

2026-2036

# SALT LAKE WILDLIFE MANAGEMENT AREA

10-YEAR MANAGEMENT PLAN  
BREVARD COUNTY



**FLORIDA FISH AND WILDLIFE  
CONSERVATION COMMISSION**

620 SOUTH MERIDIAN STREET  
TALLAHASSEE, FL 32399-1600



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PENDING APPROVAL LETTER**



## LAND MANAGEMENT PLAN EXECUTIVE SUMMARY

Lead Agency: Florida Fish and Wildlife Conservation Commission (FWC)

Common Name of Property: Salt Lake Wildlife Management Area

Location: Brevard County, Florida

Acreage Total: 6,729 acres

Salt Lake WMA Main Tract Acreage Breakdown:

<b>Landcover Classification</b>	<b>Acres*</b>	<b>Percent of Total Area</b>
Basin Marsh	2,071.99	38.87%
Basin Swamp	18.99	0.36%
Baygall	12.89	0.24%
Canal/Ditch	3.76	0.07%
Clearing	0.02	<0.01%
Clearing/Regeneration	3.51	0.07%
Depression Marsh	353.10	6.62%
Developed	3.15	0.06%
Firebreak	12.92	0.24%
Hydric Hammock	129.43	2.43%
Linear Feature	2.55	0.05%
Marsh Lake	903.40	16.95%
Mesic Flatwoods	768.56	14.42%
Mesic Hammock	188.37	3.53%
Pasture - Improved	25.26	0.47%
Road	66.61	1.25%
Scrub	40.42	0.76%
Scrubby Flatwoods	82.63	1.55%
Successional Hardwood Forest	12.04	0.23%
Successional Hydric Shrubland/Forest	7.51	0.14%
Utility Corridor	22.64	0.42%
Wet Flatwoods	598.91	11.23%
Xeric Hammock	2.49	0.05%

\*GIS-calculated acreage for land cover classification varies slightly from actual total acreage. Currently the Salt Lake WMA Main Tract is the only unit that has been mapped.

Lease/Management Agreement No.: 4316, 4344, and Contract No. 22270

Use: Single  Management Responsibilities:

Multiple

Agency FWC

Responsibilities

LEAD, LESSEE (Wildlife Management Area, resource protection, law enforcement)

Designated Land Use: Wildlife Management Area

Sublease (s): None

Encumbrances: One easement for construction and maintenance of a pipeline (Easement No. 3087) and one apiary (Contract No. 22206)

Type Acquisition: Save Our Rivers program, Scrub Jay Refugia Conservation and Recreational Lands, Scrub-Jay Refuge Preservation 2000, Brevard Coastal Scrub Ecosystem Florida Forever Project, and donations

Unique Features: Natural communities include basin marsh, basin swamp, baygall, depression marsh, hydric hammock, marsh lake, mesic flatwoods, mesic hammock, scrub, scrubby flatwoods, wet flatwoods, and xeric hammock

Archaeological/Historical: Seven documented within the SLWMA

Management Needs: Habitat restoration and improvement; public access and recreational opportunities; hydrological preservation and restoration; invasive species maintenance and control; imperiled species habitat maintenance, enhancement, and restoration

Acquisition Needs/Acreage: 3,655 acres on the FWC Additions and Inholdings list (Figures 29-31)

Surplus Lands/Acreage: None

Public Involvement: Management Advisory Group consensus building meeting and Public Hearing (Appendix 11.3)

DO NOT WRITE BELOW THIS LINE (FOR DIVISION OF STATE LANDS USE ONLY)

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ARC Approval Date \_\_\_\_\_ BTIITF Approval Date: \_\_\_\_\_

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# Land Management Plan Compliance Checklist

Required for State-owned conservation lands over 160 acres

## 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	1
2	The land acquisition program, if any, under which the property was acquired.	18-2.018 & 18-2.021	15
3	Degree of title interest held by the Board, including reservations and encumbrances such as leases.	18-2.021	15
4	The legal description and acreage of the property.	18-2.018 & 18-2.021	2
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	5-17
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	46
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	66-73
8	Identification of adjacent land uses that conflict with the planned use of the property, if any.	18-2.021	45
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)	15
10	Proximity of property to other significant State, local or federal land or water resources.	18-2.021	13, 35-37

## 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	46
12	A description of past and existing uses, including any unauthorized uses of the property.	18-2.018 & 18-2.021	41-44
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	41, 42, 46, 47
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	15
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	40, 63, 77
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	74, 86
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)	41, 43, 46, 47

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
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	86
19	Letter of compliance from the local government stating that the LMP is in compliance with the Local Government Comprehensive Plan.	BOT requirement	Appendix 11.22
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	48-82
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	46, 47
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	40, 63; Appendix 11.16
23	A statement regarding incompatible use in reference to Ch. 253.034(10).	253.034(10)	47

\*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	18
25	The management prospectus required pursuant to paragraph (9)(d) shall be available to the public for a period of 30 days prior to the public hearing.	259.032(10)	18; Appendices 11.3 and 11.4
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)	18; Appendix 11.3.1
27	Summary of comments and concerns expressed by the advisory group for parcels over 160 acres	18-2.021	Appendix 11.3.1

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
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)	18; Appendix 11.4
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	48, 49; Appendix 11.12
30	Summary of comments and concerns expressed by the management review team, if required by Section 259.036, F.S.	18-2.021	Appendix 11.12
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	Appendix 11.12

### 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	19-22; Appendix 11.5
33	Insert FNAI based natural community maps when available.	ARC consensus	27, 28
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	18-35; Appendices 11.6, 11.7, 11.9, 11.10
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	35-41
36	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding beaches and dunes.	18-2.021	40
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	16, 40
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	26-35; Appendices 11.6, 11.7, 11.9, 11.10, 11.14
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	26-35; Appendices 11.6 and 11.9
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	26-35; Appendices 11.8 and 11.11
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)	75-82

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
42	<b>Habitat Restoration and Improvement</b>	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.	↓	53-63, 75-82; Appendices 11.6, 11.9, 11.13, 11.14 11.15, and 11.16
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.	↓	75-80
42-C.	The associated measurable objectives to achieve the goals.	↓	75-80
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>	↓	53-63, 75-82; Appendix 11.13
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.		82-85; Appendices 11.19 and 11.20
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)	63; Appendix 11.16
44	<b>Sustainable Forest Management, including implementation of prescribed fire management</b>	18-2.021, 253.034(5) & 259.032(10) ↓	
44-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	40, 63, 77; Appendix 11.16
44-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	↓	77
44-C.	Measurable objectives (see requirement for #42-C).	↓	77
44-D.	Related activities (see requirement for #42-D).	↓	40, 63; Appendix 11.16
44-E.	Budgets (see requirement for #42-E).		82-85; Appendices 11.19 and 11.20
45	<b>Imperiled species, habitat maintenance, enhancement, restoration, or population restoration</b>	259.032(10) & 253.034(5)	
45-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	29, 30, 32, 55-57, 75; Appendices 11.6, 11.9, and 11.14
45-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	↓	75
45-C.	Measurable objectives (see requirement for #42-C).	↓	75
45-D.	Related activities (see requirement for #42-D).	↓	29, 30, 32, 55-57; Appendices 11.6, 11.9, and 11.14
45-E.	Budgets (see requirement for #42-E).		82-85; Appendices 11.19 and 11.20
45-F.	Assess the feasibility of managing the lands > 40 contiguous acres as a recipient site for gopher tortoises consistent with rules of the Fish and Wildlife Conservation Commission, as prepared by the agency or cooperatively with a Fish and Wildlife Conservation Commission wildlife biologist.	259.105	33
45-G.	Economic feasibility of establishing a gopher tortoise recipient site, including the initial cost, recurring management costs and the revenue projections.	259.105	33

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
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)	30-32; Appendix 11.6
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	Appendix 11.21
48	<b>Exotic and invasive species maintenance and control</b>	259.032(10) & 253.034(5)	
48-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	30-34, 58-61, 76
48-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	↓	76
48-C.	Measurable objectives (see requirement for #42-C).	↓	76
48-D.	Related activities (see requirement for #42-D).	↓	30-34, 58-611
48-E.	Budgets (see requirement for #42-E).		82-85; Appendices 11.19 and 11.20

## 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	35-39
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	35-39
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	26-28; Appendix 11.6
52	***Quantitative description of the land regarding an inventory of hydrological features and associated acreage. <i>See footnote.</i>	253.034(5)	35-39
53	<b>Hydrological Preservation and Restoration</b>	259.032(10) & 253.034(5)	
53-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	35-39, 62, 63, 77; Appendix 11.15
53-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	↓	77
53-C.	Measurable objectives (see requirement for #42-C).	↓	77
53-D.	Related activities (see requirement for #42-D).	↓	35-39, 62, 63; Appendix 11.15
53-E.	Budgets (see requirement for #42-E).		82-85; Appendices 11.19 and 11.20

## 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	40
55	***Quantitative data description of the land regarding an inventory of significant land, cultural or historical features and associated acreage.	253.034(5)	40
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	40, 63, 77; Appendix 11.17
57	<b>Cultural and Historical Resources</b>	259.032(10) & 253.034(5)	
57-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	40, 63, 77
57-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	↓	77
57-C.	Measurable objectives (see requirement for #42-C).	↓	77
57-D.	Related activities (see requirement for #42-D).	↓	40, 63
57-E.	Budgets (see requirement for #42-E).		82-85; Appendices 11.19 and 11.20

\*\*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. See <i>footnote.</i>	253.034(5)	42, 44, 62, 64, 76-78
59	<b>Capital Facilities and Infrastructure</b>	259.032(10) & 253.034(5)	
59-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	42, 44, 62, 64, 76-78
59-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	↓	76-78
59-C.	Measurable objectives (see requirement for #42-C).	↓	76-78
59-D.	Related activities (see requirement for #42-D).	↓	42, 44, 62, 64
59-E.	Budgets (see requirement for #42-E).		82-85; Appendices 11.19 and 11.20
60	*** Quantitative data description of the land regarding an inventory of recreational facilities and associated acreage.	253.034(5)	41-43, 62, 64, 76-78
61	<b>Public Access and Recreational Opportunities</b>	259.032(10) & 253.034(5)	
61-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	41-43, 61, 62, 76-78
61-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	↓	76-78
61-C.	Measurable objectives (see requirement for #42-C).	↓	76-78
61-D.	Related activities (see requirement for #42-D).	↓	41-43, 61, 62
61-E.	Budgets (see requirement for #42-E).		82-85; Appendices 11.19 and 11.20

## 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	iii-ix
63	Place the Executive Summary at the front of the LMP. Include a physical description of the land.	ARC and 253.034(5)	i, ii
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	55-74
65	Key management activities necessary to achieve the desired outcomes regarding other appropriate resource management.	259.032(10)	75-82
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)	82-85; Appendices 11.19 and 11.20
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)	82-85; Appendices 11.19 and 11.20
68	A statement of gross income generated, net income and expenses.	18-2.018	45, 46

\*\*\* = 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.

# Table of Contents

- 1 Introduction and General Information ..... 1
  - 1.1 Location ..... 2
  - 1.2 Title Interest and Management Authority..... 15
  - 1.3 Acquisition ..... 15
  - 1.4 Planning Philosophy ..... 18
  - 1.5 Public Involvement ..... 18
- 2 Natural and Cultural Resources ..... 18
  - 2.1 Physiography..... 18
  - 2.2 Vegetation ..... 26
  - 2.3 Fish and Wildlife Resources ..... 32
  - 2.4 Water Resources..... 35
  - 2.5 Forest Resources ..... 40
  - 2.6 Beaches and Dunes ..... 40
  - 2.7 Mineral Resources..... 40
  - 2.8 Cultural Resources ..... 40
  - 2.9 Scenic Resources..... 41
- 3 Uses of the Property ..... 41
  - 3.1 Previous Use and Development ..... 41
  - 3.2 Current Use ..... 41
  - 3.3 Adjacent Land Uses ..... 45
  - 3.4 Visitation, Economic Benefits, and Revenue-generating Potential..... 45
  - 3.5 Single- or Multiple-use Management..... 46
  - 3.6 Potential Surplus Review..... 47
- 4 Management Activities and Intent ..... 47
  - 4.1 Land Management Review ..... 48
  - 4.2 Adaptive Management..... 48
  - 4.3 Habitat Restoration and Improvement..... 53
  - 4.4 Fish and Wildlife Management, Enhancement, and Population Restoration..... 55
  - 4.5 Non-native Species Maintenance and Control ..... 58
  - 4.6 Public Access and Recreational Opportunities..... 61

4.7	Hydrological Preservation and Restoration .....	62
4.8	Forest Resource Management .....	63
4.9	Cultural Resources .....	63
4.10	Capital Facilities and Infrastructure .....	63
4.11	Land Conservation and Stewardship Partnerships .....	64
4.12	Research Opportunities .....	74
4.13	Cooperative Management and Special Uses .....	74
4.14	Soil Conservation .....	74
5	Resource Management Goals and Objectives .....	75
5.1	Habitat Restoration and Improvement .....	75
5.2	Imperiled Species Habitat Maintenance, Enhancement, Restoration, or Population Restoration .....	75
5.3	Other Wildlife (Game and Non-game) Habitat Maintenance, Enhancement, Restoration, and Population Restoration.....	75
5.4	Non-native Species Maintenance and Control .....	76
5.5	Public Access and Recreational Opportunities.....	76
5.6	Hydrological Preservation and Restoration .....	77
5.7	Forest Resource Management .....	77
5.8	Cultural Resources .....	77
5.9	Capital Facilities and Infrastructure .....	77
5.10	Land Conservation and Stewardship Partnerships .....	80
5.11	Cooperative Management, Special Uses, and Research Opportunities .....	80
6	Resource Management Challenges and Strategies .....	80
7	Cost Estimates and Funding Sources .....	82
8	Analysis of Potential for Contracting Private Vendors for Restoration and Management Activities.....	86
9	Compliance with Federal, State, and Local Governmental Requirements .....	86
10	Endnotes .....	87

## Index of Figures

Figure 1. Vicinity Map .....	5
Figure 2. Aerial Imagery.....	6
Figure 3. Aerial Imagery of the SLWMA Main Tract .....	7
Figure 4. Aerial Imagery of the SLWMA Grissom Parkway Unit.....	8
Figure 5. Aerial Imagery of the Ten Mile Ridge and Micco Expansion Units .....	9
Figure 6. Section, Township, and Range Location of the SLWMA Main Tract .....	10
Figure 7. Section, Township, and Range Location of the SLWMA Grissom Parkway Unit.....	11
Figure 8. Section, Township, and Range Location of the SLWMA Ten Mile Ridge and Micco Expansion Unit.....	12
Figure 9. Conservation Lands and Florida Forever Projects Nearby the SLWMA.....	13
Figure 10. Title Ownership of the SLWMA Main Tract.....	17
Figure 11. Soil Types of the SLWMA Main Tract.....	20
Figure 12. Soil Types of the SLWMA Grissom Parkway Unit .....	21
Figure 13. Soil Types of the SLWMA Ten Mile Ridge (Top) and Micco Expansion (Bottom) Units .....	22
Figure 14. Depth-to-Water Table (cm) of the SLWMA Main Tract.....	23
Figure 15. Depth-to-Water Table (cm) of the SLWMA Grissom Parkway Unit .....	24
Figure 16. Depth-to-Water Table (cm) of the SLWMA Ten Mile Ridge (Top) and Micco Expansion (Bottom) Units .....	25
Figure 17. FNAI Natural Communities and Altered Landcover Types of the SLWMA Main Tract .....	27
Figure 18. Historic Natural Communities of the SLWMA Main Tract .....	28
Figure 19. Water Resources on or Near the SLWMA Main Tract .....	37
Figure 20. Water Resources on or Near the SLWMA Grissom Parkway Unit .....	38
Figure 21. Water Resources on or Near the SLWMA Ten Mile Ridge and Micco Expansion Units .....	39
Figure 22. Facilities.....	44
Figure 23. Florida Landscape Assessment Model of the SLWMA Main Tract.....	50
Figure 24. Florida Landscape Assessment Model of the SLWMA Grissom Parkway Unit .....	51
Figure 25. Florida Landscape Assessment Model of the Ten Mile Ridge (Top) and Micco Expansion (Bottom) Units .....	52
Figure 26. Landscape Conservation Blueprint of the SLWMA Main Tract.....	68
Figure 27. Landscape Conservation Blueprint of the SLWMA Grissom Parkway Unit .....	69
Figure 28. Landscape Conservation Blueprint of the SLWMA Ten Mile Ridge and Micco Expansion Units .....	70
Figure 29. FWC Additions and Inholdings near the SLWMA Main Tract .....	71
Figure 30. FWC Additions and Inholdings near the SLWMA Grissom Parkway Unit.....	72
Figure 31. FWC Additions and Inholdings near the SLWMA Ten Mile Ridge and Micco Expansion Units .....	73
Figure 32. Planned Facilities.....	79

## Index of Tables

Table 1. Florida Forever Projects within a Five-mile Vicinity .....	2
Table 2. Conservation Lands within a Five-mile Vicinity .....	3
Table 3. Natural Communities and Altered Landcover Types .....	26
Table 4. Imperiled Plant Species .....	29
Table 5. Non-native Plant Species.....	30
Table 6. Imperiled Fish and Wildlife Species .....	32
Table 7. Non-native Fish and Wildlife Species .....	33
Table 8. Cultural Resources .....	40

## Acronym Key

ARC	Acquisition and Restoration Council
BCSEFFP	Brevard Coastal Scrub Ecosystem Florida Forever Project
CARL	Conservation and Recreation Lands
DEP	Department of Environmental Protection
DHR	Division of Historical Resources
DSL	Division of State Lands
F.A.C	Florida Administrative Code
F.S.	Florida Statutes
FDACS	Florida Department of Agriculture and Consumer Services
FISC	Florida Invasive Species Council
FMSF	Florida Master Site File
FNAI	Florida Natural Areas Inventory
FWC	Florida Fish and Wildlife Conservation Commission
GPS	Global Positioning System
MAG	Management Advisory Group
MSL	Mean Sea Level
NRCS	Natural Resources Conservation Service
P-2000	Preservation 2000
SJRWMD	St. Johns River Water Management District
SLWMA	Salt Lake Wildlife Management Area
SOR	Save Our Rivers
USFWS	United States Fish and Wildlife Service
WMA	Wildlife Management Area

# 1 Introduction and General Information

Buffering Florida's Atlantic Coastal Ridge, the Salt Lake Wildlife Management Area (SLWMA) conserves and protects important habitat for several imperiled species, including threadroot orchids (*Harrisella porrecta*), gopher tortoises (*Gopherus polyphemus*), and more (Tables 4 and 6). The SLWMA is named for one of the three lakes, Salt Lake, Loughman Lake, and South Lake, that border the area. Salt Lake, the namesake of the SLWMA, is unique due to its relatively high salinity. Conserving native scrub habitats that lie along the St. Johns River and Indian River Lagoon system, the SLWMA protects vital watersheds and water quality, while also providing connectivity within a major wildlife corridor where many species of birds and other wildlife migrate.

The SLWMA is owned by the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees) and the St. Johns River Water Management District (SJRWMD). The SLWMA has a 5,262-acre Main Tract, as well as 1,467 acres of small parcels interspersed over three isolated areas. These additional areas are referred to by their designated Brevard Coastal Scrub Ecosystem Florida Forever project (BCSEFFP) Unit names: Grissom Parkway Unit, Micco Expansion Unit, and Ten Mile Ridge Unit (Figures 1-5). Although these units are not formally established within the boundary of the SLWMA, because the FWC has lead management authority over them, they are also covered within the SLWMA Management Plan.

These areas were purchased under the Save Our Rivers (SOR) program, Scrub Jay Refugia Conservation and Recreational Lands (CARL) Priority List, the Scrub-Jay Refuge Preservation 2000 (P-2000) project, and the BCSEFFP, as well as one donation. The cumulative acreage of the SLWMA is 6,729 acres. where the FWC is assigned lead management authority for all resources.

The SLWMA is managed by the FWC as a Wildlife Management Area (WMA) to provide ecological diversity; to conserve and restore natural wildlife habitat for both common and imperiled wildlife; and to provide high-quality opportunities for hunting, fishing, horseback riding, wildlife watching, and other fish and wildlife-focused public recreation.

This Management Plan serves as the basic statement of policy and direction for the management of the SLWMA and has been developed to guide each aspect of the SLWMA's resource and operational management for the 10-year planning period. It provides information including past usage, conservation acquisition history, and descriptions of the natural and cultural resources found on the SLWMA. Furthermore, it identifies the FWC's management intent, goals, and objectives, as well as challenges and potential solutions.

This Management Plan is submitted for review to the Acquisition and Restoration Council (ARC) acting on behalf of the Board of Trustees through the Florida Department of Environmental Protection's (DEP) Division of State Lands (DSL), in compliance with Chapters 253 and 259, Florida Statutes (F.S.), and Chapters 18-2 and 18-4, Florida Administrative Code (F.A.C.). Format and content were drafted in accordance with ARC requirements for management plans and the model plan outline provided by the staff of the DSL. Terms (Appendix 11.1) used in this

Management Plan describing management activities conform to those developed for the Land Management Uniform Accounting Council Biennial Land Management Operational Report.

Further management authority derives from Article IV, Section 9 of the Florida Constitution as well as the guidance and directives of Chapters 253, 259, 327, 370, 372, 373, 375, 378, 379, 403, 487, 597, and 870, F.S. These laws establish the authority of the FWC regarding protection and management of the State’s fish and wildlife resources.

## 1.1 Location

The SLWMA includes four disjunct areas that are spread throughout Brevard County, Florida. This area encompasses approximately 6,729 acres (Figures 1-5). The Main Tract of the SLWMA lies in all or parts of Sections 22, 23, 25-29, and 32-35 in Township 21 South, Range 34 East (Figure 6). The remaining SLWMA units can be found in all or parts of the following locations (Figures 7 and 8):

- Grissom Parkway Unit: Sections 23-25, 34, and 35 in Township 23 South, Range 35 East
- Micco Expansion Unit: Section 22 in Township 29 South, Range 34 East
- Ten Mile Ridge Unit: Sections 34 and 35 in Township 29 South, Range 34 East

The Main Tract of the SLWMA is four miles west of Titusville and about 30 miles east of Orlando. The Grissom Parkway Unit is a little under 12 miles southeast of the SLWMA Main Tract. The Ten Mile Ridge Unit is 35 miles southeast of the Grissom Parkway Unit and six miles southwest of Palm Bay. The Micco Expansion Unit can be found less than two miles south of the Ten Mile Ridge Unit. Both the Ten Mile Ridge Unit and the Micco Expansion Unit are directly west of Interstate 95, whereas the Grissom Parkway Unit is directly east of it. The SLWMA is not located within a designated Area of Critical State Concern.

### 1.1.1 Proximity to other Public Conservation Lands

The SLWMA is in the vicinity of an extensive network of conservation lands, including lands managed by the SJRWMD, the DEP, Brevard County, and others. Federally owned properties in the vicinity are two National Wildlife Refuges. Several Florida Forever projects are also located in the vicinity (Figure 9).

Tables 1 and 2 list the Florida Forever projects and conservation lands within a five-mile radius of the SLWMA, including lands managed by public and private entities that conserve cultural and natural resources within this region of Florida. Most of the conservation lands listed in Table 2 are owned by a public entity. However, some of these areas fall within a less-than-fee ownership classification where the land is owned and managed by a private landowner, while a public agency or not-for-profit organization holds a conservation easement on the land.

