) for development.

PSI documented five debris piles as part of their inspection of the property for the ESA in April 2005. Debris observed included tires, small containers, wood, and concrete rubble. They concluded that the materials were not considered a recognizable environmental condition.

No significant areas of dumping were observed in November 2018. A few older piles of construction debris and some yard waste along the western boundary were observed where the site abuts residential properties in April 2006. Some exotic species such as camphor (*Cinnamomum camphora*) were observed in November 2018 along the western edge adjacent to the residential areas and may be a result of yard waste dumping. Marion County has been actively removing debris from the site since the property acquisition.

1.5 Previous Management Plans

The 2007 Unit Management Plan for MCPR was prepared by Water & Air Research, Inc. and approved by the ARC. This version, also prepared by Water & Air Research, Inc. is an update that addresses the current management needs of the site and proposed facilities development.

2.0 Natural Resources

2.1 Soils

2.1.1 Soils Distribution

The U.S. Department of Agriculture's (USDA) Natural Resource Conservation Service (NRCS) Soil Survey of Marion County identifies five soil types, four classed non-hydric and one classified as a hydric soil type within the Conservation Area (NRCS, 2018). The soils within the Conservation Area are relatively intact with some evidence of historical use including interior roads, formal trails and localized disturbances associated with previous land uses (logging). Table 2-1 presents soils and surface acreage coverage within the Conservation Area. The distribution of the soils is exhibited in Figure 2.

The Conservation Area is a relatively flat upland with slightly sloping knolls and low ridges averaging 66 feet elevation. The highest elevation occurs at 85 feet National Geodetic Vertical Datum (NGVD) in a section of the western boundary and the lowest elevation of 52.5 feet NGVD is in the southeastern part of the site at the only surface water feature. The extreme southeastern portion of the Conservation Area may not drain externally but does receive overflow drainage internally during periods of high water from the retention reservoir associated with Northeast 35th Avenue modifications, as evidenced by the wetland surface drainage features. Adamsville sand and Placid sand represent the only poorly drained and very poorly drained soils, respectively, on site. Placid sand is the wettest, having a water table within 10 inches of the surface for 6 months or more. Both soil types occur within the lowest section of the site in the southeast portion of the property. Both soils occur below the 55-foot NGVD contour. This portion of the site lies within Federal Emergency Management Agency's Flood Zone A.

The landscape is predominantly the Candler sand, a broad, non-hydric, upland soil complex being nearly level and excessively drained. The entire site consists of 84 percent Candler fine sand, level to gently sloping upland soil series (Figure 2). This soil series is an excessively well-drained soil that has a depth to the water table of 72 inches or more. High Pine / Sandhill natural community (Florida Natural Areas Inventory [FNAI]) 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, dry depressions of sandhills important in aquifer recharge hydrology as isolated, non-wetland areas.

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

Table 2-1. Silver Springs Conservation Area Soils Distribution

Map Unit	Soil of Map Unit	Area (acre)	Area (%)	Hydric (Y/N)
22	Candler sand, 0 to 5 % slope	293.59	88.85%	N
2	Adamsville sand, 0 to 5 % slope	18.24	5.52%	N
69	Tavares sand, 0 to 5 % slope	13.35	4.04%	N
58	Placid sand, depressional	2.99	0.90%	Y
9	Arredondo sand, 0 to 5 %	2.25	0.68%	N
Total Area		330.42		

2.1.2 Soils Description

Candler Sand (22)

This soil series comprises 84 percent of the Conservation Area. 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 sands 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 and low knolls important in aquifer recharge hydrology. Natural state vegetation is turkey oak (*Quercus laevis*), bluejack oak (*Q. incana*), sand post oak (*Q. margaretta*) and longleaf pine (*Pinus palustris*); sand pine (*P. clausa*) or slash pine (*P. elliotii*) may be artifact of previous land use. With limited fire management, a secondary understory of various oaks, woody lianas and upland hardwoods is conspicuous with groundcover limited.

Occasionally, mixed throughout the Candler sand, the Tavares sand (northern section) and Arredondo sand series (western boundary) comprise approximately 6.5 percent of the Conservation Area, at much smaller scales, and as limited inclusions of non-hydric soil types.

Adamsville Sand (2)

Adamsville sands consist of very deep, somewhat poorly drained, rapidly permeable soils on broad flats, low knolls, and lower side slopes. The depth of sand or fine sand extends to 80 inches, or more. Slopes range from 0 to 5 percent and are somewhat poorly drained with rapid permeability. Natural vegetation consists of pines (*Pinus spp.*), laurel oak (*Quercus laurifolia*), water oak (*Q. nigra*) with ground cover of saw palmetto (*Serenoa repens*), pineland threeawn (*Aristida spp.*), indiagrass (*Sorghastrum spp.*), bluestem grasses (*Andropogon spp.*), and several low panicoids (*Panicum spp.*; *Dichanthelium spp.*).

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, turkey oak, and post oak (*Q. stellata*) with an undercover of pineland three awn (*Aristida beyrichiana*).

Placid Sand (58)

The Placid series consists of very deep, very poorly drained, rapidly permeable soils on low flats, depressions, poorly defined drainages on uplands. Thickness of the soil is more than 80 inches. Reaction ranges from extremely acid to strongly acid. They formed under conditions of fluctuating, but very shallow ground water table in thick beds of marine sand. Placid soils are classed as hydric soils in Marion County and comprise 1 percent of the Conservation Area landscape, primarily represented as a low depression wetland in southeastern portion of the property. Thus, the Placid soils are very poorly drained; rapid permeability but, internal drainage is impeded by a very shallow water table. Undisturbed natural vegetation consists of pond pine (*Pinus serotina*), sweetbay (*Magnolia virginiana*), pond cypress (*Taxodium ascendens*), black gum (*Nyssa biflora*), and associated wetland sedges, herbs, and coarse grasses.

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 and water oak; 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 Conservation Area. 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 problems with imported substrates include the spread of exotic invasive species' seeds or roots and the potential to change the chemistry and ecology of native soils. The goals and objectives of other components of this management plan protect the integrity of the native soils by applying appropriate management of the natural communities and preventing erosion and subsidence during planned manipulations. To the greatest extent practicable, all management tasks using vehicles shall limit travel to established trails and fire lanes to prevent soil compaction and rutting.

Fire suppression lines created during wildfires, if they should occur, shall be rehabilitated to natural elevations and protected from intrusion of non-native invasive species introductions. 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 monitored for erosion at least quarterly, especially around the sinkhole, and management strategies implemented to reduce any observed erosion problems. Pedestrian access to the steep slopes of the sinkhole shall be restricted. A designated overlook and appropriately sited trails should help prevent damage to this feature. If pedestrian access or erosion becomes a problem at the sinkhole, suitable management techniques will be employed to reduce and eliminate damage, and reestablished native vegetation. To date, little erosion has occurred around the sinkhole.

2.2 Natural Communities

2.2.1 Vegetation Community and Land Cover Descriptions and Management Needs

A summary of the biological resources on the Conservation Area is outlined below including natural vegetation communities and land cover mapping (Table 2-2, Figure 3), 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 subject property (Table 2-5). The FNAI was queried for listed or rare species that may have been documented on or near the site. There are FNAI documented listed species occurrences for the Conservation Area. Gopher tortoise and Sherman's fox squirrel were observed on site in 2016 and 2018 and both were listed species at the time of the site acquisition and in the first unit management plan (2007) however, the fox squirrel has been dropped from the listing by Florida Fish and Wildlife Conservation Commission.

Land use cover has been categorized and mapped according the FNAI nomenclature. Natural vegetation communities identified include sandhill and depression marsh and altered land cover types include successional hardwood forest.

Table 2-2. Silver Springs Conservation Area Natural and Altered Land Covers

Communities	Area (acre)	Area (%)
Sandhill	221.7	67.10%
Successional Hardwood Forest	104.78	31.71%
Depression Marsh	3.94	1.19%
Total	330.42	

Sandhill

Sandhill is the predominant natural vegetation community and is a relatively intact community (221.7 acres) although disturbed by historical fire suppression. This 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). The sandhill community occurs throughout the central and eastern portions of the site and is predominantly well drained Candler soils.

Dominant tree species in the sandhill community include longleaf pine, turkey oak, and live oak. The largest of the longleaf pine were harvested (large 15 to 20-inch diameter trees within the last 20 years) and the lack of fire has allowed the oak species, especially the turkey oak, to become much more prevalent than in a frequently burned sandhill.

Dominant shrub species include a large diversity of blueberries such as sparkleberry (*Vaccinium arboreum*), deerberry (*V. stamineum*), and shiny blueberry (*V. myrsinites*). Other shrubs include pawpaw (*Asimina* sp.), saw palmetto (*Serenoa repens*), and the shrubby low oaks (*Quercus pumila* and *Q. minima*).

The groundcover component of the sandhill has very good diversity considering the lack of fire and the predominant species include wiregrass which is very important for carrying fire across the landscape, bracken fern (*Pteridium aquilinum*), poison oak (*Toxicodendron pubescens*), narrowleaf silkgrass (*Pityopsis graminifolia*), and many other desirable sandhill species.

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

Animals characteristic of sandhill that were observed in the 2006 and 2018 field surveys include pileated woodpecker, white eyed vireo, common crow, American robin, mourning dove, towhee, northern cardinal, pocket gopher, whitetail deer, nine-banded armadillo, Sherman's fox squirrel and the state-listed gopher tortoise.

Management Needs for the Sandhill

Prescribed fire is discussed in Section 5.3 and is the most pressing management need for the sandhill community. Exotic species management is the other major management need for the sandhill, and it is discussed in detail in Section 5.2.

Successional Hardwood Forest

Successional hardwood forest is the second largest community on the subject property (104.8 acres) and is considered by FNAI to be an altered land cover type. This community is heavily disturbed by fire suppression and occurs in the northern (Tavares sands), eastern (Candler and Arredondo sands), and southern (Candler sand) portions of the site. Historically, this community was sandhill or a slightly more mesic version of Sandhill with more oaks and saw palmetto. A small portion of the successional hardwood forest land cover surrounds the depression marsh and contains Adamsville soils. The area of successional hardwood forest surrounding the depression marsh also lies in Flood Zone A. Many areas of this community (primarily the northern portions) contain large amounts of saw palmetto and some pine duff that

would carry fire. The southern and eastern portions are characterized by the lack of fire carrying fuels and a predominance of oak duff.

Predominant tree species include laurel oak, live oak, longleaf pine, sand pine, Carolina laurelcherry (*Prunus caroliniana*), black cherry (*P. serotina*), and the exotic species mimosa (*Albizia julibrissin*). Most live oaks occur in areas to the northeast and southeast of the depression marsh and form a large shady canopy.

Predominant shrub species in the northern area are saw palmetto, American beautyberry (*Callicarpa americana*), and muscadine (*Vitis rotundifolia*). In the southern portions of the site, blueberries, sparkleberry, deerberry, and shiny blueberry are common.

Typical groundcovers include greenbriar (*Smilax* sp.), Virginia creeper (*Parthenocissus quinquefolia*), poison oak, bracken fern, and dwarf huckleberry (*Gaylussacia dumosa*).

Animals characteristic of successional hardwood forest that were observed include chickadee, tufted titmouse, red bellied woodpecker, black and white warbler, northern cardinal, yellow-rumped warbler, and downy woodpecker.

Management Needs for the Successional Hardwood Forest

Prescribed fire is discussed in Section 5.3 and is a pressing management need for the successional hardwood forest community in conjunction with hardwood removal (discussed in Section 6.0) to facilitate prescribed fire. Continued exotic species management is another important management need for the successional hardwood forest and it is discussed in detail in Section 5.2.

Depression Marsh

Depression marsh is the smallest natural community on site (3.9 acres) and the only wetland. It is in the south-central portion of the site; the southern boundary of the wetland is the property line. The wetland was historically disturbed by vehicle traffic and invasion by pine and hardwood species due to low water levels. By early 2016, some tree mortality had occurred due to prolonged aboveground water levels and by March 2018 a significant amount of the pine and some of the larger oak trees had died. Historically, groundcover species were also impacted by vehicle use and there are large amounts of bare ground. By 2018, high water levels and public ownership prohibited vehicle damage and wetland groundcover species such as maidencane (*Panicum hemitomum*) had become dominant in the marsh. No site alterations that could have depressed the water levels are apparent; however, by January 2011, a large offsite retention/detention pond associated with widening of Northeast 58th Avenue was constructed. The basin was constructed such that during high water levels, excess water would outflow onto the Conservation Area at the depression marsh.

Tree species in the depression marsh include slash pine, loblolly pine (*P. taeda*), and laurel and live oaks. These species likely have established in the wetland after drying and lack of fire. The only shrub species is wax myrtle (*Morella cerifera*).

Groundcover species include Elliott's bluestem (*Andropogon gyrans*), maidencane, variable panicgrass (*P. commutatum*), Virginia chain fern (*Woodwardia virginica*), and yelloweyed grass (*Xyris* sp.).

Leopard frogs were observed in the wetland during the site survey. The wetland habitat has improved since 2016 and provides suitable habitat for wading birds and wetland dependent animals due to increased hydroperiods and protection from vehicle use.

Management Needs for the Depression Marsh

Prescribed fire is discussed in Section 5.3 and is a management need for the depression marsh community.

Sinkhole

In the western portion of the site, a small but steep-sided sinkhole occurs within the successional hardwood forest community; however, 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.

Management Needs for the Sinkhole

Preventing erosion around the sinkhole is a primary management need and is accomplished by routing trails away from the sink and monitoring unauthorized access.

2.3 Water Resources

Water Resources - Hydrology

The property lies within the Ocklawaha River drainage basin and within the physiographic area of the Central Valley in peninsular Florida. The depression marsh in the southeastern corner of the Conservation Area is the only surface water feature due to a dominance of well-drained sands on the property.

The northern 1/5 of the Conservation Area is within the Strouds Creek – Ocklawaha River watershed sub-basins and the southern portion within the Peter Gibson Pond watershed (Figure 4). The 3.9-acre depression marsh is dominated by herbaceous vegetation that has been partially invaded by slash and loblolly pine. No standing water was observed in the wetland in April 2006 and the wetland was approximately 80 percent inundated in September 2018. A larger area surrounding the wetland is designated as Flood Zone A.

Water Resources – Geology

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, geology, and direction of groundwater flow, the Conservation Area lies 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.

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 Conservation Area is near the Ocklawaha River Aquatic Preserve, also an Outstanding Florida Water. Figure 5 depicts Outstanding Florida Waters and Aquatic Preserves in the vicinity of the Conservation Area.

2.3.2 Water Resource Management Measures

Most of the 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. The Conservation Area lies within most vulnerable section of Marion County (Advanced GeoSpatial, Inc. 2007). 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 onsite.

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 Conservation Area 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

The Conservation Area contains remnants of the sandhill community with well-drained soils which is an important habitat type for a variety of protected flora and fauna. In addition, the Conservation Area is near quality sandhill habitat that is known to harbor protected species (FNAI 2018) therefore, their occurrence on the Conservation Area is possible.

The implementation of management measures for wildlife requires specific information regarding the species that are present on the Conservation Area, its habitat preferences and conditional analysis of the landscapes available for use. Initial surveys have been conducted during April 2006 and September/October 2018 and species observed are presented in Tables 2-3 and 2-4. Imperiled/listed species potentially expected within the parcel's regional geography are listed in Table 2-5. Exotic plant species observed are listed in Table 2-3 and exotic animal species in Table 2-4. Additional surveys may be considered at seasonally appropriate times so that migrant species and those species only active on a seasonal basis would be included. These surveys will help create a more comprehensive list of the species that utilize the Conservation Area, serving as guidance for habitat management considerations over time.

Table 2-3. Observed Flora on the Silver Springs Conservation Area in 2006 and 2018, Marion County, Florida

				Florida Natural Areas Inventory Natural or Altered Community Designation		
Scientific Name	Common Name	Exotic/Listed Ranking	Comments	Sandhill	Successional hardwood forest	Depression marsh
<i>Agave</i> sp.	Century plant/Aloe					
<i>Albizia julibrissin</i>	Silktree, mimosa	EPPC(I)		X	X	
<i>Amsonia ciliata</i>	Fringed bluestar			X		
<i>Andropogon glomeratus</i>	Bushy bluestem					
<i>Andropogon gyrans</i>	Elliott's bluestem			X		
<i>Andropogon virginicus</i> var. <i>virginicus</i>	Broomsedge bluestem					X
<i>Aristida beyrichiana</i>	Wiregrass			X	X	
<i>Asclepias humistrata</i>	Pinewoods milkweed			X		
<i>Asclepias tuberosa</i>	Butterfly milkweed			X	X	
<i>Asclepias verticillata</i>	Whorled milkweed					
<i>Asimina incana</i>	Pawpaw			X	X	
<i>Asimina pygmaea</i>	Dwarf pawpaw					
<i>Asimina</i> sp.	Pawpaw			X		
<i>Berlandiera subacaulis</i>	Florida greeneyes			X		
<i>Butia capitata</i>	Jelly palm	Exotic		X		
<i>Callicarpa americana</i>	American beautyberry				X	
<i>Carphephorus</i> sp.	Chaffhead			X		
<i>Cartrema americanum</i>	Wild olive				X	
<i>Carya glabra</i>	Pignut hickory					
<i>Cinnamomum camphora</i>	Camphortree	EPPC(I)		X	X	
<i>Chrysopsis scabrella</i>	Coastalplain goldenaster			X	X	
<i>Cladonia evansii</i>	Cup lichen		Lichen		X	
<i>Cladonia leporina</i>	Cup lichen		Lichen	X	X	
<i>Cladonia</i> spp.	Cup lichen		Lichen	X	X	
<i>Cnidioscolus stimulosus</i>	Tread-softly			X	X	X
<i>Cornus florida</i>	Flowering dogwood				X	
<i>Cornus foemina</i>	Swamp dogwood					
<i>Crataegus</i> sp.	Hawthorn			X	X	
<i>Crocanthemum carolinianum</i>	Carolina frostweed			X		
<i>Crocanthemum corymbosum</i>	Pinebarren frostweed			X	X	
<i>Croton argyranthemus</i>	Healing croton			X	X	
<i>Croton punctatus</i>	Beach tea			X		
<i>Dioscorea bulbifera</i>	Air potato	EPPC(I)			X	
<i>Diospyros virginiana</i>	Common persimmon			X	X	
<i>Dyschoriste angusta</i>	Pineland twinflower			X		
<i>Elephantopus carolinianus</i>	Carolina elephantsfoot			X	X	
<i>Eriocaulon</i> sp.	Pipewort					X
<i>Erythrina herbacea</i>	Coralbean			X	X	
<i>Galactia</i> sp.	Milkpea			X	X	
<i>Gaylussacia dumosa</i>	Dwarf huckleberry				X	
<i>Geobalanus oblongifolius</i>	Gopher apple			X	X	
<i>Hypericum</i> sp.	St. John's wort			X	X	
<i>Ilex opaca</i>	American holly				X	
<i>Ilex opaca</i> var. <i>arenicola</i>	Scrub holly			X		
<i>Imperata cylindrica</i>	Cogongrass	EPPC(I)				
<i>Juniperus virginiana</i>	Red cedar				X	
<i>Krigia cespitosa</i>	Weedy dwarfdandelion				X	
<i>Liatris</i> sp.	Gayfeather			X		
<i>Lupinus diffusus</i>	Skyblue lupine			X		
<i>Lygodesmia aphylla</i>	Rose rush			X		
<i>Magnolia grandiflora</i>	Southern magnolia			X	X	
<i>Morella cerifera</i>	Wax myrtle			X	X	X
<i>Opuntia humifusa</i>	Pricklypear			X		
<i>Panicum commutatum</i>	Variable panicgrass					X
<i>Panicum hemitomon</i>	Maidencane					X
<i>Parthenocissus quinquefolia</i>	Virginia creeper				X	
<i>Persea borbonia</i>	Red bay				X	
<i>Phoebanthus grandiflorus</i>	Florida false sunflower			X		
<i>Pinus clausa</i>	Sand pine			X	X	
<i>Pinus elliotii</i>	Slash pine			X		X
<i>Pinus palustris</i>	Longleaf pine			X	X	
<i>Pinus taeda</i>	Loblolly pine				X	X
<i>Pityopsis graminifolia</i>	Narrowleaf silkgrass			X	X	
<i>Polygala incarnata</i>	Procession flower			X		
<i>Prunus caroliniana</i>	Carolina laurelcherry			X		
<i>Prunus serotina</i>	Black cherry			X	X	
<i>Prunus umbellata</i>	Flatwoods plum				X	
<i>Pteridium aquilinum</i>	Bracken fern			X	X	
<i>Pterocaulon pycnostachyum</i>	Blackroot				X	
<i>Pueraria montana</i>	Kudzu	EPPC(I)			X	
<i>Quercus falcata</i>	Southern red oak				X	

Table 2-3. Observed Flora on the Silver Springs Conservation Area in 2006 and 2018, Marion County, Florida

				Florida Natural Areas Inventory Natural or Altered Community Designation		
Scientific Name	Common Name	Exotic/Listed Ranking	Comments	Sandhill	Successional hardwood forest	Depression marsh
<i>Quercus incana</i>	Bluejack oak			X		
<i>Quercus laevis</i>	Turkey oak			X	X	
<i>Quercus laurifolia</i>	Laurel oak			X	X	X
<i>Quercus margaretta</i>	Sand post oak			X		
<i>Quercus minima</i>	Dwarf live oak			X		
<i>Quercus myrtifolia</i>	Myrtle oak			X		
<i>Quercus pumila</i>	Running oak			X		
<i>Quercus virginiana</i>	Virginia live oak			X	X	X
<i>Rhus copallinum</i>	Winged sumac				X	
<i>Rhynchosia cinerea</i>	Brownhaired snoutbean			X		
<i>Rubus sp.</i>	Blackberry			X		
<i>Sabal palmetto</i>	Cabbage palm				X	
<i>Sassafras albidum</i>	Sassafras			X		
<i>Schoenocaulon dubium</i>	Florida feathershank			X		
<i>Serenoa repens</i>	Saw palmetto			X	X	
<i>Silphium compositum</i>	Kidneyleaf rosinweed			X		
<i>Smilax bona-nox</i>	Saw greenbrier				X	
<i>Smilax sp.</i>	Greenbrier			X	X	
<i>Solidago sp.</i>	Goldenrod				X	
<i>Sporobolus junceus</i>	Pinewod dropseed			X		
<i>Stillingia sylvatica</i>	Queensdelight			X	X	
<i>Tillandsia bartramii</i>	Bartram's airplant			X	X	
<i>Tillandsia usneoides</i>	Spanish moss				X	
<i>Toxicodendron radicans</i>	Eastern poison ivy			X	X	
<i>Toxicodendron pubescens</i>	Eastern poison oak				X	
<i>Trachelospermum jasminoides</i>	Confederate jasmine	Exotic			X	
<i>Tradescantia sp.</i>	Spiderwort			X		
<i>Triadica sebiferum</i>	Chinese tallow	EPPC(II)		X		
<i>Vaccinium arboreum</i>	Sparkleberry			X	X	
<i>Vaccinium myrsinites</i>	Shiny blueberry			X		
<i>Vaccinium stamineum</i>	Deerberry			X	X	
<i>Vitis aestivalis</i>	Summer grape				X	
<i>Vitis rotundifolia</i>	Muscadine			X	X	
<i>Wisteria sinensis</i>	Chinese wisteria	EPPC(II)				
<i>Woodwardia virginica</i>	Virginia chain fern					X
<i>Xyris sp.</i>	Yelloweyed grass					X
<i>Yucca aloifolia</i>	Spanish bayonet	Exotic		X		
<i>Yucca filamentosa</i>	Adam's needle				X	

Notes:

Exotic Pest Plant Council (EPPC)

EPPC I - Category I Invasive

EPPC II - Category II invasive

Table 2-4. Observed Fauna on the Silver Springs Conservation Area in 2006 and 2018, Marion County, Florida

			FNAI Natural or Altered Community Designation		
Scientific Name	Common Name	Exotic/Listed Ranking	Sandhill	Successional hardwood forest	Wet depression
VERTEBRATES					
Amphibians					
<i>Rana sphenocephala</i>	Southern leopard frog				X
Birds					
<i>Aix sponsa</i>	Wood duck				X
<i>Ardea alba</i>	Great egret				X
<i>Cardinalis cardinalis</i>	Northern cardinal		X	X	
<i>Corvus brachyrhynchos</i>	Common crow		X	X	
<i>Dryocopus pileatus</i>	Pileated woodpecker		X	X	
<i>Pipilo erythrophthalmus</i>	Towhee			X	
<i>Turdus migratorius</i>	American robin			X	
<i>Vireo griseus</i>	White eyed vireo			X	
<i>Zenaida macroura</i>	Mourning dove		X	X	
Mammals					
<i>Dasypus novemcinctus</i>	Nine-banded armadillo	Exotic	X	X	
<i>Didelphis virginiana</i>	Virginia opossum		X		
<i>Odocoileus virginianus</i>	White-tailed deer			X	
<i>Geomys pinetis</i>	Pocket gopher		X		
<i>Sciurus carolinensis</i>	Eastern grey squirrel			X	
<i>Sciurus niger shermani</i>	Sherman's fox squirrel		X	X	
Reptiles					
<i>Gopherus polyphemus</i>	Gopher tortoise	FWC, T		X	
INVERTEBRATES					
Insects					
<i>Pogonomyrmex badius</i>	Florida harvester ant		X	X	
<i>Romalea microptera</i>	Lubber grasshopper			X	
<i>Typocerus sparsus</i>	Black and yellow longhorn beetle		X		

Notes:

FWC = Florida Fish and Wildlife Conservation Commission

Table 2-5. Listed Plant and Animal Species that Potentially May Occur on the Silver Springs Conservation 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>Asplenium verecundum</i>	Delicate spleenwort	Hammock, Sinkhole Hammock, Succession	E	
<i>Carex chapmanii</i>	Chapman's sedge	Forest	T	
<i>Centrosema arenicola</i>	Sand butterfly pea	Sandhill	E	
<i>Encyclia tampensis</i>	Florida butterfly orchid	Hammock	C	
<i>Epidendrum conopseum</i>	Green-fly orchid	Hammock	C	
<i>Erigeron longifolium</i> var. <i>gnaphalifolium</i>	Scrub buckwheat	Sandhill	T	
<i>Euphorbia commutata</i>	Wood spurge	Forest	E	
<i>Garberia heterophylla</i>	Garberia	Sandhill	T	
<i>Matelea floridana</i>	Florida spiny-pod	Hammock	E	
<i>Matelea gonocarpus</i>	Angle-pod	Forest	T	
<i>Monotropsis reynoldsiae</i>	Pygmy pipes	Hammock	E	
<i>Nolina atopocarpa</i>	Florida beargrass	Sandhill	T	
<i>Orbexilum virgatum</i>	Pineland scurfpea	Sandhill	E	
<i>Orthochilus ecristatus</i>	Non-crested eulophia	Sandhill	T	
<i>Pecluma dispersa</i>	Widespread polypody	Hammock	E	
<i>Pecluma plumula</i>	Plume polypody	Hammock	E	
<i>Pecluma ptilota</i>	Swamp plume polypody	Hammock	E	
<i>Pteroglossaspis ecristata</i>	Giant orchid	Sandhill	T	
<i>Pycnanthemum floridanum</i>	Florida mountain-mint	Sandhill	T	
<i>Sideroxylon alachuense</i>	Silver buckthorn	Hammock	E	
<i>Sideroxylon lycioides</i>	Buckthorn	Hammock	E	
<i>Spigelia loganioides</i>	Levy pinkroot	Hammock	E	
<i>Spigelia loganioides</i>	Pinkroot	Succession Forest	E	
<i>Stenorrhynchos lanceolatus</i>	Beaked orchid	Sandhill	T	
<i>Thelypteris reptans</i>	Creeping star-hair fern	Hammock	E	
<i>Tipularia discolor</i>	Crane-fly orchid	Forest	T	
<i>Warea amplexifolia</i>	Clasping warea	Sandhill	E	E
<i>Zamia</i> spp.	Coontie	Sandhill	C	
Birds				
<i>Dendroica kirtlandii</i>	Kirtland's warbler	Forest, Hammock		E
<i>Egretta caerulea</i>	Little blue heron	Depression marsh	T	
<i>Egretta tricolor</i>	Tricolored heron	Depression marsh	T	
<i>Falco sparverius paulus</i>	Southeastern American kestrel	Sandhill, Hammock	T	
<i>Mycteria americana</i>	Wood stork	Depression marsh		T
<i>Picoides borealis</i>	Red-cockaded woodpecker	Sandhill		E
Mammals				
<i>Blarina shermani</i>	Sherman's short-tailed shrew	Hammock	T	
Reptiles				
<i>Drymarchon corais couperi</i>	Eastern indigo snake	Successional Forest, Hammock, 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:**

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 species *

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

2.4.2 Management Measures for Fish and Wildlife

The primary land management goals and objectives focus on habitats and natural communities utilized by plant and animal habitats, rather than individual species. 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. Invasive exotic plant and prescribed fire management is detailed in Sections 5.2 and 5.3, respectively. The implementation of these programs is ongoing at the Conservation Area and is proactively prioritized by the MCPR. 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.