**Table 1. Florida Forever Projects within a Five-mile Vicinity**

<b>Project Name</b>	<b>GIS Acres</b>
Brevard Coastal Scrub Ecosystem	29,720.43
Indian River Lagoon Blueway	28,060.12

<b>Project Name</b>	<b>GIS Acres</b>
Maytown Flatwoods	7,837.47
Strategic Managed Area Lands List – FWC-18	7.04

**Table 2. Conservation Lands within a Five-mile Vicinity**

<b>Federal Government</b>	<b>Managing Agency/ Easement Holder</b>
Merritt Island National Wildlife Refuge	USFWS
St. Johns National Wildlife Refuge	USFWS
<b>State of Florida</b>	
Charles H. Bronson State Forest	FFS
Crystal Bay Scrub Jay and Gopher Tortoise Preserve	FWC
Spoil Site BV-24 Buffer Area Conservation Area	FWC
St. Sebastian River Preserve State Park	DEP
William Beardall Tosohatchee Wildlife Management Area	FWC
<b>Water Management District</b>	
Buck Lake Conservation Area	SJRWMD
Canaveral Marshes Conservation Area	SJRWMD
Farnton-Brevard Conservation Easement	SJRWMD
Great Outdoors-MCA South-1B Conservation Easement	SJRWMD
Met Life and Wheeler Farms Parcels	SJRWMD
River Lakes Conservation Area	SJRWMD
Seminole Ranch Conservation Area	SJRWMD
St. Johns Marsh Sanctuary	SJRWMD
Wal-Mart Parcels	SJRWMD
Willowbrook Conservation Easement	SJRWMD
<b>Local Government</b>	
Cameron Preserve	Town of Malabar
Cape Atlantic Estates Parcels	Volusia County
Chain of Lakes Stormwater Park	Brevard County
Cocoa Conservation Area	City of Cocoa
East Central Regional Rail Trail	Volusia County
Enchanted Forest Sanctuary	Brevard County
Fox Lake Sanctuary	Brevard County
Grant Flatwoods Sanctuary	Brevard County
Indian Mound Station Sanctuary	Brevard County
Jordan Scrub Sanctuary	Brevard County
Kabboord Sanctuary	Brevard County
Kings Park	Brevard County
Malabar Scrub Sanctuary	Brevard County

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Micco Scrub Sanctuary	Brevard County
North Buck Lake Scrub Sanctuary	Brevard County
Orlando Wetlands Park	City of Orlando
Pine Island Conservation Area	Brevard County
Sand Hill Trailhead	Town of Malabar
South Babcock	Brevard County
South Lake Conservation Area	Brevard County
Sykes Creek Headwaters - Tract A	Brevard County
Turkey Creek Sanctuary	City of Palm Bay
Valkaria Expansion	Brevard County
Valkaria Scrub Sanctuary	Brevard County
Volusia/FAS Mitigation Conservation Easement	Volusia County
Wheeler Road	City of Orlando

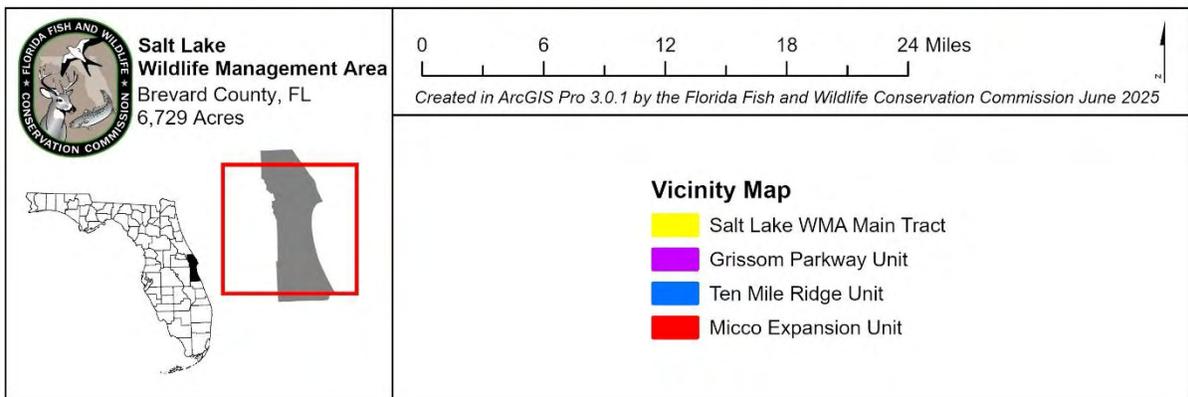
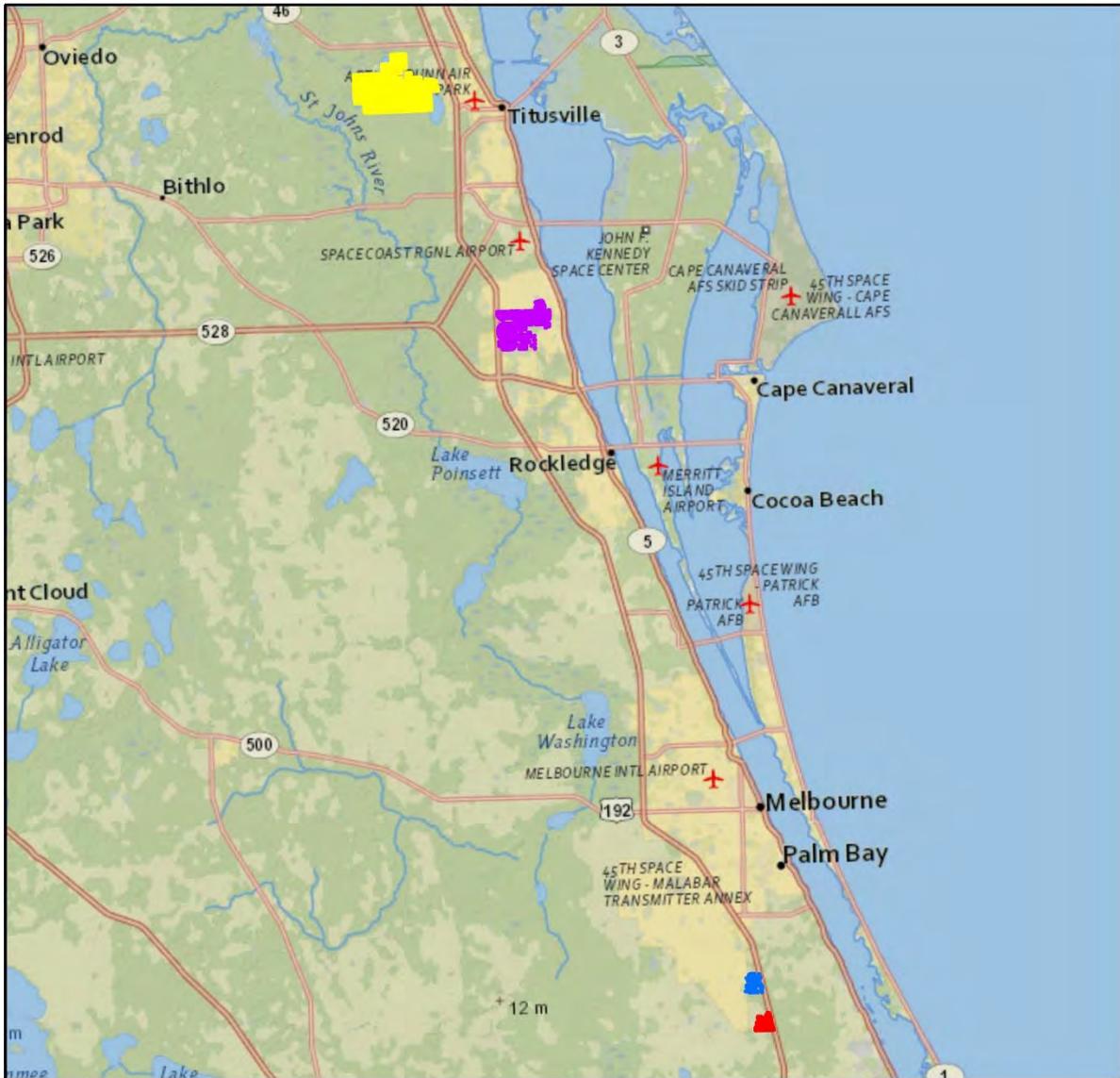
**Private/Public Conservation Organization**

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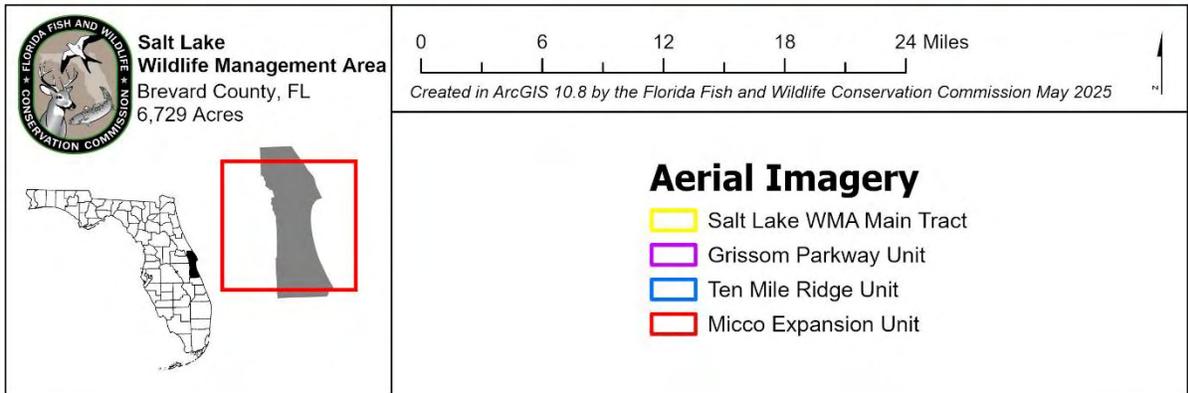
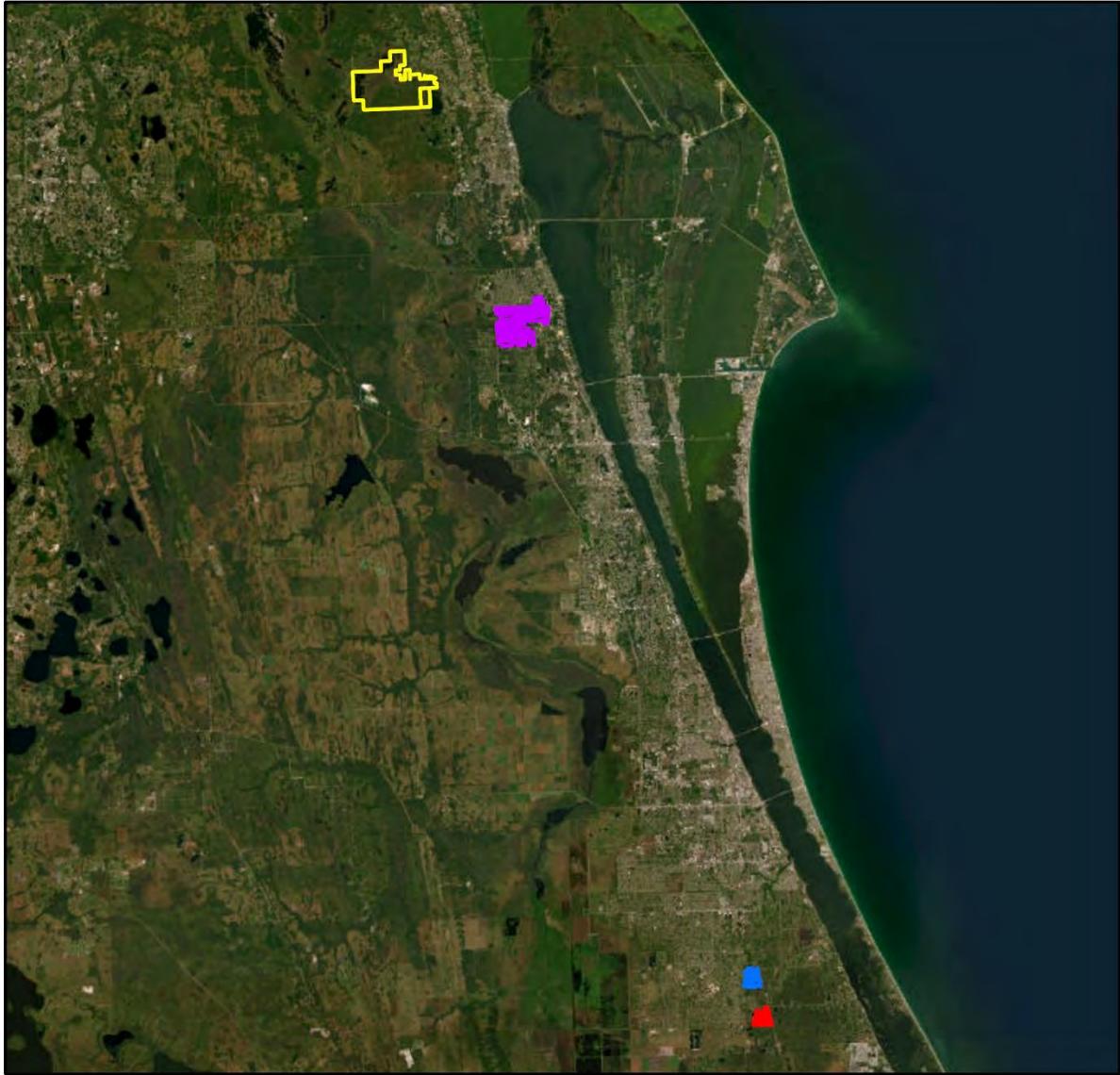
Farmton Mitigation Bank	Miami Corporation
Putnam Land Conservancy Brevard Parcels	Putnam Land Conservancy, Inc.

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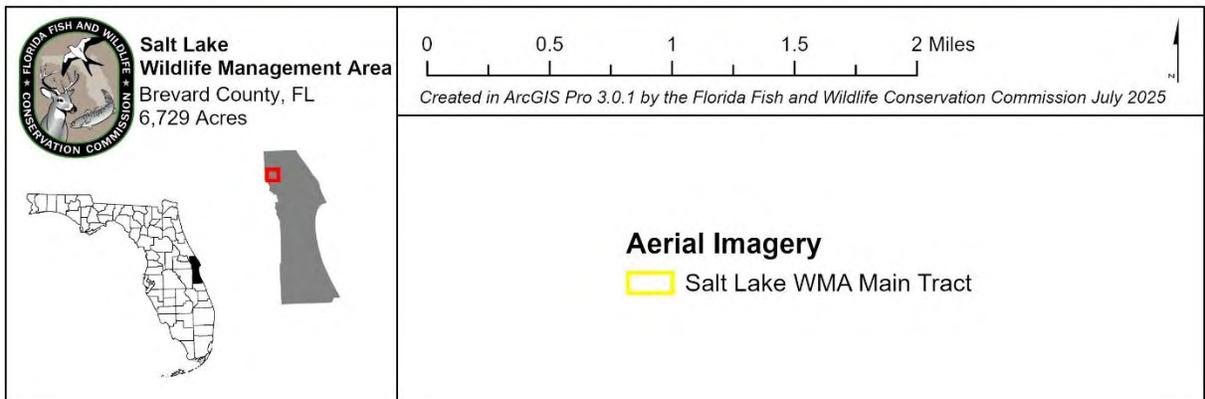
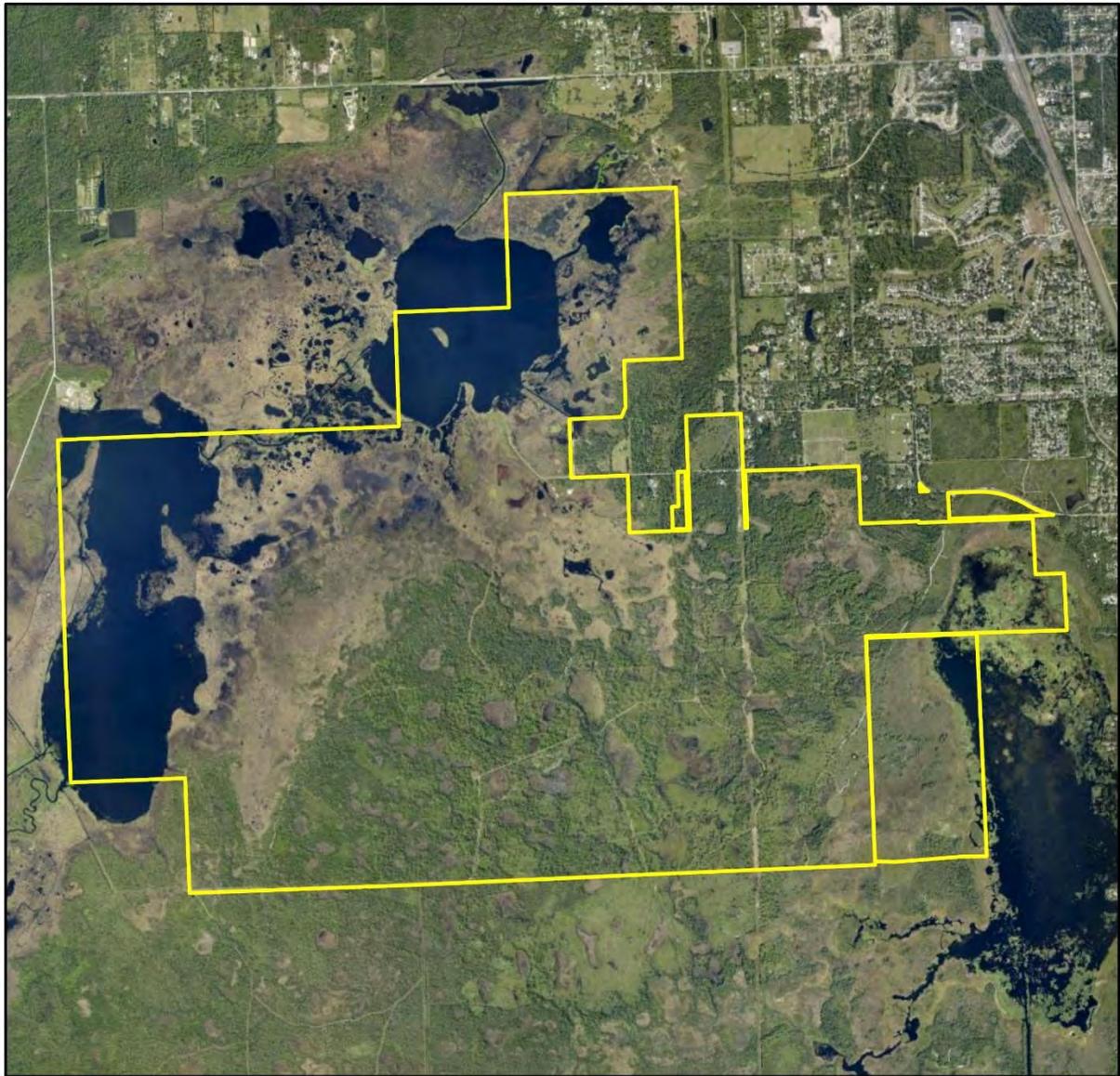
Acronym Key	Agency Name
DEP	Florida Department of Environmental Protection
FFS	Florida Forest Service
FWC	Florida Fish and Wildlife Conservation Commission
SJRWMD	St. Johns River Water Management District
USFWS	United States Fish and Wildlife Service



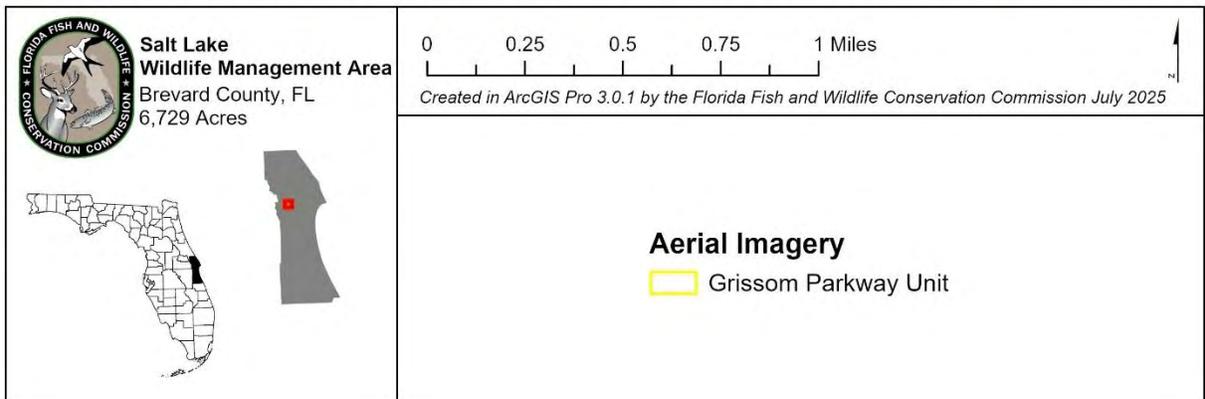
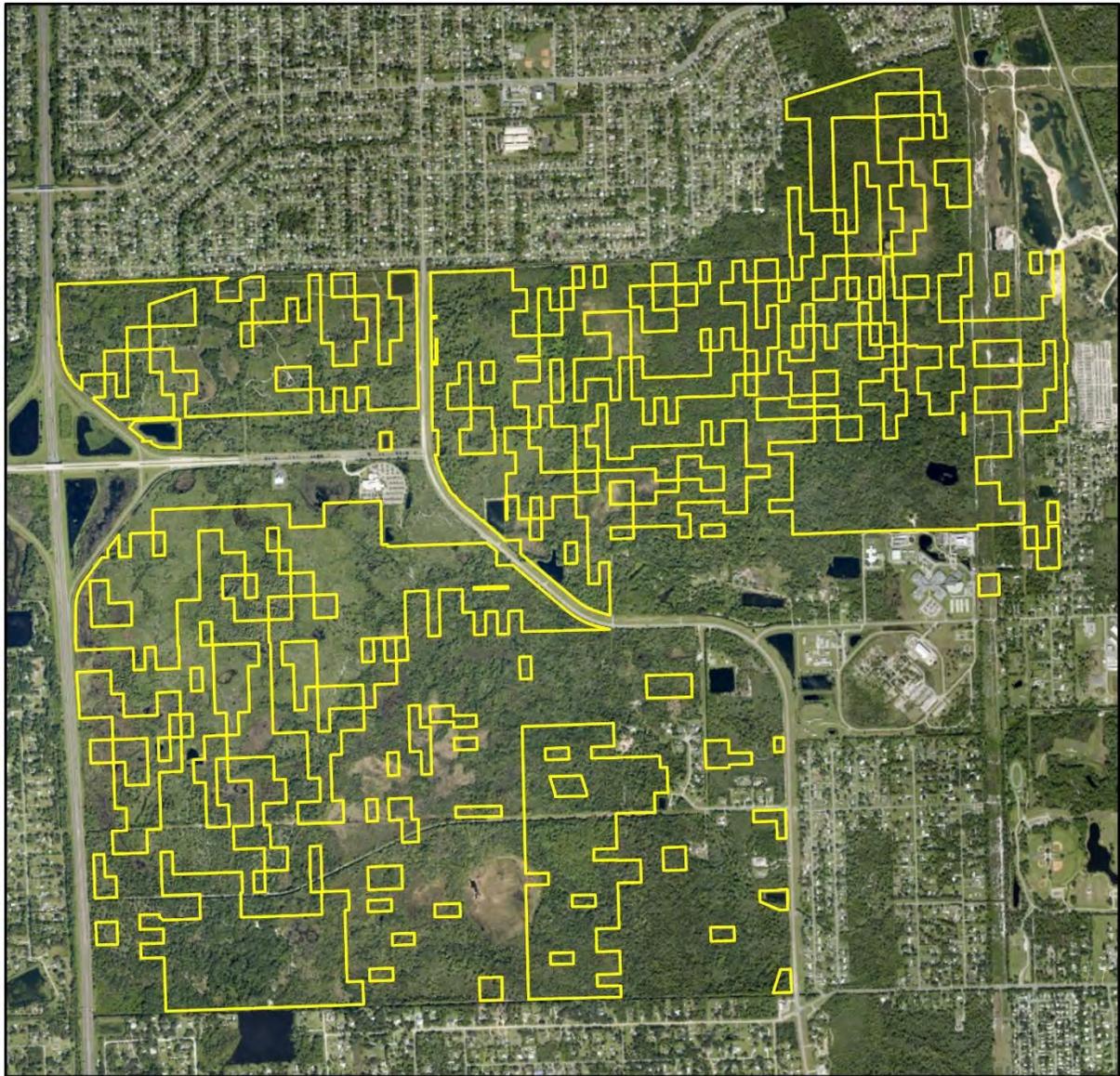
**Figure 1. Vicinity Map**



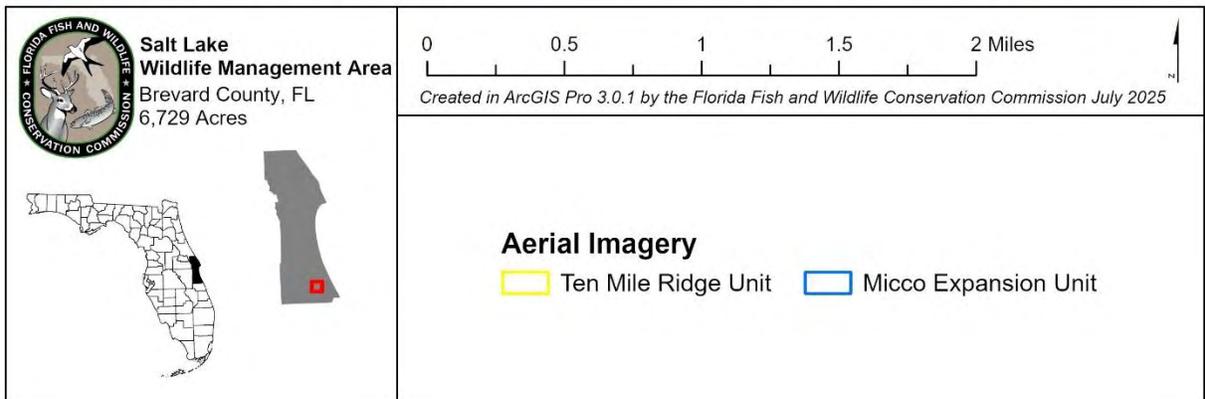
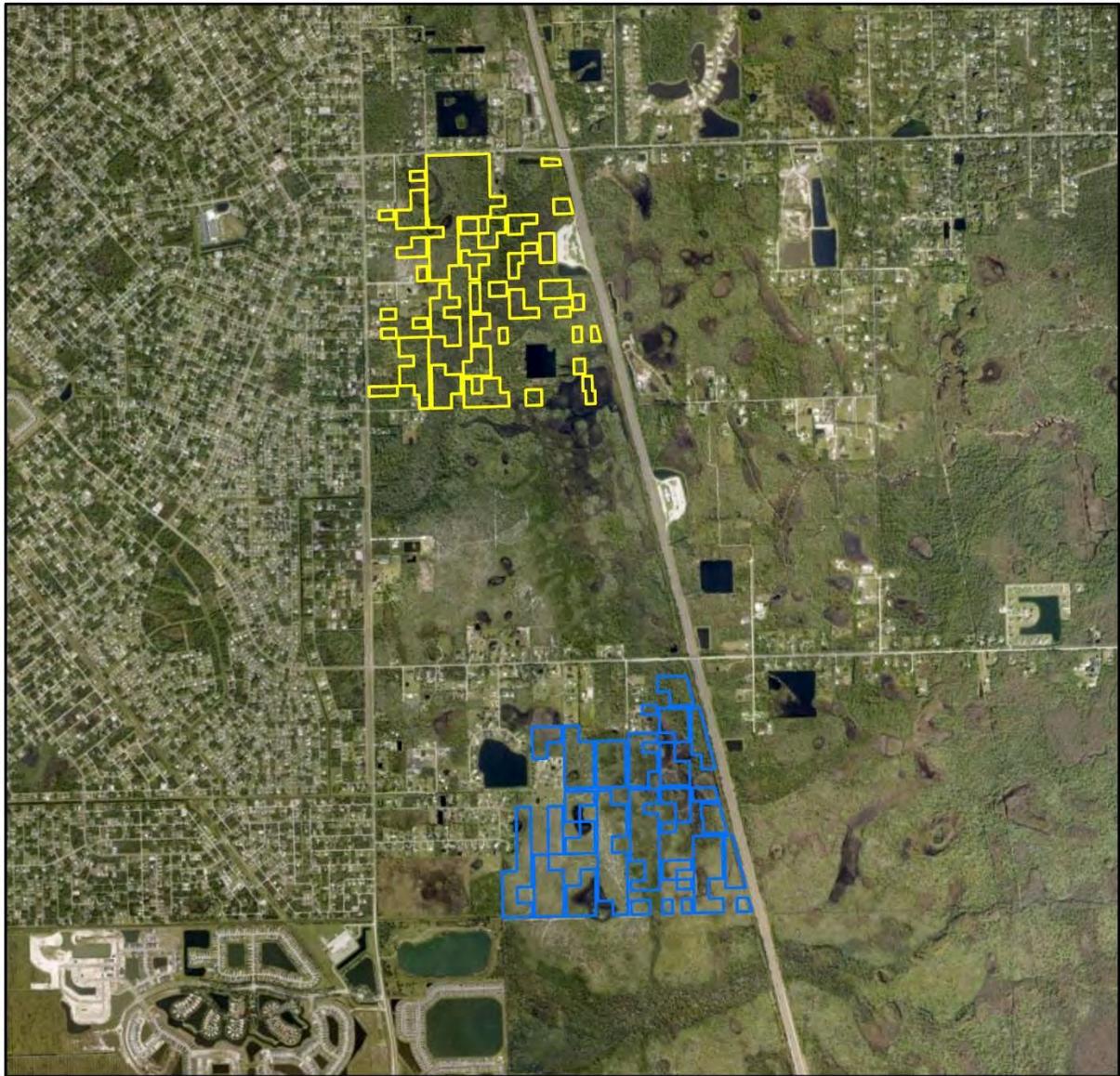
**Figure 2. Aerial Imagery**



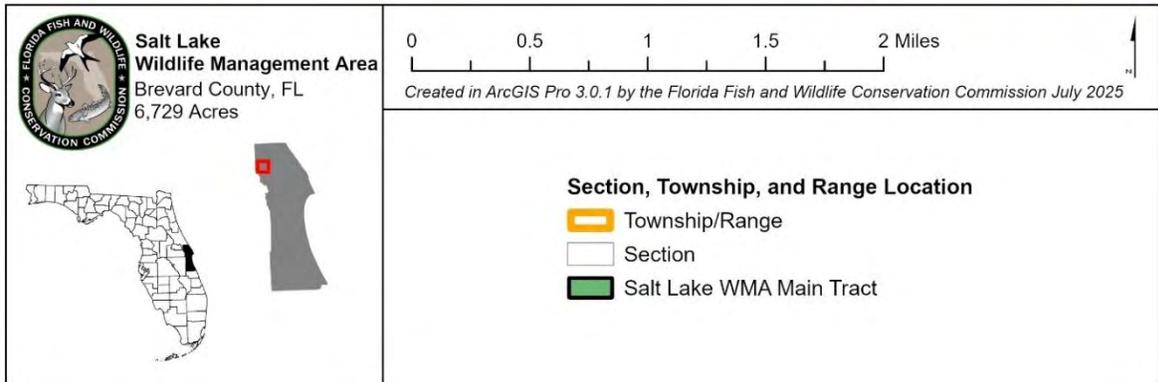
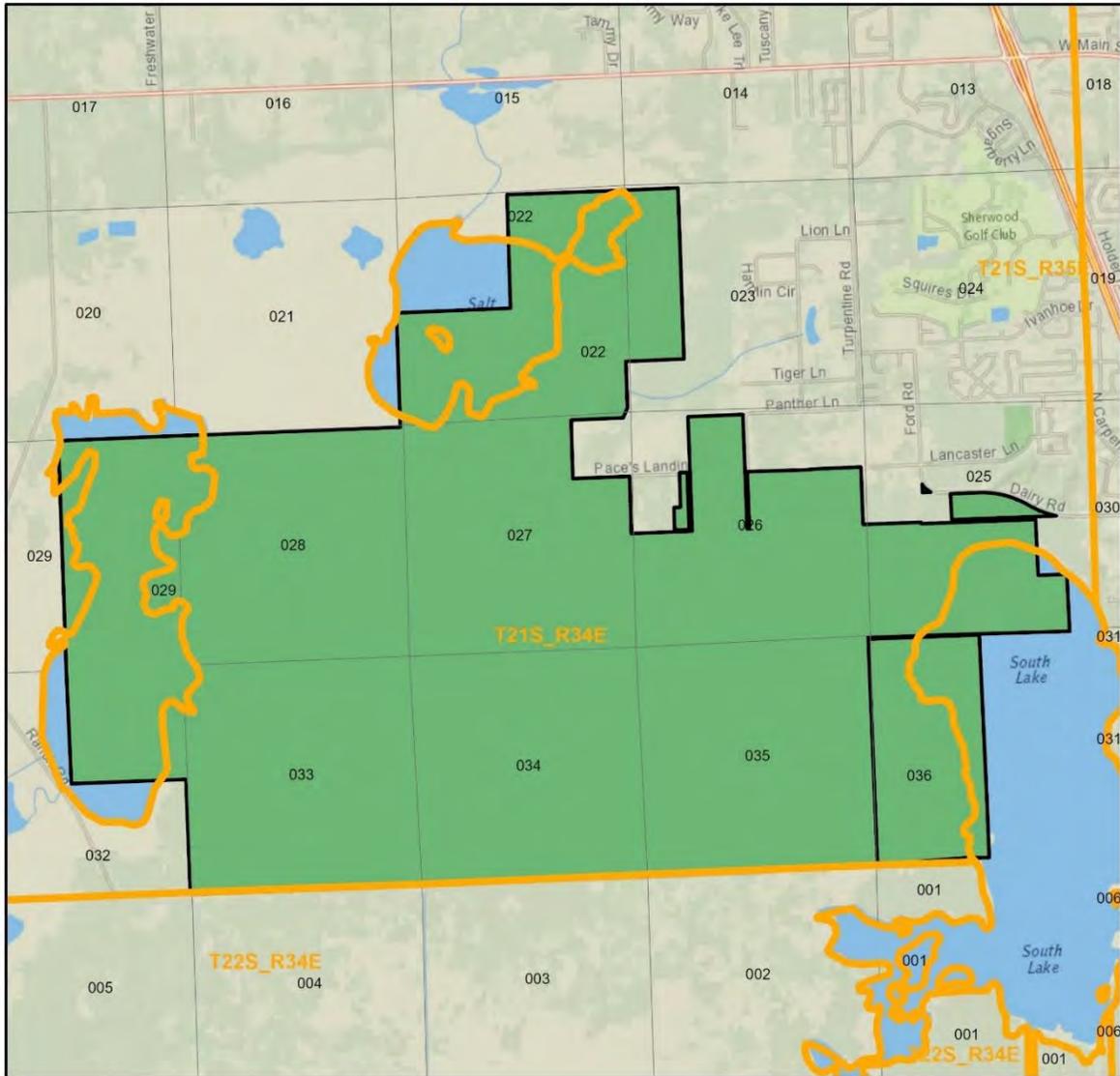
**Figure 3. Aerial Imagery of the SLWMA Main Tract**



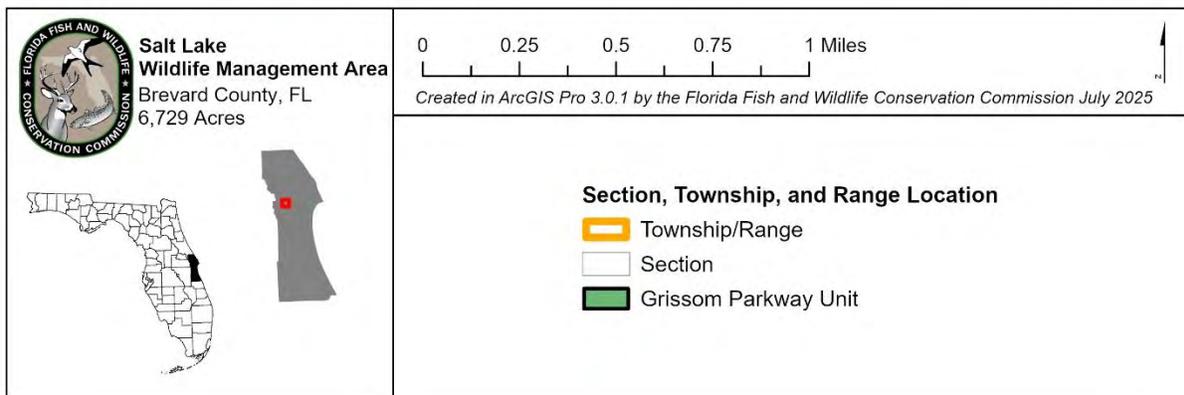
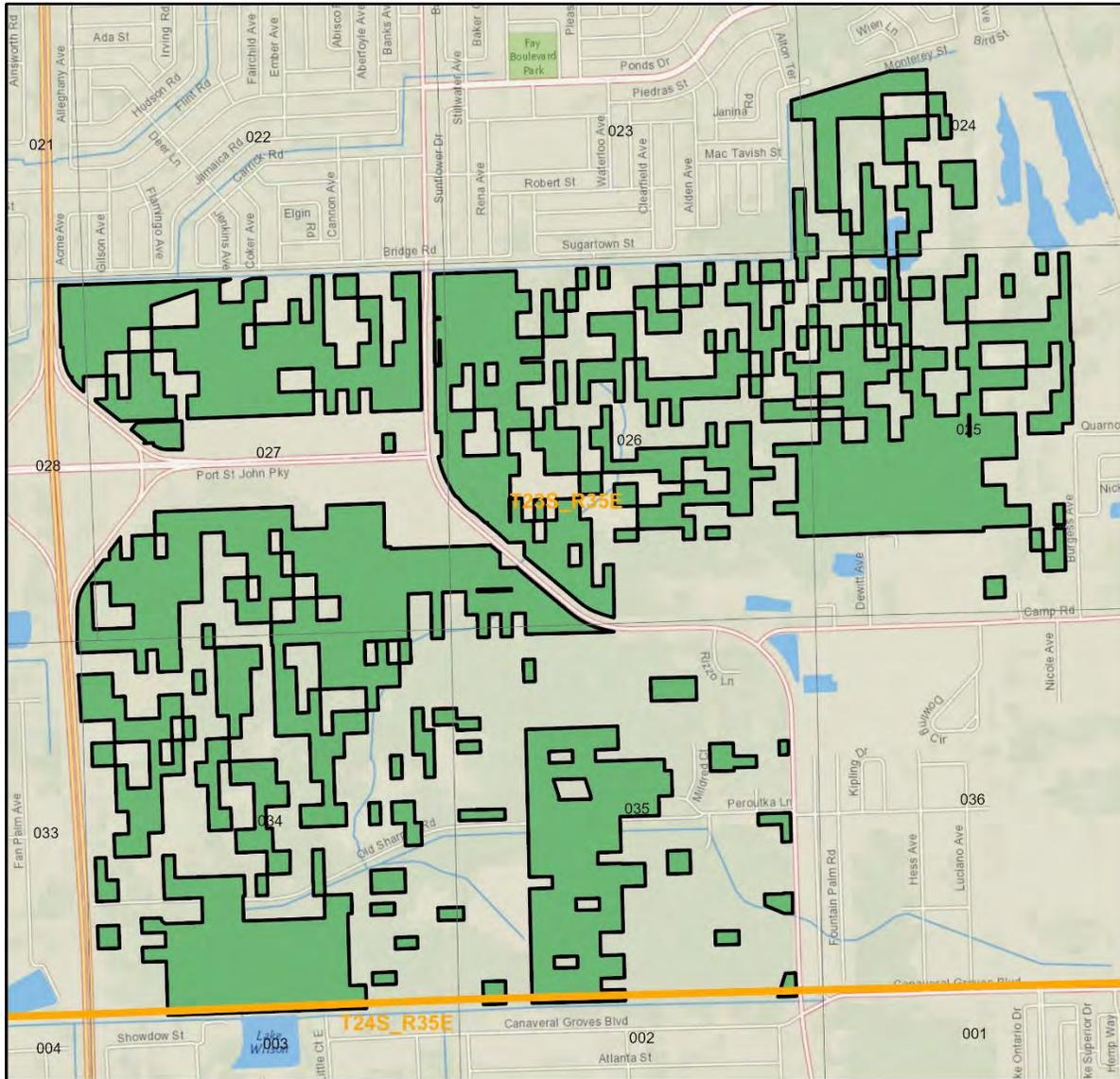
**Figure 4. Aerial Imagery of the SLWMA Grissom Parkway Unit**



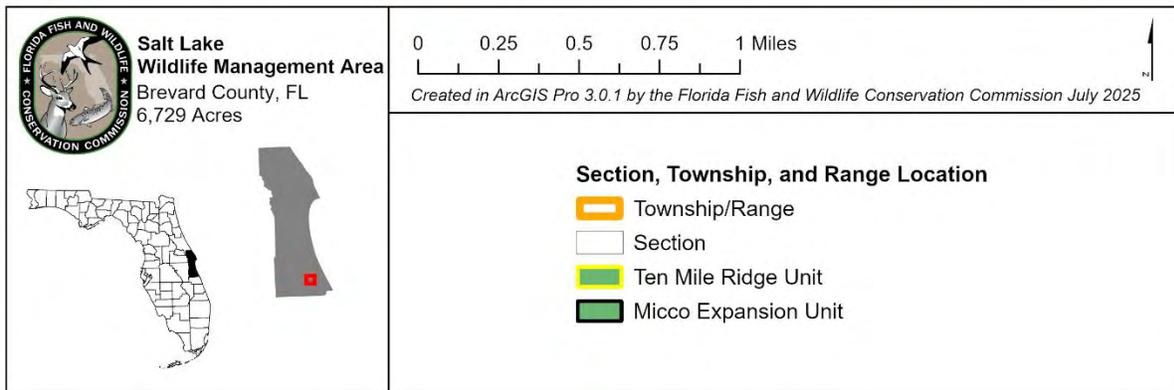
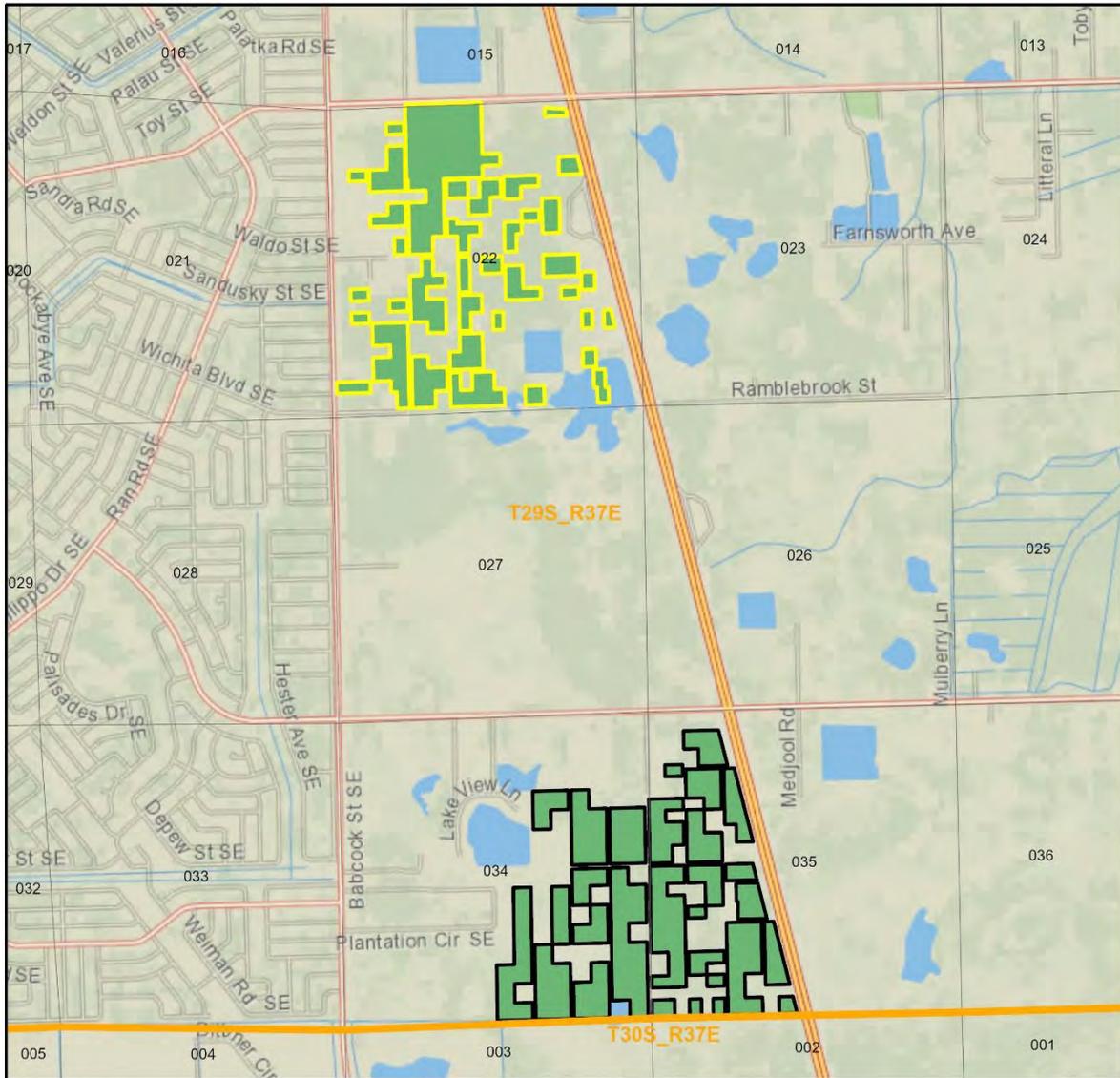
**Figure 5. Aerial Imagery of the Ten Mile Ridge and Micco Expansion Units**



**Figure 6. Section, Township, and Range Location of the SLWMA Main Tract**



**Figure 7. Section, Township, and Range Location of the SLWMA Grissom Parkway Unit**



**Figure 8. Section, Township, and Range Location of the SLWMA Ten Mile Ridge and Micco Expansion Unit**

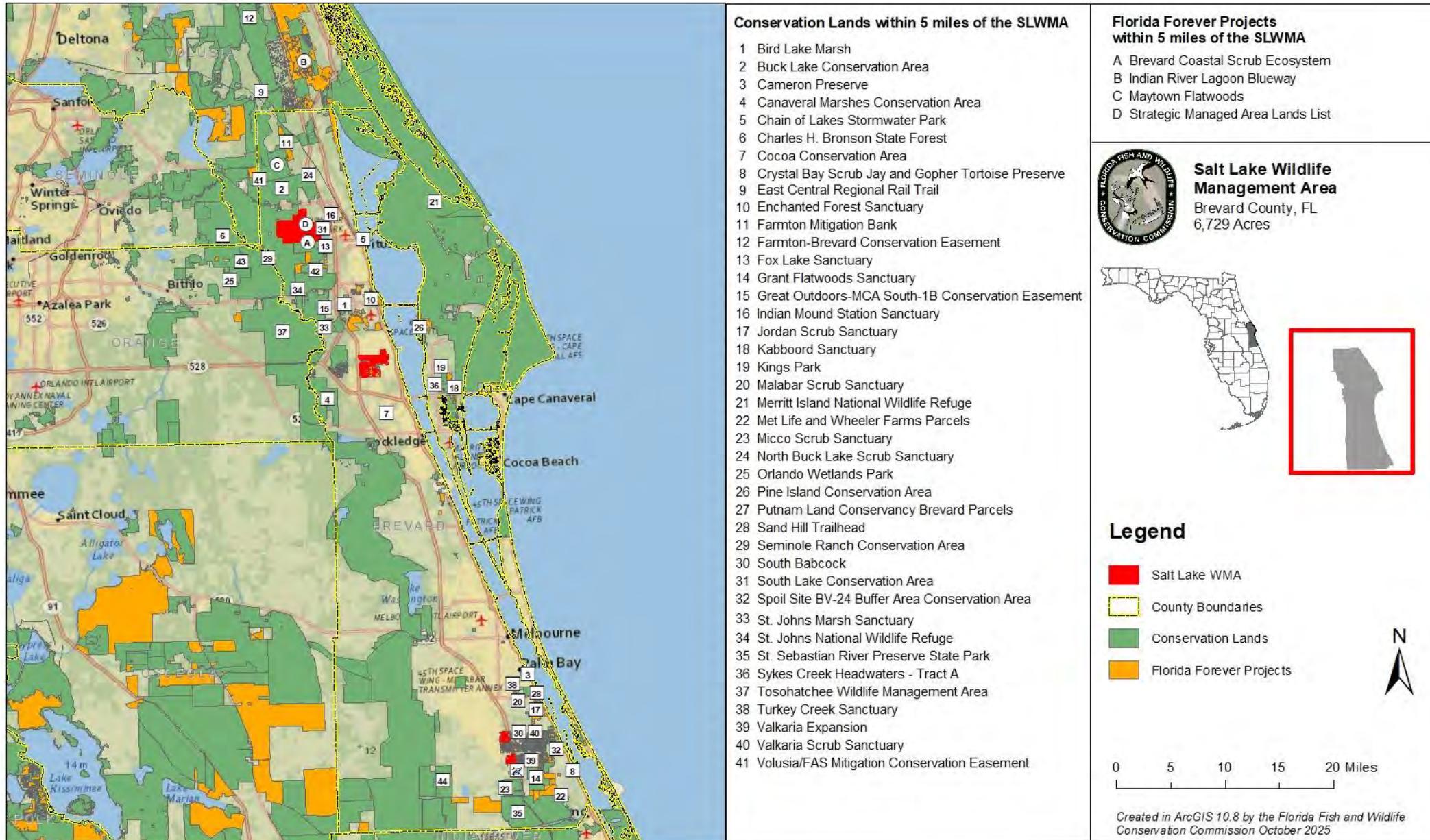


Figure 9. Conservation Lands and Florida Forever Projects Nearby the SLWMA

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## **1.2 Title Interest and Management Authority**

Title to the SLWMA is vested in the Board of Trustees and the SJRWMD. In 2001, the DSL entered a 50-year lease agreement (Lease Agreement No. 4316) granting the FWC management authority over the BCSEFFP units (Appendices 11.2.1-11.2.16). In 2002, the DSL and the SJRWMD entered a 50-year lease agreement (Lease Agreement No. 4344) granting the FWC management authority for the SLWMA (Appendix 11.2.17). In 2023, the SJRWMD and FWC also established a 50-year Cooperative Agreement (Contract No. 22270) giving the FWC management authority over two new additions to the area (Appendix 11.2.18).

Further management authority derives from Article IV, Section 9 of the Florida Constitution as well as the guidance and directives of Chapters 253, 259, 327, 370, 373, 375, 378, 379, 403, 487, 597, and 870 of the F.S. These constitutional provisions and laws provide the FWC with the authority to protect, conserve, and manage the State's fish and wildlife resources.

The Board of Trustees' Lease Agreements with the FWC also directs the FWC to "manage the leased premises only for the conservation and protection of natural and historical resources and resource-based, public outdoor recreation which is compatible with the conservation and protection of these public lands, as set forth in subsection 253.023(11), F.S...." The lease agreement further directs the FWC to "implement applicable Best Management Practices for all activities under this lease in compliance with paragraph 18-2.018(2)(h), F.A.C., which have been selected, developed, or approved by lessor, lessee, or other land managing agencies for the protection and enhancement of the leased premises. The Lease does not authorize the use of any lands located waterward of the mean high or ordinary high water line of any lake, river, stream, creek, bay, estuary, other water body, or of the waters or the airspace hereabove.

The SJRWMD's Cooperative Agreement with the FWC states that the FWC shall manage the SJRWMD-owned parcels consistent with Lease No. 4344. However, the SJRWMD reserves uses, "including, but not limited to, all water management uses including periodic inundation, construction of works and appurtenant works, access roads and supporting structures. Water management uses shall take priority over all other uses..."

## **1.3 Acquisition**

### **1.3.1 Acquisition History**

The SJRWMD began acquiring the Main Tract of the SLWMA in 1982 under the SOR program. By 1999, both the Board of Trustees and the SJRWMD had acquired 5,045 acres of the SLWMA's Main Tract under the SOR, P-2000, and Scrub Jay Refugia CARL projects. In 2020, the SJRWMD received a donation of 209 acres, which was added to the Main Tract of the SLWMA. In 2024, seven more acres were purchased by the Board of Trustees under the Strategic Managed Area Lands List Florida Forever project (Figure 10).

The remaining 1,467 acres are distributed over three isolated units (Figures 1-5). These additional units were purchased by the Board of Trustees under the P-2000 project and the BCSEFFP, along with one donation. Most of the land in these units was purchased through multiple

acquisitions of individual, small lots. From 1999 to 2007, about 1,201 of these acres were purchased under P-2000 and the BCSEFFP.

In 2014, a little over one acre was donated to the Board of Trustees from Jett Terrain, LLC, and about 53 acres were purchased by the Board of Trustees under the BCSEFFP. In 2020, 270 more acres were acquired under the same program. In 2021, there was a partial release of 59 acres due to its acreage being erroneously included in an amendment to Lease No. 4163, giving the land back to the Tosohatchee Game Preserve Inc.

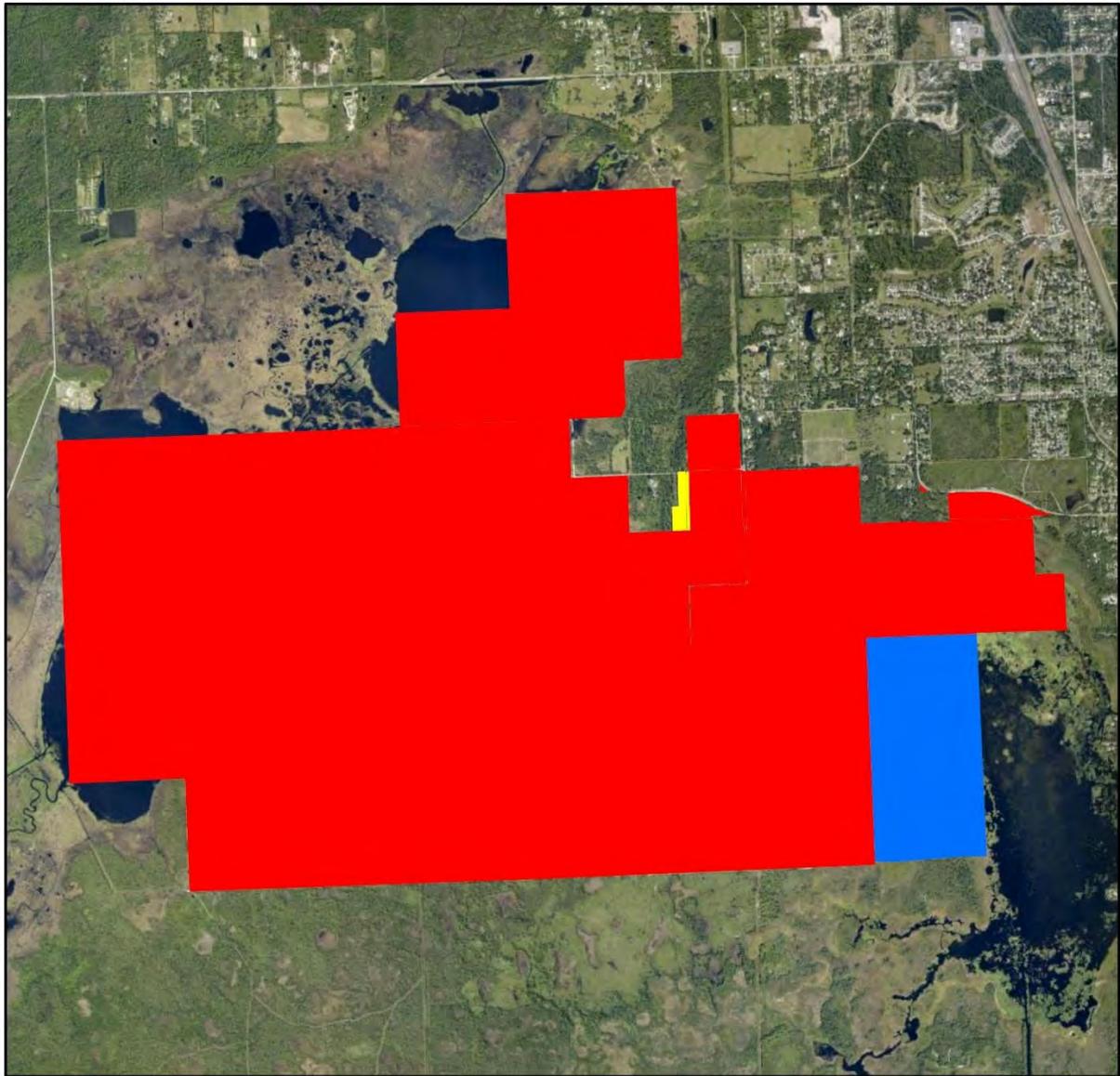
### **1.3.2 Purpose for Acquisition of the Property**

The original acquisition of the SLWMA was acquired by the SJRWMD under their SOR program to preserve the watershed and water quality of the St. Johns River and to provide natural resource based public outdoor recreation and education.