To date, there have been ongoing activities intended to protect the habitats present on the Conservation Area. These actions include maintaining the integrity of fencing and access gates, limiting access for the public to the established entrance and trails, conducting prescribed burns, and removing exotic invasive plant species. Game hunting is prohibited, as is the collection of plants within the Conservation Area.

2.5 Special Status Species

Population and distribution information on special status species utilizing the Conservation Area was obtained from existing land management plans, previous inquiries, the staff of the MCPR, local experts and consultants, relevant literature and the site visits. 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.

Although no listed plant species were located during the 2006 and 2018 biological survey and site visits, the relatively good quality of the sandhill habitat contributes to its potential to harbor listed plant species. Table 2-5 contains a list of species that potentially could occur primarily within the sandhill portions of the subject property. These species should be the focus of any listed plant species surveys that may be conducted on the Conservation Area.

The state-listed gopher tortoise was observed frequently in the sandhill community during both site visits and Sherman's fox squirrel (a notable species and previously listed as a Species of Special Concern) has been confirmed within the sandhill community at two locations.

In addition, FNAI was consulted to document the occurrence of endangered and threatened animal species in the area (Appendix B). FNAI has not documented any listed plant or animal species occurrences on site; however, the eastern indigo snake, a federally listed threatened species is likely to occur on site. Other notable species that may occur on site include the gopher frog and black bear (previously listed as Species of Special Concern and Threatened, respectively).

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 Conservation Area. 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.
- Consider options to enhance the historically degraded depression marsh, as feasible.
- Consideration will be given to a multi-season, listed plant species survey to assist with the prioritization of prescribed fire.

2.5.1 Descriptions of Special Status Species and Management Measures

Gopher Tortoise

Ample gopher tortoise habitat exists on the Conservation Area in much of the sandhill community and portions of the successional hardwood forest; however, both habitats require more frequent prescribed fire conducted during appropriate seasons to rehabilitate the community for continued and enhanced gopher tortoise population viability by improving forage and maintaining open habitat for successful nesting.

Management Measures for Gopher Tortoise

Currently, rehabilitation measures and systematic natural community improvements are planned via prescribed fire and potentially hardwood removal to improve habitat quality and population health throughout the Conservation Area. However frequently, gopher tortoise occurs in limited, isolated areas of residual sandhill habitat within woodland gaps and herbaceous inclusions in the successional hardwood forest community. Formal surveys to estimate the size of the resident gopher tortoise population and map the distribution of burrows in the uplands of the Conservation Area have not been conducted and may be useful when prioritizing prescribed fires.

Sand Skink

Based on soil, location, elevation, and habitat criteria outlined by the U.S. Fish and Wildlife Services (FWS) in the Peninsular Florida Species Conservation and Consultation Guide, portions of the subject property are potentially sand skink (*Neoseps reynoldsi*) habitat. This includes the presence of an appropriate soil type, location in Marion County, and existing elevations above 82 feet and correct historic habitat type, sandhill.

Management Measures for Sand Skink

Discussion with the FWS is strongly recommended to determine if specific sampling for this fossorial lizard is required to determine its presence or absence prior to any proposed Conservation Area development. Surveys, if needed, can only be conducted in the fall (October through November) and spring (March to May 15th). Only after a spring survey can it be

determined that no skinks exist onsite.

https://www.fws.gov/northflorida/Skink/20120206_Skink_Conservation_Consultation_Guide_Final.pdf

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 Conservation Area, 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 Conservation Area. Management of the natural communities will continue using scheduled and planned prescribed fire regimes. Additionally, portions of the successional hardwood forest will be rehabilitated as budgeting and resources allow.

3.0 Cultural Resources

In addition to managing the natural resources of the Conservation Area, 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 Conservation Area, there are known sites immediately adjacent to the property, as well as the extensive archaeological and historic remains within the nearby Silver Springs State Park (FMSF 2018). This suggests that the Conservation Area has the potential to contain cultural resources, but the property has never been formally surveyed (FMSF 2018). This section will introduce the regulations and some definitions for cultural resources, and then discuss the nature of potential resources within the Conservation Area and the recommended management measures for the Conservation Area.

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 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 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—state division which oversees all cultural resources activities in Florida. Includes the State Historic Preservation Office, Review and Compliance, Architectural Preservation, Survey and Registration, Master Site File, State Archaeologist and State Grants administration.

Florida Master Site File (FMSF)—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 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 Conservation 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 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. Marion 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, Marion 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 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 Conservation Area Site Potential

There have been no previous surveys within the Conservation Area, but there have been surveys immediately adjacent and nearby (FMSF 2018). These surveys have resulted in

identification of numerous archaeological sites and historic structures, particularly in and around Silver Springs State Park. The Park itself is considered an historic district (FMSF 2018). Two of the previously identified archaeological sites are immediately adjacent to the boundaries of the Conservation Area, one at the north next to the Silver Springs Historic District and one at the southeast. Both sites are described as prehistoric campsites, dating from the Archaic period to the Alachua period (FMSF 2018). The Silver Springs Historic District includes historic buildings and archeological sites within the former Silver Springs attraction and now part of Silver Springs State Park.

The majority of the Conservation Area contains extremely well-drained soils, indicating a predominantly sandhills environment (USDA 2018). The sandhills offered limited resources for prehistoric people due to the droughty nature of the environment. However, there is a pond located at the southeast corner of the Conservation Area (USGS 1991) which would have been attractive to both faunal species and prehistoric Native Americans. Historic occupation was probably also limited by the low fertility of the soils. A 1940 aerial photograph shows limited activity within the property. There are possible agricultural fields on the southeast and center west, and several dirt trails crossing the property (USDA 1940). The pond at that time was open water.

Based on the known sites, the proximity of the property to Silver Springs, and the environmental characteristics of the property, the Conservation Area does have the potential for archaeological sites, particularly in the vicinity of the pond on the southeast and the known site on the north, which is also the closest point to Silver Springs. The balance of the tract has a limited potential for resources due to the distance from possible water sources and the dominance of the sandhills environment.

3.3 Management Measures for Cultural Resources

Since the Conservation Area 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 Florida Division of Historical Resources 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 Florida Division of Historical Resources 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 FMSF.

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 Conservation Area 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 Register of Professional Archaeologists.

4.0 Recreational Resources

The Conservation Area has been developed as a passive recreation park. A Conceptual Site Master Plan illustrating existing and proposed Conservation Area facilities is provided as Figure 7. The purpose of the Conservation Area is to protect the region's water resources (specifically Silver Springs) while providing passive recreational use and public access with minimal impacts. The site will be improved to continue public access and to stress the importance and connectivity of the site to the protection of one of Florida's first magnitude springs and provide recreational links to regional trail facilities and parks. The trail design was intended to take advantage of existing trails and roads with educational signage opportunities describing the natural systems of the Conservation Area, and its ecological value to the region's water resources. Other facilities, including the entrance roadway and parking, shall demonstrate minimal impacts to the ecological structure and function of the site.

Specifically, the entrance use area and trailhead are located near the park access along Northeast 7th Street in a vegetation community that has been previously affected by fire suppression and invasion of hardwoods. Therefore, some disturbance necessary to construct the facilities will benefit the community by allowing more light in the forest, improving growth of groundcover. The footprint of the facilities is small relative to the site and emphasis will be placed on minimizing impervious surfaces.

4.1 Existing Recreational Facilities

Entrance Road and Signage

A short entrance road enters the property through the successional hardwood forest at the southern end of the property off Northeast 7th Street creates a scenic entrance to the site. The entrance was designed and built with minimum impacts to vegetation and is conveniently located near the trailhead. The entrance is located opposite an existing road, Northeast 52nd Court. Two attractive entrance signs were installed along the Northeast 7th Street entrance. Signs have also been erected on the existing State Road 35 access gates indicating that these gates are for use by authorized vehicles only. Boundary markers have been installed in strategic locations where urban interface may have the most impact.

Parking

Parking was designed to minimize negative impacts. The surface is pervious with four corralled spaces and a couple of undefined spaces amidst the trees in the center of the looped road/parking area. The entire parking loop and spaces are defined by a split-rail fence design, minimizing the number of spaces reduces human impacts and enhances visitor experience.

Trail System

Most of the trail system that was proposed in the 2007 LMP has been created with way finding signage and general information at the trailhead. Existing trails (total approximately 4.5 miles) provide the user with a variety of habitats and features that occur throughout the site. These trails are easily traversable with level and smooth surfaces. Information is provided at the main trailhead located at the parking area.

The trail system takes the visitor through all the different habitats and special features occurring on the site. Allowable uses include hiking on all trails. No motorized vehicle use will be permitted on any of the trails. The system is a looped network that provides the user with the option to

choose different length hikes. The loops range in distance between approximately 0.5 mile to 2 miles with a short cut through the center of the main loop. The initial 0.5-mile loop (Eagle Pass Trail) takes the user through a well-represented array of habitats that occur on site. Most of the remainder of the trail system moves through the sandhill community and totals approximately 2 miles. The main trail (Deer Track) is a total of 1.6 miles and the cut through (Bypass Trail) is 0.4 mile. Directional signage and hand-held maps are available both on site and online for a high-quality visitor experience. There are quite a few fire lanes and service roads that intersect the trails; however, these are well marked, and the user can easily find their way.

4.2 Proposed Recreational Facilities

Entrance Area and Parking

More defined parking is proposed to accommodate up to 20 spaces (including one ADA space) and one space for a school bus. All of which will be a pervious surface. A picnic area is recommended at the main trailhead under the large oak with one accessible table. A total of three to four picnic tables are recommended. No restroom facilities are currently proposed; however, the conceptual site plan reserves a site for construction of facilities should visitor usage indicate that one is needed, and funding is available. The concept for the main trailhead, entrance area and parking are shown in Figure 7.

Trail System

The main trailhead is located adjacent to the parking area and will include a covered gathering spot (pavilion) for a small to moderate-sized group of visitors that includes posted educational themes, a map of the site, and safety tips.

The Conservation Area is included in the Marion County Outdoor and Recreation Plan as a critical link to existing and proposed parks and regional trail facilities (Figure 6). Connection to Silver Springs State Park and regional trails is proposed by way of the future Downtown Ocala Connector Trail. This trail will begin in Downtown Ocala to the west and enter through the main entrance of Conservation Area. The trail will follow through to the east side of the property directly across State Road 35 to the entrance of the State Park and connecting with the Silver Springs Bikeway. A firm, stable surface (paved) trail will be constructed on the initial 0.5-mile loop (Eagle Pass) and continued on Deer Track in a northeast direction to accommodate pass-through cyclists and accessibility. See Figure 7, Existing and Proposed Trails. The remainder of the trails on site should stay unpaved but maintained for hiking.

Neighborhood trailheads will be considered with the support of the local homeowner's association and may be located on the southwestern and northwestern boundaries of the tract providing pedestrian access points for the adjacent neighborhoods. These access points will be narrow openings to allow pedestrian traffic only. The MCPR will coordinate opening these trails with adjacent neighborhoods.

Education/Interpretation

Educational interpretation facilities include interpretive displays in the main trailhead outdoor classroom (pavilion), signage throughout the site that supports the educational themes of the site, and hand-held brochures.

Recommended educational themes include “Protecting Our Water Resources” (main theme) “Being Good Neighbors” and “Bear-wise”. Since the tract was acquired to protect Silver Springs, information on how the geology and soils provide superior recharge characteristics to the

aquifer is essential. The site currently experiences several adverse impacts from properties adjacent to the site. These impacts include hunting by feral and domestic pets (dogs and cats), the dumping of yard waste that has introduced invasive, exotic plant species, and general runoff from streets and parking lots. Signage located at strategic locations can communicate these messages; neighborhood entrances to the site will offer valuable opportunities to educate the neighbors on these issues.

Offsite Improvements

As wildlife moves between Silver Springs State Park and the Conservation Area, these movements are adversely impacted by the widening of State Road 35. Mitigative measures should be considered in any site improvements.

5.0 Resource Management

5.1 Site Security

Access to the site is on the southern property boundary along Northeast 7th Street. The site perimeter shall be inspected periodically to identify unauthorized access points and if observed, management strategies will be implemented to stop the problem. Fencing was installed along selected portions of the boundary to restrict access to designated locations and reduce dumping of yard waste, a potential source of invasive exotic plants. The fences and boundary of the site shall be inspected periodically to ensure security of the site. Breaches within fenced portions of the site will be repaired as soon as feasible. 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 Conservation Area property.

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 and biological controls), the long-term control of these species must include surveys 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.

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 enough 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 USDA. The Exotic Pest Plant Council has compiled a list of plant species that are invading and disrupting native plant communities (Category I) and species that have the potential to invade and disrupt natural

communities (Category II). A list of these species can be found at <https://www.fleppc.org/list/list.htm>.

Invasive exotic plants documented on the Conservation Area include; camphor tree, cogongrass (*Imperata cylindrica*), Chinese tallow (*Triadica sebiferum*), air potato (*Dioscorea bulbifera*), mimosa, Chinese wisteria (*Wisteria sinensis*), and kudzu (*Pueraria montana*). 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 in the northern, western, and southern portions of the site. The Chinese tallow is located near the houses on the western boundary along with the cogongrass. A small amount of kudzu occurs along the northern fence line. One occurrence of Chinese wisteria was noted in the sandhill community. All mulch and fill used on the property shall be specified as weed-free. No livestock use of the property will be permitted thus; minimizing the introduction of invasive plants.

At present, only relatively low levels of invasive plants are present (except possibly the mimosa and camphor tree); however, they have the potential to spread rapidly and damage on site communities. Camphor tree seedlings were found in dispersed locations throughout portions of the successional hardwood forest, because of the relatively low levels of invasive exotic plants, management efforts will ensure control of existing populations and monitor the site for new infestations. 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. Invasive plants that were spread around the Conservation Area currently under maintenance status are camphor tree, cogongrass, air potato, wisteria, and mimosa trees. 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.

5.2.2 Invasive Exotic Animals and Management

Feral animals can disrupt native plant communities and animal populations. No evidence of damage or presence of feral animals was observed during the 2006 and 2018 site visits. Marion County continues to monitor for the presence of species such as feral pigs, cats and dogs. Education outreach concentrating on the harm to native wildlife populations by domestic pets, such as cats and dogs is an important part of the feral animal management. The outreach should be directed to neighbors of the Conservation Area and visitors. Education is important as fencing will not prevent small dogs and cats from entering the property.

Although not currently surveyed for, pathogenic organism infestations may influence the Conservation Area. 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 Conservation Area 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.

5.3 Prescribed Burns

Prescribed Fire Management Plan

The upland and wetland communities on the Conservation Area are fire dependent. Fire suppression has been practiced on the site for at least several decades prior to purchase by the State and has resulted in significant hardwood invasion in the former sandhill communities now mapped as successional hardwood forest. The lack of fire has caused hardwood invasion within this community and has also caused an abnormally high coverage of hardwoods and some groundcover reduction in the sandhill community.

A site-specific fire management plan has been developed for the Conservation Area (Marion County 2007) and is included in Appendix D.

As part of the prescribed Fire Management Plan, a neighborhood outreach program shall be developed focusing on surrounding developments to educate the citizens on benefits and use of prescribed fire as a management tool. The fire management plan will be developed and implemented in cooperation with the FFS.

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, 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 Conservation Area 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 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 of Florida'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 enhancing an restoring the successional hardwood forest. The gopher tortoise and the Sherman's fox squirrel populations require periodic fire. Listed plants species that may occur in these two communities would also benefit from periodic fire.

5.3.2 Management Measures for Fire

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. Figure 8 shows the fire MUs on the Conservation Area.

Marion County shall 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 and roads).

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.

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 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 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 members with less burn experience are teamed up with more experienced members to ensure both safety and to enhance learning. As they progress through their training, they can 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 Conservation Area site dictates the various management and restoration strategies. Due to three land cover types at Conservation Area, forested sandhill and successional hardwood forest, and depressional marsh different management and restoration strategies with varying intensities will be implemented.

Xeric Uplands (sandhill and successional hardwood forest)

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/maintenance of fire breaks/lines
- Implementation of prescribed fire
- Exotic species management
- Hardwood management (chemical treatment and/or mechanical removal, if required)

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 Natural Community: (FNAI 2010)

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. Cogongrass (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.

Wetlands

No Marion County arthropod (mosquito) control occurs in natural wetlands of the Conservation Area. Wetlands (depression marsh) only make up 1.2 percent of the Conservation Area, and the remainder of the site is well drained uplands. Depression marshes with a long enough hydroperiod typically develop a fauna of predatory fish, amphibians, and invertebrates that help keep mosquito larvae in control. Aerial foragers such as bats and insect-eating birds assist in keeping the biting adult mosquito populations low.

Although an arthropod control plan does not exist for this site, should monitoring on site or nearby indicate that control is warranted, MCPWR will consult with the Marion County Health Department and coordinate proposed control measures to minimize environmental damage on the Conservation Area while addressing public health needs.

Detailed Management Needs for the Depression Marsh Community: From (FNAI 2010)

Fires in surrounding communities should be allowed to burn into depression marshes and extinguish naturally or burn through them. Encroachment of shrubs such as coastal plain willow (*Salix caroliniana*), common buttonbush (*Cephalanthus occidentalis*), groundsel tree (*Baccharis halimifolia*), and wax myrtle (*Myrica cerifera*) are typical signs of lack of fire in depression marshes (Huffman and Blanchard 1991).

Physical disturbance, particularly from hog rooting, livestock, or vehicles (e.g., “mud bogging”) can cause serious damage in many marshes; these activities can destroy native species and churn the soil which is often then colonized by pure stands of Carolina redroot (*Lachnanthes caroliniana*) and other weedy species. Such physical disturbances can allow invasive exotic plants to get a foothold, including torpedo grass

(*Panicum repens*), Peruvian primrosewillow (*Ludwigia peruviana*), common water hyacinth (*Eichhornia crassipes*), and Brazilian pepper (*Schinus terebinthifolius*).

5.5 2- and 10-Year Management Planning

Management planning is part of the short- and long-term planning for Conservation Area. 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

- Maintain perimeter and MU fire lines
- Install/ rehabilitate perimeter fencing in selected areas if needed
- Maintain/expand public use and recreational facilities
- Develop plans for
 - Paved Downtown/Ocala connector trail
 - Public information kiosks
 - Sandhill restoration
 - Sinkhole/karst aquifer recharge importance
 - Prescribed fire importance
 - Listed species (gopher tortoise)
 - Bear habitat information

Resource Management

- Continue exotic/invasive plant surveys and eradication efforts
 - Focus on perimeters near adjacent home sites and species listed in Table 2-3
 - Successional hardwood forest
- Continue trash removal
- Update the prescribed fire management plan
- Continue 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
 - Sandhill and successional hardwood forest
 - Prescribed fire
 - Chemical or mechanical removal to facilitate prescribed fire

Support and Maintenance

- Maintain existing 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

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;
 - Additional public use signage
 - Additional public use facilities (pavilion)
 - Additional parking facilities
 - Paved Downtown Ocala connector trail
 - Additional public information kiosks
 - Sandhill restoration
 - Sinkhole/karst aquifer recharge importance
 - Prescribed fire importance
 - Listed species (gopher tortoise)
 - Bear habitat information

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
 - Successional hardwood forest
 - Hardwood removal
 - Prescribed fire
 - Sandhill
 - Prescribed fire
 - Depression marsh
 - Prescribed fire along perimeter

Support and Maintenance

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

Administration and Law Enforcement

- Administration and law enforcement

6.0 Habitat Restoration

Observations made while conducting the 2006 and 2018 biological surveys, coupled with information from historical aerial photographs have determined that historical impacts to the Conservation Areas uplands and wetlands have occurred.

Historical impacts to the depression marsh include woody species encroachment and vehicular traffic. Information from the 2018 biological survey indicates that these prior impacts have been mitigated since the 2006 survey. Vehicular traffic in the wetland has been eliminated allowing herbaceous vegetation to reestablish and recent (since 2016) improvements to the wetland's hydrology has reduced woody species invasion and killed many inappropriate woody species that were established within the wetland. An additional restoration/enhancement activity proposed for the depression marsh is prescribed fire in the surrounding uplands and the wetland fringe to kill woody species (oaks and pines) that have not already succumbed to the increased water levels and to stimulate the growth of additional herbaceous species. Some minor additional development of the Conservation Area (mainly trails) is proposed outside the wetland and implementation of the conceptual plan will not interfere with possible future wetland restoration.

In the sandhill community the continued use of prescribed fire will be the predominant tool in the restoration/enhancement of this natural community, potentially with some limited mechanical removal and/or herbicide application targeting inappropriate hardwoods that have encroached into this pyrogenic community. We recommend several winter burns in the sandhill until fuel loads and duff layers have been reduced to more normal levels. When in maintenance condition, periodic growing season burns are recommended for ecological and fuel reduction purposed.

The remaining upland, now classified as an altered community successional hardwood forest, was historically a sandhill community. The alteration that contributed to the successional hardwood forest designation is primarily due to fire suppression. Over many decades increased oak tree cover has effectively reduced the fine fuels that carry fire by reducing longleaf pine needle cast, shading out pyrogenic herbaceous species and increasing oak leaf duff that inhibits fire. This altered community may have some burnable areas (northern area and portions of the southern area) where prescribed fire may be suitable, but in general, hardwood oak reduction via mechanical or selective chemical treatment will be necessary to allow for prescribed fire. We also recommend leaving portions of the successional hardwood forest unburned to provide buffering along the site's eastern and southern boundaries and around the parking facilities. In addition, the nice live oak hammocks southwest and northeast of the depression marsh should be left unburned.

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 and most all the successional hardwood forest will require extensive hardwood removal. Using a biomass harvester for hardwood reduction may be a cost-effective way to remove hardwoods in portions of the sandhill and most of the successional hardwood forest.

Restoration Resource Organizations and Agencies

- **Ocala Longleaf Local Implementation Team (OLIT)**

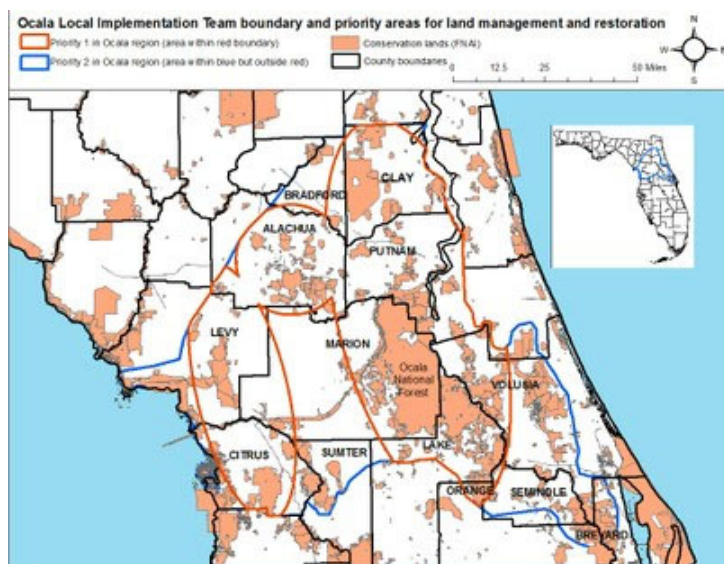
<https://www.longleafalliance.org/olit>

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

OLIT Boundary and Priority Areas



- **Florida Forest Service County Forester**

Greg Barton, Marion County Forester
6675 Northeast 40th Avenue
Ocala, Florida 34479
352.732.1782

County foresters can give technical assistance for managing longleaf pine stands.