The purposes of the BCSEFFP are to preserve the remaining swaths of coastal scrub habitat and other associated habitats to conserve lands for the federally listed Threatened Florida scrub-jay (*Aphelocoma coerulescens*) and a variety of other imperiled and rare wildlife and plants that remain within what was once a much larger, contiguous area of coastal scrub habitat, as well as to preserve the watershed of the St. Johns River and Indian River Lagoon systems.

### **1.3.3 Encumbrances**

On the SLWMA, there is one easement with the Florida Gas Transmission Company (Easement No. 30879) for the construction and maintenance of a pipeline for the transportation of natural gas. There is also one housing agreement for FWC staff (Contract No. 25130).



**Figure 10. Title Ownership of the SLWMA Main Tract**

## **1.4 Planning Philosophy**

The FWC emphasizes consensus-building to engage, understand, and incorporate the ideas of the various interests, user groups, and communities that it serves. To achieve this, the FWC convenes a Management Advisory Group (MAG) meeting, which engages stakeholders from various user groups at the beginning of FWC's planning process, and a public hearing in which the public can provide formal testimony.

The FWC maintains transparency and accountability throughout the development and implementation of the Management Plan by following a "living document" concept, which links each plan with the previous plan by reporting on the objectives, management activities, and projects accomplished over the last planning timeframe (see Section 4). The Management Plan serves as the guiding framework to implement an adaptive management process, and content will be evaluated throughout the planning period to achieve comprehensive conservation goals (Section 4.2). As needed, amendments to Management Plans are presented to the DSL and ARC for review and consideration.

## **1.5 Public Involvement**

The FWC conducted a MAG meeting in Titusville, Florida, on July 23, 2025, to obtain input from both public and private stakeholders regarding management of the SLWMA. Results of this meeting were used by the FWC to develop management goals and objectives and to identify opportunities and strategies for management to include in this Management Plan (Appendix 11.3.1). Further, a public hearing, as required by Chapter 259.032(10), F.S., was held in Mims, Florida, on September 25, 2025, to solicit input and comments from the public regarding this Management Plan (Appendix 11.4). A Management Prospectus was made available to the public 30 days prior to the hearing. A report of that hearing can be found in Appendix 11.3.2. A [website](#) is also maintained for receipt of public input. Further testimony and input are received at a public meeting held by ARC. Input received from all public involvement efforts is considered in the development of the update to this Management Plan.

# **2 Natural and Cultural Resources**

## **2.1 Physiography**

### **2.1.1 Topography and Geologic Formations**

The Main Tract of the SLWMA is located in the Barrier Island Sequence District in both the Upper St. Johns River Valley and Atlantic Coastal Complex Provinces. Holocene sediments are specific to this tract; these sediments occur at less than five feet above mean sea level (MSL) and include quartz sands, carbonate sands and muds, and organics.

The Grissom Parkway, Ten Mile Ridge, and Micco Expansion units are also located in the Barrier Island Sequence District and the Atlantic Coastal Complex Province. All three units have Anastasia formations. These formations are up to 100 feet in thickness and mainly comprised of

quartz sand and seashells that have been cemented together, as well as coquinoïdal limestone, unconsolidated shell, and shelly sands.

The Grissom Parkway Unit also has shelly sediments of the Plio-Pleistocene. Shelly sediments of Plio-Pleistocene age are mollusk-bearing sediments that contain some of the most abundant and diverse fossil faunas in the world, consisting of fossiliferous sands and carbonates. Lithologically, these sediments are complex, varying from unconsolidated, variably calcareous and fossiliferous quartz sands to well indurated, sandy, fossiliferous limestones.

The topography of the SLWMA is relatively flat, characteristic of the broad, low areas along the upper St. Johns River basin. A few scattered knolls, numerous seasonal wet depressions scattered throughout the flatwoods and a few Native American mounds exemplify relief. Elevations on the Main Tract of the SLWMA range between 10 feet and 25 feet above MSL.

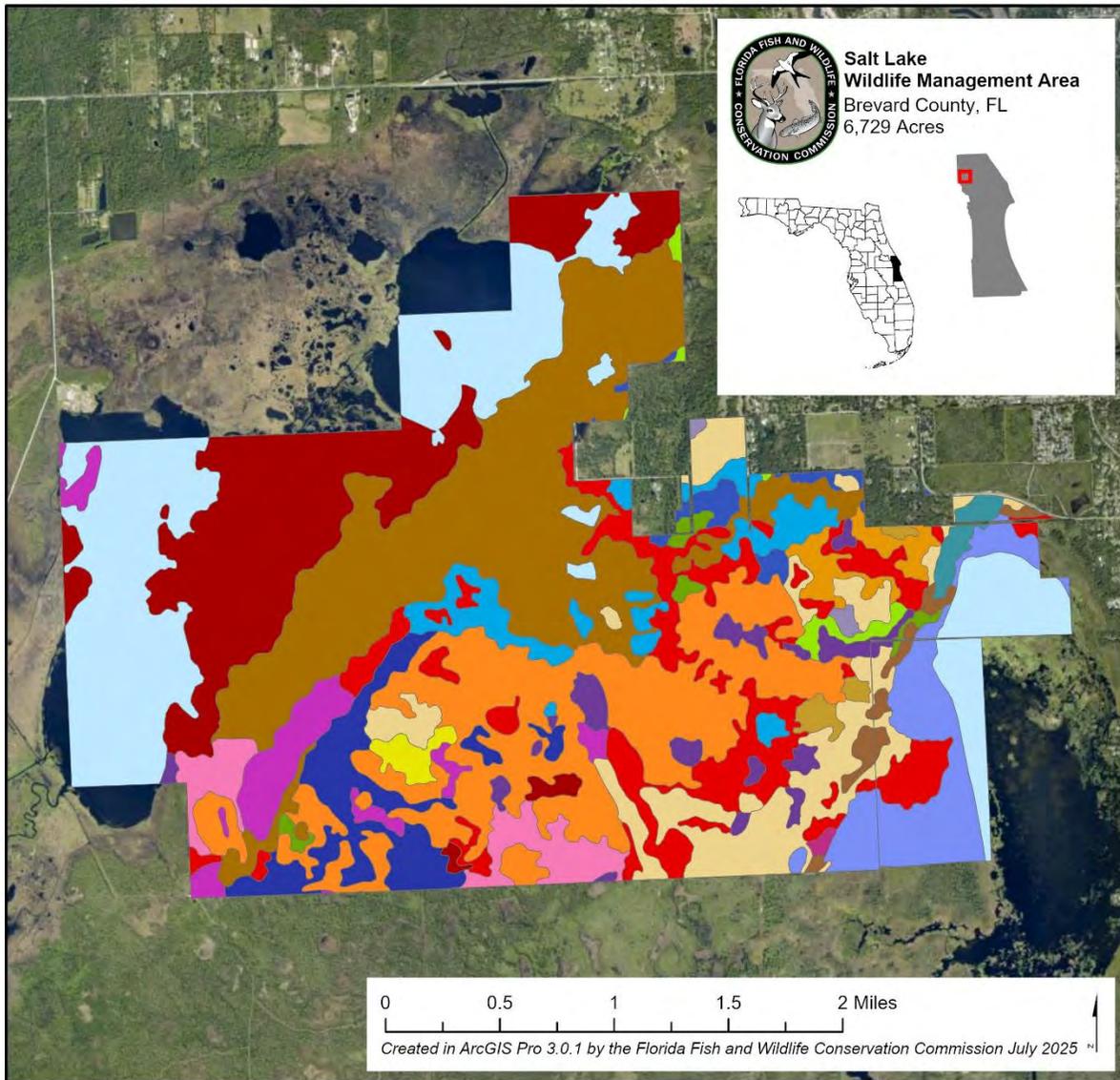
### **2.1.2 Soils**

The U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) data were used to identify the SLWMA soil series and depth-to-water table. The map units described in the soil survey of the SLWMA are distributed as shown in Figures 11-13. Analyses of depth-to-water table on the SLWMA are also provided in Figures 14-16. The NRCS defines a soil map unit as: “a collection of soil areas or non-soil areas (miscellaneous areas) delineated in a soil survey.”<sup>1</sup> Soil map units may contain multiple soil components, which are given names that are unique identifiers. The NRCS defines the water table as, “the saturated zone in the soil.”<sup>1</sup> These numbers can be affected by the hydrogeology of an area. Appendix 11.5 lists the names and official map unit descriptions as determined by the NRCS.

The SLWMA is about 13% water. The distribution and associated percentages of soil types on the SLWMA are as follows: Holopaw sand (14%); Wabasso sand (13%); Myakka sand (12%); Floridana, Chobee, and Felda soils, frequently flooded (9%); Tomoka muck, frequently ponded (8%); and Anclote sand (9%). Another 6% of the area is made up of both Immokalee sand and Riviera sand. The remaining acreage of the SLWMA is made up of trace amounts of depressional Basinger sand; Chobee mucky loamy fine sand; Delray sand, occasionally flooded; EauGallie sand; EauGallie, Winder, and Riveria soils; Floridana sand; Malabar sand; Paola fine sand; Pomello sand; Quartzipsamments, smoothed; Samsula muck, frequently ponded; St. Johns sand; St. Lucie fine sand; Taveres fine sand; Terra Ceia muck; steep Udorthents; and, Valkaria sand.<sup>1</sup>

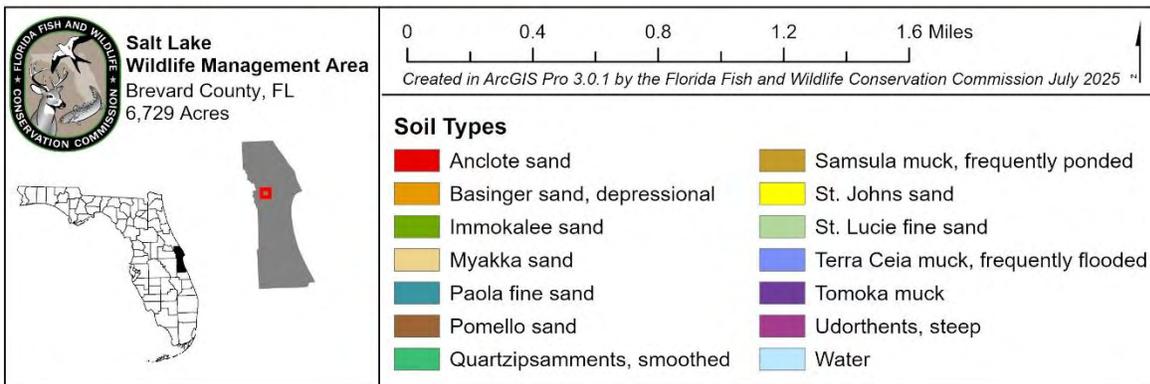
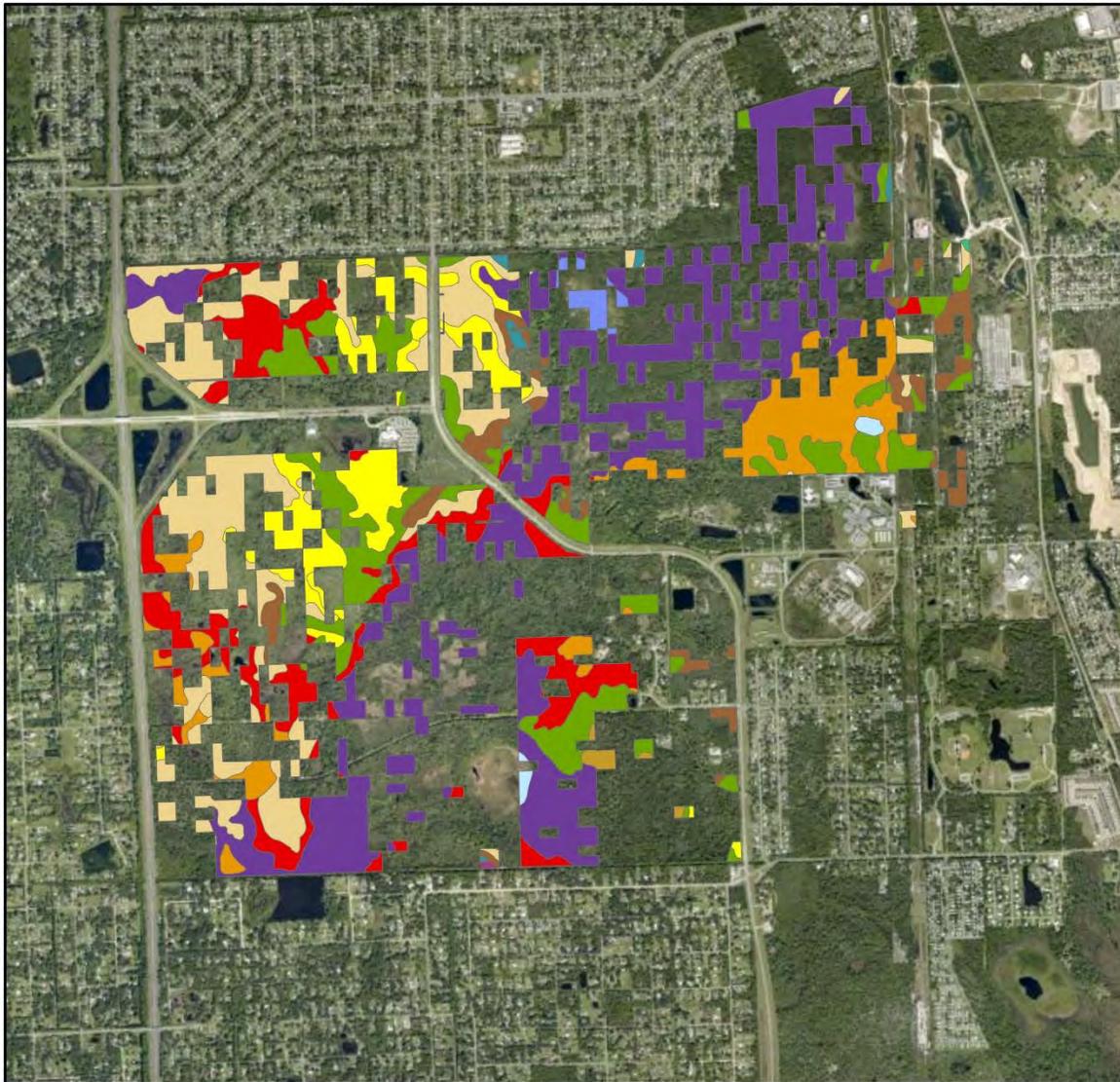
### **2.1.3 Standard Weather Conditions**

In general, moderate climates occur in Brevard County. The SLWMA is characterized by long, warm summers and mild winters. The average daily winter temperature over the last 10 years has been 66.8° Fahrenheit (F), with an average minimum temperature of approximately 65.6°F. The average daily summer temperature is 81.1°F with an average maximum temperature of approximately 82.2°F.<sup>2</sup> According to an on-site rain gauge, over the last 10 years, the SLWMA has seen an average annual rainfall of 60 inches with the majority occurring in the summer season.<sup>2</sup>

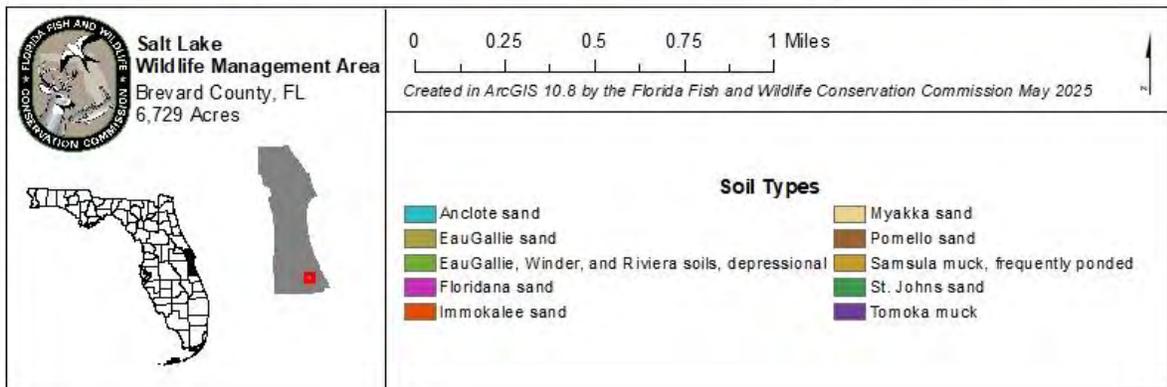
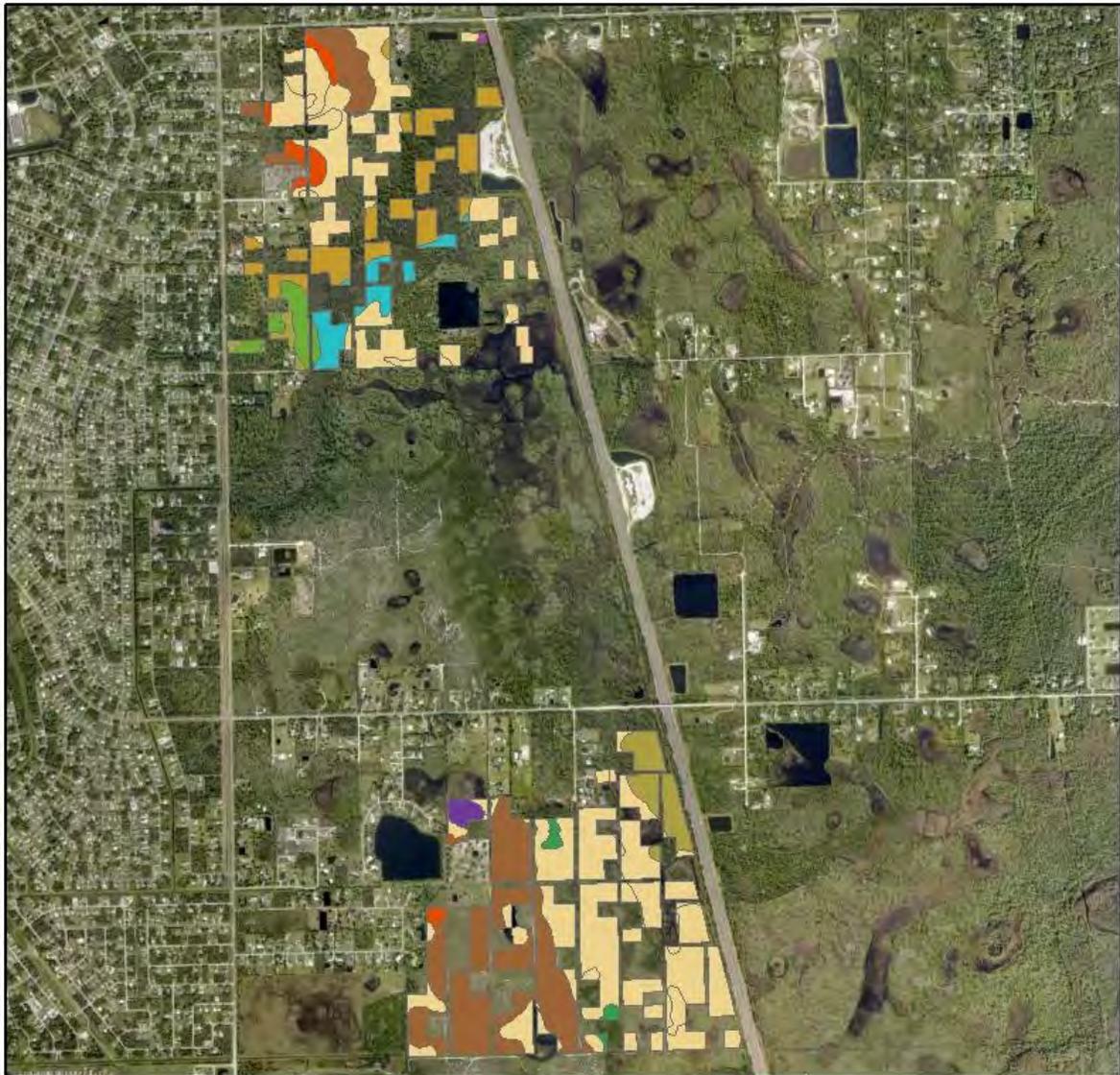


Soil Types	
<span style="color: red;">■</span> Anclote sand	<span style="color: teal;">■</span> Paola fine sand
<span style="color: orange;">■</span> Basinger sand, depressional	<span style="color: pink;">■</span> Pineda sand
<span style="color: yellow;">■</span> Chobee mucky loamy fine sand, depressional	<span style="color: brown;">■</span> Pomello sand
<span style="color: lightgreen;">■</span> Delray sand, occasionally flooded	<span style="color: blue;">■</span> Riviera sand
<span style="color: cyan;">■</span> EauGallie sand	<span style="color: gold;">■</span> Samsula muck, frequently ponded
<span style="color: magenta;">■</span> Floridana sand	<span style="color: purple;">■</span> Tavares fine sand
<span style="color: darkred;">■</span> Floridana, Chobee, and Felda soils, frequently flooded	<span style="color: lightblue;">■</span> Terra Ceia muck, frequently flooded
<span style="color: brown;">■</span> Holopaw sand	<span style="color: darkpurple;">■</span> Tomoka muck
<span style="color: green;">■</span> Immokalee sand	<span style="color: grey;">■</span> Valkaria sand
<span style="color: blue;">■</span> Malabar sand	<span style="color: orange;">■</span> Wabasso sand
<span style="color: tan;">■</span> Myakka sand	<span style="color: lightblue;">■</span> Water

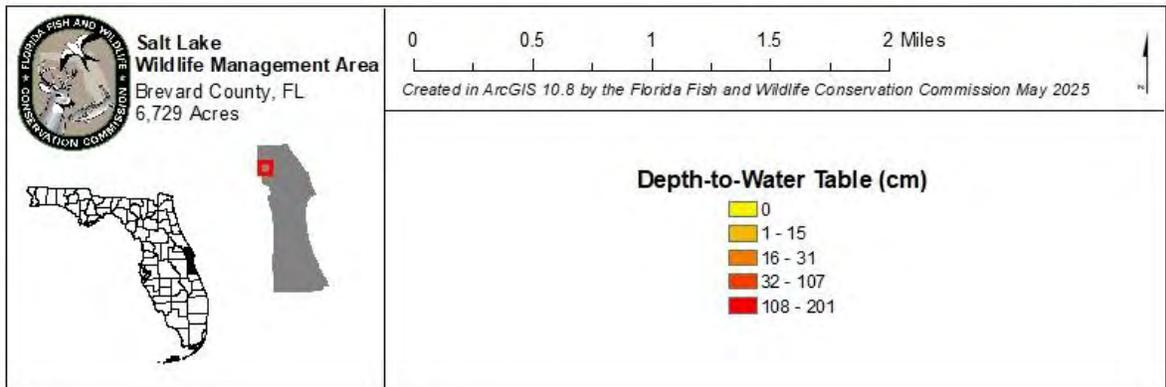
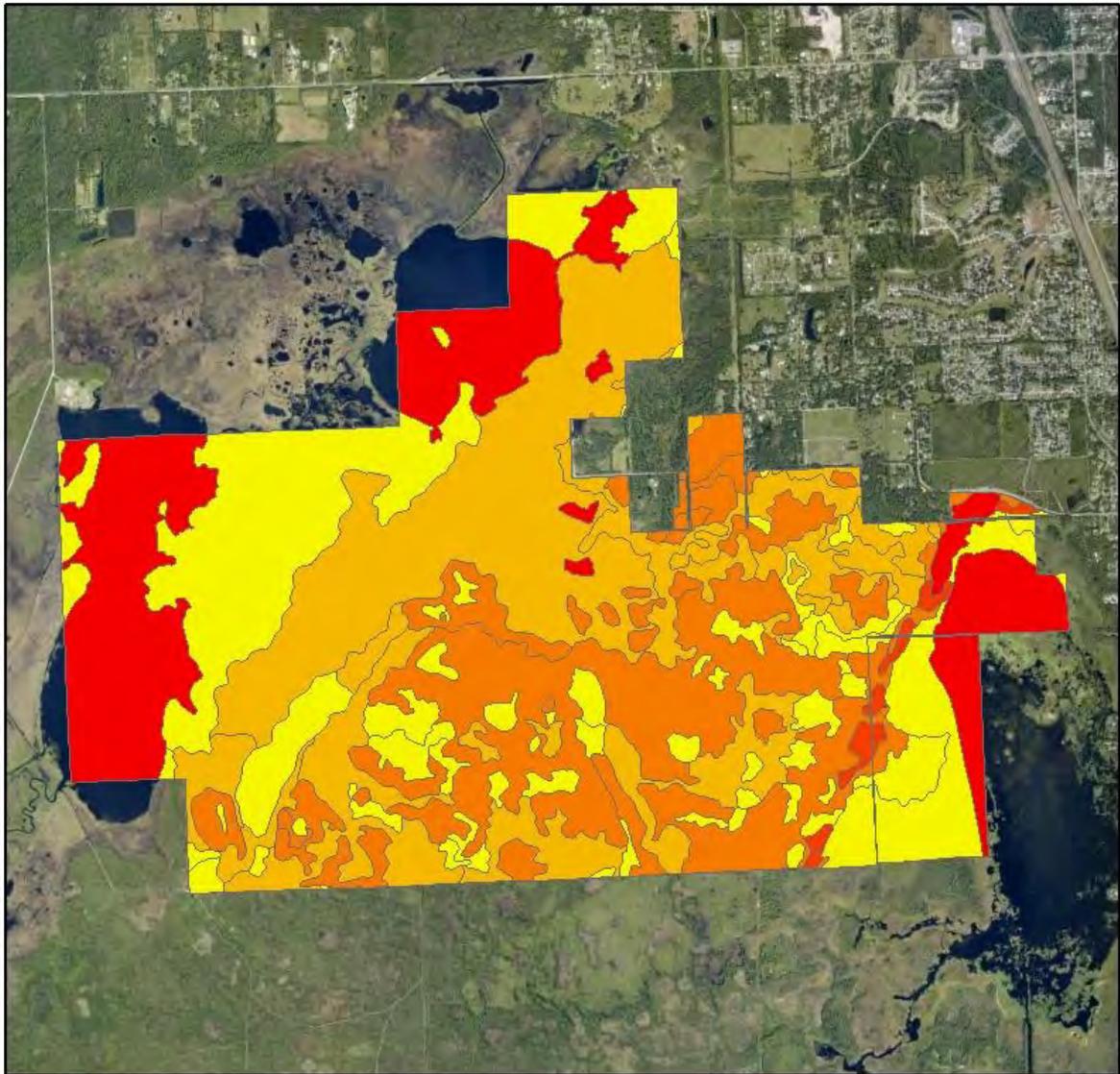
**Figure 11. Soil Types of the SLWMA Main Tract**



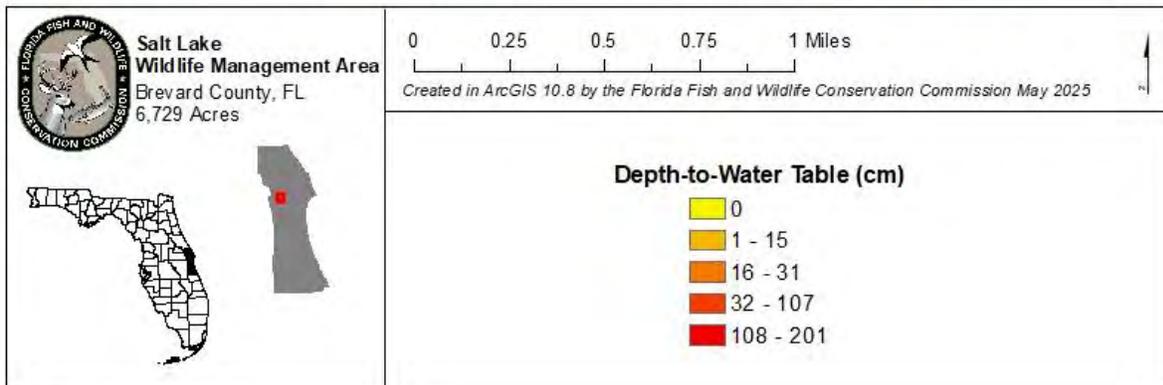
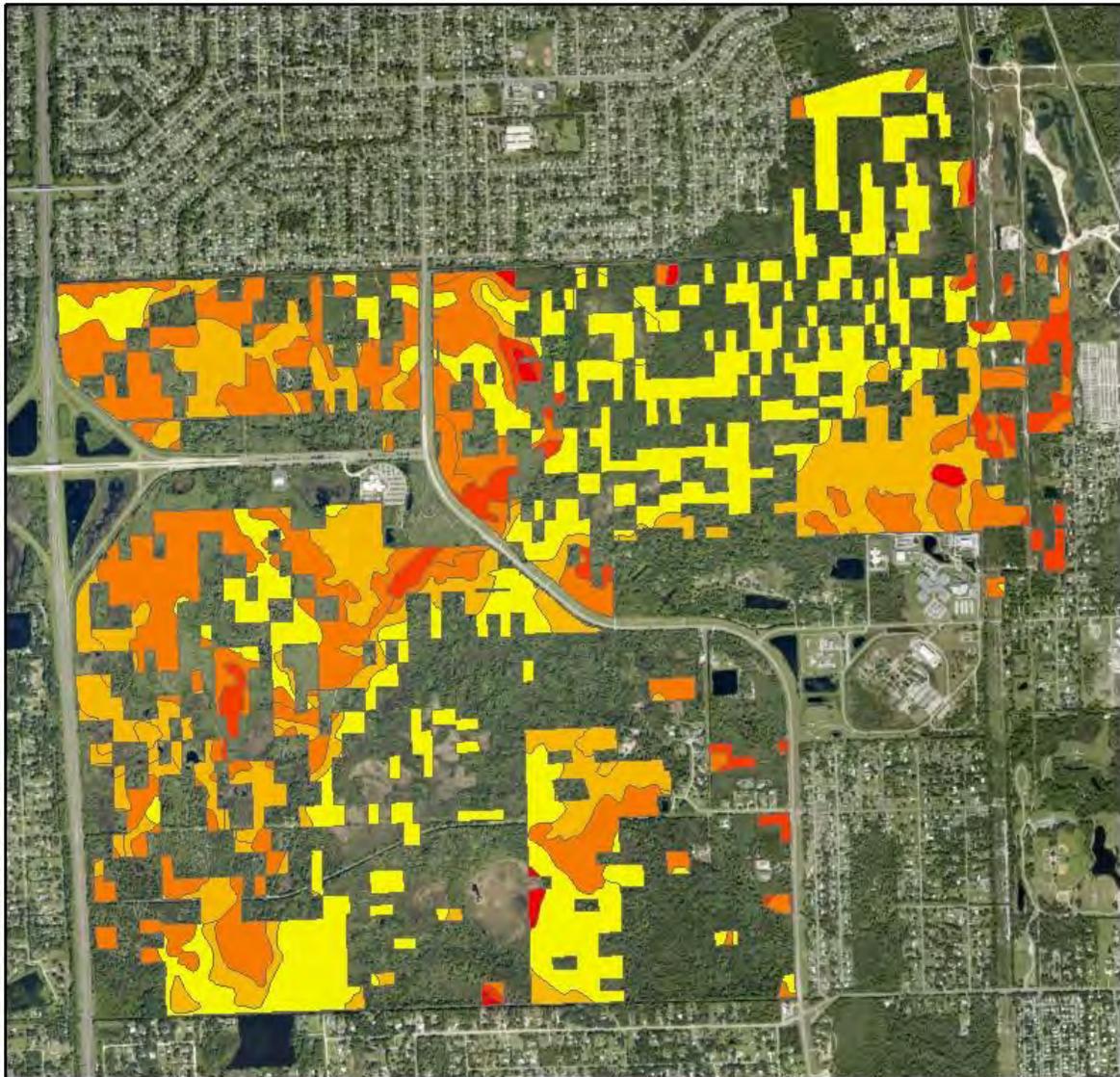
**Figure 12. Soil Types of the SLWMA Grissom Parkway Unit**



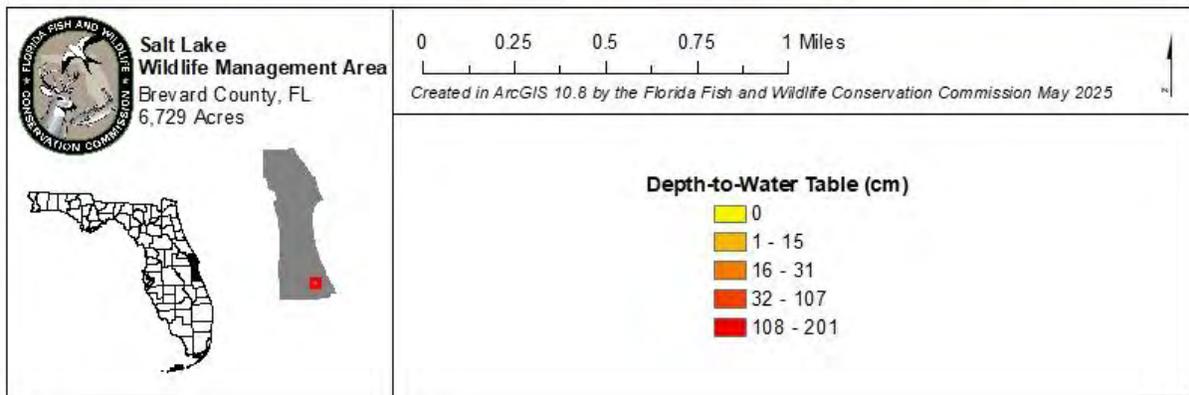
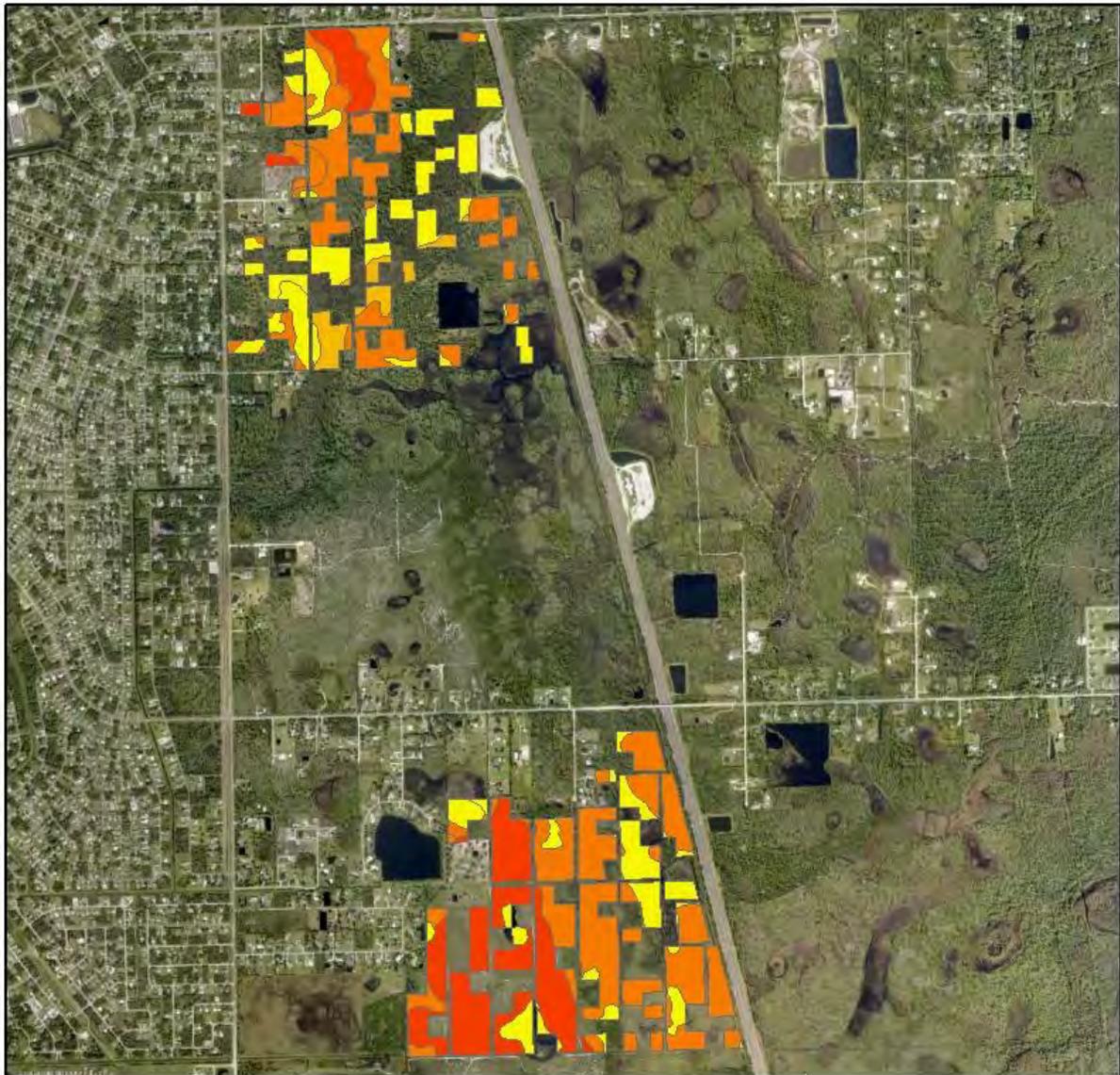
**Figure 13. Soil Types of the SLWMA Ten Mile Ridge (Top) and Micco Expansion (Bottom) Units**



**Figure 14. Depth-to-Water Table (cm) of the SLWMA Main Tract**



**Figure 15. Depth-to-Water Table (cm) of the SLWMA Grissom Parkway Unit**



**Figure 16. Depth-to-Water Table (cm) of the SLWMA Ten Mile Ridge (Top) and Micco Expansion (Bottom) Units**

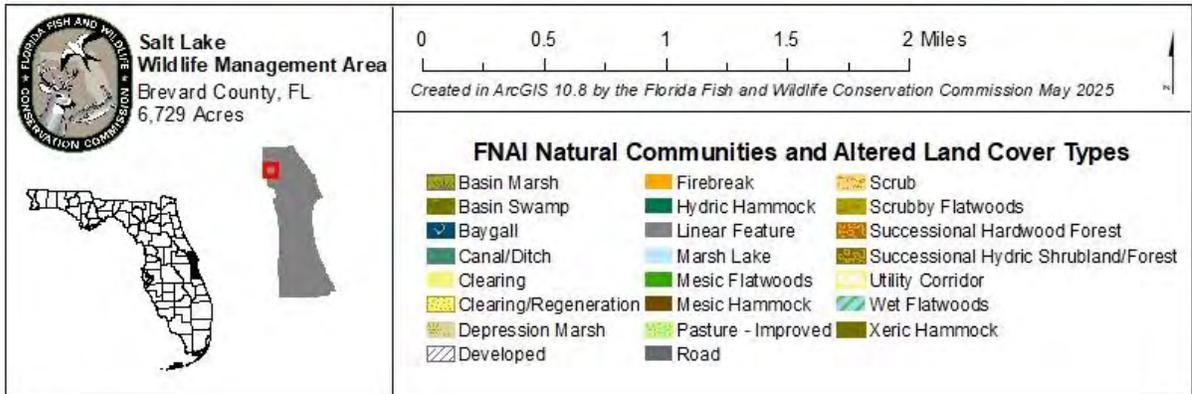
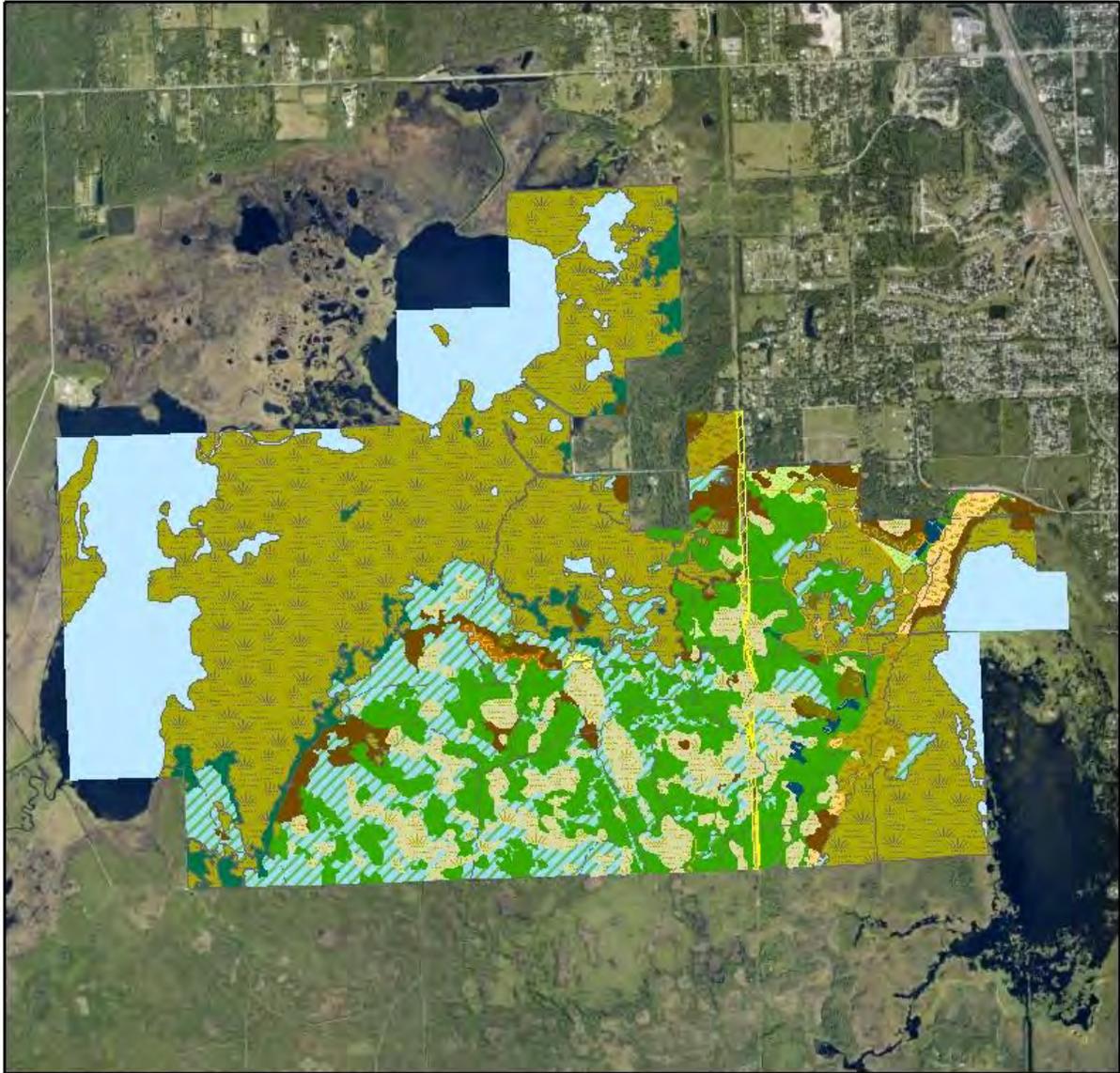
## 2.2 Vegetation

Through the services of the Florida Natural Areas Inventory (FNAI), the FWC has mapped the current and historic natural communities and altered landcover types of the SLWMA Main Tract and documented 23 natural communities and altered landcover types (Table 3, Figures 17 and 18). Descriptions of natural communities and altered landcover types can be found in Appendix 11.6.

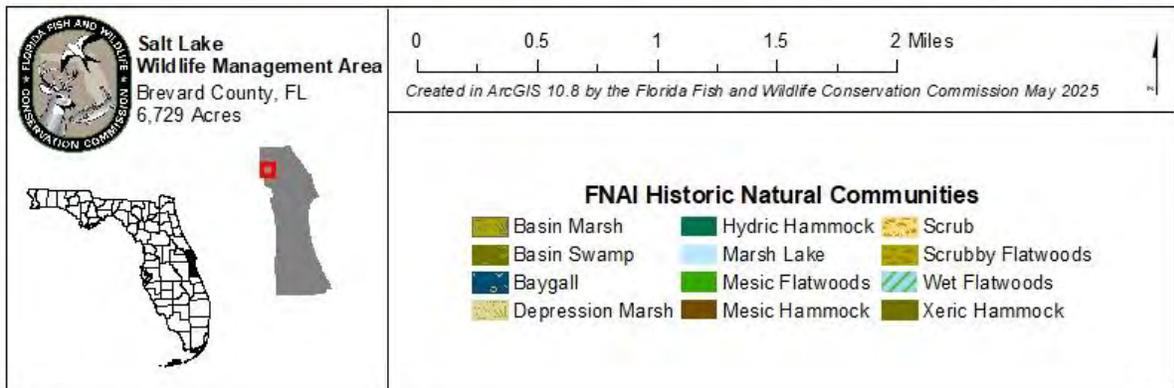
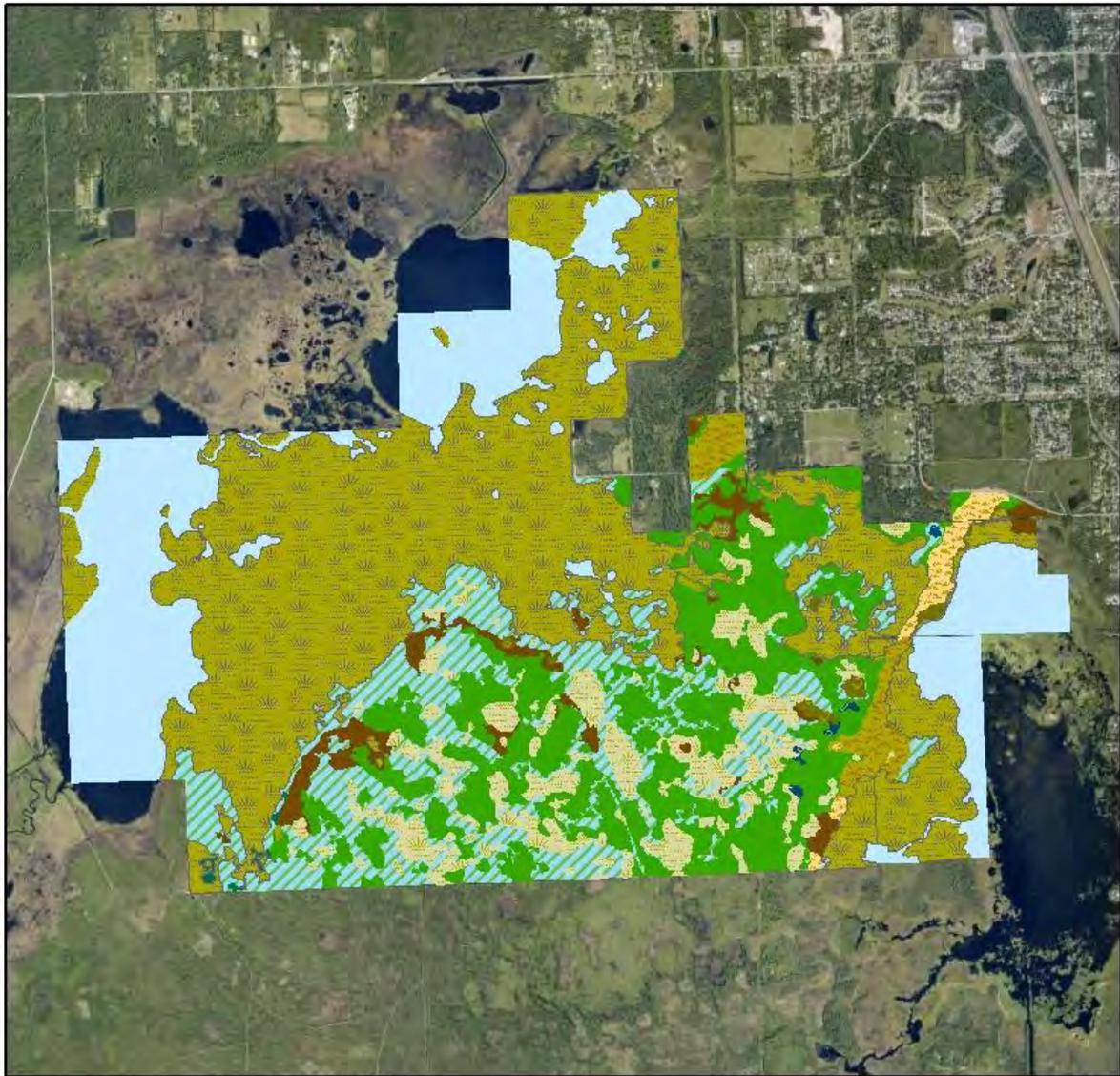
Additionally, native plant species found on the SLWMA Main Tract have been documented and recorded by either FWC staff or contractors (Appendix 11.7). Currently, 24 imperiled plant species, seven Commercially Exploited plant species, and 76 non-native plant species have been documented on the area (Tables 4 and 5, Sections 2.2.1 and 2.2.2).

**Table 3. Current Natural Communities and Altered Landcover Types**

<b>Community Type</b>	<b>GIS Acres</b>	<b>Percentage</b>
Basin Marsh	2,071.99	38.87%
Basin Swamp	18.99	0.36%
Baygall	12.89	0.24%
Canal/Ditch	3.76	0.07%
Clearing	0.02	<0.01%
Clearing/Regeneration	3.51	0.07%
Depression Marsh	353.10	6.62%
Developed	3.15	0.06%
Firebreak	12.92	0.24%
Hydric Hammock	129.43	2.43%
Linear Feature	2.55	0.05%
Marsh Lake	903.40	16.95%
Mesic Flatwoods	768.56	14.42%
Mesic Hammock	188.37	3.53%
Pasture - Improved	25.26	0.47%
Road	66.61	1.25%
Scrub	40.42	0.76%
Scrubby Flatwoods	82.63	1.55%
Successional Hardwood Forest	12.04	0.23%
Successional Hydric Shrubland/Forest	7.51	0.14%
Utility Corridor	22.64	0.42%
Wet Flatwoods	598.91	11.23%
Xeric Hammock	2.49	0.05%



**Figure 17. FNAI Current Natural Communities and Altered Landcover Types of the SLWMA Main Tract**



**Figure 18. Historic Natural Communities of the SLWMA Main Tract**

### 2.2.1 Imperiled Plants

For the purposes of this Management Plan, the term “imperiled species” as it relates to plants refers to plant species that Florida Department of Agriculture and Consumer Services (FDACS) or the United States Fish and Wildlife Service (USFWS) has designated as Endangered or Threatened. This designation is commonly known as “listed species”, and all names and status determinations were derived from Florida’s Regulated Plant Index rule (5B-40.0055, F.A.C.) that is maintained by FDACS.

FNAI conducted a rare plant survey in Fiscal Year 2022/2023 on the SLWMA Main Tract and identified 24 imperiled plant species, of which four are state-designated Endangered and 13 are state-designated Threatened (Table 4). The protections afforded plants that occur on conservation lands, in conjunction with management actions including invasive plant removal and prescribed fire, will continue to maintain and enhance habitat for these and other imperiled plants. As such, these species should persist under planned management on the SLWMA.

In addition to the imperiled plants, seven plants that are state-designated as Commercially Exploited are known to occur on the SLWMA Main Tract (Table 4). The FWC will continue to monitor the known occurrences of these species and report any illegal collection to the appropriate authorities.

**Table 4. Imperiled Plant Species**

Scientific Name	Common Name	Status	FNAI Ranks*
<i>Calopogon multiflorus</i>	Many-flowered grass-pink	ST	G3 / S2S3
<i>Encyclia tampensis</i>	Butterfly orchid	CE	G4 / S3S4
<i>Epidendrum conopseum</i>	Green-fly orchid	CE	G4 / S4S5
<i>Eulophia ecristata</i>	Non-crested eulophia	ST	G4 / S4
<i>Harrisella porrecta</i>	Threadroot orchid	ST	GU / S4
<i>Lilium catesbaei</i>	Catesby lily	ST	G4 / S4
<i>Listera australis</i>	Southern twayblade	ST	G5 / S3S4
<i>Matelea gonocarpos</i>	Angle pod	ST	G5 / SNR
<i>Myrcianthes fragrans</i>	Simpson’s stopper	ST	G4 / S4
<i>Nemastylis floridana</i>	Celestial lily	SE	G3 / S3
<i>Ophioglossum palmatum</i>	Hand fern	SE	G4 / S3
<i>Osmunda cinnamomea</i>	Cinnamon fern	CE	G5 / S4
<i>Osmunda regalis</i>	Royal fern	CE	G5T5 / S5
<i>Pinguicula caerulea</i>	Blue-flowered butterwort	ST	G4 / S3S4
<i>Pinguicula lutea</i>	Yellow-flowered butterwort	ST	G4G5 / S3
<i>Platanthera nivea</i>	Snowy orchid	ST	G3G4 / S3
<i>Rhapidophyllum hystrix</i>	Needle palm	CE	G4 / S4
<i>Serenoa repens</i>	Saw palmetto	CE	G4G5 / S4S5
<i>Spiranthes laciniata</i>	Lace-lip ladies’ tresses	ST	G4G5 / S3S4
<i>Stenorrhynchos lanceolatus</i>	Leafless beaked orchid	ST	G4 / S3

Scientific Name	Common Name	Status	FNAI Ranks*
<i>Tillandsia fasciculata</i>	Common wild-pine	SE	G5 / S4?
<i>Tillandsia utriculata</i>	Giant wild-pine	SE	G5 / S3
<i>Zamia integrifolia</i>	Coontie	CE	G3G4 / S3S4
<i>Zephyranthes simpsonii</i>	Simpson's zephyr-lily	ST	G2G3 / S2S3

\*Explanations of FNAI ranks can be found in Appendix 11.8

Acronym	Status
CE	Commercially Exploited (State designation)
SE	State Endangered
ST	State Threatened

It is possible other imperiled species are on the SLWMA, and, if encountered, staff will document these occurrences. Florida's imperiled species are adapted to natural communities and should continue to benefit from the FWC's ongoing and planned management to maintain and enhance natural community structure and function. Under the FWC's management, these species have a higher probability of persistence than in the absence of this management. However, while habitat management provides overall benefits to a host of species reliant upon these natural communities, imperiled species sometimes require specific attention. Detailed descriptions of rare plants known to occur on the SLWMA can be found in Appendix 11.9.