- **USDA Service Center (Natural Resources Conservation Service, NRCS)**

Ocala Service Center
2441 Northeast 3rd Street Suite 204
Ocala, Florida 34470
352.732.7534

NRCS

Several programs give financial and technical assistance to plant longleaf pine in Florida. The Longleaf Pine Initiative and Working Lands for Wildlife is available to forest owners in select counties to restore longleaf pine and create habitat for gopher tortoise and northern bobwhite quail. Landowners apply through NRCS's [Environmental Quality Incentive Program](#).

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. Third level priorities include establishing the multi-use spur through the site to link the Downtown Ocala Connector Trail between downtown and Silver Springs State Park. Establish remote interpretive stations throughout the site and provide other public amenities such as a pavilion, picnic area, and benches.

7.2 Cost Estimate

The costs to install various improvements and conduct management activities are incorporated in the MCPR annual budget. Costs reflect labor and material costs for improvements and services that will not be provided by the MCPR personnel. MCPR personnel will provide prescribed fire, exotic plant species control, and environmental monitoring services at the Conservation Area 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 MCPR personnel, these management services could be contracted to qualified vendors.

7.3 Policies and Ordinances

Policy 2.1.24 of the Marion County Comprehensive Plan pertaining to Preservation Designation (PR) 35, 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 LDC. This land use designation is allowed in the Urban and Rural Area".

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 E. This plan is in accordance with the policies set forth by the Marion County Comprehensive Plan especially Parks, Recreation and Open Space Element and specifically Objective 1.2 (Appendix E). In addition, Marion County's Conservation Element contains policies related to High and Prime Groundwater and Aquifer Recharge Areas and Springs Protection Zones (Policy 1.1.1).

Table 7-1. Priority Schedule for Silver Springs Conservation Area, Marion County, Florida

Tasks/Capital Improvements by Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Physical Assets										
Install or rehabilitate perimeter fire lines	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1
Install additional perimeter fencing in selected areas, if needed	Priority 2	Priority 2	Priority 2	Priority 2	Priority 2	Priority 2	Priority 2	Priority 2	Priority 2	Priority 2
Install enhanced entrance, parking, and landscaping				Priority 2	Priority 2	Priority 2				
Enhance/install secondary interpretive kiosks, signage, and trail spurs		Priority 2			Priority 2			Priority 2		
Install ADA hardened trail (Ocala connector)		Priority 2		Priority 2	Priority 2					
Install picnic tables, bike rack	Priority 3	Priority 3					Priority 3	Priority 3		
Install picnic pavilion						Priority 2	Priority 2	Priority 2		
Conduct Cultural Resource Assessments at construction locations (paved trails, pavilion, etc.)		Priority 1	Priority 1		Priority 1					
Resource Management										
Continue prescribed fire management	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1
Update prescribed fire management plan	Priority 1	Priority 1								
Continue invasive exotic plant eradication (as needed)	Priority 2	Priority 2	Priority 2	Priority 2	Priority 2	Priority 2	Priority 2	Priority 2	Priority 2	Priority 2
Develop and implement environmental monitoring plan	Priority 2	Priority 2	Priority 2	Priority 2	Priority 2	Priority 2	Priority 2	Priority 2	Priority 2	Priority 2
Cultural Resources Assessments			Priority 3					Priority 3		
Develop and implement feral animal removal plan		Priority 2		Priority 2		Priority 2		Priority 2		Priority 3
Visitor Services/Education Program										
Enhance interpretive material and interpretive trail signage	Priority 3			Priority 3			Priority 3			Priority 3
Support and Maintenance										
Maintain existing dirt roads and trails (as needed)	Priority 2	Priority 2	Priority 2	Priority 2	Priority 2	Priority 2	Priority 2	Priority 2	Priority 2	Priority 2
Maintain perimeter and interior fire lines	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1	Priority 1
Administration and Law Enforcement										
Administration and Law Enforcement	Priority 1					Priority 1	Priority 1			

The site is currently zoned as R1, and its designation in the 2035 Future Land Use Map is Preservation.

7.5 Proposed Expansion Opportunities

There are no opportunities to expand the Conservation Area lands due to residential and commercial development to the north, southwest and south adjacencies and Silver Springs State Park adjacency to the east. Currently, there is approximately 60 acres of undeveloped platted lots on the northern end of the west boundary of the site zoned for residential R1. This property was sold to Weirsdale Development LLC, in December 2005 then sold to Leon Ocala Holdings LLC in 2011. Since then some of these parcels were then sold to D. R. Horton, Inc. Between this platted area and the Conservation Area, there is one large parcel (approximately 6.2-acre, lot (Parcel Number 2737-000-004) adjacent to the Conservation Area owned by the City of Ocala and it is not known what the intended future use of this site is. However, the sinkhole that occurs on the Conservation Area is within proximity and should be addressed if any development is to occur on this parcel. Refer to Future Land Use Plan, Policy 8.2.9 Buffers for Karst Topography/Features.

8.0 Summary of Management Objectives

The general goals and objectives created by reference to the Marion County Comprehensive Plan and the MCPR Master Plan are:

- Protect the recharge potential of the site as it is within 1 mile from Silver Springs, a Florida First Magnitude Spring, and protect the site from groundwater contamination.
- Establish and operate the Conservation Area for passive recreation and cultural, historic, and natural interpretation.
- 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.

OBJECTIVES ACCOMPLISHED SINCE LAST MANAGEMENT PLAN

Physical Assets

- Installed entrance parking
- Installed interpretive kiosk
- Installed looped trail network
- Installed picnic tables
- Installed perimeter fencing where needed

Resource Management

- Initiated prescribed fire program and created burn plan
- Initiated invasive exotic plant eradications
- Develop and implement environmental monitoring plan

Support and Maintenance

- Installed service access gates and roads
- Installed perimeter and interior fire lines
- Removed trash and debris

Administration and Law Enforcement

- Administration and law enforcement
- Enforced no camping policy at unauthorized encampments

2-YEAR MANAGEMENT OBJECTIVES

Tasks/Capital Improvements

Physical Assets

- Install or rehabilitate perimeter fire lines
- Install additional perimeter fencing in selected areas if needed

Resource Management

- Continue prescribed fire program
- Create an updated fire management plan for the site
- Continue invasive exotic plant eradications (as needed)
- Develop and implement environmental monitoring plan

Support and Maintenance

- Maintain existing dirt roads and trails (as needed)
- Maintain perimeter and interior fire lines

Administration and Law Enforcement

- Administration and law enforcement

10-YEAR MANAGEMENT OBJECTIVES

Physical Assets

- Install enhanced entrance parking, landscaping
- Enhance interpretive kiosk and spur hiking trails
- Install ADA hardened trail (Ocala Connector)
- Install picnic tables, bike rack, secondary interpretive kiosks
- Install picnic pavilion

Resource Management

- Continue prescribed fire program
- Continue invasive exotic plant eradications (as needed)
- Develop and implement environmental monitoring plan

Support and Maintenance

- Maintain existing dirt roads and trails (as needed)
- Maintain perimeter and interior fire lines

Administration and Law Enforcement

- Administration and law enforcement

9.0 References

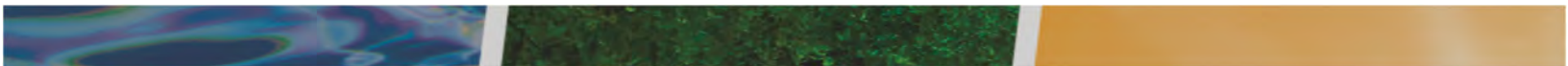
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FIGURES

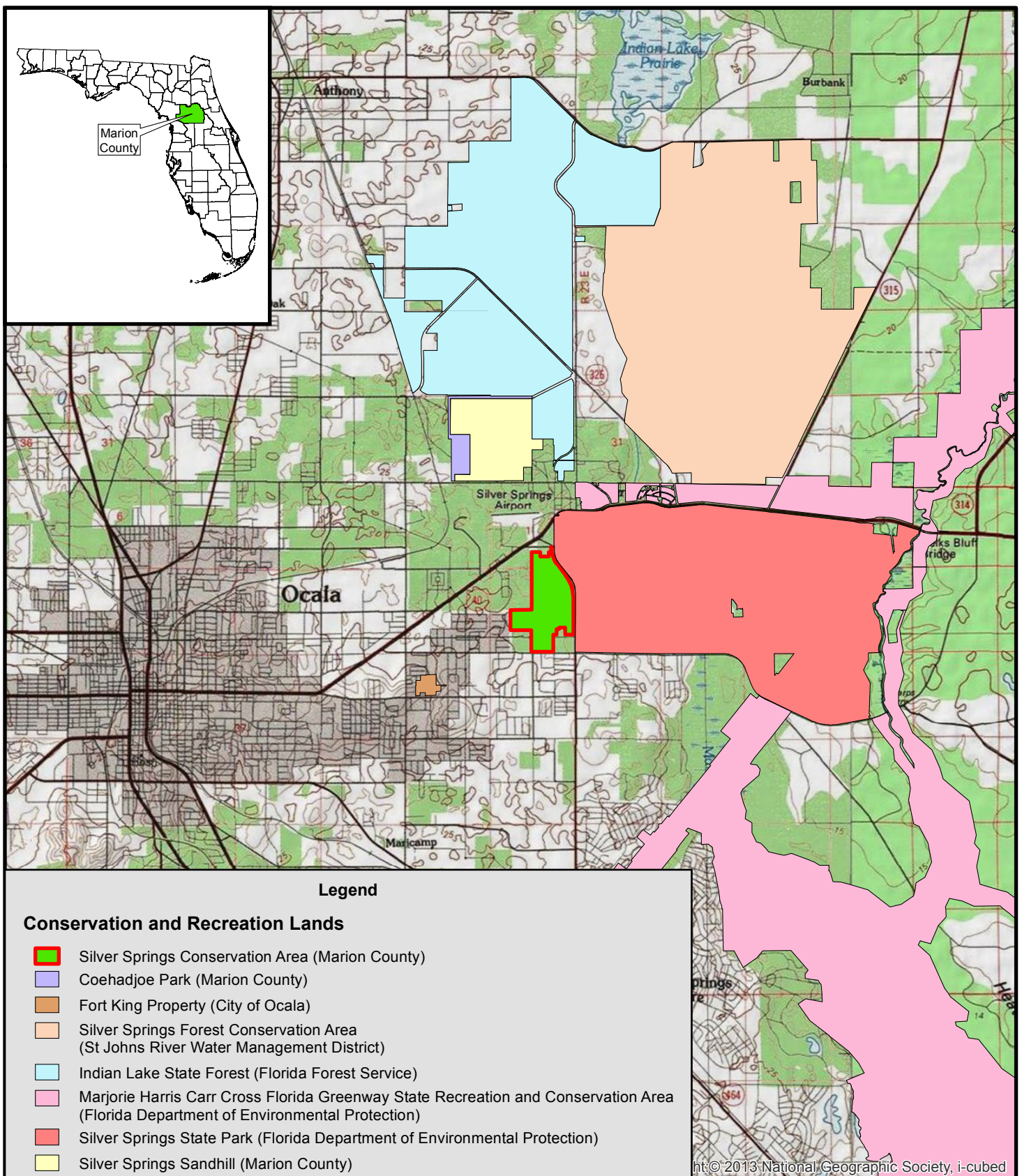


Figure 1.
Location of Silver Springs Conservation Area and Other Nearby
Conservation and Recreation Lands with Managing Agency
Marion County, Florida

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

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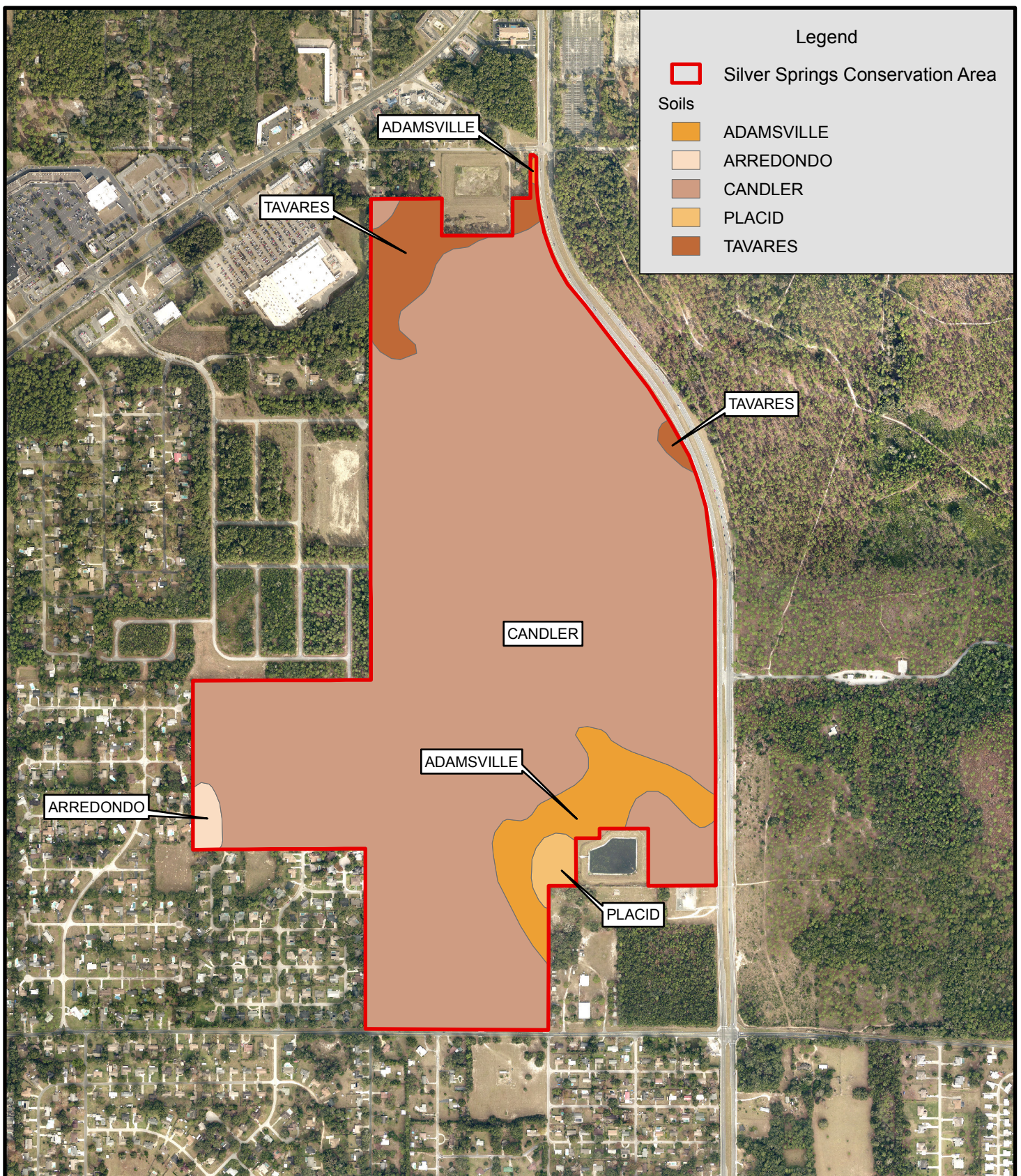


Figure 2.
Soils Map of Silver Springs Conservation Area
Marion County, Florida

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

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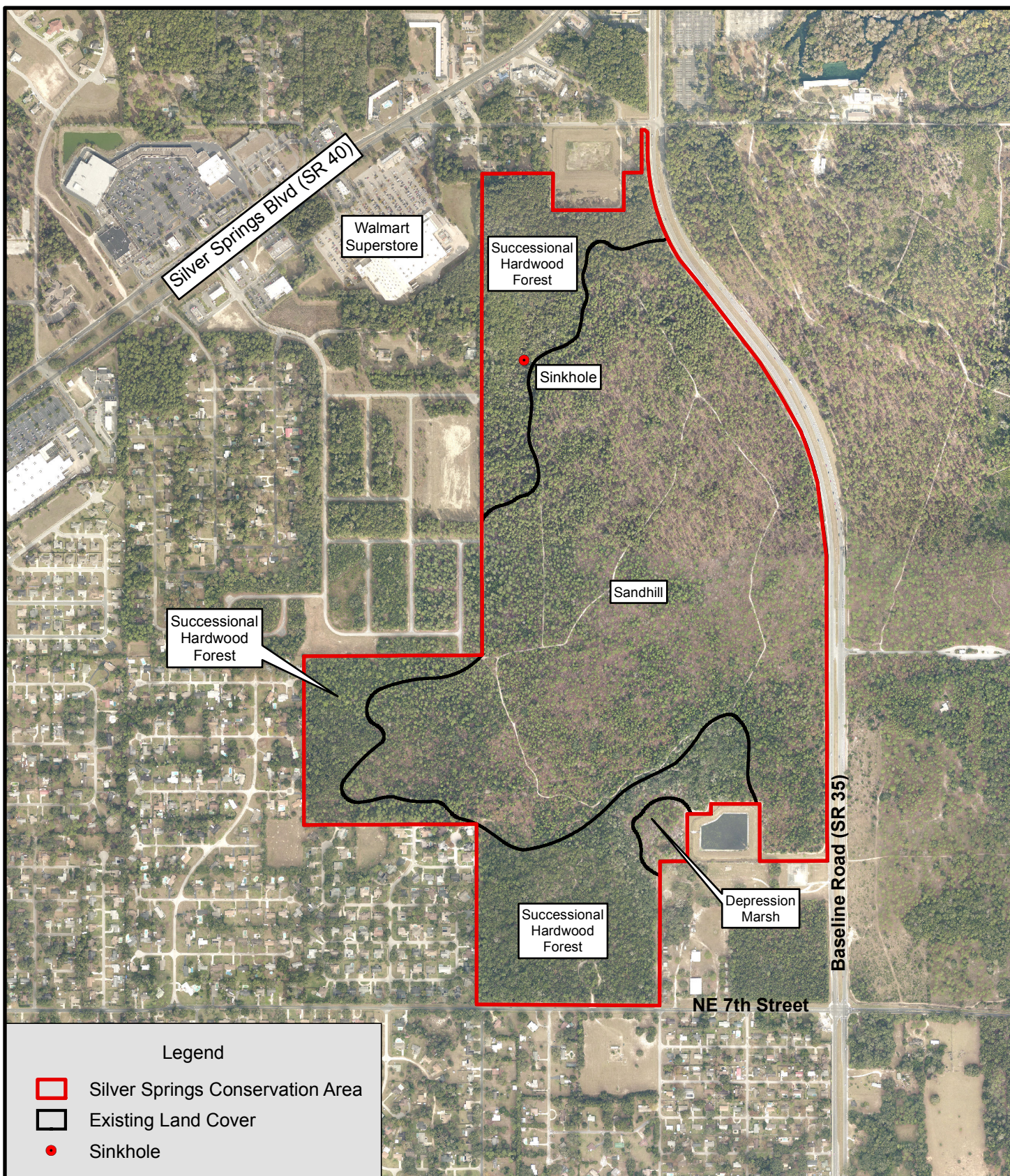


Figure 3.
Florida Natural Areas Inventory Natural Communities
on Silver Springs Conservation Area
Marion County, Florida

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

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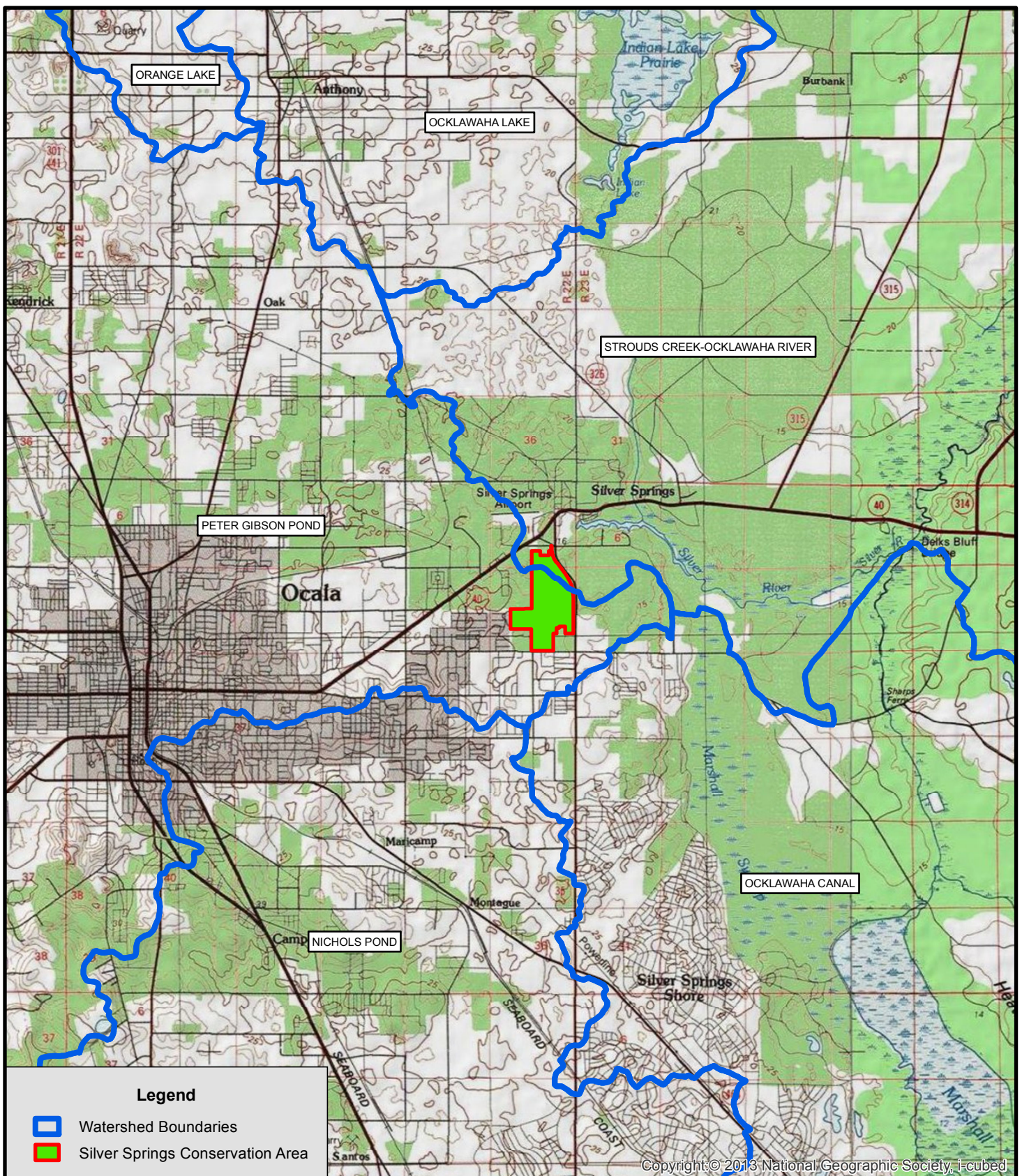


Figure 4.
Watershed Boundary Map in the Vicinity of Silver Springs Conservation Area
Marion County, Florida

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

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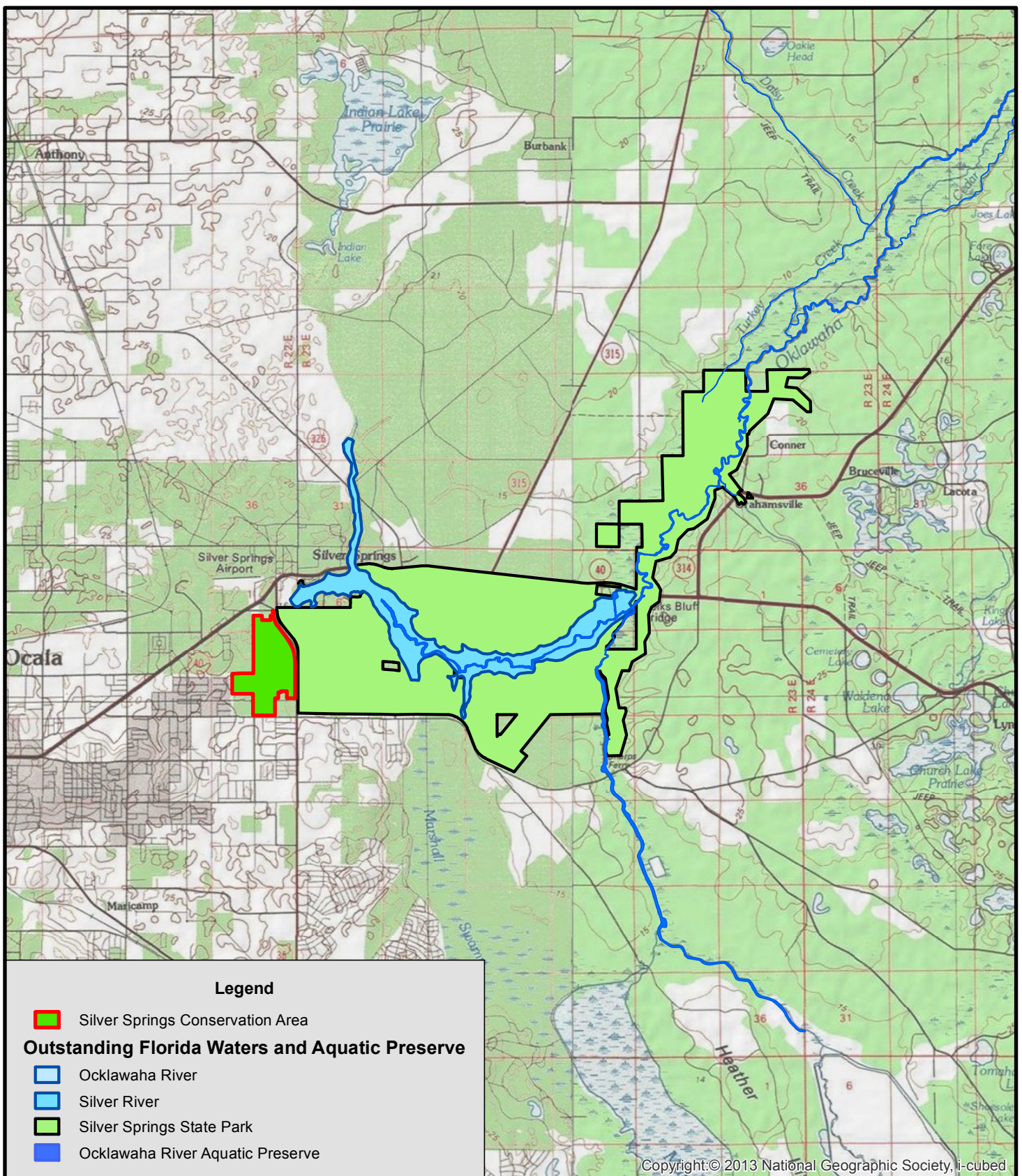