### 2.2.2 Non-native Plants

FWC biologists and contractors have documented 76 non-native plant species on the SLWMA, of which 38 are invasive (Table 5). Species that are considered invasive are species that (a) are non-native to a specified geographic area; (b) were introduced by humans (intentionally or unintentionally); and (c) do or can cause environmental, economic, or human harm. The FWC relies on the Florida Invasive Species Council (FISC) for the categorization of invasive plant species.

**Table 5. Non-native Plant Species**

Scientific Name	Common Name	FISC Category
<i>Albizia julibrissin</i>	Silktree, Mimosa	I
<i>Alternanthera philoxeroides</i>	Alligatorweed	II
<i>Asparagus aethiopicus</i>	Asparagus fern	I
<i>Begonia cucullata</i>	Wax begonia, Club begonia	II
<i>Cantinoa mutabilis</i>	Tropical bushmint	-
<i>Ceratopteris thalictroides</i>	Watersprite	-
<i>Cinnamomum camphora</i>	Camphor tree	I
<i>Commelina diffusa</i> var. <i>diffusa</i>	Common dayflower	-
<i>Crotalaria lanceolata</i>	Lanceleaf rattlebox	-
<i>Cupaniopsis anacardioides</i>	Carrotwood	I
<i>Cuphea carthagenensis</i>	Colombian waxweed	-
<i>Cynodon dactylon</i>	Bermudagrass	-
<i>Cyperus aristulatus</i>	Awned halfchaff sedge	-
<i>Cyperus blepharoleptos</i>	Cuban bulrush	-

<i>Cyperus esculentus</i>	Yellow nutgrass	-
<i>Cyperus lanceolatus</i>	Epiphytic flatsedge	-
<i>Dactyloctenium aegyptium</i>	Durban crowfootgrass	II
<i>Desmodium incanum</i>	Zarabacoa comun	-
<i>Dioscorea bulbifera</i>	Air-potato	I
<i>Drymaria cordata</i>	West Indian chickweed	-
<i>Dysphania ambrosioides</i>	Mexican tea	-
<i>Echinochloa crus-galli</i>	Barnyardgrass	-
<i>Eichhornia crassipes</i>	Common water hyacinth	I
<i>Emilia fosbergii</i>	Florida tasselflower	-
<i>Enterolobium contortisiliquum</i>	Earpod tree	-
<i>Eragrostis atrovirens</i>	Thalia lovegrass	-
<i>Eugenia uniflora</i>	Surinam cherry	I
<i>Helianthus simulans</i>	Muck sunflower	-
<i>Hemarthria altissima</i>	Limpogress	II
<i>Imperata cylindrica</i>	Cogon grass	I
<i>Kalanchoe blossfeldiana</i>	Christmas kalanchoe	-
<i>Kummerowia striata</i>	Japanese clover	-
<i>Landoltia punctata</i>	Dotted duckweed	II
<i>Lantana strigocamara</i>	Lantana, Shrub verbena	I
<i>Lonicera japonica</i>	Japanese honeysuckle	I
<i>Ludwigia peruviana</i>	Peruvian primrosewillow	I
<i>Lygodium japonicum</i>	Japanese climbing fern	I
<i>Lygodium microphyllum</i>	Old world climbing fern	I
<i>Melaleuca quinquenervia</i>	Punktree, Melaleuca	I
<i>Melia azedarach</i>	Chinaberry	II
<i>Melinis repens</i>	Natal grass	I
<i>Momordica charantia</i>	Balsam pear, Balsam apple	II
<i>Murdannia nudiflora</i>	Nakedstem dewflower	-
<i>Myriophyllum aquaticum</i>	Parrot feather water milfoil	-
<i>Nephrolepis cordifolia</i>	Tuberous sword fern	I
<i>Oplismenus hirtellus</i>	Woods grass	-
<i>Panicum repens</i>	Torpedo grass	I
<i>Paspalum notatum</i>	Bahia grass	-
<i>Paspalum urvillei</i>	Vasey grass	-
<i>Philodendron hederaceum</i> var. <i>oxycardium</i>	Heartleaf philodendron	-
<i>Phyllanthus urinaria</i>	Chamber bitter	-
<i>Psidium cattleianum</i>	Strawberry guava	I
<i>Psidium guajava</i>	Guava	I
<i>Pteris grandifolia</i>	Long brake	-
<i>Richardia brasiliensis</i>	Tropical Mexican clover	-
<i>Sacciolepis indica</i>	Indian cupscale	-
<i>Salvinia minima</i>	Common salvinia, Water fern	I

<i>Schinus terebinthifolia</i>	Brazilian pepper	I
<i>Senna occidentalis</i>	Septicweed	-
<i>Solanum capsicoides</i>	Soda apple	-
<i>Solanum diphyllum</i>	Two-leaf nightshade	II
<i>Solanum viarum</i>	Tropical soda apple	I
<i>Sphagneticola trilobata</i>	Wedelia, Creeping oxeye	II
<i>Sporobolus indicus</i>	Smut grass	-
<i>Stellaria media</i>	Common chickweed	-
<i>Syagrus romanzoffiana</i>	Queen palm	II
<i>Syngonium podophyllum</i>	Arrowhead vine	I
<i>Syzygium cumini</i>	Java plum	-
<i>Torenia crustacea</i>	Malaysian false pimpernel	-
<i>Triadica sebifera</i>	Chinese tallow	I
<i>Urena lobata</i>	Caesar weed	I
<i>Urochloa maxima</i>	Guinea grass	II
<i>Urochloa mutica</i>	Para grass	I
<i>Wisteria sinensis</i>	Chinese wisteria	II
<i>Youngia japonica</i>	Oriental false hawksbeard	-
<i>Zeuxine strateumatica</i>	Lawn orchid	-

## 2.3 Fish and Wildlife Resources

As described above, the SLWMA has a variety of natural communities and habitat types that support a wide array of imperiled and more common wildlife species. Active wildlife management practices make the SLWMA an excellent place to observe wildlife. The SLWMA’s basin marsh, marsh lake, mesic flatwoods, and other natural communities provide critical habitat for resident and migratory wildlife. The FWC maintains an inventory of fauna occurring on the SLWMA listed in Appendix 11.10, including mammals, birds, reptiles, amphibians, and invertebrates.

### 2.3.1 Imperiled Fish and Wildlife

For the purposes of this Management Plan, the term “imperiled fish and wildlife” refers to animal species that are currently federally-designated as Threatened or Endangered by the USFWS or state-designated as Threatened by the FWC. This designation is also commonly known as “listed species.” Table 6 outlines all imperiled fish and wildlife that have been observed on the SLWMA.

**Table 6. Imperiled Fish and Wildlife Species**

Scientific Name	Common Name	Status	FNAI Ranks*
<i>Antigone canadensis pratensis</i>	Florida sandhill crane	ST	G5T2/S2
<i>Aphelocoma coerulescens</i>	Florida scrub-jay	FT	G2/S2
<i>Caracara plancus audubonii</i>	Audubon’s crested caracara	FT	G5/S2
<i>Drymarchon couperi</i>	Eastern indigo snake	FT	G2G3/S2?
<i>Egretta caerulea</i>	Little blue heron	ST	G5/S4
<i>Egretta rufescens</i>	Reddish egret	ST	G4/S2

Scientific Name	Common Name	Status	FNAI Ranks*
<i>Egretta tricolor</i>	Tricolored heron	ST	G5/S4
<i>Gopherus polyphemus</i>	Gopher tortoise	ST	G3/S3
<i>Haematopus palliatus</i>	American oystercatcher	ST	G5/S2
<i>Laterallus jamaicensis jamaicensis</i>	Eastern black rail	FT	G3/S2
<i>Mycteria americana</i>	Wood stork	FT	G4/S2
<i>Platalea ajaja</i>	Roseate spoonbill	ST	G5/S2
<i>Rynchops niger</i>	Black skimmer	ST	G5/S3
<i>Sternula antillarum</i>	Least tern	ST	G4/S3

\*Explanations of FNAI ranks can be found in Appendix 11.8

Acronvm	Status
FT	Federally Threatened
ST	State Threatened

At its November 2016 Commission meeting, the FWC approved Florida's [Imperiled Species Management Plan](#), which included changes to the listing status for many wildlife species. Subsequent rule changes (68A-27.003 and 68A-27.005, F.A.C.) have come into effect since the Imperiled Species Management Plan was approved and those changes have been incorporated into this Management Plan. All federally listed species that occur in Florida are included in [Florida's Endangered and Threatened Species list](#) as federally-designated Endangered or Threatened. Species that are not federally listed, but which have been identified by the FWC as being at some level of risk of extinction, are state-designated as Threatened.

#### Gopher Tortoise Recipient Site Eligibility

Per Chapter 259.01, F.S., the FWC has evaluated the SLWMA for eligibility as a recipient site for gopher tortoises. Based on monitoring results from the 2015 gopher tortoise survey, as well as current habitat conditions and population size, the FWC is unable to recommend that the SLWMA be considered as a recipient site for gopher tortoise relocation.

#### **2.3.2 Non-native Wildlife Species**

In addition to the native wildlife species listed in Appendix 11.10, 14 non-native wildlife species have been documented on the SLWMA (Table 8). The FWC will continue to document any occurrences of non-native species found. More information on monitoring and management of non-native wildlife can be found in Section 4.5 and Section 5.4.

**Table 7. Non-native Fish and Wildlife Species**

Scientific Name	Common Name
<i>Anolis sagrei</i>	Brown anole
<i>Cairina moschata</i>	Muscovy duck
<i>Clarias batrachus</i>	Walking catfish
<i>Columba livia</i>	Rock dove
<i>Eleutherodactylus planirostris</i>	Greenhouse frog

Scientific Name	Common Name
<i>Lilioceris cheni</i>	Air potato leaf beetle
<i>Oreochromis aureus</i>	Blue tilapia
<i>Osteopilus septentrionalis</i>	Cuban tree frog
<i>Passer domesticus</i>	House sparrow
<i>Pterygoplichthys multiradiatus</i>	Orinoco sailfin catfish
<i>Pterygoplichthys pardalis</i>	Sailfin catfish
<i>Streptopelia decaocto</i>	Eurasian collared dove
<i>Sturnus vulgaris</i>	European starling
<i>Sus scrofa</i>	Wild hog

### 2.3.3 FNAI Element Occurrences

A diverse assemblage of wildlife species can be found on the SLWMA. The FWC uses the FNAI Natural Heritage Database to assist in identifying and recording sensitive resources on FWC-managed areas (Appendix 11.11). This database also supplemented the development of the species tables found in Appendices 11.7 and 11.10. FNAI’s Natural Heritage Database is a comprehensive compilation of records documenting the location and ecological status of rare plant and animal species in the state. The database consists of “element occurrences”, where an “element” is any exemplary or rare component of the natural environment, such as a species, natural community, or other ecological feature; and an “element occurrence” is an area of land and/or water where an element is, or was, present. FNAI scientists “track” (collect information on) approximately 233 vertebrates, 562 invertebrates, and 492 plants representing approximately 13% of the state’s vertebrate species, less than 5% of the invertebrates, and about 12% of the plants. The status of each tracked element is assessed using standardized methodology; each tracked element is assigned ranks that reflect its rarity and degree of imperilment at the global and state level. These ranks are applied using a standardized methodology that incorporates many factors, including geographic range; number, size, and condition of known occurrences; population size and trends; life history characteristics; and threats. An explanation of Natural Heritage rank and definitions are in Appendix 11.8 and may be found [online](#).

The FNAI element occurrence records include 52 occurrences of wildlife species on or in the vicinity of the SLWMA. Several of the imperiled species discussed in Section 2.2.1 and Section 2.3.1 in this report are tracked by FNAI. These species and their ranks are listed in Tables 4 and 6. The following additional species at the SLWMA are tracked by FNAI:

Scientific Name	Common Name	FNAI Ranks*
<i>Anarhynchus wilsonia</i>	Wilson’s plover	G5/S2
<i>Aramus guarauna</i>	Limpkin	G5/S3
<i>Crotalus adamanteus</i>	Eastern diamondback rattlesnake	G3/S3
<i>Danaus Plexippus</i>	Monarch	G4/S4
<i>Dryobates villosus</i>	Hairy woodpecker	G5/S3
<i>Egretta thula</i>	Snowy egret	G5/S3
<i>Elanoides forficatus</i>	Swallow-tailed kite	G5/S2

<i>Eudocimus albus</i>	White ibis	G5/S4
<i>Falco columbarius</i>	Merlin	G5/S2
<i>Falco peregrinus</i>	Peregrine falcon	G4/S2
<i>Haliaeetus leucocephalus</i>	Bald eagle	G5/S3
<i>Hydroprogne caspia</i>	Caspian tern	G5/S2
<i>Lithobates capito</i>	Gopher frog	G2G3/S3
<i>Neofiber alleni</i>	Round-tailed muskrat	G2/S2
<i>Nyctanassa violacea</i>	Yellow-crowned night-heron	G5/S3
<i>Nycticorax nycticorax</i>	Black-crowned night-heron	G5/S3
<i>Pandion haliaetus</i>	Osprey	G5/S3S4
<i>Passerina ciris</i>	Painted bunting	G5T3Q/S1S2
<i>Pelecanus occidentalis</i>	Brown pelican	G5/S3
<i>Peucaea aestivalis</i>	Bachman's sparrow	G3/S3
<i>Plegadis falcinellus</i>	Glossy ibis	G5/S3
<i>Recurvirostra americana</i>	American avocet	G5/S2
<i>Sciurus niger niger</i>	Southern fox squirrel	G5T5/S3
<i>Thalasseus maximus</i>	Royal tern	G5S3
<i>Ursus americanus floridanus</i>	Florida black bear	G5T4/S4

\*Explanations of FNAI ranks can be found in Appendix 11.8

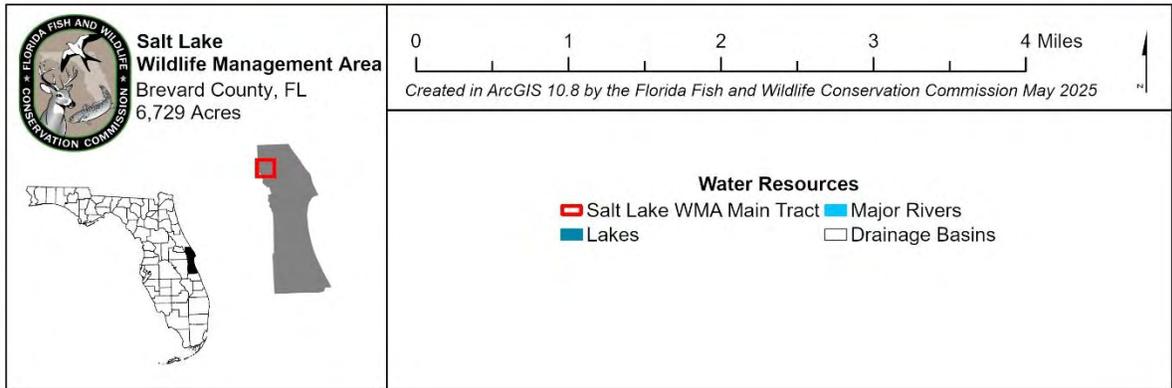
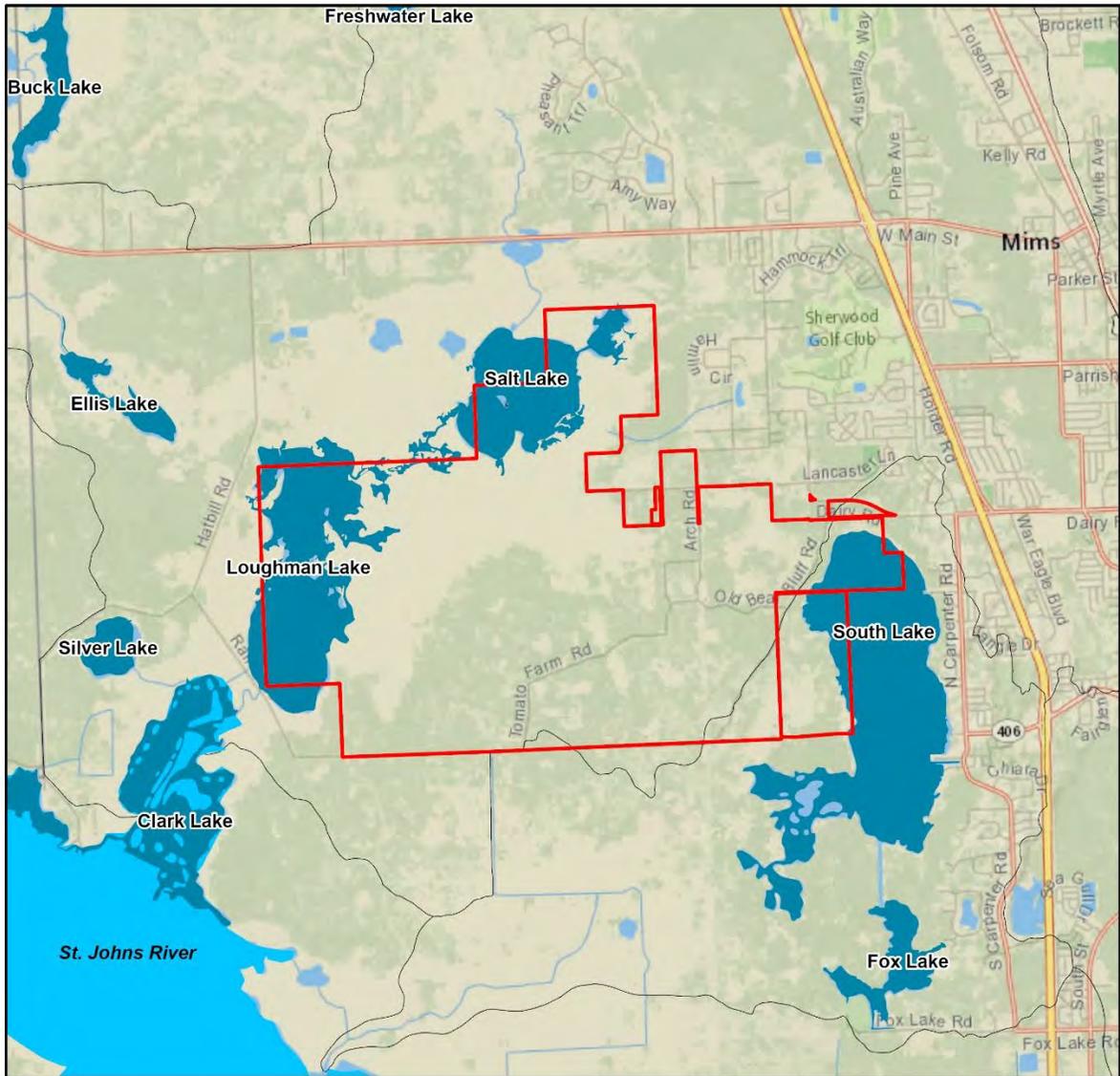
## 2.4 Water Resources

All surface waters of the State are classified by the DEP according to designated uses as described in Chapter 62-302.400, F.A.C. The surface waters of the SLWMA are designated as Class III and classified for fish consumption; recreation or limited recreation; as well as propagation and maintenance of a healthy, well-balanced population of fish and wildlife. Additionally, it is the policy of the DEP to afford the highest protection to Outstanding Florida Waters (OFW) and Outstanding National Resource Waters (Chapter 62-302.700 F.A.C.). No waterbodies on the SLWMA are designated as OFW. No degradation of water quality, other than that allowed in subsections Chapter 62-4.242(2) and (3), F.A.C., is permitted in these OFW, notwithstanding any other DEP rules that may allow water quality to lower. The SLWMA is not located within and/or adjacent to an aquatic preserve.

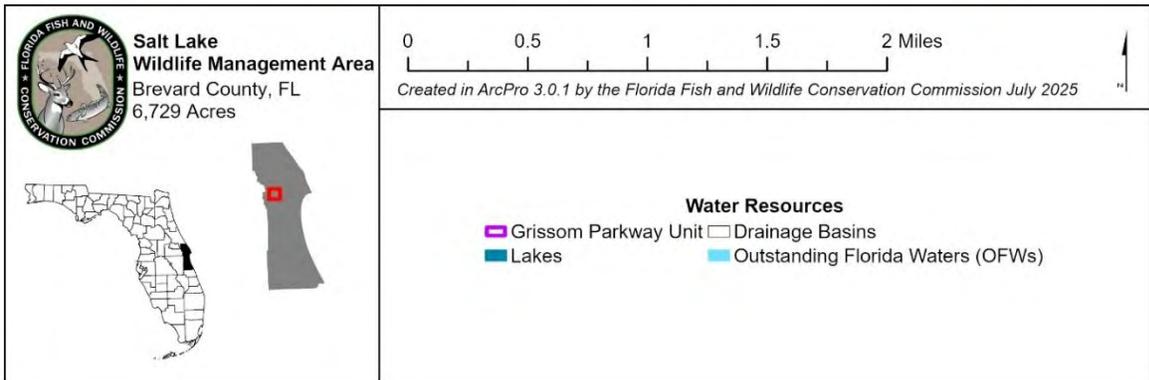
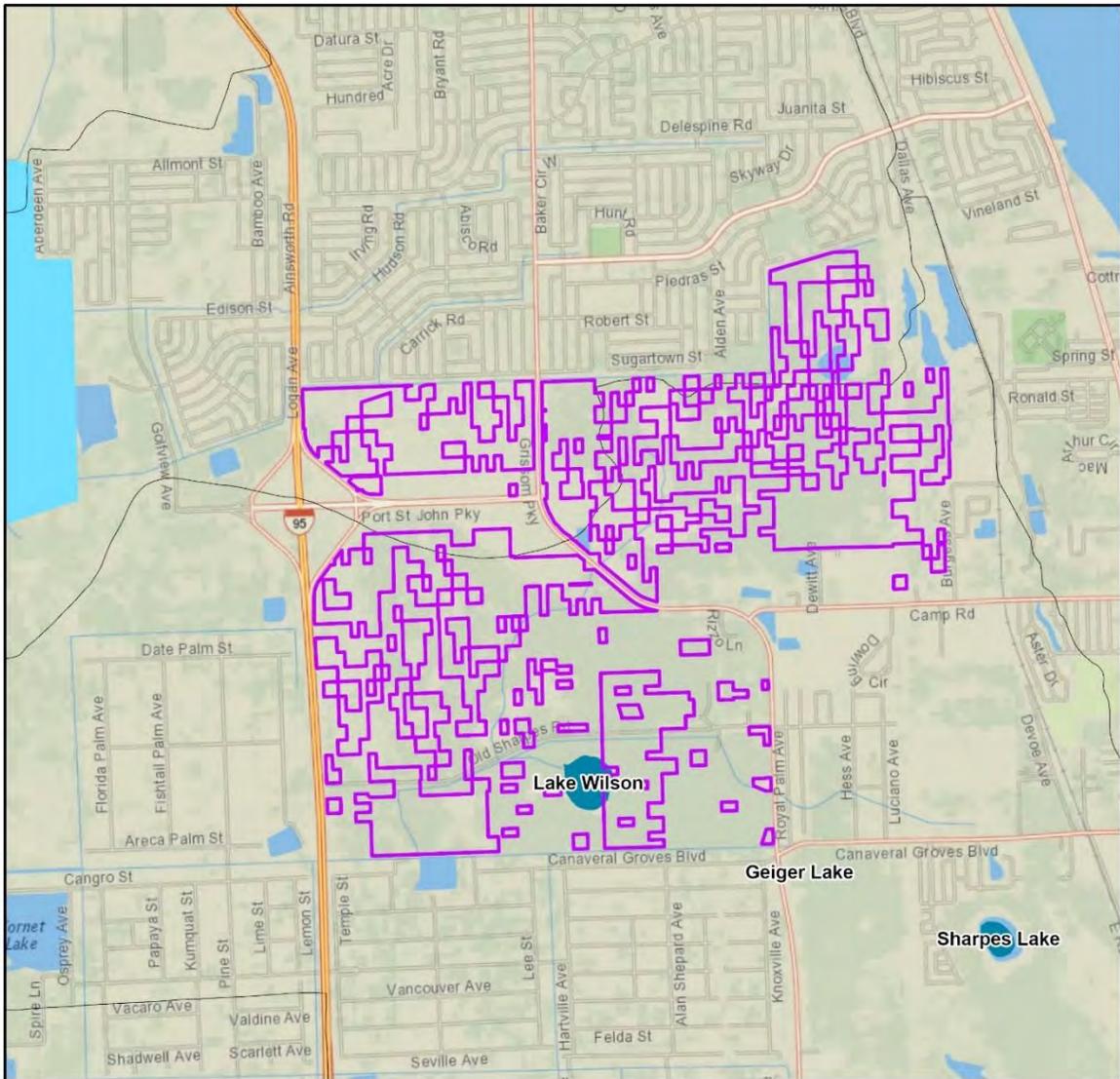
Uncommon in Florida lakes, the level of salinity in Salt Lake is about one-third of what is found in the Atlantic Ocean. This has an impact on plants and wildlife in the vicinity of the lake. In fact, the high soil salinity around the lake has caused several patches of barren soil known as salt pans. In addition to Salt Lake, the SLWMA contains most of Loughman Lake and the northern end of South Lake. Most of the SLWMA is situated within the Clark Lake Outlet drainage basin, although the extreme eastern portion of the area drains to the South Lake Outlet. Despite their proximity to the Atlantic Ocean, both outlets drain west into the St. Johns River (Figure 19).