Figure 5.
Outstanding Florida Waters and Aquatic Preserves in the
Vicinity of Silver Springs Conservation Area
Marion County, Florida

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

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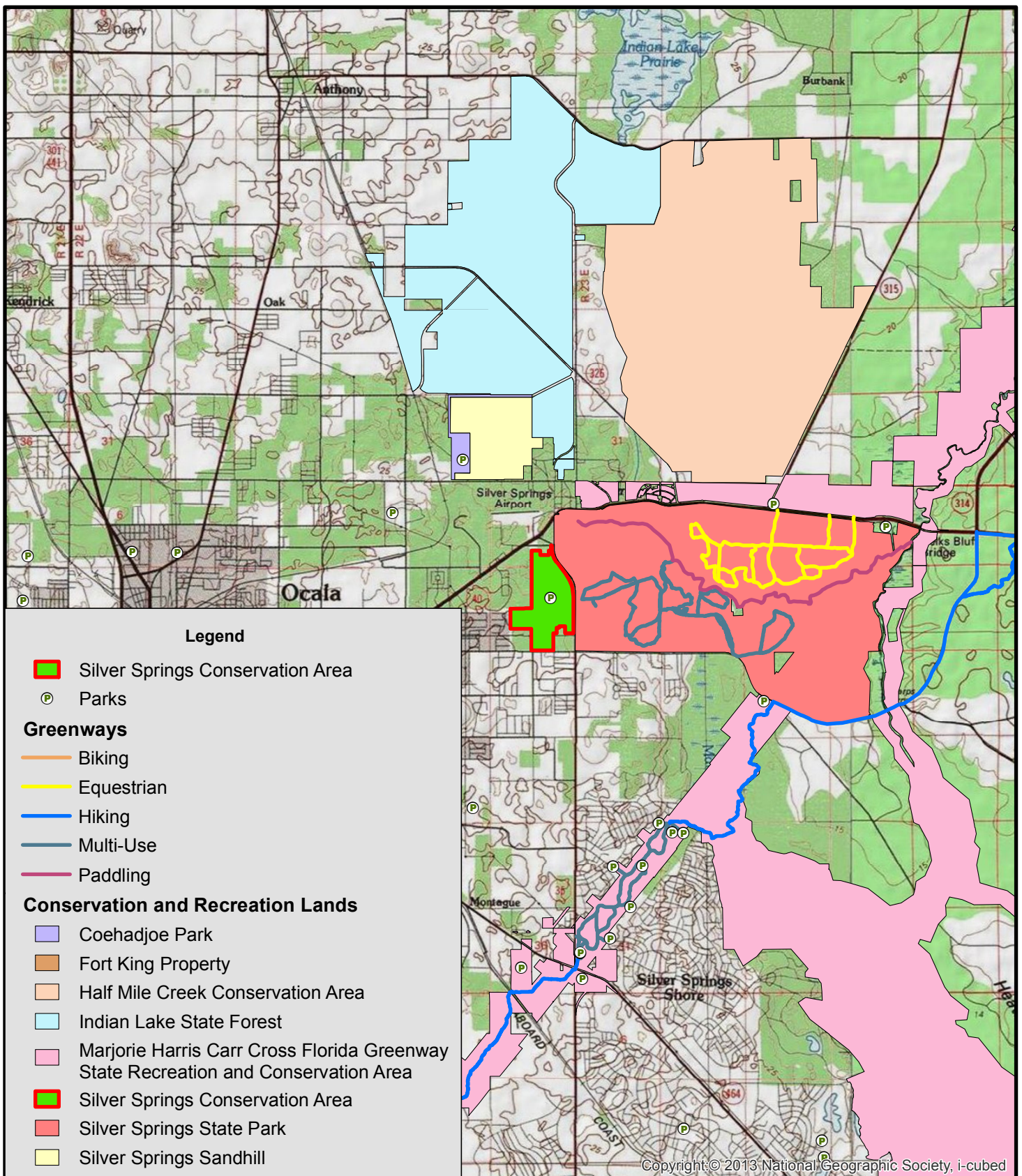


Figure 6.
Trails, Parks and Greenways in the Vicinity of
Silver Springs Conservation Area
Marion County, Florida

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

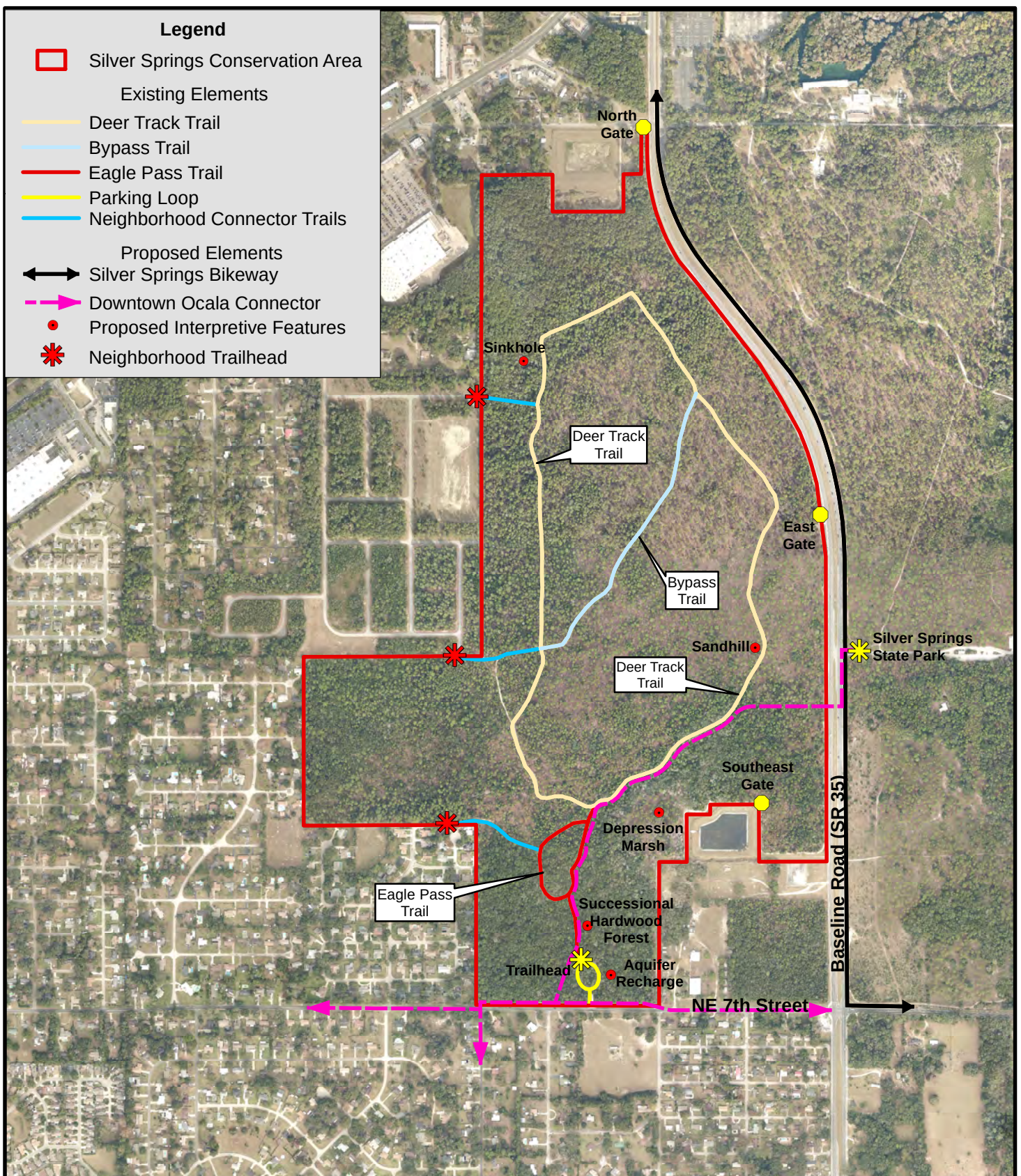
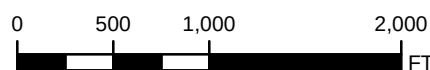


Figure 7.
Existing and Proposed Recreational Resources
at Silver Springs Conservation Area
Marion County, Florida

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



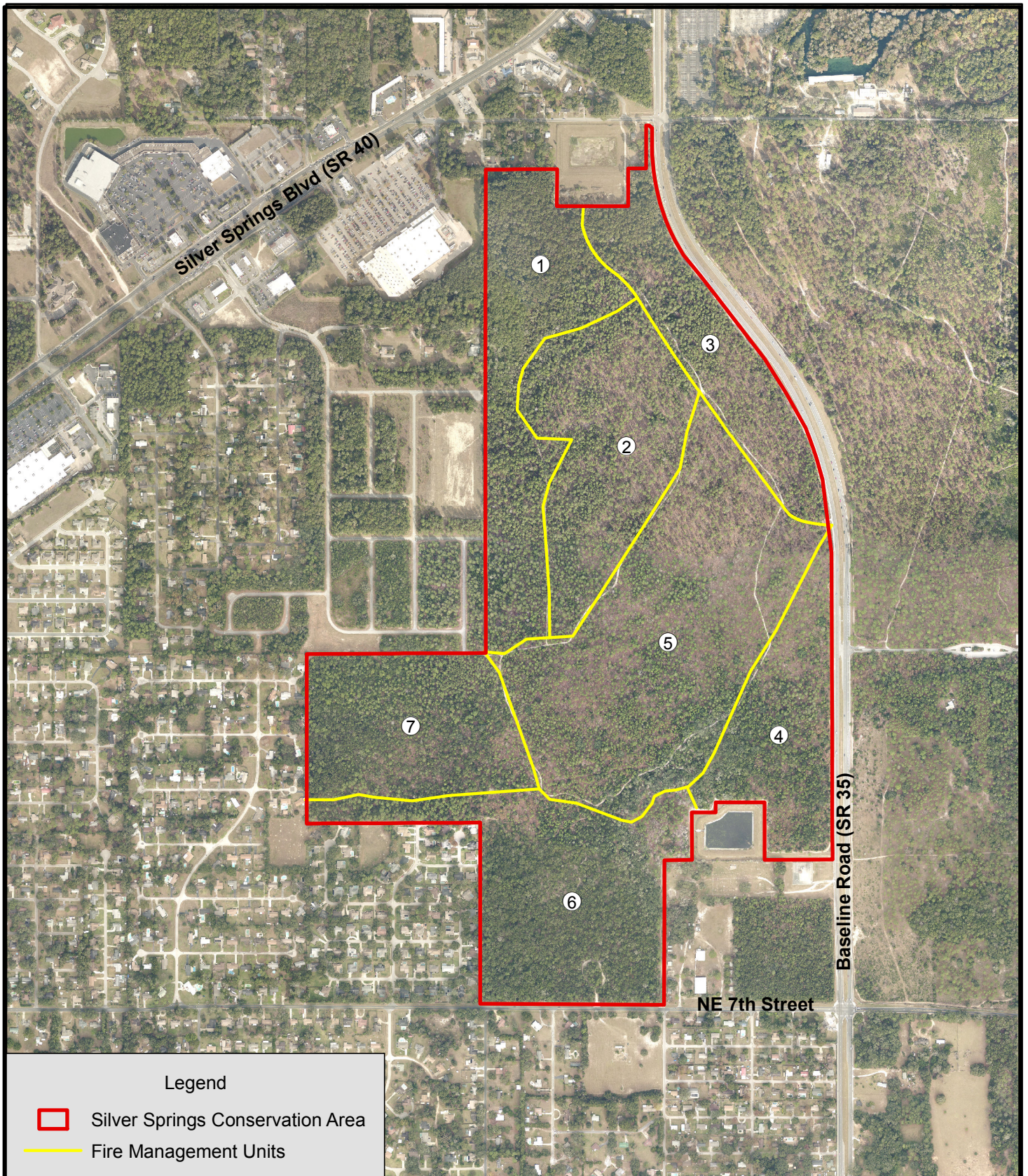


Figure 8.
Fire Management Units at Silver Springs Conservation Area
Marion County, Florida

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



APPENDIX A

LEASE AND LEGAL DESCRIPTION

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

LEASE AGREEMENT

Lease Number 4519

THIS LEASE AGREEMENT, made and entered into this 14th day of February 2006 between the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA hereinafter referred to as "LESSOR", and MARION COUNTY, 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, Department of Environmental Protection.
2. DESCRIPTION OF PREMISES: The property subject to this lease, is situated in the County of Marion, State of Florida and is more particularly described in Exhibit "A" attached hereto and hereinafter referred to as the "leased premises".
3. TERM: The term of this lease shall be for a period of fifty (50) years commencing on February 14, 2006 and ending on February 13, 2056, unless sooner terminated pursuant to the provisions of this lease.
4. PURPOSE: The LESSEE shall manage the leased premises only for the establishment and operation of a conservation area, historical and cultural interpretation, passive recreation, and for public safety and welfare, 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 conformance with this lease.

7. ASSIGNMENT: This lease shall not be assigned in whole or in part without the prior written consent of LESSOR. 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. 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 application, 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 on the effective date of this lease which established the primary public purpose for which the leased premises are to be managed. 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 including, but not limited to, utility easements are expressly prohibited without the prior written approval of LESSOR. Any easement not approved in writing by LESSOR shall be void and without legal effect.

10. SUBLEASES: This agreement 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 at any and all times to 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, improvements, and signs 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 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 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 \$100,000 per person and \$200,000 per incident or occurrence for personal injury, death, and property damage on the leased premises. Such policies of insurance shall name LESSOR, the State of Florida and LESSEE as co-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, Department of Environmental Protection, Mail Station 130, 3900 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. 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: Each party is responsible for all personal injury and property damage attributable to the negligent acts or omissions of that party and the officers, employees and agents thereof. Nothing herein shall be construed as an indemnity or 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.

15. PAYMENT OF TAXES AND ASSESSMENTS: LESSEE shall assume full responsibility for and shall pay all liabilities that accrue to the leased premises or to the improvements thereon, including any and all

ad valorem taxes and drainage and special assessments or taxes of every kind and all mechanic's or materialman's liens which may be hereafter lawfully assessed and levied against the leased premises.

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 all 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, and LESSOR specifically reserves the right to lease the leased premises for purpose of exploring and recovering oil and minerals by whatever means appropriate; provided, however, that LESSEE named herein shall be fully compensated for any and all damages that might result to the leasehold interest of said LESSEE by reason of such exploration and recovery operations.

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 either audit such records at any reasonable time or require the submittal of an annual independent audit by a Certified Public Accountant 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: Department of Environmental Protection
Division of State Lands
Bureau of Public Land Administration, M. S. 130
3800 Commonwealth Boulevard,
Tallahassee, Florida 32399-3000

LESSEE: Marion County, Florida
Department of Parks and Recreation
111 S.E. 25th Avenue
Ocala, Florida 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 and attorneys' fees 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 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 the 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.

27. ENVIRONMENTAL AUDIT: At LESSOR'S discretion, LESSEE shall provide LESSOR with a current Phase I environmental site assessment conducted in accordance with the 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 LESSOR and the Bureau of Public Land Administration, Division of State Lands, Department of Environmental Protection, Mail Station 130, 3900 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

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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 of State Lands, Department of Environmental Protection shall perform an on-site inspection and the keys to any building on the leased premises shall be turned over to the Division. If the improvements do not meet all conditions as set forth in paragraphs 19 and 35 herein, LESSEE shall pay all costs necessary to meet the prescribed conditions.

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 or other land managing agencies for the protection and enhancement of the leased premises.

30. 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.

31. 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 shall remain in full force and effect and shall in no way be affected, impaired or invalidated.

32. 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

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archaeological and historic sites on state-owned lands is prohibited unless prior authorization has been obtained from the 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.

33. 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 there above.

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

35. MAINTENANCE OF IMPROVEMENTS: LESSEE shall maintain the real property contained within the leased premises and any improvements located thereon, in a state of good condition, working order and repair including, but not limited to, keeping the leased premises free of trash or litter, maintaining all planned improvements as set forth in the approved Management Plan, meeting all building and safety codes in the location situated and maintaining 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.

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

37. 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.

38. ADMINISTRATIVE FEE: SUBLESSEE shall pay TRUSTEES an annual administrative fee of \$300 pursuant to subsection 18-2.020(8), Florida Administrative Code. The initial annual administrative fee shall be payable within thirty days from the date of execution of this lease

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Lease No. 4519

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.

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

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

Judy Woodard
Witness
Judy Woodard
Print/Type Name
Tracey Mason
Witness
Tracey Mason
Print/Type Name

By: Gloria C. Nelson (SEAL)
GLORIA C. NELSON, OPERATIONS AND
MANAGEMENT CONSULTANT MANAGER
BUREAU OF PUBLIC LAND
ADMINISTRATION, DIVISION OF STATE
LANDS, FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION

"LESSOR"

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this
14th day of February, 2004, by Gloria C. Nelson, as
Operations and Management Consultant Manager, Bureau of Public
Land Administration, Division of State Lands, 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.

Michelle Brady
Notary Public, State of Florida

Print/Type Notary Name
NOTARY PUBLIC-STATE OF FLORIDA
Michelle Brady
Commission Number:  Commission # DD507113
Expires: JAN. 16, 2010
Commission Expires: Bonded Thru Atlantic Bonding Co., Inc.

Approved as to Form and Legality

By: David J. [Signature]
DEP Attorney

Donna M. Smith
Witness
Donna M. Smith
Print/Type Name
Cindy Bonvissuto
Witness
Cindy Bonvissuto
Print/Type Name

MARION COUNTY, FLORIDA
By its Board of County Commissioners
By: James T. Payton, Jr.
James T. Payton, Jr.
Print/Type Name
Title: Chairman

OFFICIAL SEAL

ATTEST: David R. Ellspermann
County Administrator and Ex-Officio
Clerk of the Board of County
Commissioners of Marion County
David R. Ellspermann
Clerk "LESSEE"

STATE OF FLORIDA
COUNTY OF MARION

The foregoing instrument was acknowledged before me this 7th
day of February 2006, by James T. Payton, Jr. and
David R. Ellspermann, as Chairman and Clerk
respectively, on behalf of the Board of County Commissioners of Marion
County, Florida. They are personally known to me.

Donna M. Smith
Notary Public, State of Florida

Donna M. Smith
Print/Type Notary Name

Commission Number: DD510890

Commission Expires: 1/25/2010



Donna M. Smith
MY COMMISSION # DD510890 EXPIRES
January 25, 2010
BONDED THRU TROY FAIN INSURANCE, INC.

Approved as to Form
and Legal Sufficiency

S. MacKinnon
County Attorney

This Instrument Prepared By:

Joseph R. Boyd, Esquire
Tallahassee Title Group, LLC
1407 Piedmont Drive East
Tallahassee, Florida 32308



DAVID R. ELLSPERMANN, CLERK OF COURT MARION COUNTY
DATE: 09/14/2005 02:57:04 PM
FILE #: 2005164134 OR BK 04173 PGS 0356-0361

RECORDING FEES 52.50

SPECIAL WARRANTY DEED

DEED DOC TAX 54,929.00

THIS INDENTURE, made this 30th day of June, A.D., 2005, between KORMAN-SELDIN SILVER RIVER DEVELOPMENT COMPANY, a Nebraska general partnership, whose address is 13057 West Center Road, Omaha, Nebraska 68144-3748, grantor, and the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, whose post office address is c/o Florida Department of Environmental Protection, Division of State Lands, 3900 Commonwealth Boulevard, Mail Station 115, Tallahassee, FL 32399-3000, grantee,

(Wherever used herein the terms grantor and grantee include all the parties to this instrument and their heirs, legal representatives, successors and assigns. Grantor and grantee are used for singular and plural, as the context requires and the use of any gender shall include all genders.)

WITNESSETH: That the said grantor, for and in consideration of the sum of \$10.00 and other good and valuable considerations to said grantor in hand paid by said grantee, the receipt whereof is hereby acknowledged, has granted, bargained and sold to the said grantee, and grantees successors and assigns forever, the following described land situate, lying and being in Marion County, Florida, to-wit:

See Exhibit "A" attached hereto and by reference made a part hereof.

Property Appraiser's Parcel ID Number: R2416700000 and R2743800000

This property is not the homestead property of the grantor, nor contiguous to homestead property, as such homestead is defined under Florida law.

This conveyance is subject to easements, restrictions, limitations and conditions of record if any now exist, but any such interests that may have been terminated are not hereby re-imposed.

TO HAVE AND TO HOLD the same unto the said grantee in fee simple forever.

AND the said grantor does hereby fully warrant the title to said land, and will defend the same against the lawful claims of all persons claiming by, through or under the said grantor, but against none other.

IN WITNESS WHEREOF the grantor has executed these presents, the day and year first written.

Signed, sealed and delivered in the presence of:

Korman-Seldin Silver River Development Company, a Nebraska general partnership
By: Belmont Investments, LLC, an Arizona limited liability company, as its Managing Partner
By: Belmont Management Company, an Arizona corporation, as Manager of Belmont Investments, LLC, an Arizona limited liability company

By: Scott Seldin
Scott Seldin, President

(Corporate Seal)

[Signature]
Signature of First Witness
HILLARY SPERDUE
Printed, Typed or Stamped Name of First Witness
[Signature]
Signature of First Witness
Mike Clark
Printed, Typed or Stamped Name of Second Witness

Exhibit "A"
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Lease No. 4519

State of Arizona

County of Maricopa

The foregoing instrument was acknowledged before me this 30 day of June, 2005, by Scott Seldin as President of Belmont Management Company, an Arizona corporation as Manager of Belmont Investments, LLC, an Arizona limited liability company as Managing Partner of Korman-Seldin Silver River Development Company, a Nebraska General Partnership, on behalf of said partnership. Such person(s) (Notary Public must check applicable box):

- ☒ is/are personally known to me.
- ☐ produced a current driver license(s).
- ☐ produced _____ as identification.

(NOTARY PUBLIC SEAL)

Notary Public Susan E. Parker

(Printed, Typed or Stamped Name of Notary Public)

Commission No.: _____

My Commission Expires: _____



REVEREND 05/19/97
DEK06902.DOC

EXHIBIT "A"

A parcel of land located in portions of Sections 1 and 12, Township 15 South, Range 22 East, Marion County, Florida, described as follows:

All of that part of the South 1/4 of Section 1, Township 15 South, Range 22 East lying Southeasterly and East of State Highway No. 40;

LESS AND EXCEPT: That portion thereof lying East of County Road No. 35;
ALSO LESS AND EXCEPT: The West 264.50 feet of the East 314.50 feet of the South 330 feet of the North 380 feet of the SE 1/4 of the SW 1/4;

ALSO LESS AND EXCEPT: The South 330 feet of the North 380 feet of the West 529 feet of the SW 1/4 of the SE 1/4;

ALSO LESS AND EXCEPT: Commence 1040.62 feet East and N 54°10'45" E 223 feet from the SW corner, thence N 54°10'45" E 200 feet; thence N 35°49'15" W 440 feet; thence S 54°10'45" W 200 feet; thence S 35°49'15" E 440 feet;

ALSO LESS AND EXCEPT: The East 132.25 feet of the West 1190.25 feet of the South 330 feet of the North 380 feet of the SW 1/4 of the SE 1/4;

ALSO LESS AND EXCEPT: The North 50 feet of the SE 1/4 of the SW 1/4 East of State Highway #40, for road;

ALSO LESS AND EXCEPT: The North 50 feet of the South 1/2 of the SE 1/4 West of State Road 35, for road right of way;

ALSO LESS AND EXCEPT: Right of way for State Road S-35 as shown in Official Records Book 125, page 373;

ALSO LESS AND EXCEPT: Additional right of way for State Road 40;

ALSO LESS AND EXCEPT: Any portion of the above described lands lying within the South 1/2 of the Southwest 1/4 of said Section 1;

AND:

All of the East 1/2 of Section 12, Township 15 South, Range 22 East;

LESS AND EXCEPT: that portion thereof lying North and East of County Road No. 35;

ALSO LESS AND EXCEPT: The South 810 feet of the West 537.78 feet of the SE 1/4 of the SE 1/4;

ALSO LESS AND EXCEPT: The North 300 feet of the South 1110 feet of the SE 1/4 of the SE 1/4;

ALSO LESS AND EXCEPT: Right of way for State Road S-35 as shown in Official Records Book 125, page 373;

ALSO LESS AND EXCEPT: Right of way for Sharpes Ferry Road (NE 7th Street);

ALSO LESS AND EXCEPT: The South 810 feet of the SE 1/4 of the SE 1/4 of Section 12, Township 15 South, Range 22 East, except the West 537.78 feet and except road right of way for NE 7th Avenue and right of way for SR 35;

AND:

All of the East 1/2 of the SW 1/4 of Section 12, Township 15 South, Range 22 East;

LESS AND EXCEPT: Right of way for Sharpes Ferry Road (NE 7th Street);

Florida's First Magnitude Springs Silver Springs
Seldin-Korman, Silver River Development Company

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BSM
By EB Date 3.22.05

Exhibit "A"

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Lease No. 4519

EXHIBIT "A"

ALSO LESS AND EXCEPT: Hunters Trace subdivision, as recorded in Plat Book 1, Pages 36 and 37, Public Records of Marion County, Florida, more particularly described as follows:

Commence at the Southwest corner of the East 1/2 of the Southwest 1/4 of Section 12, Township 15 South, Range 22 East and proceed N 00°00'06" E along the West boundary of said East 1/2 of Southwest 1/4 of Section 12 a distance of 50.95 feet to a point on the maintained North right of way line of NE 7th Street, said point also being the POINT OF BEGINNING of the following described parcel: thence continue N 00°00'06" E along said East boundary a distance of 1330.50 feet; thence N 89°39'52" E a distance of 1287.98 feet; thence S 00°00'54" E a distance of 1346.16 feet to a point on the aforesaid maintained right of way line of NE 7th Street; thence N 89°38'21" W along said maintained right of way line a distance of 1288.37 feet to the POINT OF BEGINNING:

ALSO LESS AND EXCEPT from all the above described lands, Parcels 223 - Part A, Parcel 223 - Part B and Parcel 223 - Part C, described as follows:

PARCEL 223 - PART A:

Commence at the Southwest corner of the Southeast 1/4 of Section 12, Township 15 South, Range 22 East, Marion County, Florida (a 20d nail as now exists) as shown on Florida Department of Transportation Right-of-Way Map, Section No. 36009-2504; thence South 89°53'24" East a distance of 809.222 meters (2654.92 feet) to the Southeast corner of the Southeast 1/4 of Section 12, Township 15 South, Range 22 East, Marion County, Florida (a nail and disk LS#3492 now exists); thence North 00°10'46" East along the East line thereof, a distance of 6.267 meters (20.56 feet); thence North 89°33'14" West, a distance of 15.240 meters (50.00 feet) to the intersection of the existing Westerly right-of-way line for State Road No. 35 and the existing Northerly right-of-way line for NE 7th Street (Sharpes Ferry Road); thence North 00°10'46" East along said Westerly right-of-way line, a distance of 331.826 meters (1088.67 feet); thence leaving said Westerly right-of-way line South 89°51'11" West, a distance of 162.283 meters (532.42 feet) to the POINT OF BEGINNING; thence continue South 89°51'11" West, a distance of 164.665 meters (540.24 feet); thence North 00°08'49" West, a distance of 108.002 meters (354.34 feet); thence North 89°51'11" East, a distance of 53.735 meters (176.30 feet); thence North 00°08'49" West, a distance of 22.373 meters (73.40 feet); thence North 89°51'11" East, a distance of 110.930 meters (363.94 feet); thence South 00°08'49" East, a distance of 130.375 meters (427.74 feet) to the POINT OF BEGINNING.