The Grissom Parkway Unit of the BCSEFFP parcels also drains west to the St. Johns River despite being located only about a mile from the Indian River. The Grissom Parkway Unit is within the Lake Wilson Outlet and Delespine Grant Ditch drainage basins (Figure 20). The Ten Mile Ridge and Micco Expansion units drain east to the Indian River. Ten Mile Ridge is within Goat

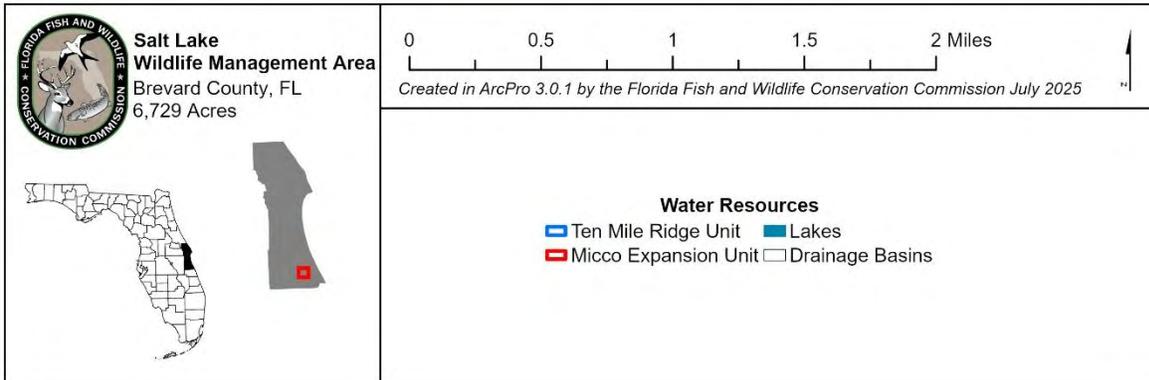
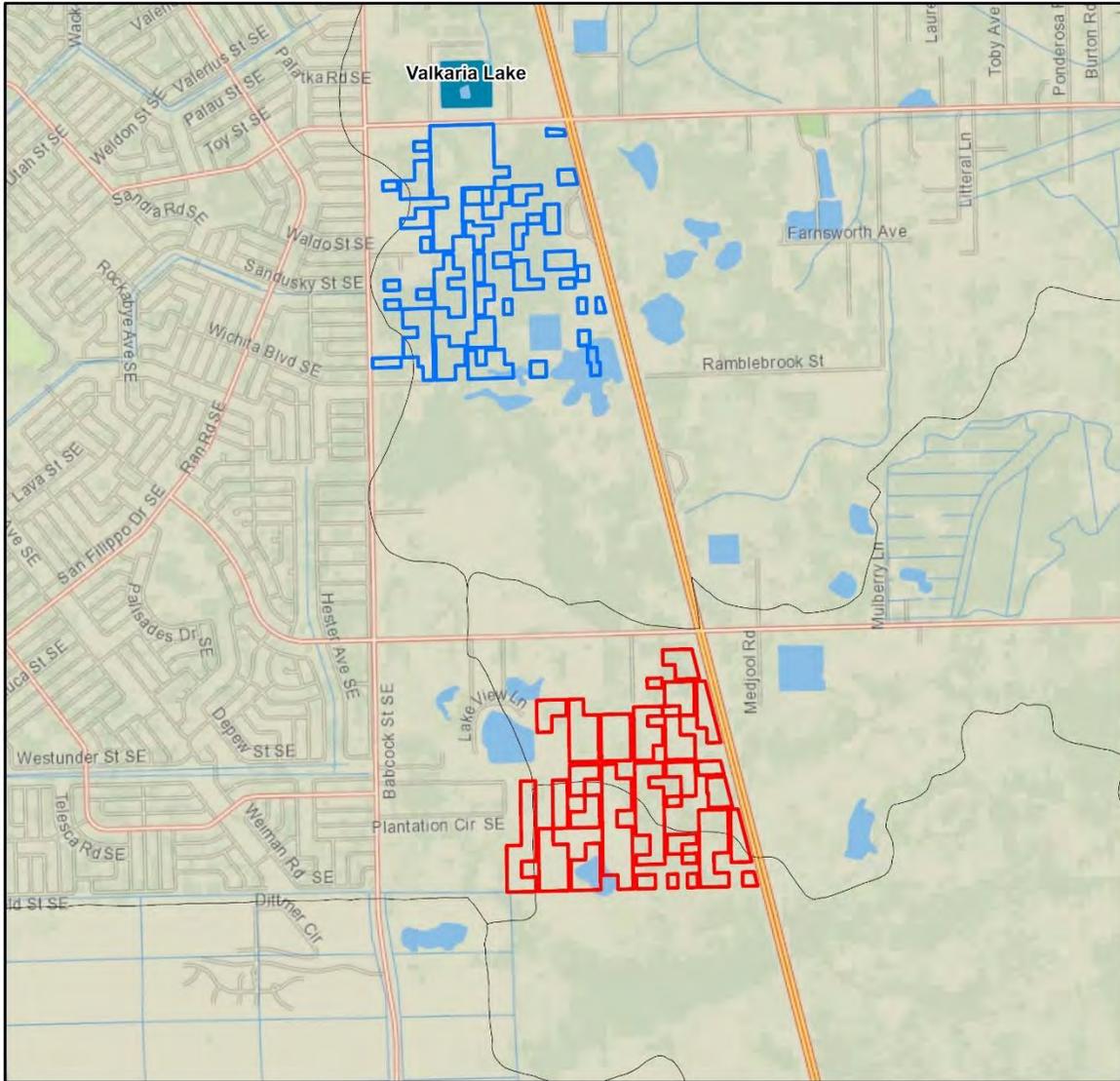
Creek drainage basin, while the Micco Expansion Unit is split by the Trout Creek and Micco Ditches drainage basins (Figure 21).



**Figure 19. Water Resources on or Near the SLWMA Main Tract**



**Figure 20. Water Resources on or Near the SLWMA Grissom Parkway Unit**



**Figure 21. Water Resources on or Near the SLWMA Ten Mile Ridge and Micco Expansion Units**

## 2.5 Forest Resources

The SLWMA has over 3,000 acres that are under water or too wet to manage for forestry activities. There are approximately 2,000 acres with current or future potential for timber management. While timber management is not the primary goal for these properties, many of the silvicultural recommendations can be implemented along with preservation activities to maintain or restore these areas to their once natural condition. Exclusive timber management would not meet the objectives for which this property was purchased. However, it is possible to manage the mesic flatwoods, scrubby flatwoods, and ruderal areas in order to retain their natural appearance, composition, and ecological health, while producing some revenue from timber harvests.

## 2.6 Beaches and Dunes

There are no beaches or dunes on the SLWMA. However, parts of the SLWMA have relic ancient sand dunes along their sandy ridges that are now xeric plant communities.

## 2.7 Mineral Resources

There are no known commercial mineral deposits on the SLWMA.

## 2.8 Cultural Resources

The Florida Master Site File (FMSF), maintained by the Florida Department of State's Division of Historical Resources (DHR), is the State of Florida's official inventory of cultural resources, archaeological and historical survey reports, and other manuscripts relevant to historic preservation in Florida. Categories of resources recorded at the FMSF include archaeological sites, historical structures, historical cemeteries, historical bridges, and historical resource groups (comprised of historic districts, landscapes, and linear features).

To date, the FMSF indicates that one previous cultural resource survey has been conducted on the SLWMA, and seven archaeological sites have been recorded (Table 8). The FWC will consult with the DHR to determine the necessary actions for resource inventory and preservation. All identification, assessment, and preservation strategies are developed in consultation with the DHR.

**Table 8. Cultural Resources**

<b>FMSF No.</b>	<b>Resource Category</b>	<b>Resource Title</b>	<b>Acres</b>	<b>National Register of Historic Places Eligibility</b>
BR01879	Archaeological Resource	Cattle Dipping Vat	1.84	Not Evaluated
BR01875	Archaeological Resource	Hogs and Dogs	1.32	Not Evaluated
BR01878	Archaeological Resource	Patient Men	0.58	Not Evaluated
BR01874	Archaeological Resource	Salt Lake	0.37	Not Evaluated
BR00007	Archaeological Resource	Snake Creek	18.49	Not Evaluated
BR01877	Archaeological Resource	South Lake	1.17	Not Evaluated
BR01876	Archaeological Resource	Turner Classic	1.11	Not Evaluated

## **2.9 Scenic Resources**

The SLWMA offers stunning scenery across its many natural landscapes. Visitors can explore the scenic uplands as well as all three lakes along the trails and from wildlife viewing platforms. Habitats on the SLWMA shelter a variety of bird species, which are easily spotted throughout the area.

## **3 Uses of the Property**

### **3.1 Previous Use and Development**

Native people lived around Salt Lake for thousands of years and hunted, fished, and foraged in marshes, swamps, and nearby coastal lagoons. The area was occupied by the Ais people, according to Florida historians. Several mounds and middens that are scattered throughout the area attest to the presence of the Ais living on the area thousands of years before the European settlement of Florida.

The Spanish interacted with the Ais in the middle of the 16th century. In 1566, Pedro Menéndez de Avilés established a fort and mission at an Ais town, which the Spanish called Santa Lucía. Spain had eventually established some control over the coast. Along with new agricultural practices, the Spanish and other settlers brought livestock, primarily cattle and hogs, as well as horses to Florida.

In the late 17th century, Jonathan Dickinson and his party were shipwrecked and spent several weeks among the Ais. By Dickinson's account, the Ais had established coastal towns and villages from north Brevard County to Jupiter Inlet in the south. The Ais did not survive long after Dickinson's stay with them.

After the decline of these native people, pioneers of European ancestry explored and settled the area. Rangeland cattle grazing and other agricultural practices began to be utilized in a more systematic way and occurred in central Florida through most of the European settlement era. The Europeans logged out most of the large pines in the area, although some of the remaining trees bear the telltale cat-faced scars made from collecting resin. In more recent decades, the area was part of a cattle operation, as well as an industry that involved removing timber and cabbage palms and selling them for landscaping.

### **3.2 Current Use**

Currently, the SLWMA is managed for the conservation and protection of fish and wildlife habitat and fish and wildlife-focused public outdoor recreation. A wide range of operational and resource management actions are conducted on the SLWMA each year, including activities such as prescribed burning; wildlife habitat restoration and improvement; invasive species maintenance and control; road repairs and maintenance; imperiled and locally important species management, monitoring, and protection; facilities and infrastructure maintenance; conservation acquisition and stewardship activities; cultural resources monitoring and protection; and research related activities.

The SLWMA is being managed as a multiple-use conservation land. Multiple-use management strategies incorporate uses related to wildlife, fisheries, forest management, and fish and wildlife-focused public outdoor recreation. Current and anticipated resource uses of the property are diverse. Public outdoor educational and recreational opportunities are provided that are compatible with the original purposes for acquisition of the SLWMA. Hunting continues to be a popular recreational activity. The area also offers excellent opportunities for wildlife watching. The diversity of vegetation not only harbors a variety of bird species but also provides good opportunities for mammalian and other wildlife watching. Additional uses include hiking, photography, bicycling, nature study, fishing, and horseback riding. Due to the proximity of population centers in Brevard County, public use can be expected to increase as public awareness of opportunities increases.

### **3.2.1 Hunting**

Currently, the SLWMA offers several hunting opportunities, including archery, small game, muzzleloading gun, general gun, spring turkey, wild hog, and migratory birds. For more information on hunting opportunities at the SLWMA visit the following link: [MyFWC.com/Hunting](http://MyFWC.com/Hunting).

### **3.2.2 Fishing**

Fishing is authorized year-round at the SLWMA and is available at all water bodies within the area.

### **3.2.3 Paddling**

Although there are no designated launches for boats or paddle crafts, paddling opportunities are available on all three lakes on the SLWMA. Access to South Lake is through Fox Lake, via the Fox Lake Park ramp. Visitors can launch boats on Salt Lake from a boat ramp on S.R. 46 or the Hatbill Park ramp.

### **3.2.4 Bicycling**

Bicycling is permitted on named or numbered roads or trails within the SLWMA.

### **3.2.5 Horseback Riding**

Horseback riding is permitted on named or numbered roads or trails within the SLWMA. Horses are prohibited during established hunting seasons, except small game season. Horse trailer parking is located at the entrance off Arch Road. No water is available except for natural ponds.

### **3.2.6 Trails and Roads**

Currently, the SLWMA offers a 3.5 mile marked, multi-use loop trail. Another 0.6-mile-long trail leads to the overlook by South Lake. Additionally, there are approximately 25.2 miles of roads with 4.9 miles of those roads available for public vehicular access; the remainder of the roads are used by staff to access the SLWMA for management. Vehicle access is prohibited except during hunting seasons. Vehicles may only be operated on named or numbered roads.

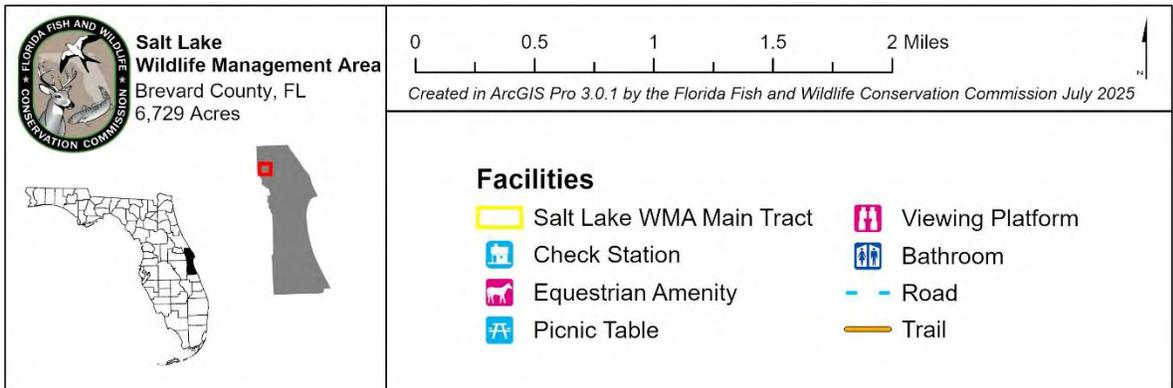
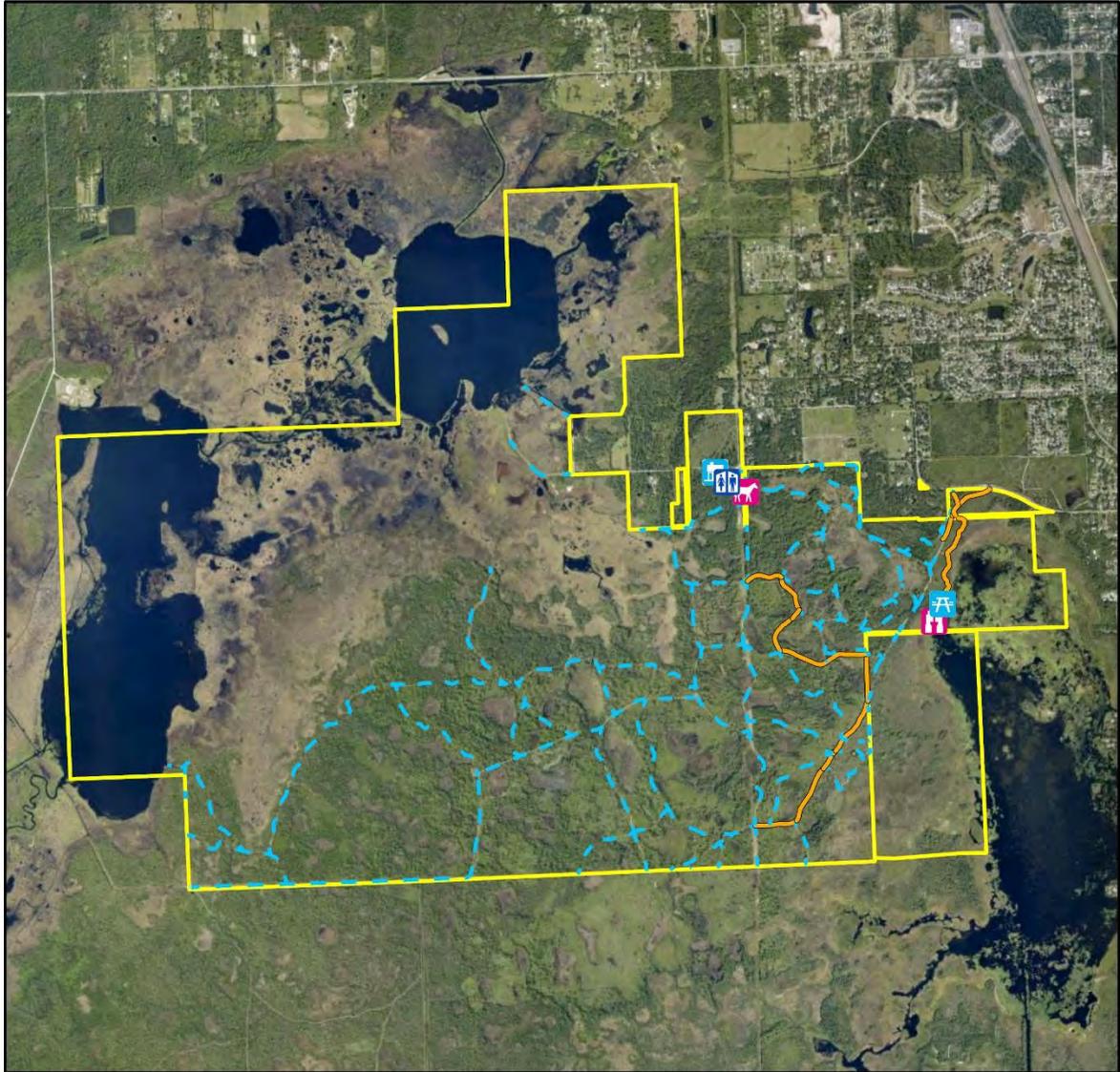
### **3.2.7 Camping**

Camping is not permitted on the SLWMA; however, camping opportunities are available on nearby public lands.

### **3.2.8 Geocaching**

Geocaching, also known as Global Positioning System (GPS) Stash Hunt and GeoStash, is a contemporary combination of orienteering and scavenger hunting generally utilizing a GPS receiver unit. Geocache websites routinely promote good stewardship. However, the potential exists for resource damage, user conflicts, or safety issues caused by inappropriately placed caches and/or links that do not provide adequate information about the area.

It is the policy of the FWC to allow placement of geocaches only in those locations that do not present the potential for resource damage, user conflicts, or threats to the safety of the activity participants. The placement of geocaches on FWC-managed lands is governed by specific guidelines. These guidelines may be found on the FWC [website](#).



**Figure 22. Facilities**

### **3.3 Adjacent Land Uses**

The SLWMA is spread throughout Brevard County, also known as “Space Coast Florida”. Over the last 50 years, the economy of this area has been based on commercial fishing, citrus agriculture, and resort tourism. Most notably, Brevard County is known for the Kennedy Space Center, a nationally renowned launch complex. The SLWMA is not located within a designated Area of Critical State Concern.

The 2023 U.S. Census estimates that there are 640,773 people living in Brevard County. The Department of Economic Affairs, Bureau of Economic and Business Research’s (BEBR) medium-range population projection indicates that in the year 2035, there will be 724,600 people living in Brevard County.

The current zoning ordinance for the Main Tract of the SLWMA is General Use. According to Brevard County’s Comprehensive Plan, this designation allows for single-family detached residential dwellings, as well as parks and recreational facilities. The other three units of the SLWMA fall under the General Use and Agriculture Residential zoning ordinances. Brevard County’s future land use maps indicate that the SLWMA will be primarily designated and zoned as Public Conservation. Lands immediately adjacent to the SLWMA are classified as General Use, Agricultural Residential, Rural Residential, and Government Managed Lands.

### **3.4 Visitation, Economic Benefits, and Revenue-generating Potential**

Visitation and public use of the area for fish and wildlife-focused public outdoor recreational opportunities is the primary source of economic benefits from the SLWMA, which contributes to the overall economy for the Northeast region of Florida. In Fiscal Year 2024/2025, an estimated 6,751 people visited the SLWMA. Primarily as a result of this visitation and use of the area, the FWC economic analysis estimates that the SLWMA generated an annual economic impact of \$1,319,077\* for the State and the Northeast region of Florida. This estimated annual economic impact has aided in the support or creation of an estimated 13.4 jobs.\*

Further revenue-generating potential of the SLWMA will depend upon future uses described in the Management Plan and may include sales of various permits, recreational user fees, or other ecotourism activities, if such projects are feasible. The annual area regulations can be consulted to clarify the necessary and required permits, fees, and regulations. Additionally, the long-term value of ecosystem services, including the protection of air and water quality functions, are significant to local and regional land and water resources, as well as human health.

*\*The above figures are based on expenditure data from the 2006 National Survey of Fishing, Hunting and Wildlife-Associated Recreation (USFWS) and 2006 IMPLAN economic models assembled by Southwick Associates and the USFWS. The results were updated in 2010 based on hunting and fishing license trends and inflation. The results were combined and weighted based on the numbers of hunters, anglers, and wildlife viewers statewide. The results assume participants’ expenditures and the values used to calculate these expenditures are consistent throughout the state. Users applying these results to local situations should be aware that*

*differences might exist between these statewide averages and the site in question and make adjustments, if needed.*

### **3.5 Single- or Multiple-use Management**

As mentioned previously, the SLWMA will be managed under the multiple-use concept as a WMA. The SLWMA will provide fish and wildlife-focused public outdoor recreation and educational opportunities, while protecting the natural and cultural resources found on the area. Any natural and cultural resources on the SLWMA will be managed under the guidance of the ARC, the Conceptual State Lands Management Plan, and as outlined in the original purposes for acquisition. A detailed assessment of the benefits and potential impacts of planned uses and activities on natural and cultural resources was an integral part of the development of the management activities and intent, goals, objectives, challenges, and strategies sections of this Management Plan.

#### **3.5.1 Analysis of Multiple-use Potential**

The following actions or activities have been considered under the multiple-use concept as possible uses to be allowed on the SLWMA. Uses classified as “Approved” are in accordance with the purposes for acquisition; the Conceptual State Lands Management Plan; and the FWC agency mission, goals, and objectives. Uses classified as "Conditional" indicate that the use may be acceptable but will be allowed only if approved through a process other than the management plan development and approval process (e.g., special-use permitting, managed-area regulation, rule development). Uses classified as “Rejected” are not considered to be in accordance with the original purpose of acquisition or one or more of the various forms of guidance available for planning and management.

	<b>Approved</b>	<b>Conditional</b>	<b>Rejected</b>
<b>Apiaries</b>		✓	
<b>Archery</b>		✓	
<b>Astronomy</b>	✓		
<b>Bicycling</b>	✓		
<b>Cattle grazing</b>		✓	
<b>Citrus or other agriculture</b>			✓
<b>Ecosystem services and maintenance</b>	✓		
<b>Ecotourism</b>		✓	
<b>Environmental education</b>	✓		
<b>First-responder training</b>		✓	
<b>Fishing</b>		✓	
<b>Geocaching</b>		✓	
<b>Hiking</b>	✓		
<b>Horseback riding</b>	✓		
<b>Hunting</b>		✓	
<b>Linear facilities</b>		✓	
<b>Military training</b>		✓	
<b>Preservation of cultural resources</b>	✓		
<b>Primitive camping</b>		✓	
<b>Protection of imperiled species</b>	✓		

<b>Off-road vehicle use</b>			✓
<b>Shooting sports park</b>			✓
<b>Soil and water conservation</b>	✓		
<b>Timber harvest</b>		✓	
<b>Wildlife observation</b>	✓		

### 3.5.2 Incompatible Uses and Linear Facilities

Consideration of incompatible uses and linear facilities on the SLWMA are made in accordance with the requirements of Section 253.034(10), F.S.; various applicable Florida Constitution, statute, rule, and policy requirements; and other provisions governing applications for proposed incompatible uses or linear facilities on state-owned conservation lands. Upon approval and implementation of the SLWMA Management Plan, any proposed future uses that have been classified herein as Rejected, or other proposed future uses that are determined to be incompatible with the purposes of acquisition or other management authorizations and guidance, will be forwarded for review and approval consideration to the DEP-DSL, ARC, and the Board of Trustees prior to any incompatible use or linear facility being authorized on the SLWMA.

### 3.6 Potential Surplus Review

On conservation lands where the FWC is the lead manager, the FWC evaluates and identifies recommended areas for a potential surplus designation by the DSL, ARC, and the Board of Trustees. This evaluation consists of GIS modeling and analysis, aerial photography interpretation, analysis of fish and wildlife resources, a review of resource and operational management needs, and a review of public access and recreational use of the area. Also, the FWC considers recommendations for surplus lands as they relate to Florida’s “No Net Loss of Hunting Lands” legislation (Ch. 379.3001, F.S.), as well as surplus restrictions for lands acquired through the Federal Aid in Wildlife Restoration Act (Pittman-Robertson) or through other federal grant programs.

The evaluation of the SLWMA by the FWC has determined that all portions of the area are being managed and operated for the original purposes of acquisition and remain integral to the continued conservation of important fish and wildlife resources and continue to provide good fish and wildlife-focused public outdoor recreational opportunities. Therefore, no portion of the SLWMA is recommended for potential surplus review.

## 4 Management Activities and Intent

The following section provides a description of agency plans to locate, identify, protect, preserve, or otherwise use fragile natural resources and non-renewable cultural resources. In general, the FWC management intent for the SLWMA is to restore and maintain natural communities in a condition that sustains ecological processes and conserves biological diversity, especially fish and wildlife resources. In conjunction with this primary emphasis, it is the FWC’s intent to provide quality fish and wildlife-focused public outdoor recreational opportunities on the SLWMA. The FWC will utilize the best available data, guidelines, natural resource management practices, and recreational management practices to achieve these outcomes in accordance with the original

purposes for acquisition. Furthermore, as noted previously, the management activities described in this section comply with those of the Conceptual State Lands Management Plan.

## **4.1 Land Management Review**

On-site reviews of conservation and recreation lands that exceed 1,000 acres and are titled in the name of the Board of Trustees are required every five years by Section 259.036, F.S. An LMR was conducted for the SLWMA in 2022, and the recommendations from that review were considered during the development of this Management Plan (Appendix 11.12). These reviews determine whether the lands are being managed for the purposes for which they were acquired and whether they are being managed in accordance with their management plan adopted pursuant to Section 259.032, F.S. According to statute, the review team “shall evaluate the extent to which the existing management plan provides sufficient protection to threatened or endangered species, unique or important natural or physical features, geological or hydrological functions or archaeological features. The review shall also evaluate the extent to which the land is being managed for the purposes for which it was acquired and the degree to which actual management practices, including public access, are in compliance with the adopted management plan”.

## **4.2 Adaptive Management**

Adaptive management is "learning by doing";<sup>3</sup> it is the adjustment or modification of conservation actions to achieve a desired conservation goal. In practice, adaptive management is a rigorous process that includes sound planning and experimental design with a systematic evaluation process that links monitoring to management.<sup>3, 4, 5</sup> Adaptive management requires flexibility for implementation but should be fitted over a fundamentally sound, well-planned design.