PARCEL 223 - PART B:

Commence at the Southwest corner of the Southeast 1/4 of Section 1, Township 15 South, Range 22 East, Marion County, Florida (an 8" octagon concrete monument as now exists) as shown on Florida Department of Transportation Right-of-Way Map, Section No. 36009-2504; thence North 00°07'51" East along the West line thereof, a distance of 388.130 meters

Florida's First Magnitude Springs, Silver Springs
Seldin-Korman, Silver River Development Company

EXHIBIT "A"

(1273.39 feet); thence North 89°36'46" East along the existing Southerly right-of-way line of North East 24th Street, a distance of 161.029 meters (528.31 feet) to the POINT OF BEGINNING; thence continue North 89°36'46" East along said existing Southerly right-of-way line, a distance of 161.449 meters (529.69 feet) to a point on the West line of Official Record Book 2942, Page 655, also being the West line of Deed Book 285, Page 292; thence South 00°07'51" West along said West line, a distance of 186.279 meters (611.15 feet); thence North 89°52'09" West, a distance of 161.442 meters (529.86 feet); thence North 00°07'51" East, a distance of 184.819 meters (606.36 feet) to the POINT OF BEGINNING.

PARCEL 223 - PART C:

Commence at the Southwest corner of the Southeast 1/4 of Section 12, Township 15 South, Range 22 East, Marion County, Florida (a 20d nail as now exists) as shown on Florida Department of Transportation Right-of-Way Map, Section No. 36009-2504; thence South 89°53'24" East a distance of 809.222 meters (2654.92 feet) to the Southeast corner of the Southeast 1/4 of Section 12, Township 15 South, Range 22 East, Marion County, Florida (a nail and disk LS#3492 now exists); thence North 00°10'46" East along the East line thereof, a distance of 6.267 meters (20.56 feet); thence North 89°33'14" West, a distance of 15.240 meters (50.00 feet) to the intersection of the existing Westerly right-of-way line for State Road No. 35 and the existing Northerly right-of-way line for NE 7th Street (Sharpes Ferry Road); thence North 00°10'46" East along said Westerly right-of-way line, a distance of 331.826 meters (1088.67 feet) to the POINT OF BEGINNING; thence leaving said Westerly right-of-way line South 89°51'11" West, a distance of 8.388 meters (27.52 feet); thence North 00°36'47" West, a distance of 55.670 meters (182.64 feet); thence North 00°01'19" West, a distance of 239.457 meters (785.62 feet); thence North 00°06'36" West, a distance of 133.802 meters (438.98 feet); thence North 00°19'21" West a distance of 23.064 meters (75.67 feet); thence North 00°10'46" East a distance of 20.229 meters (66.37 feet) to a point on the North line of the Southeast 1/4 of said Section 12; thence leaving said North line North 00°06'16" West, a distance of 222.778 meters (730.90 feet); thence North 07°07'50" West, a distance of 168.538 meters (552.95 feet) to a point on a non-tangent curve; thence 122.617 meters (402.29 feet) along the arc of a curve concave Southwesterly, having a radius of 790.000 meters (2591.86 feet), a central angle of 08°53'35", a chord bearing of North 18°11'20" West and a tangent bearing of North 13°44'33" West; thence North 29°11'07" West, a distance of 89.987 meters (295.23 feet); thence North 31°57'38" West, a distance of 90.439 meters (296.72 feet); thence North 37°37'25" West, a distance of 238.205 meters (781.51 feet); thence North 39°35'54" West, a distance of 61.441 meters (201.58 feet) to a point on a non-tangent curve; thence 261.769 meters (858.82 feet) along the arc of a curve concave Northeasterly having a radius of 474.000 meters (1555.11 feet), a central angle of 31°38'31", a chord bearing of North 16°24'02" West, and a tangent bearing of North 32°13'18" West; thence North 00°34'46" West, a distance of 40.636 meters (133.32 feet); thence North 47°22'41" West, a distance of 8.576

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Seldin-Korman, Silver River Development Company

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Exhibit "A"
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Lease No. 4519

EXHIBIT "A"

meters (28.14 feet); thence South 89°36'46" West, a distance of 6.882 meters (22.58 feet) to a point on the East line of Official Record Book 2942, Page 655; thence North 00°07'51" East along said East line, a distance of 3.000 meters (9.84 feet) to a point on the existing Southerly right-of-way line for North East 24th Street; thence North 89°36'46" East along said existing Southerly right-of-way line a distance of 32.325 meters (106.05 feet) to a point on the existing Westerly right-of-way line for State Road No. 35; thence South 00°10'05" East along said existing Westerly right-of-way line, a distance of 56.322 meters (184.78 feet) to a point of curvature; thence 305.869 meters (1003.51 feet) along the arc of a curve concave Northeasterly having a radius of 451.925 meters (1482.89 feet), a central angle of 38°46'43" and a chord bearing of South 19°33'26" East to a point of tangency; thence South 38°56'48" East along said existing Westerly right-of-way line for SR 35, a distance of 62.081 meters (203.67 feet) to a point on the North line of the Northeast 1/4 of said Section 12; thence continue South 38°56'48" East along said existing Westerly right-of-way line for SR 35, a distance of 265.827 meters (872.13 feet) to a point of curvature; thence 285.708 meters (937.36 feet) along the arc of a curve concave Southwesterly having a radius of 421.445 meters (1382.69 feet), a central angle of 38°50'32" and a chord bearing of South 19°31'32" East to a point of tangency; thence South 00°06'16" East along said existing Westerly right-of-way line for SR 35, a distance of 336.936 meters (1105.43 feet) to a point on the North line of the Southeast 1/4 of said Section 12; thence leaving said North line South 00°10'46" West along said existing Westerly right-of-way line for SR 35, a distance of 472.253 meters (1549.38 feet) to the POINT OF BEGINNING.

Florida's First Magnitude Springs, Silver Springs
Seldin-Korman, Silver River Development Company

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APPENDIX B

PUBLIC PARTICIPATION DOCUMENTATION

**LAND MANAGEMENT ADVISORY GROUP
MINUTES FROM MEETING OF September 12, 2019**

The Marion County Land Management Advisory Group held a public meeting on September 12, 2019 at the Fire Rescue department training room.

MEMBERS PRESENT

Laura Digruttolo
Laura Nesmith
John Rudniansyn
Judy Greenburg
Justin Albright
Justin Kilcrease
Lynn Mosura-Bliss
Mickey Thomason
Carl Zalak III, District 4 County Commissioner

MEMBERS ABSENT

Peter Nesmith

STAFF PRESENT

Jim Couillard, Director
Greg Wiley, Operations Manager
Laura Cooper, Administrative Services Coordinator

CALL TO ORDER

The meeting was officially called to order at 10:00 PM by Greg Wiley, followed by the invocation and the Pledge of Allegiance.

ROLL CALL

Roll call was taken by Laura Cooper.

SILVER SPRINGS SANDHILL LAND MANAGEMENT PLAN

- A. Lynn Mosura-Bliss provided a brief introduction to both land areas and discussed their similarities including: proximity to each other, similar habitat, both were chosen by the State due to their proximity to Silver Springs, etc.
- B. Laura Nesmith presented a Power Point presentation for the Silver Springs Sandhill Land Management Plan. An introduction to the property was provided which explained that the Silver Springs Sandhill is 470 acres, west of Coehadjoe Park and abuts Indian Lake State Forest. This is an ecologically diverse area that provides unique opportunities for passive recreation and connectivity to other parks and trail systems. Laura also reviewed the location of this area on a map.
- C. The following topics were presented to the advisory group through the Power Point presentation:
 - i. The steps required for Unit Management Plan approval including: drafting Unit Management Plan, County Comprehensive Plan consistency review, formation of advisory group, advisory group review workshop and public hearing, Board of County Commissioners noticed hearing, state review and approval.
 - ii. Relevant ecological criteria provided by the Sandhill.
 - iii. Natural communities and Recreational opportunities at Silver Springs Sandhill.

- iv. Proposed natural resource management actions for the 2019 – 2029 Management Plan.
 - v. Land management tools.
- D. Judy Greenburg stated she was worried a 3D archery range would disturb the healthy sandhill ecosystem where it is currently proposed and asked if that could be moved into the hardwood area instead. Greg Wiley explained that a 3D archery range allows the area to stay natural and undisturbed and that permanent structures would not be built. He added that the primary archery area would be set up on the County's former water reclamation facility which has already been disturbed and would provide enough room for approximately 40 targets. Judy reiterated that even foot traffic disturbs wildlife and could the group consider moving the archery components to the hardwoods? The advisory group discussed possibly conducting a feasibility study and Lynn reiterated that the archery range is still only a concept at this time. Greg mentioned the County would look into moving the proposed extension if it was ever necessary to construct.
 - E. Laura Digrutollo stated parking is already an issue at Coehadjoe Park and that staff should consider adding additional parking for those accessing the trail system.
 - F. Judy inquired about the various trails proposed for the area and whether or not horses would be allowed. The group discussed trail uses and clarified that the area was not big enough to support horse trails.
 - G. The advisory group members discussed the history and naming of the Sandhill, Coehadjoe Park and surrounding areas. It was suggested that moving forward, all of Silver Springs Sandhill be under the name Coehadjoe Park.
 - H. Commissioner Zalak provided that archery, especially in that area of the County, has become extremely popular and is in high demand. That area desperately needs recreational opportunities of this kind and it creates a very positive economic impact to the area.
 - I. The group also discussed the lack of camping in the surrounding area. Commissioner Zalak asked Mickey Thomason and Justin Kilcrease if the state could increase their camping, but they both responded that the State would not be able to do so. Additional discussions also included the possibility of glamping sites at the archery range or just space for camper trailers to park during tournaments. Commissioner Zalak asked if a camping area could just be designated on the plans as conceptual. Jim Couillard advised the working group that Environmental Services, the County department that owns the land in question, asked Parks & Recreation not to build too many permanent structures due to the land being within a water recharge area.
 - J. John Rudniansyn asked about a cleared area on the map where long leaf pine had once been and whether or not the County would be replanting. Greg provided that yes that restoration to that area is one of the County's long term goals.
 - K. The group discussed that when this area is sprayed with herbicides, staff will need to be aware that citizens may have questions and concerns due to the proximity to the springs. Greg stated those applying the herbicide will need to be prepared to explain to the public that the product being used is safe for the environment and part of the area's restoration process. Laura Digrutollo recommended temporary signage when spraying is taking place that would provide information to the public. Greg detailed the types of invasive vegetation in the area, what has been removed or brought under control.
 - L. Laura Digrutollo mentioned that there should be some clarification between the different types of species of Fox Squirrels that are mentioned in both plans. She also suggested listing her office as a resource when the County was ready to

conduct any wild life surveys. Additionally, Laura suggested embellishing the section that lists various resources for restoration and management such as the Department of Greenways and Trails and St. Johns River Water Management District. Lastly, Laura recommended adding, to both plans, basic information about black bears.

SILVER SPRINGS CONSERVATION AREA LAND MANAGEMENT PLAN

- A. Lynn introduced the next power point presentation with a brief introduction of the Silver Springs Conservation Area. This is a 330 acre property that is adjacent to Silver Springs State Park that sits west of and adjacent to SR 35 and is within a half mile of Silver Springs. This area has significant ecological, cultural and recreational significance in addition to creating interconnectivity and providing environmental and education opportunities.
- B. The following topics were introduced to the advisory group through the Power Point presentation:
 - i. The steps required for Unit Management Plan approval including: drafting Unit Management Plan, County Comprehensive Plan consistency review, formation of advisory group, advisory group review workshop and public hearing, Board of County Commissioners noticed hearing, state review and approval.
 - ii. Relevant ecological criteria provided by the Conservation Area.
 - iii. Natural communities and Recreational opportunities at Silver Springs Conservation Area.
 - iv. Significant management accomplishments since the 2017 Management Plan.
 - v. Proposed natural resource management actions for the 2019 – 2029 Management Plan.
 - vi. Proposed management actions for cultural resources.
- C. The group discussed the potential connection between existing trails and the walking trails in the neighborhoods that abut the Conservation Area. Greg stated that when the County first took over the management of that area, County staff met with HOA board members and they decided against the trail connections. They were concerned about increased access into their neighborhood and backyards. Greg added that this was 12 years ago and since then the property has been fenced and maintained; it would be worth it to reach back out to those HOAs again to see if there was an interest in connecting the walking trails.
- D. Laura Digrutollo mentioned how heavy the growth is in many parts of the Conservation Area and suggested that controlled burns may be very beneficial to the area. Mikey added that there will need to be a lot of mechanical clearing, which may initially be the best option because burning would be challenging in that area. Commissioner Zalak asked about micro burning and Mikey agreed that it was possible. Greg supplied that the Conservation Area is located between residential areas and a four-lane highway. Although County staff has worked well with State and other local officials to coordinate controlled burns in the past, that is a very difficult area to coordinate a burn and he agreed that mechanical clearing would be the best option. The group also discussed that when any burning does take place, that the public should be provided with an explanation regarding how beneficial it is to the environment. Mikey also advised that the State has been contracting out their controlled burns so that time and staffing would not be an issue.
- E. Laura Digrutollo inquired about the types of usage in the area. Greg provided that

it is primarily walking, pet walking and nature observation. Laura suggested contacting the surrounding neighborhoods and HOAs to see if there was any interest in the communities adopting the area and performing small scale clean ups and clearings of the area. This would also serve to educate the community about the importance of the Conservation Area, create awareness and develop new stewards for the area. John added that staff could also ask the HOA boards if they would be interested in holding a community meeting in which County staff provided an educational presentation about the area. Providing this education ahead of any burning or work in the area would prove the most beneficial.

- F. Laura Digrutollo also stated that her office receives a lot of nuisance calls about black bears in this area so providing the public with additional information would be beneficial. Judy asked which areas the hardwoods would be removed for sandhill restoration and whether or not that could be an attractor for the bears. The group discussed this with the general consensus being that it would not necessarily attract bears.

ADVISORY GROUP DISCUSSION

- A. Greg offered a tour of both areas to the group if anyone was interested.
B. Greg also reminded the group about the Public Hearing taking place on October 1, 2019 at 5:30 PM at Growth Services and asked that everyone please attend.

ADJOURMENT

Meeting was adjourned at 11:45 AM

Minutes Reviewed by: _____ Date: _____
Greg Wiley, Operations Manager

Minutes submitted by Laura Cooper

**LAND MANAGEMENT ADVISORY GROUP
MINUTES FROM MEETING OF October 1, 2019**

The Marion County Land Management Advisory Group held a public meeting on October 1, 2019 at the Growth Services department training room.

MEMBERS PRESENT

Lynn Mosura-Bliss
John Rudnianyn
Justin Albright
Peter Nesmith

MEMBERS ABSENT

Justin Kilcrease
Mickey Thomason
Judy Greenburg
Laura Digruttolo
Carl Zalak

STAFF PRESENT

Greg Wiley, Operations Manager
Laura Cooper, Administrative Services Coordinator

CALL TO ORDER

The meeting was officially called to order at 5:37 PM by Greg Wiley, followed by the invocation and the Pledge of Allegiance.

INTRODUCTION OF GUESTS

None

ROLL CALL

Roll call was taken by Laura Cooper.

PROOF OF PUBLICATION

The proof of publication was read by Laura Cooper.

ADVISORY GROUP DISCUSSION

The advisory group briefly discussed that they were satisfied with both the Silver Springs Sandhill and Silver Springs Conservation Area Land Management Plans based on their last review of both plans. Lynn Mosura-Bliss asked those in attendance if they had any additional questions about either plan or if they would like to review the power point presentation again. Both John Rudnianyn and Justin Albright stated they did not have any additional question.

PUBLIC COMMENT

No members of the public were present.

ADJOURMENT

Meeting was adjourned at 5:47 PM

Minutes Reviewed by: _____
Greg Wiley, Operations Manager

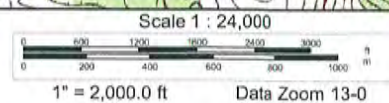
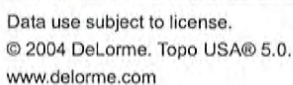
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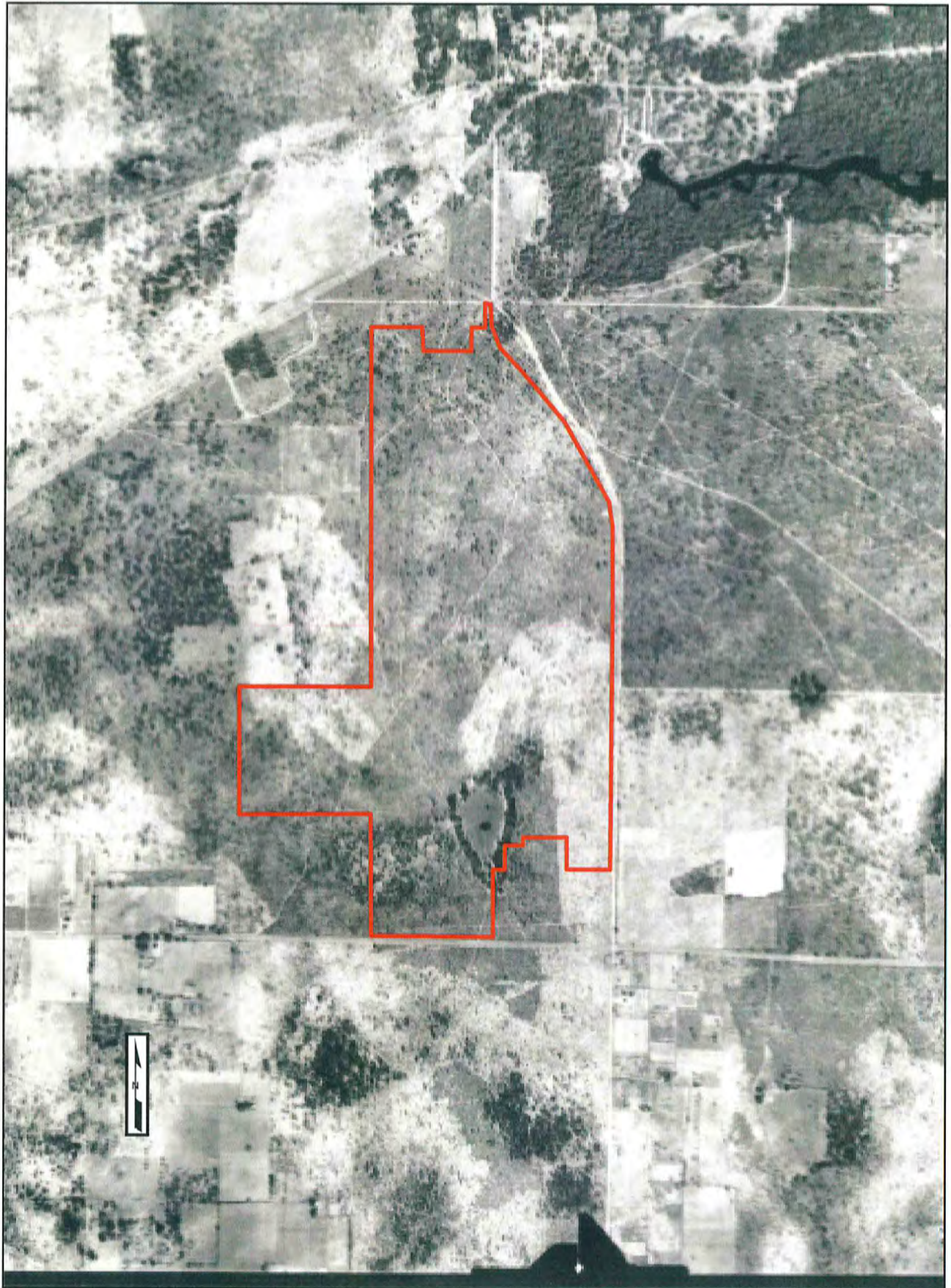
Minutes submitted by Laura Cooper

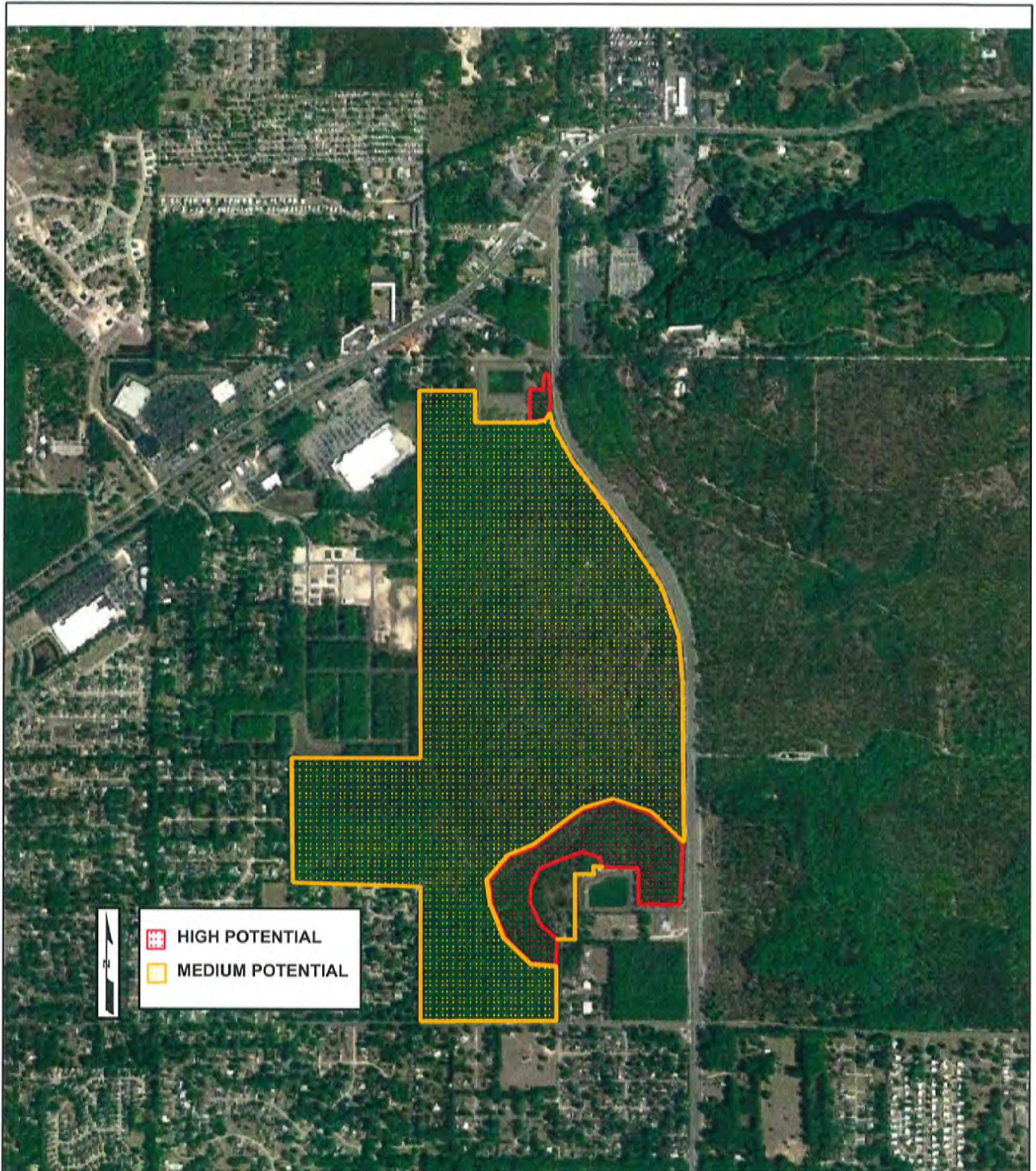


APPENDIX C

CULTURAL RESOURCE MAPS









APPENDIX D

DRAFT FIRE MANAGEMENT PLAN

Draft Fire Management Plan for the Silver Springs Conservation Area in Marion County, Florida

Prepared for

Mr. Greg Wiley, Parks and Natural Resource Manager
Marion County Parks & Recreation Department
111 S.E. 25th Avenue
Ocala, Florida 34471

Prepared by

Water & Air Research, Inc.
6821 S.W. Archer Road
Gainesville, Florida 32608



July 11, 2006
06-5929

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- 1 Vegetation and Land Use on the Silver Springs Conservation Area.
- 2 Fire Management Units on the Silver Springs Conservation Area.
- 3 Smoke Management of the Silver Springs Conservation Area.

Appendices

- A Prescribed Fire Plans
- B Silver Springs Conservation Area Annual Prescribed Fire Goals and Burn Sequences
- C Copy of Post Burn Evaluation Form

Acronyms and Abbreviations

CPB	Certified Prescribed Burner
DOF	Division of Forestry
DOT	Department of Transportation
FAC	Florida Administrative Code
FMP	Fire Management Plan
FMU	Fire Management Units
FNAI	Florida Natural Areas Inventory
PBPs	Prescribed Burning Plans
PFG	Prescribed Fire Goals
UMF	Upland Mixed Forest
WP	Wet Prairie

1 Purpose

The Fire Management Plan (FMP) describes all fire management activities at Marion County's Silver Springs Conservation Area (SSCA). These activities include prescribed fire and wildfire responses. It serves as a source of information and an action plan for the Marion County Parks and Recreation Department (MCPR). The purpose of fire management at SSCA is to reduce fuels and wildfire potential as well as restore, maintain, and protect in perpetuity all natural communities, ecotones, and their ecological processes.

2 Ecological Role of Fire

Pine-dominated Sandhill communities have expanded in the past several thousand years in the southeastern coastal plain. This expansion occurred simultaneously with an increase in precipitation, thunderstorms, and fuel build up, as well as an increase in population of Native Americans. Increased lightning fires occurring from April to September and human ignition occurring throughout the year were responsible for the expansion and maintenance of these ecosystems. The relative importance of the two ignition sources is unknown and highly debated (Myers and Ewel 1990).

Frequent low-intensity surface fires originating in pine communities historically burned across large un-fragmented landscapes into other natural communities. Nearly all of Florida's natural communities are either fire maintained or fire influenced, depending on the characteristics of their vegetation (fuel), hydrology (depth to water), and soils (wetland versus upland, mineral versus organic). These characteristics result in differences in flammability, allowing boundaries, or ecotones, to exist between natural communities. Ecotones are dynamic; variability of natural fire regimes determines and shapes changing boundary locations.

Natural fire regimes vary in both return interval and intensity. For example, the flammability of sandhill communities fuel such as pine needles and wiregrass leaves, allows fires to burn every one to eight years. Ecotones between communities with frequent fire (Sandhill) and those with infrequent fire (Upland Mixed Forest [UMF]) provide important habitats for many plant and animal species. Therefore, prescribed fires that vary in both return interval and intensity that are allowed to burn across ecotones, from one natural community into another, create and maintain a natural mosaic of vegetation community types.

3 Vegetation Communities

Water & Air Research, Inc. (Water & Air), has classified and described the natural communities at SSCA, provided acreage totals, vegetation species lists, community descriptions, and associated wildlife for each community in the SSCA Unit Management Plan (2006). Natural community maps previously developed as part of the Unit Management Plan are presented in Figure 1. For the purpose of this document, natural communities are classified based on Florida

Natural Areas Inventory's (FNAI) Guide to the Natural Communities of Florida (FNAI and Florida Department of Natural Resources 1990).

3.1 Natural Communities

Fire maintained and fire influenced natural communities at SSCA include: Sandhill and Wet Prairie. The UMF community by definition is not a fire dependent community; however, it was likely a Sandhill community that has in recent history changed into an UMF community due to fire suppression.

The Sandhill and Wet Prairie communities are moderately "disturbed" due to fire suppression; however, the Sandhill more or less retains its natural floral and faunal assemblages and is considered a natural community. "Disturbed" in this context is used to refer to the effects of fire suppression.

3.2 Environmentally Sensitive Areas

The palustrine Wet Prairie natural community at SSCA is an environmentally sensitive area. The use of heavy equipment and fire plow lines in and near this wetland area is to be avoided to prevent environmental degradation, erosion, and alteration of hydrology. In addition, the terrestrial Sandhill community has highly diverse ground covers of grasses and herbs that are very susceptible to mechanical disturbance. The use of heavy equipment in these areas should be minimized - loading and unloading equipment only on roads, harrow lines, and disturbed areas.

4 Vegetation Community Restoration Requirements

4.1 Natural Communities

The restoration of the natural communities at SSCA will begin with several winter season burns to reduce fuels. The following conditions are for a winter burn: low to moderate in-stand (eye level) wind speeds of 1-3 miles per hour [mph], 20-foot wind speeds of 6-20 mph, fine fuel moisture from 10 to 20 percent, moderate to high soil moisture, relative humidity greater than 35 to 60 percent, and stable conditions. Low in-stand wind speeds are necessary for safety reasons. An early spring burn could also be used to accomplish fuel reductions. The burn conditions will be such that areas with moderate to heavy fuels can be burned safely. Every effort will be made to burn the appropriate areas during windows of opportunity that may arise depending on weather conditions.

After the initial fuel reduction burn(s), growing season burns with variable return intervals and frequencies will be utilized for maintenance and expansion of these communities. The goal will be to restore the native pyrogenic (fire loving) vegetation assemblage.

4.2 Upland Communities (Ecotones)

The community at SSCA designated as UMF is primarily an upland community that has been strongly influenced by fire suppression. The UMF areas contain upland hardwoods species that invaded what is believed to be a historically pyrogenic, pine dominated sandhill or flatwoods community.

Prescribed fire in the Sandhill communities adjacent to the UMF community will be allowed to burn into the UMF wherever possible.

The goal will be to restore as much of the UMF native vegetation assemblage by reducing further hardwood expansion/succession and encouraging fire dependent species.

Generally, the UMF community will be difficult to burn under normal burn conditions due to the low amount of fine fuels, high amount of oak leaf litter, and the patchy distribution of fuels such as saw palmetto and gallberry. These areas should be burned under the following conditions: moderate in-stand wind speeds (≤ 4 mph), 20-foot wind speeds of around 10 mph, fine fuel moisture from 6 to 13 percent, moderate to high soil moisture, relative humidity from 30 to 50 percent, and moderately stable fire weather conditions.

The goal will be to decrease the hardwood component of the UMF community to encourage and maintain the fire dependent species.

In the likely event that prescribed fire will not be sufficient to reduce the hardwood cover in the UMF to meet the goals, the use of selective herbicides on a per tree basis and/or the use of mechanical hardwood removal may be explored.

5 Fire Hazard Assessment - Existing Hazards

5.1 Introduction

The majority of the SSCA contains burnable vegetation communities. The Wet Prairie is frequently dry due to drought, hydrologic degradation, and the presence of dry organic soils in some areas. Fire suppression in the upland communities (primarily the UMF) has created some areas with moderate fuel loads such as saw palmetto (*Serenoa repens*) in the northernmost UMF (Figure 1). This section addresses these fire hazards that exist at the SSCA. A carefully planned and well-executed prescribed fire program can help reduce wildfire threats and a good fire management plan can provide valuable information to the DOF and Marion County Fire Department in case of a wildfire emergency.

5.2 Wildfire

The occurrence of wildfire at the SSCA is possible due to moderate fuel loads, history of fire suppression, and the threat of lightning-induced, arson, or accidental ignition. The fine fuels,

especially in the Sandhill community that is nearly throughout the site, are prone to easy ignition. Detailed wildfire response information follows in Section 7.

SSCA's proximity to a frequently traveled road increases the likelihood of wildfire caused by cigarettes or arson. A 20-foot perimeter firebreak (exposing mineral soils) along the reserve's entire perimeter will reduce the ability of fire to move onto or off the property (see Section 6). Note that firebreaks should not traverse the wetland for ecological reasons.

5.3 Fuel Load

As mentioned previously, fire suppression has influenced the communities within the SSCA. Fuel loads range from low to moderate fuels in the Sandhill community.

A prescribed fire program at the SSCA will, over time, reduce fuel loading and minimize the hazards that wildfire poses to neighbors, area roads, and the integrity of the vegetation communities themselves.

5.4 Hazards to Adjacent Lands

Uncontrolled fire on the SSCA would pose hazards to adjacent landowners and properties and to users of nearby roads. Properties immediately adjacent to the SSCA along the middle of the western boundary are currently (under present fuel loads) the most threatened by uncontrolled fire. These areas have low to moderate fuel loads that are adjacent to private property. The potential of fire escaping the property is not great due to the low fuels; the non-burning characteristic of the UMF; and the lawn grasses and yards of the adjacent homes. However, under drought conditions, the potential for wildfire effects is there.

Low fuel areas make up the majority of the remaining boundaries; therefore, the threat to adjacent property owners is reduced. However, these areas under dry conditions can pose a threat to adjacent owners in the event of an uncontrollable fire.

Because of the above conditions, it is recommended that the entire perimeter of the SSCA be contained within a 20-foot firebreak that exposes mineral soils. The firebreak should be maintained yearly or as site condition warrants (e.g., re-disk as needed, especially when wildfire weather conditions are favorable for wildfire development).

5.5 Organic Soils

The presence of organic soils at the SSCA is in a relatively small area (Wet Prairie) and it is unlikely that they would increase fire-related hazards due to the possibility of these soils igniting and creating smoke problems. Most of the organic soils in the Wet Prairie have been oxidized due to lack of inundation.

5.6 Smoke Management – Uncontrolled Fire

Uncontrolled fires at the SSCA can present a significant smoke hazard to the surrounding community. Smoke can aggravate respiratory problems in humans and animals and can obstruct visibility on area highways.

5.7 Conclusion

The combination of low to medium fuel loads and historical fire suppression within the SSCA coupled with relatively close urban areas and major highways create a potentially hazardous wildfire situation. Fire-related hazards could be greatly reduced as a result of an active prescribed burn program. Once all fire maintained communities at the SSCA have been burned, the likelihood of a wildfire occurring will be greatly reduced, as the moderate fuel load in certain areas will no longer exist.

6 Prescribed Fire

6.1 Purpose and Goals

The purpose of a prescribed fire regime and fire management at the SSCA is to restore, maintain, and protect in perpetuity all natural communities, ecotones, and their ecological processes. Another purpose of prescribed fire management is to eliminate undesirable fuel loads in an ecologically sound manner so as to reduce the possibility of catastrophic and potentially life or property threatening wildfire.

The proximity of the SSCA to the Silver River State Park (SRSP) may facilitate cooperation between the staff at the SRSP and SSCA when conducting prescribed fire. It is not known at this time whether the SSCA or SRSP will be conducting the prescribed fire.

In several of SSCA's natural communities, fire suppression has occurred resulting in moderate fuel loads; increased potential for catastrophic wildfires; the accumulation of organic soils, "ladder" fuels and heavy duff layers; and succession to hardwood dominated forests with reduced amounts of herbaceous vegetation (primarily the UMF). While these hazards exist during prescribed fires, experienced fire managers can burn under exacting weather and fuel conditions to minimize the hazards. SSCA has areas with moderate fuel loads and is proximate to suburban areas and busy roads. These conditions require expert planning and efficient execution of prescribed fires. Initially, all prescribed burn units will be sized such that the burn and mopping up can be completed in less than one day. In addition, areas of heavy fuel will be burned last and will be burned in manageable sizes. Easier, less fuel intensive burns, especially in perimeter communities, will be conducted first so as to maximize the acreage of black line (recently burned areas) on-site. Once fuel loads are reduced, fire management will become more straightforward. If weather conditions are excellent for prescribed fire, the burn schedule and sequences can be deviated from if the adjustments are determined to be in the best interest of site restoration. For example, if extreme wildfire conditions are interrupted by a brief period of

very good weather (for prescribed fire) it may be determined that the areas in need of a fuel reduction burn should be burned immediately (in case extreme wildfire conditions return). This may be a prudent way to decrease heavy fuel loads in areas that are susceptible to wildfire.

6.2 Prescribed Fire Burn Plans

The SSCA is divided into seven Fire Management Units (FMU) ranging in size from approximately 15.5 to 84 burnable acres. The FMU map is presented as Figure 2. Each FMU is surrounded by either permanent roads and trails or the 20-foot wide harrowed perimeter boundary (control lines). Multiple perimeter firebreaks are not used. Perimeters of FMUs do not occur on ecotones. As described in the previous section, it is not ecologically prudent to maintain harrowed boundaries on ecotones for the purpose of fire management.

SSCA Prescribed Burning Plans (PBP) are written for each FMU, at a scale large enough to safely mimic a variable natural fire regime and to fulfill the previously stated FMP purpose (to restore, maintain, and protect in perpetuity all natural communities, ecotones, and their ecological processes). Sample PBPs are presented in Appendix A. The sample PBPs can be used for all FMUs with some modification. Adjustments to the PBPs will always be required prior to the burn so updates to weather and site conditions can be incorporated. The SSCA PBPs contain at a minimum all items in DOF's Form SN 4461 FC5400-15 - purpose of fire, specific management objectives, a detailed map or aerial photograph, and smoke screening. PBPs also contain a prescribed burn checklist (logistics, notification of neighbors, placement of smoke signs, etc.). A Certified Burn Manager (CBM) or a Certified Prescribed Burner (CPB) prepares all PBPs and supervises all prescribed fires on the SSCA. A CBM has completed a training program that included Interagency Basic Prescribed Fire, Florida Fire Behavior, Basic Fire Control, and Standards for Survival. A CPB has completed Interagency Basic Prescribed Fire training.

The SSCA prescribed fires will meet all provisions of Florida Statutes, §590.026 and §590.12, and Florida Administrative Code (FAC), 51.2.0061. The DOF will be contacted prior to every prescribed fire event for authorization.

PBP parameters should be followed on all prescribed fires. Prescribed fires may need to be extinguished when one or more parameters exceed acceptable limits. However, this decision is made by the CBM or CPB, based on whether or not objectives are being met, and on whether or not suppression action will cause more damage than the fire. When it is decided to allow a prescribed fire to continue after one or more parameters has been exceeded, the reasons are documented, and the results are recorded in Post Burn Evaluations (PBE). A prescribed fire that can no longer be contained is a wildfire. Appropriate action is taken in accordance with Section 7.

Prescribed fires on SSCA are planned on an annual basis. The SSCA Annual Prescribed Fire Goals (PFG) (Appendix B) list FMUs planned to be burned for the year. A large majority of

prescribed fires will be planned for the lightning season (growing season) once the initial fuel reduction winter burns are conducted. Initial fuel reduction prescribed fires may be planned for the non-lightning season. Fixed rotations and single prescriptions will be avoided in favor of variability in fire regimes. Variability in return interval and intensity is an important goal both within and among fires (Myers and Ewel 1990).

6.3 Firebreaks and Firelines

A system of permanent firebreaks will need to be developed and maintained for the SSCA. Maintenance should be conducted on the firebreaks yearly at a minimum and re-checked and re-disked as needed prior to each prescribed burn or if wildfire conditions warrant. As previously mentioned, all seven FMUs are surrounded by a combination of permanent roads or trails and a single harrowed perimeter boundary (Figure 2). When conditions allow, emphasis is placed on the use of permanent firebreaks, preparatory burning (black line [fresh burn] or recently burned), water, or foam, during prescribed fires and wildfire suppression.

Note that the debris that results from the firebreaks should be chipped and distributed on-site. Large piles of burnable debris should be avoided so as to not create hotspots and damage vegetation communities.

Again, protection of human lives, both firefighters and the public, protection of human structures and property, and protection of crucial natural and cultural resources are priorities during a wildfire. However, plowed and bulldozed firelines are used only when they prevent more damage than they cause, or minimize direct threats to firefighters. Under most wildfire conditions, plowed and bulldozed firelines can be installed on burn compartment perimeters (existing nature trails). Plowed and bulldozed firelines are rehabilitated, and Best Management Practices (BMPs) are implemented as soon as practical after fires are suppressed.

Tractor plow line standards for the SSCA are:

- 1 The minimum number of plow lines necessary to contain a fire is used.
- 2 Fire plow line depth is no greater than the minimum required to contain the fire.
3. Fire plow lines are not located within 200 feet of any environmentally sensitive area unless the potential damage from the fire exceeds impacts from fire plow lines.
4. Fire plow lines do not bisect or tie into wetlands.

6.4 Smoke Management – Prescribed Fire

Caution is exercised to prevent a public safety or health hazard from the smoke of any prescribed fire or wildfire on SSCA. Prescribed fires must pass smoke-screening procedures as outlined by Wade and Lunsford (1989) (Figure 3). If smoke causes a public safety hazard, immediate suppression action may be taken. The Florida Department of Transportation (DOT)

may be asked to routinely place smoke signs on highways and roads when needed. Effort is made to prevent prescribed fires from entering areas of organic soil (e.g., Wet Prairie) during dry periods. If organic soils should be ignited, active fire suppression efforts should be taken. This should not be a serious issue as organic soils on-site are limited in extent and easily accessible.

6.5 Public Notification

Prescribed fire planning involves the notification of neighbors and posting of warning signs on adjacent roads. This public information process may include:

1. Advance notification (and possibly visitation) of the residences adjacent to the SSCA on all sides.
2. Distribution of flyers about prescribed fire to neighbors of the SSCA and to visitors to the trail head the week before and week after the prescribed burn.

Designate a public information officer to be on hand during the prescribed fire to handle public contact.

6.6 Personal Protective Equipment

Personnel involved in prescribed fires and wildfire suppression wear personal protective equipment that includes hardhat, visor, or goggles; Nomex or all cotton shirt; all cotton pants; leather gloves; and sturdy leather boots.

7 Wildfire Response

DOF and Marion County Fire Department are immediately notified for all known and suspected wildfires on the SSCA. DOF and the Marion County Fire Department are requested to immediately notify the MCPD Department when known and suspected wildfires are reported on or near the SSCA.

The following considerations, listed in order of priority, are paramount during a wildfire: protection of human lives, protection of human structures and property, and protection of crucial natural and cultural resources. Appropriate wildfire suppression strategies minimize fire suppression cost and damage, based on safety, smoke management considerations, probable fire behavior, total fire load, and potential environmental impacts.

Three alternative suppression strategies for wildfires on the SSCA are:

7.1 Confine

Confine is a suppression strategy that allows wildfires to burn as long as they remain, or are predicted to remain, in predetermined boundaries. This strategy is employed when direct suppression tactics will cause more environmental damage than the fire, and when certified

personnel are available to monitor the fire. It is also employed when parameters of PBPs are being met.

7.2 Contain

Contain is a suppression strategy to restrict wildfires to a certain area by using natural or constructed barriers that stop the fire's spread under the prevailing and forecasted weather until it is out. This strategy allows the use of environmentally sensitive tactics that keep the wildfire from burning a large area or for a long duration FMU or compartment boundaries are plowed or bulldozed if necessary, rather than installing new fire plow lines. Certified personnel are available to monitor the fire and parameters of PBPs may or may not be met during this suppression strategy.

7.3 Control

Control is a strategy using aggressive suppression tactics to establish firelines around a fire to halt spread, and to extinguish all hot spots until it is out. This alternative is used when there is a direct threat to human lives; human improvements and property; private lands; and crucial natural and cultural resources. This strategy may also be used when fire load is extremely high, certified personnel are not available to monitor the fire, or PBP parameters are not being met.

8 Record Keeping – Prescribed Fire Monitoring

A historical record of all prescribed fires and known wildfires on SSCA will be catalogued. Post Burn Evaluations will also be conducted. Record keeping is intended to provide data for future natural areas management decisions at the SSCA. A copy of the Post Burn Evaluation Form is in Appendix C.

9 References

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Water & Air Research, Inc. 2004. Saddle Creek/Green Swamp and Lake Lowery Corridors, Gator Creek Reserve Management Plan, prepared for Polk County Natural Resources Division, Bartow, Florida.

Water & Air Research, Inc. 2006. SSCA Unit Management Plan.

Figures

Appendix A – Prescribed Fire Plans

Water & Air Research
6821 S.W. Archer Rd.
Gainesville, FL 32608
Tel. 352-372-1500 or 800-242-4927
Fax. 352-378-1500
www.waterandair.com

Prescribed Burning Plan

GENERAL SITE INFORMATION

Landowner No./Site	Silver River Conservation Area, Marion County	Authorization No.	
Fire Management Unit	1 (see FMP Appendix B)	Acres in FMU	44.96 acres
Compartments to Burn		Acres to Burn	Approximately 15.49 acres

County: Marion

Section	Township	Range

SITE DESCRIPTION AND PERTINENT BURN INFORMATION

Previous Burn Dates	No recent burn
Season to Burn	Winter burn(s) to reduced fuel loads followed by growing season burns.
Natural Communities	Sandhill (15.49 acres) and Upland Mixed Forest (UMF, 29.47 acres). Much of the UMF may be difficult to burn.
Overstory Fuel Description	Pine dominant with Turkey Oak in sandhill and oak dominant UMF
Shrub Midstory Fuel Description	Shrub midstory fuel varies from relatively dense in some areas of the UMF to relatively in the sandhill
Herbaceous Fuel Description	Pine/oak duff in UMF and pine needle duff and wiregrass in the Sandhill
Topography	Very flat 5% slopes and several small sinkholes
Burn Objectives	Ecological restoration/fuel reduction
Intensity	Light to moderate
Desired Flame Length	Up to ten feet in oak infested areas
Rate of Spread: Heading Fire	As determined by site field conditions
Rate of Spread: Backing Fire	As determined by site field conditions
Burn Technique	Backing fire followed by strip head fires (depending on wind direction and speed). To be determined later.

MEASURABLE PRESCRIBED FIRE OBJECTIVES

1	Restore, enhance and maintain fire based communities
2	Topkill at least 75% of the oaks
3	Consume 75% of the groundcover and understory vegetation leaving a mosaic of burned/unburned areas
4	Limit mortality of mature pine to < 10%
5	Reduce fuels so a growing season burn can be conducted safely

SITE PREPARATION

1	Notify surrounding homeowners/SSCA trailhead visitors via posted flyers of intended prescribed burn date
2	Disc, mow, rake, or leaf blow all firebreaks/firelines where needed
3	Unlock and open all pertinent access gates
4	Place prescribed burning signs along SR 35 (Baseline Road), and other roads adjacent to SSCA

HAZARDS INSIDE AND OUTSIDE UNIT

1	Automobile traffic on SR 35
----------	-----------------------------

2	Neighborhoods south and west of SSCA, Silver River State Park
3	Working with a crew that is unfamiliar with the area
4	
5	

SMOKE MANAGEMENT**Comments**

Figure 3 (attachment) in the SSCA FMP outlines smoke sensitive areas

SMOKE SENSITIVE AREAS

1	Ocala to the west
2	
3	
4	
5	

SMOKE MANAGEMENT OBJECTIVES

1	Work to avoid hazardous smoke conditions on SR 35
2	Try to avoid smoke in Ocala and surrounding communities
3	Burn under weather conditions that blow smoke towards the Silver River State Park
4	Ensure adequate mop-up to prevent overnight smoke
5	

WEATHER AND FUEL PARAMETERS

Parameter	Maximum	Minimum	Preferred	Units/Comments
Temperature	95	55	75	Degrees
Relative Humidity	65	35	45	
Mid-Flame Wind Speed	8	4	6	Miles Per Hour (MPH)
20' Wind Speed	15	5	10	MPH
20" Wind Direction	W, NW	W	NW	Compass Bearing
Transport Wind Speed	20	7	10	MPH
Transport Wind Direction	W, NW	W	NW	Compass Bearing
Mixing Height		1,700		Feet
Dispersion Index – Day	75	40	50	
Dispersion Index – Night		6		
KBDI	400	100	250	
Days Since Rain				Days
1 Hr. Fuel Moisture				
10 Hr. Fuel Moisture				
100 Hr. Fuel Moisture				
Soil Moisture				

PERSONNEL

Prescription Written By	Peter W. NeSmith
Title	Scientist/Botanist
Prescribed Burning Certificate Number	
Date	
Ignition Time	
Release Time	

Certified Burn Manager/ Prescribed Burner Signature		
PERSONNEL		
Burn Boss		
Weather Monitor	Smoke Monitor	
Crew #1 Crew Boss	Crew #2 Crew Boss	Crew #3 Crew Boss
Ignition Crew		
Holding Crew		

IGNITION PLAN

Based on wind direction (from the W or NW) all downwind control lines will be secured by using blacklines/backfiring techniques. Unit firebreaks will be disced, mowed, racked or blown prior to ignition of blacklines. When downwind lines are secure, short flanking fire will be pulled into the wind along the appropriate control lines. After all downwind lines (including downwind lateral lines) are secure small strip head fires may be utilized. Ignition crew #1 will accomplish ignition. Note: a unit/compartments map detailing the area to be burned, pertinent land marks, environmentally sensitive areas, holding areas, location and type of control lines, ignition locations and methodology, and crew assignment locations will be developed for each burn.

HOLDING PLAN

Each holding crew will be assigned to a particular control line. Two (or more depending of crew number and burn conditions) will be assigned to each control line. The water tanker/truck operator will stay with the downwind holding crew and be available by radio as needed.

CONTINGENCIES

In the event of an escape, confinement, contain and control suppression will be handled by direct attack by the tractor operator. During any escape event all ignition will be stopped. If needed, fences will be cut to facilitate fire suppression activities. If direct attack is unsuccessful, indirect measures will be used such as counter firing, connection of natural barriers by firebreak, and the emergency action plan will be implemented.

COMMUNICATIONS

All radio communications will be hierarchical order from crew to crew boss to burn boss (and vice versa). First and or last names will be used for identification.

MOP-UP

Post burn, all active fire and smolders within 20 feet of the control lines and all snags 1.5 times their height from the control lines will be extinguished. The unit will be checked the following morning.

Prescribed Fire Checklist

Predicted weather	_____
Burn Authorization and number	_____
Burn plan field copy	_____
Hand tools	_____
Fuel with spout	_____
Drip torches	_____
Ignition source	_____
Water and food	_____
Personnel protection equipment	
Nomex suit	_____
Gloves	_____
Goggles	_____
Helmet	_____
Shelter	_____
Weather kit	_____
Camera	_____

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Fax. 352-378-1500
www.waterandair.com

Prescribed Burning Plan

GENERAL SITE INFORMATION

Landowner No./Site	Silver River Conservation Area, Marion County	Authorization No.	
Fire Management Unit	2 (see FMP Appendix B)	Acres in FMU	44.30 acres
Compartments to Burn		Acres to Burn	Approximately 44.30 acres

County: Marion

Section	Township	Range

SITE DESCRIPTION AND PERTINENT BURN INFORMATION

Previous Burn Dates	No recent burn
Season to Burn	Winter burn(s) to reduced fuel loads followed by growing season burns.
Natural Communities	Sandhill (42.50 acres) and Upland Mixed Forest (UMF, 1.80 acres) that will likely burn.
Overstory Fuel Description	Pine dominant with Turkey Oak in sandhill and a small amount of oak dominant UMF that will likely burn.
Shrub Midstory Fuel Description	Shrub midstory generally low in the sandhill
Herbaceous Fuel Description	Pine/oak duff in UMF and pine needle duff and wiregrass in the Sandhill
Topography	Very flat 5% slopes and several small sinkholes
Burn Objectives	Ecological restoration/fuel reduction
Intensity	Light to moderate
Desired Flame Length	Up to ten feet in oak infested areas
Rate of Spread: Heading Fire	As determined by site field conditions
Rate of Spread: Backing Fire	As determined by site field conditions
Burn Technique	Backing fire followed by strip head fires (depending on wind direction and speed). To be determined later.

MEASURABLE PRESCRIBED FIRE OBJECTIVES

1	Restore, enhance and maintain fire based communities
2	Topkill at least 75% of the oaks
3	Consume 75% of the groundcover and understory vegetation leaving a mosaic of burned/unburned areas
4	Limit mortality of mature pine to < 10%
5	Reduce fuels so a growing season burn can be conducted safely

SITE PREPARATION

1	Notify surrounding homeowners/SSCA trailhead visitors via posted flyers of intended prescribed burn date
2	Disc, mow, rake, or leaf blow all firebreaks/firelines where needed
3	Unlock and open all pertinent access gates
4	Place prescribed burning signs along SR 35 (Baseline Road), and other roads adjacent to SSCA

HAZARDS INSIDE AND OUTSIDE UNIT

1	Automobile traffic on SR 35
----------	-----------------------------

2	Neighborhoods south and west of SSCA, Silver River State Park
3	Working with a crew that is unfamiliar with the area
4	
5	

SMOKE MANAGEMENT**Comments**

Figure 3 (attachment) in the SSCA FMP outlines smoke sensitive areas

SMOKE SENSITIVE AREAS

1	Ocala to the west
2	
3	
4	
5	

SMOKE MANAGEMENT OBJECTIVES

1	Work to avoid hazardous smoke conditions on SR 35
2	Try to avoid smoke in Ocala and surrounding communities
3	Burn under weather conditions that blow smoke towards the Silver River State Park
4	Ensure adequate mop-up to prevent overnight smoke
5	

WEATHER AND FUEL PARAMETERS

Parameter	Maximum	Minimum	Preferred	Units/Comments
Temperature	95	55	75	Degrees
Relative Humidity	65	35	45	
Mid-Flame Wind Speed	8	4	6	Miles Per Hour (MPH)
20' Wind Speed	15	5	10	MPH
20" Wind Direction	W, NW	W	NW	Compass Bearing
Transport Wind Speed	20	7	10	MPH
Transport Wind Direction	W, NW	W	NW	Compass Bearing
Mixing Height		1,700		Feet
Dispersion Index – Day	75	40	50	
Dispersion Index – Night		6		
KBDI	400	100	250	
Days Since Rain				Days
1 Hr. Fuel Moisture				
10 Hr. Fuel Moisture				
100 Hr. Fuel Moisture				
Soil Moisture				

PERSONNEL

Prescription Written By	Peter W. NeSmith
Title	Scientist/Botanist
Prescribed Burning Certificate Number	
Date	
Ignition Time	
Release Time	

Certified Burn Manager/ Prescribed Burner Signature		
PERSONNEL		
Burn Boss		
Weather Monitor	Smoke Monitor	
Crew #1 Crew Boss	Crew #2 Crew Boss	Crew #3 Crew Boss
Ignition Crew		
Holding Crew		

IGNITION PLAN

Based on wind direction (from the W or NW) all downwind control lines will be secured by using blacklines/backfiring techniques. Unit firebreaks will be disced, mowed, racked or blown prior to ignition of blacklines. When downwind lines are secure, short flanking fire will be pulled into the wind along the appropriate control lines. After all downwind lines (including downwind lateral lines) are secure small strip head fires may be utilized. Ignition crew #1 will accomplish ignition. Note: a unit/compartments map detailing the area to be burned, pertinent land marks, environmentally sensitive areas, holding areas, location and type of control lines, ignition locations and methodology, and crew assignment locations will be developed for each burn.

HOLDING PLAN

Each holding crew will be assigned to a particular control line. Two (or more depending of crew number and burn conditions) will be assigned to each control line. The water tanker/truck operator will stay with the downwind holding crew and be available by radio as needed.

CONTINGENCIES

In the event of an escape, confinement, contain and control suppression will be handled by direct attack by the tractor operator. During any escape event all ignition will be stopped. If needed, fences will be cut to facilitate fire suppression activities. If direct attack is unsuccessful, indirect measures will be used such as counter firing, connection of natural barriers by firebreak, and the emergency action plan will be implemented.

COMMUNICATIONS

All radio communications will be hierarchical order from crew to crew boss to burn boss (and vice versa). First and or last names will be used for identification.

MOP-UP

Post burn, all active fire and smolders within 20 feet of the control lines and all snags 1.5 times their height from the control lines will be extinguished. The unit will be checked the following morning.

Prescribed Fire Checklist

Predicted weather	_____
Burn Authorization and number	_____
Burn plan field copy	_____
Hand tools	_____
Fuel with spout	_____
Drip torches	_____
Ignition source	_____
Water and food	_____
Personnel protection equipment	
Nomex suit	_____
Gloves	_____
Goggles	_____
Helmet	_____
Shelter	_____
Weather kit	_____
Camera	_____

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Prescribed Burning Plan

GENERAL SITE INFORMATION

Landowner No./Site	Silver River Conservation Area, Marion County	Authorization No.	
Fire Management Unit	3 (see FMP Appendix B)	Acres in FMU	32.91 acres
Compartments to Burn		Acres to Burn	Approximately 27.49 acres

County: Marion

Section	Township	Range

SITE DESCRIPTION AND PERTINENT BURN INFORMATION

Previous Burn Dates	No recent burn
Season to Burn	Winter burn(s) to reduced fuel loads followed by growing season burns.
Natural Communities	Sandhill (27.49 acres) and Upland Mixed Forest (UMF, 5.42 acres) that will likely be difficult to burn.
Overstory Fuel Description	Pine dominant with Turkey Oak in sandhill and oak dominant UMF
Shrub Midstory Fuel Description	Shrub midstory low in the sandhill and UMF
Herbaceous Fuel Description	Pine/oak duff in UMF and pine needle duff and wiregrass in the Sandhill
Topography	Very flat 5% slopes and several small sinkholes
Burn Objectives	Ecological restoration/fuel reduction
Intensity	Light to moderate
Desired Flame Length	Up to ten feet in oak infested areas
Rate of Spread: Heading Fire	As determined by site field conditions
Rate of Spread: Backing Fire	As determined by site field conditions
Burn Technique	Backing fire followed by strip head fires (depending on wind direction and speed). To be determined later.

MEASURABLE PRESCRIBED FIRE OBJECTIVES

1	Restore, enhance and maintain fire based communities
2	Topkill at least 75% of the oaks
3	Consume 75% of the groundcover and understory vegetation leaving a mosaic of burned/unburned areas
4	Limit mortality of mature pine to < 10%
5	Reduce fuels so a growing season burn can be conducted safely

SITE PREPARATION

1	Notify surrounding homeowners/SSCA trailhead visitors via posted flyers of intended prescribed burn date
2	Disc, mow, rake, or leaf blow all firebreaks/firelines where needed
3	Unlock and open all pertinent access gates
4	Place prescribed burning signs along SR 35 (Baseline Road), and other roads adjacent to SSCA

HAZARDS INSIDE AND OUTSIDE UNIT

1	Automobile traffic on SR 35
2	Neighborhoods south and west of SSCA, Silver River State Park

Water & Air Research, Inc.

3	Working with a crew that is unfamiliar with the area
4	
5	

SMOKE MANAGEMENT**Comments**

Figure 3 (attachment) in the SSCA FMP outlines smoke sensitive areas

SMOKE SENSITIVE AREAS

1	Ocala to the west
2	
3	
4	
5	

SMOKE MANAGEMENT OBJECTIVES

1	Work to avoid hazardous smoke conditions on SR 35
2	Try to avoid smoke in Ocala and surrounding communities
3	Burn under weather conditions that blow smoke towards the Silver River State Park
4	Ensure adequate mop-up to prevent overnight smoke
5	

WEATHER AND FUEL PARAMETERS

Parameter	Maximum	Minimum	Preferred	Units/Comments
Temperature	95	55	75	Degrees
Relative Humidity	65	35	45	
Mid-Flame Wind Speed	8	4	6	Miles Per Hour (MPH)
20' Wind Speed	15	5	10	MPH
20" Wind Direction	W, NW	W	NW	Compass Bearing
Transport Wind Speed	20	7	10	MPH
Transport Wind Direction	W, NW	W	NW	Compass Bearing
Mixing Height		1,700		Feet
Dispersion Index – Day	75	40	50	
Dispersion Index – Night		6		
KBDI	400	100	250	
Days Since Rain				Days
1 Hr. Fuel Moisture				
10 Hr. Fuel Moisture				
100 Hr. Fuel Moisture				
Soil Moisture				

PERSONNEL

Prescription Written By	Peter W. NeSmith
Title	Scientist/Botanist
Prescribed Burning Certificate Number	
Date	
Ignition Time	
Release Time	

Certified Burn Manager/ Prescribed Burner Signature		
PERSONNEL		
Burn Boss		
Weather Monitor	Smoke Monitor	
Crew #1 Crew Boss	Crew #2 Crew Boss	Crew #3 Crew Boss
Ignition Crew		
Holding Crew		

IGNITION PLAN

Based on wind direction (from the W or NW) all downwind control lines will be secured by using blacklines/backfiring techniques. Unit firebreaks will be disced, mowed, racked or blown prior to ignition of blacklines. When downwind lines are secure, short flanking fire will be pulled into the wind along the appropriate control lines. After all downwind lines (including downwind lateral lines) are secure small strip head fires may be utilized. Ignition crew #1 will accomplish ignition. Note: a unit/compartments map detailing the area to be burned, pertinent land marks, environmentally sensitive areas, holding areas, location and type of control lines, ignition locations and methodology, and crew assignment locations will be developed for each burn.

HOLDING PLAN

Each holding crew will be assigned to a particular control line. Two (or more depending of crew number and burn conditions) will be assigned to each control line. The water tanker/truck operator will stay with the downwind holding crew and be available by radio as needed.

CONTINGENCIES

In the event of an escape, confinement, contain and control suppression will be handled by direct attack by the tractor operator. During any escape event all ignition will be stopped. If needed, fences will be cut to facilitate fire suppression activities. If direct attack is unsuccessful, indirect measures will be used such as counter firing, connection of natural barriers by firebreak, and the emergency action plan will be implemented.

COMMUNICATIONS

All radio communications will be hierarchical order from crew to crew boss to burn boss (and vice versa). First and or last names will be used for identification.

MOP-UP

Post burn, all active fire and smolders within 20 feet of the control lines and all snags 1.5 times their height from the control lines will be extinguished. The unit will be checked the following morning.

Prescribed Fire Checklist

Predicted weather	_____
Burn Authorization and number	_____
Burn plan field copy	_____
Hand tools	_____
Fuel with spout	_____
Drip torches	_____
Ignition source	_____
Water and food	_____
Personnel protection equipment	
Nomex suit	_____
Gloves	_____
Goggles	_____
Helmet	_____
Shelter	_____
Weather kit	_____
Camera	_____

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Prescribed Burning Plan

GENERAL SITE INFORMATION

Landowner No./Site	Silver River Conservation Area, Marion County	Authorization No.	
Fire Management Unit	4 (see FMP Appendix B)	Acres in FMU	31.23 acres
Compartments to Burn		Acres to Burn	Approximately 25.95 acres

County: Marion

Section	Township	Range

SITE DESCRIPTION AND PERTINENT BURN INFORMATION

Previous Burn Dates	No recent burn
Season to Burn	Winter burn(s) to reduced fuel loads followed by growing season burns.
Natural Communities	Sandhill (25.95 acres) and Upland Mixed Forest (UMF, 5.28 acres) that may be difficult to burn.
Overstory Fuel Description	Pine dominant with Turkey Oak in sandhill and oak dominant UMF
Shrub Midstory Fuel Description	Shrub midstory low in the UMF and the sandhill
Herbaceous Fuel Description	Pine/oak duff in UMF and pine needle duff and wiregrass in the Sandhill
Topography	Very flat 5% slopes and several small sinkholes
Burn Objectives	Ecological restoration/fuel reduction
Intensity	Light to moderate
Desired Flame Length	Up to ten feet in oak infested areas
Rate of Spread: Heading Fire	As determined by site field conditions
Rate of Spread: Backing Fire	As determined by site field conditions
Burn Technique	Backing fire followed by strip head fires (depending on wind direction and speed). To be determined later.

MEASURABLE PRESCRIBED FIRE OBJECTIVES

1	Restore, enhance and maintain fire based communities
2	Topkill at least 75% of the oaks
3	Consume 75% of the groundcover and understory vegetation leaving a mosaic of burned/unburned areas
4	Limit mortality of mature pine to < 10%
5	Reduce fuels so a growing season burn can be conducted safely

SITE PREPARATION

1	Notify surrounding homeowners/SSCA trailhead visitors via posted flyers of intended prescribed burn date
2	Disc, mow, rake, or leaf blow all firebreaks/firelines where needed
3	Unlock and open all pertinent access gates
4	Place prescribed burning signs along SR 35 (Baseline Road), and other roads adjacent to SSCA

HAZARDS INSIDE AND OUTSIDE UNIT

1	Automobile traffic on SR 35
2	Neighborhoods south and west of SSCA, Silver River State Park

Water & Air Research, Inc.

3	Working with a crew that is unfamiliar with the area
4	
5	

SMOKE MANAGEMENT**Comments**

Figure 3 (attachment) in the SSCA FMP outlines smoke sensitive areas

SMOKE SENSITIVE AREAS

1	Ocala to the west
2	
3	
4	
5	

SMOKE MANAGEMENT OBJECTIVES

1	Work to avoid hazardous smoke conditions on SR 35
2	Try to avoid smoke in Ocala and surrounding communities
3	Burn under weather conditions that blow smoke towards the Silver River State Park
4	Ensure adequate mop-up to prevent overnight smoke
5	

WEATHER AND FUEL PARAMETERS

Parameter	Maximum	Minimum	Preferred	Units/Comments
Temperature	95	55	75	Degrees
Relative Humidity	65	35	45	
Mid-Flame Wind Speed	8	4	6	Miles Per Hour (MPH)
20' Wind Speed	15	5	10	MPH
20" Wind Direction	W, NW	W	NW	Compass Bearing
Transport Wind Speed	20	7	10	MPH
Transport Wind Direction	W, NW	W	NW	Compass Bearing
Mixing Height		1,700		Feet
Dispersion Index – Day	75	40	50	
Dispersion Index – Night		6		
KBDI	400	100	250	
Days Since Rain				Days
1 Hr. Fuel Moisture				
10 Hr. Fuel Moisture				
100 Hr. Fuel Moisture				
Soil Moisture				

PERSONNEL

Prescription Written By	Peter W. NeSmith
Title	Scientist/Botanist
Prescribed Burning Certificate Number	
Date	
Ignition Time	
Release Time	

Certified Burn Manager/ Prescribed Burner Signature		
PERSONNEL		
Burn Boss		
Weather Monitor	Smoke Monitor	
Crew #1 Crew Boss	Crew #2 Crew Boss	Crew #3 Crew Boss
Ignition Crew		
Holding Crew		

IGNITION PLAN

Based on wind direction (from the W or NW) all downwind control lines will be secured by using blacklines/backfiring techniques. Unit firebreaks will be disced, mowed, racked or blown prior to ignition of blacklines. When downwind lines are secure, short flanking fire will be pulled into the wind along the appropriate control lines. After all downwind lines (including downwind lateral lines) are secure small strip head fires may be utilized. Ignition crew #1 will accomplish ignition. Note: a unit/compartments map detailing the area to be burned, pertinent land marks, environmentally sensitive areas, holding areas, location and type of control lines, ignition locations and methodology, and crew assignment locations will be developed for each burn.

HOLDING PLAN

Each holding crew will be assigned to a particular control line. Two (or more depending of crew number and burn conditions) will be assigned to each control line. The water tanker/truck operator will stay with the downwind holding crew and be available by radio as needed.

CONTINGENCIES

In the event of an escape, confinement, contain and control suppression will be handled by direct attack by the tractor operator. During any escape event all ignition will be stopped. If needed, fences will be cut to facilitate fire suppression activities. If direct attack is unsuccessful, indirect measures will be used such as counter firing, connection of natural barriers by firebreak, and the emergency action plan will be implemented.

COMMUNICATIONS

All radio communications will be hierarchical order from crew to crew boss to burn boss (and vice versa). First and or last names will be used for identification.

MOP-UP

Post burn, all active fire and smolders within 20 feet of the control lines and all snags 1.5 times their height from the control lines will be extinguished. The unit will be checked the following morning.

Prescribed Fire Checklist

Predicted weather	_____
Burn Authorization and number	_____
Burn plan field copy	_____
Hand tools	_____
Fuel with spout	_____
Drip torches	_____
Ignition source	_____
Water and food	_____
Personnel protection equipment	
Nomex suit	_____
Gloves	_____
Goggles	_____
Helmet	_____
Shelter	_____
Weather kit	_____
Camera	_____

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 6821 S.W. Archer Rd.
 Gainesville, FL 32608
 Tel. 352-372-1500 or 800-242-4927
 Fax. 352-378-1500
www.waterandair.com

Prescribed Burning Plan

GENERAL SITE INFORMATION

Landowner No./Site	Silver River Conservation Area, Marion County	Authorization No.	
Fire Management Unit	5 (see FMP Appendix B)	Acres in FMU	84.00 acres
Compartments to Burn		Acres to Burn	Approximately 84.00 acres

County: Marion

Section	Township	Range

SITE DESCRIPTION AND PERTINENT BURN INFORMATION

Previous Burn Dates	No recent burn
Season to Burn	Winter burn(s) to reduced fuel loads followed by growing season burns.
Natural Communities	Sandhill (79.74 acres) and Upland Mixed Forest (UMF, 4.26 acres) that may be burnable.
Overstory Fuel Description	Pine dominant with Turkey Oak in sandhill and oak dominant UMF
Shrub Midstory Fuel Description	Shrub midstory low in the UMF and sandhill
Herbaceous Fuel Description	Pine/oak duff in UMF and pine needle duff and wiregrass in the Sandhill
Topography	Very flat 5% slopes and several small sinkholes
Burn Objectives	Ecological restoration/fuel reduction
Intensity	Light to moderate
Desired Flame Length	Up to ten feet in oak infested areas
Rate of Spread: Heading Fire	As determined by site field conditions
Rate of Spread: Backing Fire	As determined by site field conditions
Burn Technique	Backing fire followed by strip head fires (depending on wind direction and speed). To be determined later.

MEASURABLE PRESCRIBED FIRE OBJECTIVES

1	Restore, enhance and maintain fire based communities
2	Topkill at least 75% of the oaks
3	Consume 75% of the groundcover and understory vegetation leaving a mosaic of burned/unburned areas
4	Limit mortality of mature pine to < 10%
5	Reduce fuels so a growing season burn can be conducted safely

SITE PREPARATION

1	Notify surrounding homeowners/SSCA trailhead visitors via posted flyers of intended prescribed burn date
2	Disc, mow, rake, or leaf blow all firebreaks/firelines where needed
3	Unlock and open all pertinent access gates
4	Place prescribed burning signs along SR 35 (Baseline Road), and other roads adjacent to SSCA

HAZARDS INSIDE AND OUTSIDE UNIT

1	Automobile traffic on SR 35
2	Neighborhoods south and west of SSCA, Silver River State Park

3	Working with a crew that is unfamiliar with the area
4	
5	

SMOKE MANAGEMENT**Comments**

Figure 3 (attachment) in the SSCA FMP outlines smoke sensitive areas

SMOKE SENSITIVE AREAS

1	Ocala to the west
2	
3	
4	
5	

SMOKE MANAGEMENT OBJECTIVES

1	Work to avoid hazardous smoke conditions on SR 35
2	Try to avoid smoke in Ocala and surrounding communities
3	Burn under weather conditions that blow smoke towards the Silver River State Park
4	Ensure adequate mop-up to prevent overnight smoke
5	

WEATHER AND FUEL PARAMETERS

Parameter	Maximum	Minimum	Preferred	Units/Comments
Temperature	95	55	75	Degrees
Relative Humidity	65	35	45	
Mid-Flame Wind Speed	8	4	6	Miles Per Hour (MPH)
20' Wind Speed	15	5	10	MPH
20" Wind Direction	W, NW	W	NW	Compass Bearing
Transport Wind Speed	20	7	10	MPH
Transport Wind Direction	W, NW	W	NW	Compass Bearing
Mixing Height		1,700		Feet
Dispersion Index – Day	75	40	50	
Dispersion Index – Night		6		
KBDI	400	100	250	
Days Since Rain				Days
1 Hr. Fuel Moisture				
10 Hr. Fuel Moisture				
100 Hr. Fuel Moisture				
Soil Moisture				

PERSONNEL

Prescription Written By	Peter W. NeSmith
Title	Scientist/Botanist
Prescribed Burning Certificate Number	
Date	
Ignition Time	
Release Time	

Certified Burn Manager/ Prescribed Burner Signature		
PERSONNEL		
Burn Boss		
Weather Monitor	Smoke Monitor	
Crew #1 Crew Boss	Crew #2 Crew Boss	Crew #3 Crew Boss
Ignition Crew		
Holding Crew		

IGNITION PLAN

Based on wind direction (from the W or NW) all downwind control lines will be secured by using blacklines/backfiring techniques. Unit firebreaks will be disced, mowed, racked or blown prior to ignition of blacklines. When downwind lines are secure, short flanking fire will be pulled into the wind along the appropriate control lines. After all downwind lines (including downwind lateral lines) are secure small strip head fires may be utilized. Ignition crew #1 will accomplish ignition. Note: a unit/compartments map detailing the area to be burned, pertinent land marks, environmentally sensitive areas, holding areas, location and type of control lines, ignition locations and methodology, and crew assignment locations will be developed for each burn.

HOLDING PLAN

Each holding crew will be assigned to a particular control line. Two (or more depending of crew number and burn conditions) will be assigned to each control line. The water tanker/truck operator will stay with the downwind holding crew and be available by radio as needed.

CONTINGENCIES

In the event of an escape, confinement, contain and control suppression will be handled by direct attack by the tractor operator. During any escape event all ignition will be stopped. If needed, fences will be cut to facilitate fire suppression activities. If direct attack is unsuccessful, indirect measures will be used such as counter firing, connection of natural barriers by firebreak, and the emergency action plan will be implemented.

COMMUNICATIONS

All radio communications will be hierarchical order from crew to crew boss to burn boss (and vice versa). First and or last names will be used for identification.

MOP-UP

Post burn, all active fire and smolders within 20 feet of the control lines and all snags 1.5 times their height from the control lines will be extinguished. The unit will be checked the following morning.

Prescribed Fire Checklist

Predicted weather	_____
Burn Authorization and number	_____
Burn plan field copy	_____
Hand tools	_____
Fuel with spout	_____
Drip torches	_____
Ignition source	_____
Water and food	_____
Personnel protection equipment	
Nomex suit	_____
Gloves	_____
Goggles	_____
Helmet	_____
Shelter	_____
Weather kit	_____
Camera	_____

Water & Air Research
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Prescribed Burning Plan

GENERAL SITE INFORMATION

Landowner No./Site	Silver River Conservation Area, Marion County	Authorization No.	
Fire Management Unit	6 (see FMP Appendix B)	Acres in FMU	55.02 acres
Compartments to Burn		Acres to Burn	Approximately 20 acres

County: Marion

Section	Township	Range

SITE DESCRIPTION AND PERTINENT BURN INFORMATION

Previous Burn Dates	No recent burn
Season to Burn	Winter burn(s) to reduced fuel loads followed by growing season burns.
Natural Communities	Sandhill (6.93 acres), Upland Mixed Forest (UMF, 44.15 acres), and Wet Prairie (3.94 acres). The Sandhill, Wet Prairies and 10 acres of the UMF are included in the burnable acreage. Most of the UMF will be difficult to burn.
Overstory Fuel Description	Pine dominant with Turkey Oak in sandhill and oak dominant UMF
Shrub Midstory Fuel Description	Shrub midstory fuel low in the UMF and sandhill
Herbaceous Fuel Description	Pine/oak duff in UMF and pine needle duff and wiregrass in the Sandhill
Topography	Very flat 5% slopes and several small sinkholes
Burn Objectives	Ecological restoration/fuel reduction
Intensity	Light to moderate
Desired Flame Length	Up to ten feet in oak infested areas
Rate of Spread: Heading Fire	As determined by site field conditions
Rate of Spread: Backing Fire	As determined by site field conditions
Burn Technique	Backing fire followed by strip head fires (depending on wind direction and speed). To be determined later.

MEASURABLE PRESCRIBED FIRE OBJECTIVES

1	Restore, enhance and maintain fire based communities
2	Topkill at least 75% of the oaks
3	Consume 75% of the groundcover and understory vegetation leaving a mosaic of burned/unburned areas
4	Limit mortality of mature pine to < 10%
5	Reduce fuels so a growing season burn can be conducted safely

SITE PREPARATION

1	Notify surrounding homeowners/SSCA trailhead visitors via posted flyers of intended prescribed burn date
2	Disc, mow, rake, or leaf blow all firebreaks/firelines where needed
3	Unlock and open all pertinent access gates
4	Place prescribed burning signs along SR 35 (Baseline Road), and other roads adjacent to SSCA

HAZARDS INSIDE AND OUTSIDE UNIT

1	Automobile traffic on SR 35
2	Neighborhoods south and west of SSCA, Silver River State Park

Water & Air Research, Inc.

3	Working with a crew that is unfamiliar with the area
4	
5	

SMOKE MANAGEMENT**Comments**

Figure 3 (attachment) in the SSCA FMP outlines smoke sensitive areas

SMOKE SENSITIVE AREAS

1	Ocala to the west
2	
3	
4	
5	

SMOKE MANAGEMENT OBJECTIVES

1	Work to avoid hazardous smoke conditions on SR 35
2	Try to avoid smoke in Ocala and surrounding communities
3	Burn under weather conditions that blow smoke towards the Silver River State Park
4	Ensure adequate mop-up to prevent overnight smoke
5	

WEATHER AND FUEL PARAMETERS

Parameter	Maximum	Minimum	Preferred	Units/Comments
Temperature	95	55	75	Degrees
Relative Humidity	65	35	45	
Mid-Flame Wind Speed	8	4	6	Miles Per Hour (MPH)
20' Wind Speed	15	5	10	MPH
20" Wind Direction	W, NW	W	NW	Compass Bearing
Transport Wind Speed	20	7	10	MPH
Transport Wind Direction	W, NW	W	NW	Compass Bearing
Mixing Height		1,700		Feet
Dispersion Index – Day	75	40	50	
Dispersion Index – Night		6		
KBDI	400	100	250	
Days Since Rain				Days
1 Hr. Fuel Moisture				
10 Hr. Fuel Moisture				
100 Hr. Fuel Moisture				
Soil Moisture				

PERSONNEL

Prescription Written By	Peter W. NeSmith
Title	Scientist/Botanist
Prescribed Burning Certificate Number	
Date	
Ignition Time	
Release Time	

Certified Burn Manager/ Prescribed Burner Signature		
PERSONNEL		
Burn Boss		
Weather Monitor	Smoke Monitor	
Crew #1 Crew Boss	Crew #2 Crew Boss	Crew #3 Crew Boss
Ignition Crew		
Holding Crew		

IGNITION PLAN

Based on wind direction (from the W or NW) all downwind control lines will be secured by using blacklines/backfiring techniques. Unit firebreaks will be disced, mowed, raked or blown prior to ignition of blacklines. When downwind lines are secure, short flanking fire will be pulled into the wind along the appropriate control lines. After all downwind lines (including downwind lateral lines) are secure small strip head fires may be utilized. Ignition crew #1 will accomplish ignition. Note: a unit/compartments map detailing the area to be burned, pertinent land marks, environmentally sensitive areas, holding areas, location and type of control lines, ignition locations and methodology, and crew assignment locations will be developed for each burn.

HOLDING PLAN

Each holding crew will be assigned to a particular control line. Two (or more depending of crew number and burn conditions) will be assigned to each control line. The water tanker/truck operator will stay with the downwind holding crew and be available by radio as needed.

CONTINGENCIES

In the event of an escape, confinement, contain and control suppression will be handled by direct attack by the tractor operator. During any escape event all ignition will be stopped. If needed, fences will be cut to facilitate fire suppression activities. If direct attack is unsuccessful, indirect measures will be used such as counter firing, connection of natural barriers by firebreak, and the emergency action plan will be implemented.

COMMUNICATIONS

All radio communications will be hierarchical order from crew to crew boss to burn boss (and vice versa). First and or last names will be used for identification.

MOP-UP

Post burn, all active fire and smolders within 20 feet of the control lines and all snags 1.5 times their height from the control lines will be extinguished. The unit will be checked the following morning.

Prescribed Fire Checklist

Predicted weather	_____
Burn Authorization and number	_____
Burn plan field copy	_____
Hand tools	_____
Fuel with spout	_____
Drip torches	_____
Ignition source	_____
Water and food	_____
Personnel protection equipment	
Nomex suit	_____
Gloves	_____
Goggles	_____
Helmet	_____
Shelter	_____
Weather kit	_____
Camera	_____

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Prescribed Burning Plan

GENERAL SITE INFORMATION

Landowner No./Site	Silver River Conservation Area, Marion County	Authorization No.	
Fire Management Unit	7 (see FMP Appendix B)	Acres in FMU	38.18 acres
Compartments to Burn		Acres to Burn	Approximately 33.65 acres

County: Marion

Section	Township	Range

SITE DESCRIPTION AND PERTINENT BURN INFORMATION

Previous Burn Dates	No recent burn
Season to Burn	Winter burn(s) to reduced fuel loads followed by growing season burns.
Natural Communities	Sandhill (23.65 acres) and Upland Mixed Forest (UMF, 14.53 acres). About 10 acres of the UMF are included in the burnable area.
Overstory Fuel Description	Pine dominant with Turkey Oak in sandhill and oak dominant UMF
Shrub Midstory Fuel Description	Shrub midstory fuel varies from relatively dense in some areas of the UMF to relatively in the sandhill
Herbaceous Fuel Description	Pine/oak duff in UMF and pine needle duff and wiregrass in the Sandhill
Topography	Very flat 5% slopes and several small sinkholes
Burn Objectives	Ecological restoration/fuel reduction
Intensity	Light to moderate
Desired Flame Length	Up to ten feet in oak infested areas
Rate of Spread: Heading Fire	As determined by site field conditions
Rate of Spread: Backing Fire	As determined by site field conditions
Burn Technique	Backing fire followed by strip head fires (depending on wind direction and speed). To be determined later.

MEASURABLE PRESCRIBED FIRE OBJECTIVES

1	Restore, enhance and maintain fire based communities
2	Topkill at least 75% of the oaks
3	Consume 75% of the groundcover and understory vegetation leaving a mosaic of burned/unburned areas
4	Limit mortality of mature pine to < 10%
5	Reduce fuels so a growing season burn can be conducted safely

SITE PREPARATION

1	Notify surrounding homeowners/SSCA trailhead visitors via posted flyers of intended prescribed burn date
2	Disc, mow, rake, or leaf blow all firebreaks/firelines where needed
3	Unlock and open all pertinent access gates
4	Place prescribed burning signs along SR 35 (Baseline Road), and other roads adjacent to SSCA

HAZARDS INSIDE AND OUTSIDE UNIT

1	Automobile traffic on SR 35
----------	-----------------------------

2	Neighborhoods south and west of SSCA, Silver River State Park
3	Working with a crew that is unfamiliar with the area
4	
5	

SMOKE MANAGEMENT

Comments

Figure 3 (attachment) in the SSCA FMP outlines smoke sensitive areas

SMOKE SENSITIVE AREAS

1	Ocala to the west
2	
3	
4	
5	

SMOKE MANAGEMENT OBJECTIVES

1	Work to avoid hazardous smoke conditions on SR 35
2	Try to avoid smoke in Ocala and surrounding communities
3	Burn under weather conditions that blow smoke towards the Silver River State Park
4	Ensure adequate mop-up to prevent overnight smoke
5	

WEATHER AND FUEL PARAMETERS

Parameter	Maximum	Minimum	Preferred	Units/Comments
Temperature	95	55	75	Degrees
Relative Humidity	65	35	45	
Mid-Flame Wind Speed	8	4	6	Miles Per Hour (MPH)
20' Wind Speed	15	5	10	MPH
20" Wind Direction	W, NW	W	NW	Compass Bearing
Transport Wind Speed	20	7	10	MPH
Transport Wind Direction	W, NW	W	NW	Compass Bearing
Mixing Height		1,700		Feet
Dispersion Index – Day	75	40	50	
Dispersion Index – Night		6		
KBDI	400	100	250	
Days Since Rain				Days
1 Hr. Fuel Moisture				
10 Hr. Fuel Moisture				
100 Hr. Fuel Moisture				
Soil Moisture				

PERSONNEL

Prescription Written By	Peter W. NeSmith
Title	Scientist/Botanist
Prescribed Burning Certificate Number	
Date	
Ignition Time	
Release Time	

Certified Burn Manager/ Prescribed Burner Signature		
PERSONNEL		
Burn Boss		
Weather Monitor	Smoke Monitor	
Crew #1 Crew Boss	Crew #2 Crew Boss	Crew #3 Crew Boss
Ignition Crew		
Holding Crew		

IGNITION PLAN

Based on wind direction (from the W or NW) all downwind control lines will be secured by using blacklines/backfiring techniques. Unit firebreaks will be disced, mowed, racked or blown prior to ignition of blacklines. When downwind lines are secure, short flanking fire will be pulled into the wind along the appropriate control lines. After all downwind lines (including downwind lateral lines) are secure small strip head fires may be utilized. Ignition crew #1 will accomplish ignition. Note: a unit/compartments map detailing the area to be burned, pertinent land marks, environmentally sensitive areas, holding areas, location and type of control lines, ignition locations and methodology, and crew assignment locations will be developed for each burn.

HOLDING PLAN

Each holding crew will be assigned to a particular control line. Two (or more depending of crew number and burn conditions) will be assigned to each control line. The water tanker/truck operator will stay with the downwind holding crew and be available by radio as needed.

CONTINGENCIES

In the event of an escape, confinement, contain and control suppression will be handled by direct attack by the tractor operator. During any escape event all ignition will be stopped. If needed, fences will be cut to facilitate fire suppression activities. If direct attack is unsuccessful, indirect measures will be used such as counter firing, connection of natural barriers by firebreak, and the emergency action plan will be implemented.

COMMUNICATIONS

All radio communications will be hierarchical order from crew to crew boss to burn boss (and vice versa). First and or last names will be used for identification.

MOP-UP

Post burn, all active fire and smolders within 20 feet of the control lines and all snags 1.5 times their height from the control lines will be extinguished. The unit will be checked the following morning.

Prescribed Fire Checklist

Predicted weather	_____
Burn Authorization and number	_____
Burn plan field copy	_____
Hand tools	_____
Fuel with spout	_____
Drip torches	_____
Ignition source	_____
Water and food	_____
Personnel protection equipment	
Nomex suit	_____
Gloves	_____
Goggles	_____
Helmet	_____
Shelter	_____
Weather kit	_____
Camera	_____

**Appendix B –
Prescribed Fire Goals and Burn Sequences**

Silver Springs Conservation Area Annual Prescribed Fire Goals and Burn Sequences

I. Fire Management Unit (FMU) Burn Sequence – Silver Springs Conservation Area

Outlined below is the suggested burn sequence. Due to the variability in burn weather, and prevalent dry conditions the burn sequence does not give actual years to burn but order of the burn regime. For example the first burn and second burn FMUs may be burned within the same year if weather and fuel conditions allow it.

If weather conditions are excellent for prescribed fire, the burn schedule and sequences can be deviated from if the adjustments are determined to be in the best interest of site restoration. For example, if extreme wildfire conditions are interrupted by a brief period of very good weather (for prescribed fire) it may be determined that the areas in need of a fuel reduction burn should be burned immediately (in case extreme wildfire conditions return). This may be a prudent way to decrease heavy fuel loads in areas that are susceptible to wildfire.

I.A. First Burn

FMU 3 Discussion

FMU 3 will be burned first, as prevailing wind conditions (for smoke management safety) will be primarily from the west or northwest, FMU 3 once burned, will provide a large low fuel buffer for FMUs 2 and 5. FMU 3 consists primarily of low to moderate fuel sandhill with pine needle duff and wiregrass (*Aristida beyrichiana*).

I.B. Second Burn

FMU 4 Discussion

FMU 4 will be burned second. Again, prevailing wind conditions (for smoke management safety) will be primarily from the west or northwest and FMU 4 once burned, will provide a large low fuel buffer for FMUs 5 and portions of 6. FMU 4 consists primarily of moderate to low fuel sandhill with pine needle duff and wiregrass (northern portion) and a mix of the same with more turkey oak (*Quercus laevis*).

I.C. Third Burn

FMU 6 Discussion

FMU 6 will be burned third. This FMU will be relatively easy to burn and will provide a buffer from subsequent burns between the houses that are adjacent to SSCA to the south. East of FMU 6 is UMF that will be difficult to burn under prescribed fire conditions. FMU 6 for the most part contains sparse fuels and bare ground/mineral soils to the north and the entire southern portion is oak dominated sandhill with poor fuels.

I.D. Fourth Burn

FMU 1 Discussion

FMU 1 will be burned fourth. This small FMU contains sandhill with pine needle duff and wiregrass. This unit, once burned will provide a buffer between the non-burned FMUs and the offsite burnable sandhill community to the west. Much of the northern portion of this FMU contains many oaks; however, there are areas with abundant saw palmetto (*Serenoa repens*) that will influence fire behavior due to the dense abundant fuel.

I.E. Fifth Burn

FMU 2 Discussion

FMU 2 will be burned fifth. This is a relatively large unit with predominantly sandhill fuels such as pine needle duff and wiregrass. This unit, once burned, will provide extra safety in the form of burned fuels for the last and largest burn in FMU 5. Most of this unit appears to contain burnable fuels.

I.F. Sixth Burn

FMU 7 Discussion

FMU 7 will be burned sixth. This FMU once burned, will nearly isolate the large unburned FMU 5 from the houses to the west. FMU 7 is sandhill to the east and overgrown oak dominant (low fuels) on the western edge.

I.G. Seventh Burn

FMU 5 Discussion

FMU 5 will be burned last. This unit contains modest fuels and likely the heaviest fuels of all units and presents the greatest potential for wildfire. The surrounding units will be burned first so as to create large burned out low fuel areas for safety reasons. Again, prevailing wind conditions (for smoke management safety) will be primarily from the west or northwest and all of the previously burned units to the east and south will provide added safety.

Appendix C – Post Burn Evaluation Form

POST BURN EVALUATION

SITE DESCRIPTION AND PURPOSE OF BURN

SITE: _____

ACRES: _____

UNITS: _____

DATE BURNED: _____

% BURNED: _____

DATE EVALUATED: _____

(CIRCLE)

RURAL OR URBAN

PREPARED BY: _____

PURPOSE OF BURN (circle all that apply):

ECOLOGICAL MANAGEMENT FUEL REDUCTION TRAINING RESEARCH OTHER_____

Attach a map of burn. On this map draw a line depicting where the fire stopped. Label areas burned and unburned.

WEATHER AND FUEL CONDITIONS ON DAY OF BURN

TEMPERATURE: LOW _____ HIGH _____ DAYS SINCE RAIN: _____

RELATIVE HUMIDITY: LOW _____ HIGH _____ AMOUNT OF LAST RAIN: _____

ONE-HOUR FUEL MOISTURE: _____
(CALCULATED) LOW _____ HIGH _____ K-B DROUGHT INDEX: _____

TEN-HOUR FUEL MOISTURE: _____ PROPERTY WHERE K-B
(CALCULATED) LOW HIGH INDEX WAS COLLECTED: _____

FORECASTED DISPERSION: DAY _____ NIGHT _____

WIND SPEED: LOW _____ HIGH _____

COMMENTS: _____

IMMEDIATE FIRE EFFECTS ON SPECIES OF CONCERN:

HIGHLIGHTS OF OPERATIONS

LIGHTING:	
HOLDING / SPOTTING:	
MOP-UP STANDARDS:	
SMOKE MANAGEMENT:	
PUBLIC RELATIONS:	

SUGGESTION FOR NEXT BURN:

IMMEDIATE POST BURN FIRE EFFECTS

COMMUNITY TYPE:

(CIRCLE ONE)

CONTINUITY: PATCHY CONTINUOUS _____

(CIRCLE ONE)

INTENSITY: HIGH MEDIUM LOW _____

% BURNED: _____

PINE SCORCH: LL/SL: _____ % SAND: _____

OAK SCORCH: _____

(CIRCLE ONE)

SMOLDERING: NONE ISOLATED EXTENSIVE _____

IMMEDIATE POST BURN FIRE EFFECTS

<i>COMMUNITY TYPE:</i>	
(CIRCLE ONE)	
CONTINUITY:	PATCHY CONTINUOUS
(CIRCLE ONE)	
INTENSITY:	HIGH MEDIUM LOW
% BURNED:	%
PINE SCORCH:	LL/SL: % SAND: %
OAK SCORCH:	%
(CIRCLE ONE)	
SMOLDERING:	NONE ISOLATED EXTENSIVE

POST BURN EVALUATION KEY

SITE DESCRIPTION AND PURPOSE OF BURN

<i>SITE:</i>	The name of the property.	<i>ACRES:</i>	Total area burned
<i>UNITS:</i>	Management areas burned	<i>DATE BURNED:</i>	(dd/mm/yy)
<i>% BURNED:</i>	Estimated percent of total burn area that fire carried across.	<i>DATE EVALUATED:</i>	(dd/mm/yy)
<i>RURAL:</i>	Burn occurred within one mile of <5000 people	<i>PREPARED BY:</i>	Full name
<i>URBAN:</i>	Burn occurred within one mile of >5000 people		

PURPOSE OF BU. Purpose of burn should be taken from the burn unit plan.

Attach a map of burn. On this map draw a line depicting where fire stopped. Label areas burned and unburned.

WEATHER AND FUEL CONDITIONS ON DAY OF BURN

TEMPERATURE: Information collected during burn, on site

RELATIVE HUMIDITY: Information collected during burn, on site

ONE-HOUR FUEL MOISTURE: Information collected during burn, on site, from calculations

TEN-HOUR FUEL MOISTURE: Information collected during burn, on site, from calculations

FORECASTED DISPERSION: From an agency (ex. DOF) forecast

WIND SPEED: Information collected during burn, on site

DAYS SINCE RAIN: Number of days since last rain, collected on site

AMOUNT OF LAST RAIN: Record in inches the amount of rain that was collected on site last time it rained

K-B DROUGHT INDEX: Keech-Byrum Drought Index; collected at nearest property

PROPERTY WHERE K-B INDEX

WAS COLLECTED: Record name of property, where K-B drought index was collected

IMMEDIATE FIRE EFFECTS ON SPECIES OF CONCERN:

This section is for describing any special effects that the burn had on species we have identified as being especially rare. Examples: "The organic soil smoldered in the cutthroat seep." "Excellent midstory scorch should improve RCW habitat."

HIGHLIGHTS OF OPERATIONS

LIGHTING: Give a brief description of ignition techniques used and any additional information that might be insightful: "We had to reduce the width of our strip heads to 20' to keep intensity moderate under pines."

HOLDING / SPOTTING: Describe problems or factors that affected holding the fire inside the unit. Example: "Engine 2 got stuck en route to spot over." We experienced spotting in pine needles after 2 p.m."

MOP-UP STANDARDS: Describe level of effort actually performed to mop-up the burn. "We mopped up the line 100% along the highway, thirty feet in, but only hit snags on the north line."

SMOKE MANAGEMENT: Describe how smoke behaved, especially if it impacted roads and people. Example: "Smoke lifted well off highway, but looked hazy 1/2 mile downwind." Describe any actions taken to mitigate impacts. Example: "Sent lookout downwind, called DOT to place signs

PUBLIC RELATIONS: Describe actions to inform or educate the public of burn. Example: "Held public meeting two weeks prior." Describe interactions with the public during burn . Example: A concerned neighbor, Mr. Smith, showed up on a 4-wheeler."

SUGGESTION FOR NEXT BURN: Use this space to list anything you learned on this burn that will help make the next burn more successful. Example: "We had a very difficult time holding the north line where the palmettos were thick. " or "Be sure to check organic soils at point A."

IMMEDIATE POST BURN FIRE EFFECTS

COMMUNITY TYPE: The name of the natural community: sandhill, baygall etc.

CONTINUITY: This section describes whether the burn was a complete or a patchy burn in the above community.

CONTINUOUS- The fire burned across the entire area.

PATCHY- The fire created a mosaic of burned and unburned areas.

INTENSITY: This section describes in a very coarse way the heat and flame height that occurred in the above community.

HIGH- Flames overhead

MEDIUM- Flame knee to head high

LOW- Flames below knee level

PERCENT BURNED: Give a rough estimate of how much of the above community burned.

SMOLDERING: This section addresses any organic soil or duff that continues to combust and produce smoke after the burn is complete in the above community.

NONE- no smoldering evident

ISOLATED- small patches smoldering

EXTENSIVE- large areas smoldering

PINE SCORCH: This section describes the amount of needles damaged by heat causing them to turn brown. The percentage given should describe the average over the whole community of the percentage of scorch on each tree. So if you see that most trees have only a small amount of brown needles, you might estimate it to be 10% or 20%. If the entire stand is mostly scorched, your estimate would be 80%-90%.

LL / SL- (longleaf / slash pines) _____ %

SAND- (sand pine) _____ %

OAK SCORCH: This section describes the amount of leaves damaged by heat causing them to turn brown. The percentage given should describe the average over the whole community of the percentage of scorch on each tree. So if you see that most trees have only a small amount of scorch, you might estimate it to be 10% or 20%. If the entire stand is mostly scorched, your estimate would be 100%.



APPENDIX E

COMPREHENSIVE PLAN SECTION AND COMPLIANCE LETTER

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Policy 1.2.4: The PRMP shall include the following data:

- a. An inventory of parks and recreation and open space lands, facilities, and programs provided by the County, and those which are established, operated, and/or funded parks and recreation and open space lands, facilities, and programs, under interlocal or partnership agreements, including a summary of the status of the applicable agreements. The PRMP may also include similar information on non-County parks and recreation and open space lands, facilities, and programs for the purpose of assessing their availability and suitability to the citizens of the County and economic opportunities for recreation and eco-tourism related activities.
- b. Current needs for parks and recreation and open space sites, facilities, and programs based on estimated recreation demand, and an analysis of the availability, accessibility, and adequacy of existing parks and recreation and open space sites to the public;
- c. Projected future needs for parks and recreation and open space sites, facilities, and programs based on the established LOS and the projection of the necessary availability, accessibility, and adequacy of the need for those parks and recreation and open space sites, facilities, and programs;
- d. An annual capital improvement program and budget for five years of proposed acquisition and development shall be developed, including anticipated operations impacts from such improvements for the first year.

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

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

b. The MCPRD and PRAC shall identify potential sites within delineated recreation service areas in the county, including an initial ranking based on environmental characteristics, location within the service area, accessibility, and potential for meeting existing or future needs for the area. This inventory and ranking shall be maintained as the PRMP is updated. In addition, the MCPRD shall consider any identified Urban Growth Boundary (UGB), as noted in the FLUE, in the analysis for potential parks and recreation sites.

c. The County shall encourage and provide access to public water bodies (e.g., Navigable waterways, surface waters of the state, etc.) where feasible through land acquisition and development of fishing and boating facilities.

d. The County shall encourage and support increasing the number of greenways connecting to environmentally sensitive and locally important natural resources, which provide and promote recreational opportunities, alternative transportation modes and wildlife corridors.

Policy 1.2.6: When the PRMP identifies any LOS deficiencies, the PRMP shall identify how resolution of the deficiencies will be addressed and shall reflect any necessary funding needs appropriately in the PRMP capital improvements component.

Policy 1.2.7: Opportunities to partner with public and private agencies and entities to productively and economically operate and use County-owned and operated parks and recreation and open space sites and facilities shall be evaluated by the PRMP.

OBJECTIVE 1.3: The County will utilize existing funding sources and develop new funding sources to provide for parks and recreation and open space needs in a manner that seeks to comply with the Comprehensive Plan LOS standards and any administrative standard established by the PRMP (e.g., neighborhood, community, or regional parks, etc.).

Policy 1.3.1: The County shall annually review user and other appropriate fees to defray the operation and maintenance costs of parks and recreational programs.

Policy 1.3.2: The County may utilize the information and data generated from the PRMP, as amended, to identify deficiencies in parks and recreation facilities and correct such deficiencies using development exactions, on-site dedication, fee-in-lieu payment, other funding programs, or other appropriate methods.

Policy 1.3.3: The County may apply for financial assistance (e.g., grants, loans, etc.) to support funding the acquisition and construction of parks and recreation and open space lands and facilities, as well as the development and provision of recreation programs through the MCPRD to achieve and improve financial feasibility and leverage County funds. In support of these efforts, a five year capital improvement plan shall be created and annually adopted by the County Board of County Commissioners (BCC).

Policy 1.3.4: The LDC shall contain provisions requiring new residential developments (e.g., subdivisions and particularly developments of regional impact) to provide minimum open space per dwelling unit consistent with FLUE Policy 2.1.4 as a condition of approval.

a. Compliance with this provision may be satisfied by on-site development or, when on-site provision is impractical or not selected by the developer, by providing for off-site development or

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

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

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

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

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

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

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

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

Policy 1.4.6: All new residential developments (e.g., subdivisions and particularly developments of 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.



**Marion County
Board of County Commissioners**

Growth Services

2710 E. Silver Springs Blvd.
Ocala, FL 34470
Phone: 352-438-2600
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December 7, 2018

Laura NeSmith
Water and Air Research, Inc.
6821 SW Archer Road
Gainesville, Florida 32608

RE: Marion County Comprehensive Plan Consistency Review:
Silver Springs Conservation Area – DRAFT 2018 10-Year Unit Management Plan Update

Dear Laura:

Thank you for transmitting the draft Silver Springs Conservation Area (SSCA) 2018 10-Year Unit Management Plan Update (2018 UMP Update). Marion County Growth Management Staff has reviewed the draft 2018 UMP Update and determined it is consistent with Marion County's Comprehensive Plan.

For your reference, Marion County's current Comprehensive Plan Future Land Use Map Series identifies the SSCA as *Preservation*. The *Preservation* land use designation reflects the State ownership and its original acquisition for preservation and recreation as reflected in the 2018 UMP Update.

The 2018 UMP Update will ensure the SSCA is managed to restore, protect and maintain native ecosystems & water resources, integrate compatible human uses, and ensure long-term viability of endangered threatened & species populations. Planned hiking trails will provide year-around recreational opportunities to our citizens and will add to the County's resource-based recreational opportunities.

The County's participation as the SSCA operator serves Marion County's citizens by maintaining the County's working relationship with the State to maintain the SSCA for conservation and recreation for the benefit of the public. Implementing the 2018 UMP Update will affirm the State and County's wise investment decisions and enhance the quality of life for Marion County's citizens and the general public.

We appreciate the opportunity to review the draft Silver Springs Conservation Area 2018 10-Year Unit Management Plan Update and look forward to continued cooperation and coordination with the State and County in the future, and we look forward to receiving a copy of the final 2018 UMP Update upon its completion. If you have any other questions related to this matter, please do not hesitate to contact me by mail or by phone as listed, or via email at christopher.rison@marioncountyfl.org.

Sincerely,

A handwritten signature in blue ink that reads "Christopher D. Rison".

Christopher D. Rison, AICP
Senior Planner

Xc (email): Mounir Bouyounes, County Administrator
Samuel Martsof, Growth Services Director
Xc: Silver Springs Conservation Area File

Angel Roussel, ACA/Public Works
Jim Couillard, Parks & Rec. Director
OCF

"Meeting Needs by Exceeding Expectations"