An adaptive management process produces the strongest inference and most reliable results when experimental design components are incorporated into the monitoring process. Adaptive management is most rigorously applied in an active format when components of experimental design (i.e., controls, replication, and randomization) are included in the monitoring process.<sup>3, 4, 5</sup> Incorporating valid statistical analyses of results will further enhance the value of the adaptive management process. However, in some situations, rigorous experimental design procedures can be relaxed without invalidating monitoring results. In a passive format, adaptive management can involve applying a conservation action at a site, observing the results, and adjusting the action in the future if warranted.<sup>4, 5</sup>

Proposed adaptive management, monitoring, and performance measures are developed through literature reviews and FWC staff meetings. Overall, a results-based approach is incorporated into the Management Plan, for which effective monitoring is an integral component. The FWC will monitor conservation actions, species, habitats, and major threats to the conservation of the natural and cultural resources of the SLWMA.

### **4.2.1 Monitoring**

A well-developed monitoring protocol is also one of the required criteria for the management of the SLWMA. Monitoring and performance measures are important but often overlooked elements

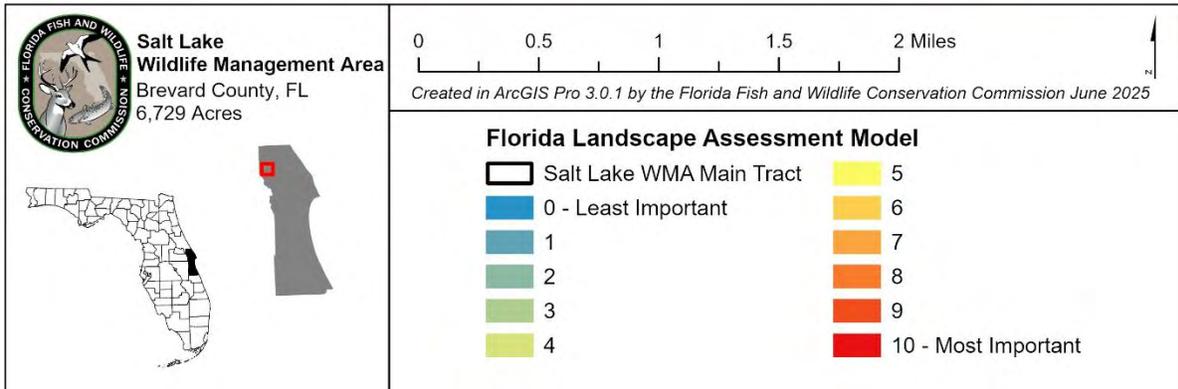
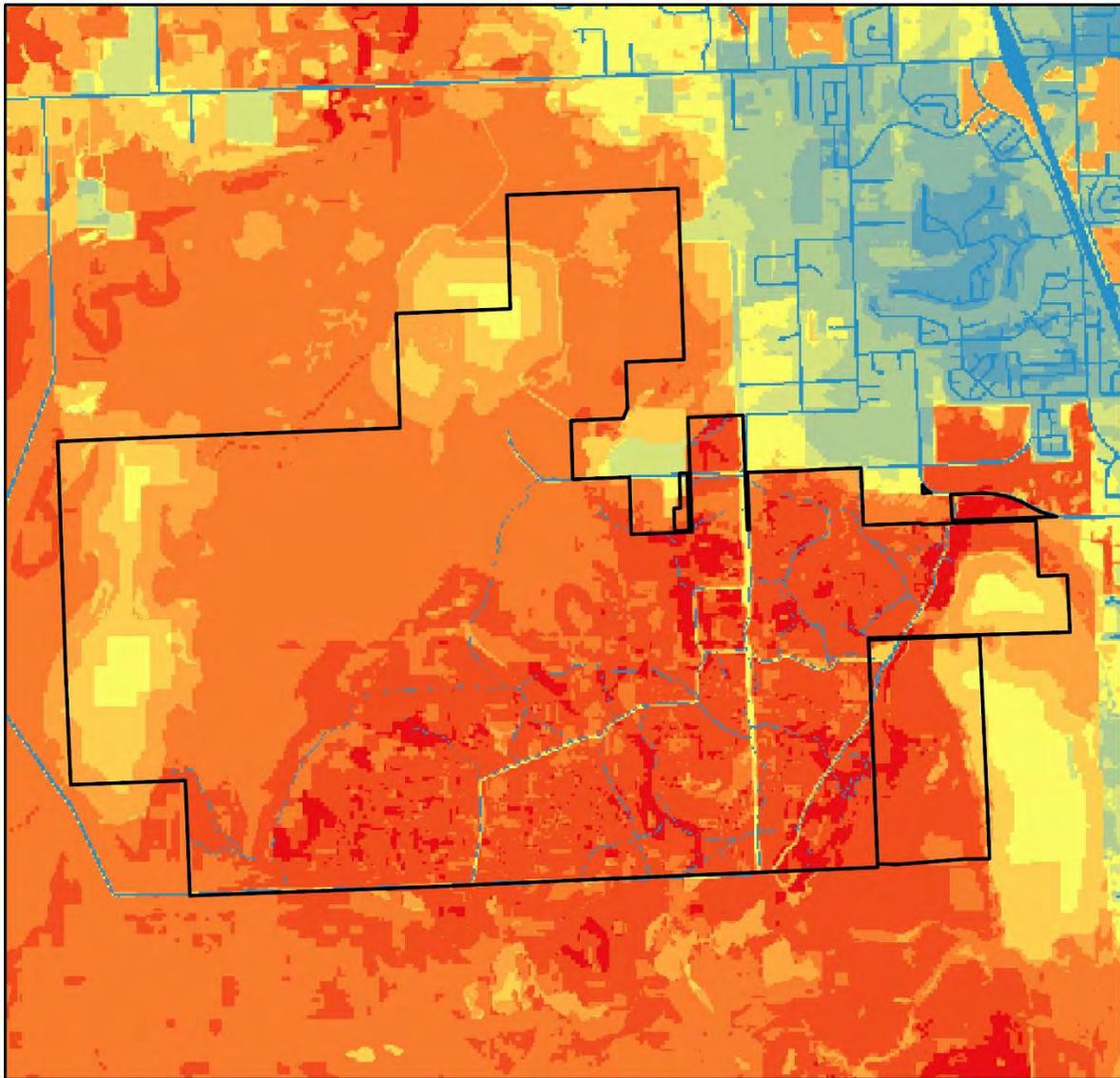
of conservation planning. Monitoring provides the critical link between implementing conservation actions and revising management goals.

Monitoring is the systematic, repeated measurement of environmental characteristics to detect changes, and particularly trends, in those characteristics. Monitoring provides the essential data for evaluating the costs, benefits, and effectiveness of planned conservation actions, whereby those evaluations can then be used to modify management actions as necessary to meet longer-term management goals.<sup>3</sup>

For natural communities, monitoring protocols are established through the FWC's Objective-Based Vegetation Management (OBVM) program, which monitors how specific vegetative attributes are responding to FWC management (Section 4.3.1). For imperiled and locally important fish and wildlife species, monitoring protocols are established through the FWC's Wildlife Conservation Prioritization and Recovery (WCPR) program (Section 4.4.1). FWC staff may also monitor additional fish and wildlife species when deemed appropriate. Volunteer opportunities that support community engagement and the goals and objectives of the SLWMA may be developed in collaboration with land managers, key biologists, and/or partners and could include projects ranging in focus from single-day events like bioblitzes and trash cleanups to longer-term programs assisting in species monitoring, trail maintenance, and habitat management. Invasive plant and animal species are monitored as needed and appropriate (Section 4.5). Recreational uses are monitored through the FWC's Public Access Services Office and work in conjunction with the establishment and adjustment of public access carrying capacities (Section 4.6.3). Cultural resources are monitored with guidance from the DHR (Section 4.9).

#### **4.2.2 Florida Landscape Assessment Model**

The FWC has developed the Florida Landscape Assessment Model (FLAM) as a Geographic Information Systems (GIS)-based assessment tool that incorporates a wide variety of landscape and wildlife species data. The FLAM evaluates the Florida landscape based upon important natural resources and habitat needs of wildlife to identify ecologically significant lands in the state and to assess the potential impacts of management and land-use changes. The FLAM was developed to provide technical assistance to various local, regional, state, and federal agencies and entities interested in wildlife needs and conservation to: (1) determine ways to avoid or minimize project impacts by evaluating alternative placements, alignments, and transportation corridors during early planning stages, (2) assess direct, secondary, and cumulative impacts to habitat and wildlife resources, and (3) identify appropriate parcels for public land acquisition for wetland and upland habitat mitigation purposes. The FLAM ranks habitat from 0-10; a rank of 10 being of greatest value. The FLAM (2021) indicates that the SLWMA has a high mean wildlife value of 8.1 (Figures 23-25).



**Figure 23. Florida Landscape Assessment Model of the SLWMA Main Tract**

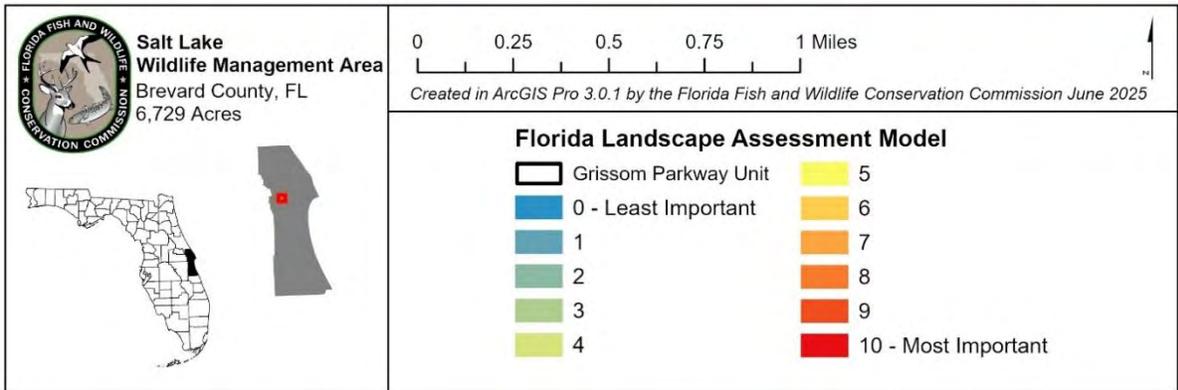
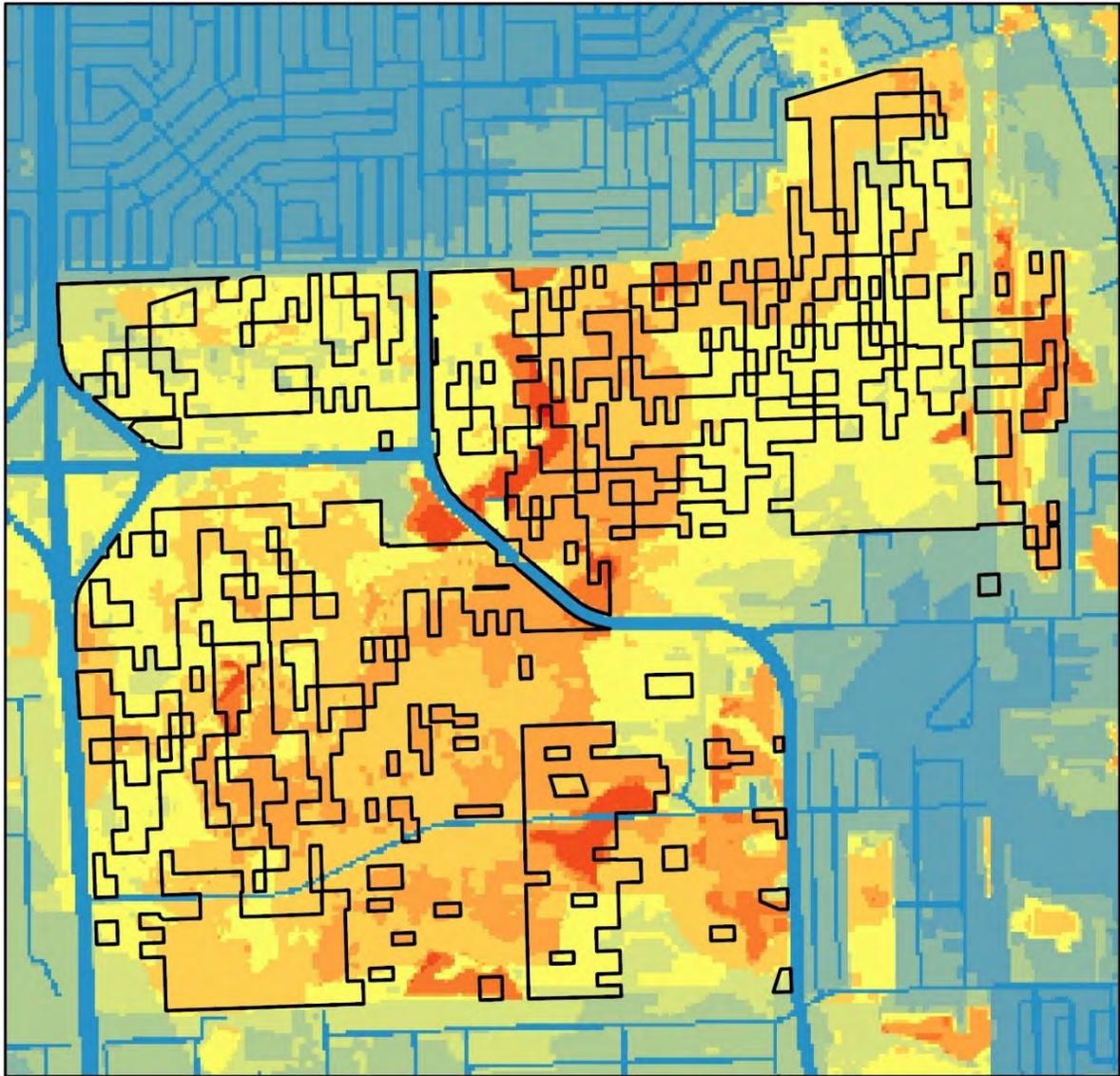
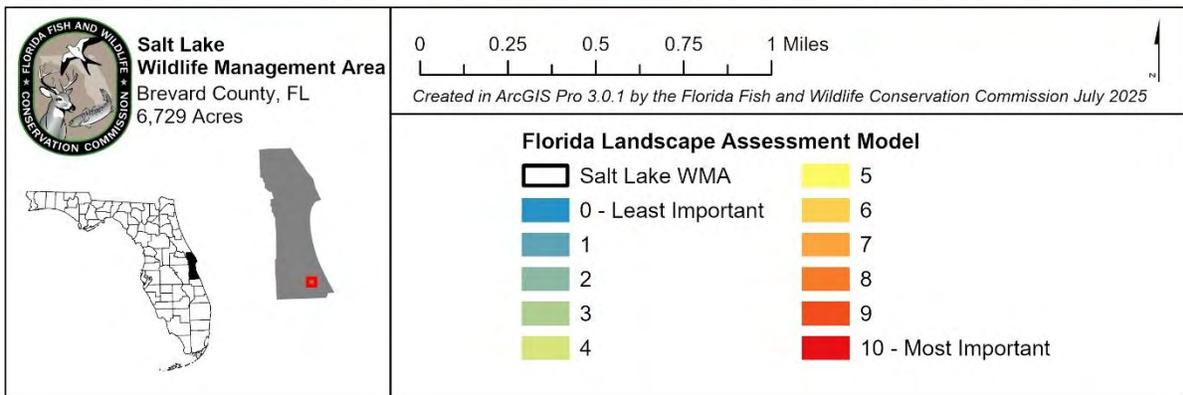
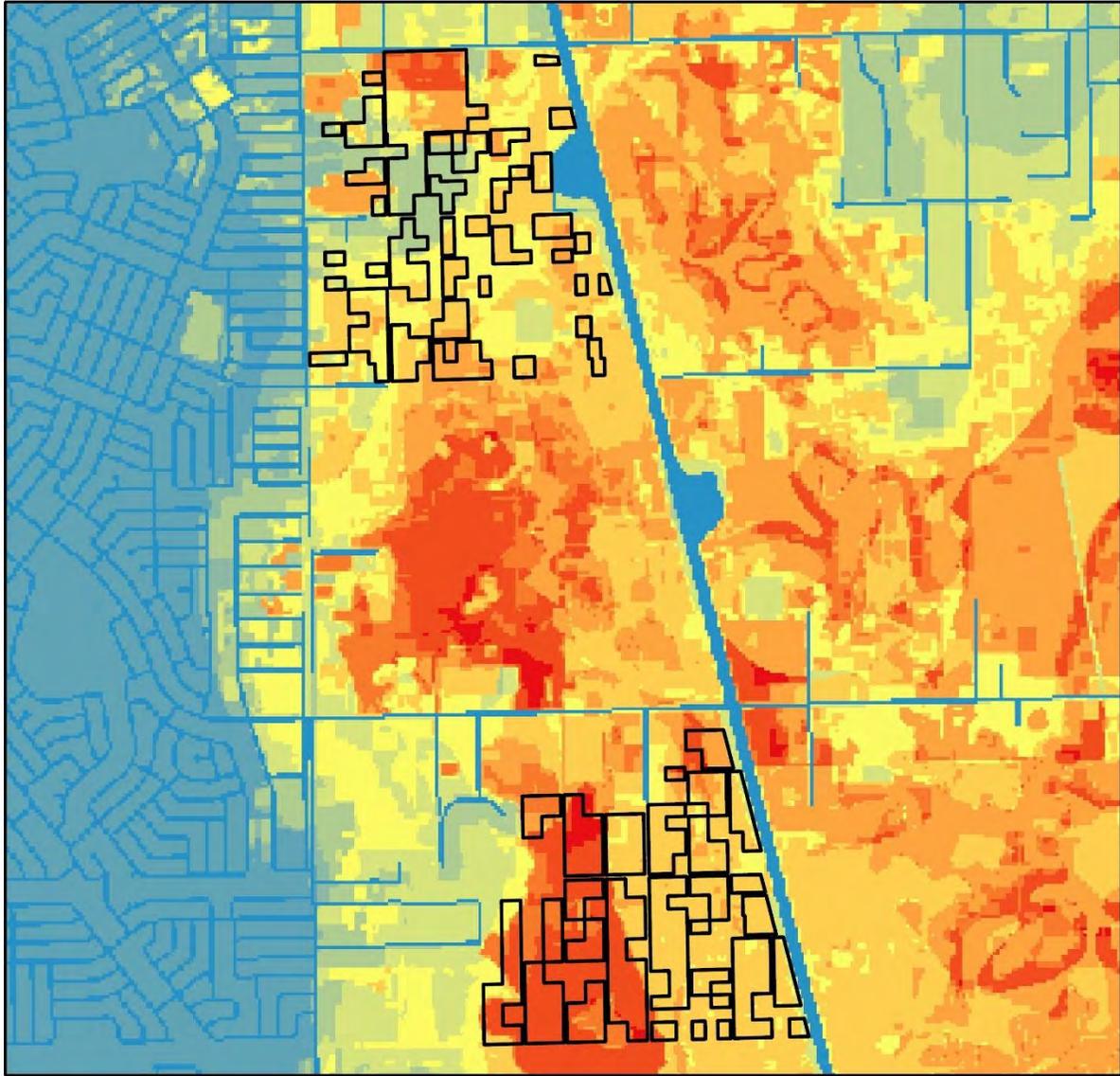


Figure 24. Florida Landscape Assessment Model of the SLWMA Grissom Parkway Unit



**Figure 25. Florida Landscape Assessment Model of the Ten Mile Ridge (Top) and Micco Expansion (Bottom) Units**

### **4.2.3 Performance Measures**

Performance measures include qualitative or quantitative measures used to provide an estimate or index of the characteristic of interest and to chart the overall progress of conservation actions towards specific goals. Successful monitoring programs and their associated performance measures provide natural resource professionals with valuable feedback on the effectiveness of conservation actions and make it possible to implement a more flexible adaptive management approach. An adaptive management approach ultimately will be more efficient and effective when it tracks inputs, incorporates an effective monitoring program that integrates performance measures, and evaluates results against desired goals.

### **4.2.4 Implementation**

The SLWMA Management Plan serves as the guiding framework to implement this adaptive management process. It serves as the underpinning for the integration of management programs (OBVM, WCPR, Public Access Assessments, etc.) underway to accomplish needed conservation actions that are planned to manage the natural resources of the SLWMA and resolve conservation threats to fish and wildlife and the habitats they occupy. Based on evaluations of project results, the conservation actions are revised as necessary, and the adaptive management process is repeated.

## **4.3 Habitat Restoration and Improvement**

On the SLWMA, the FWC will focus on land management activities and projects that support or restore native habitat diversity, emphasizing maintenance of natural communities and restoration of disturbed areas. The SLWMA has functioning natural communities, including basin marsh, marsh lake, mesic flatwoods, and wet flatwoods, that the FWC will continue to manage and protect. On any disturbed upland sites, the FWC intends to continue natural community restoration. Restoration may be achieved on disturbed areas by the reintroduction of fire, the restoration of historic hydrological conditions, the planting of species appropriate to the natural community being restored, and/or the use of mechanical or chemical management techniques as appropriate.

### **4.3.1 Objective-Based Vegetation Management**

The FWC uses a comprehensive resource management approach to improving FWC-managed areas. OBVM is a monitoring tool used by the FWC to monitor how specific structural vegetative attributes that characterize a natural community are responding to management.

The first step in implementing OBVM is to map the current, and in most cases the historic, natural communities on the managed area using the FNAI Guide to the Natural Communities of Florida. The FWC contracts with FNAI to provide these mapping services and will recertify natural community maps for most areas on a five-year basis.

FNAI has mapped the current and historic natural communities on the SLWMA. The most recent natural community map update was completed in 2023. New acquisitions that occur will be mapped for natural communities and altered landcover types during this planning period.

After natural communities have been mapped, FWC land managers identify those natural communities that will influence and guide management decisions, known as the actively managed natural communities. The actively managed natural communities being monitored at the SLWMA are mesic flatwoods, wet flatwoods, scrubby flatwoods, and scrub. Through OBVM monitoring, the FWC collects data on 12 specific structural attributes that are then compared to FNAI established desired future conditions (DFC) for each natural community. The DFCs are generally based on structural vegetation attributes collected from reference sites that were deemed to be a high-quality and functioning example of the natural community being monitored and used for comparison purposes.

Overall, natural community mapping, OBVM structural sampling, and plant species lists provide FWC staff with data indicating natural community structure, distribution, and condition on the area. Comparing the monitoring results to DFCs provides important information on the structural condition and composition of a natural community at a given point in time. OBVM sampling is repeated every five years, and comparisons with past OBVM monitoring data allow changes over time to be evaluated. This information is then used to guide and prioritize management efforts.

#### **4.3.2 Prescribed Fire and Fire Management**

The FWC employs a fire management regime to maintain or increase both species and habitat diversity and will continue a prescribed burning program on the SLWMA in accordance with natural community management objectives. Employing a burning program with different fire frequencies, intensities, and seasonality (dormant season vs. growing season) of prescribed burns creates habitat diversity and a mosaic of vegetation patterns, benefiting the greatest suite of flora and fauna.

Whenever possible, existing firebreaks such as roads and trails, as well as natural breaks such as creeks and wetlands, will be used to define management units. Disk harrows, mowing, and foam lines will be used as necessary to minimize disturbance to native groundcover.

Except for wildfire suppression, mechanical soil disturbance in wetland ecotones will be avoided to protect habitats for important rare species that often occur between upland and wetland margins. Creation of firebreaks will be avoided in wetland margins unless it is necessary to defend the boundary of a managed area.

In addition to the general prescribed fire management guidelines, an area-specific Prescribed Burn Plan has been developed and implemented (Appendix 11.13). This plan includes, but is not limited to, delineation of burn management units, descriptions of prescribed fire methodology, safety, and smoke management guidelines. As further outlined in the area's Prescribed Burn Plan, the FWC plans to continue to conduct prescribed burning on the area's fire adapted communities, with a goal to bring 100% of the area being maintained within the recommended fire return intervals during this planning period. Challenges that continue to impact the implementation of prescribed fire are described further in Section 7. The continuing benefits of prescribed fire on the area's wildlife habitats, along with other ongoing habitat restoration activities that are being implemented, are described in more detail in Section 4.3.3.

### 4.3.3 Habitat Restoration and Improvement Activities and Accomplishments

Significant habitat management activities have taken place within many of the natural communities and altered landcover types over the course of the previous management period, beginning in 2016. As stated previously, all management units with fire-adapted natural communities will continue to be treated with prescribed fires, most on a repeated basis as established within the Prescribed Burn Plan. This has aided in the improvement and restoration of native groundcover and wildlife habitat throughout the SLWMA. The following is a list of the primary habitat restoration and improvement activities that have occurred within the previous planning cycle, beginning in 2016:

- The Prescribed Burn Plan was updated in 2026.
- 3,328 acres of the area's fire adapted communities have been treated with prescribed fire.
- 2,594 acres have been mechanically treated using roller chopping, mowing, disking, and chainsawing.
- Native nuisance, non-native, and invasive species have been removed from approximately 1,342 acres on the SLWMA. Species include alligator weed (*Alternanthera philoxeroides*), Brazilian pepper (*Schinus terebinthifolia*), water hyacinth (*Eichhornia crassipes*), old world climbing fern (*Lygodium microphyllum*), and others.

Continuing habitat management activities will focus on enhancing natural communities, maintaining recommended fire return intervals for fire adapted communities, treating and removing invasive plant species, and controlling vegetation through mowing and roller chopping as needed. Invasive species control is more extensively discussed in Section 5.4. Further specific habitat management and improvement objectives planned for the SLWMA are described in Section 5.

## 4.4 Fish and Wildlife Management, Enhancement, and Population Restoration

Across the SLWMA, the size and diversity of natural communities create a mosaic that supports a wide variety of fish and wildlife species, including imperiled, game, and non-game species. The FWC uses the term "locally important species" to encompass imperiled species, as well as a select group of common species, that occur on the area and can help guide management activities. By managing the area's natural communities for locally important species, the area will benefit a host of other species that use these natural communities. To support this goal, the FWC emphasizes conservation, protection, and management of natural communities to protect and enhance populations of fish and wildlife found on the SLWMA. Natural communities vital to locally important species include basin marsh, marsh lake, mesic flatwoods, scrub, and wet flatwoods. Restoration and improvement of any altered communities, to expand habitat on the SLWMA, is also emphasized.

To guide species management on FWC-managed lands, the FWC takes a proactive, science-based approach in conjunction with input from species experts and individuals with knowledge of the area. Management practices are designed to restore, enhance, or maintain natural communities with an emphasis on the needs of locally important species. Locally important

species (resident and migratory) will be managed for optimum richness, diversity, and abundance. This will be further augmented by following approved Federal and FWC Species Recovery Plans, guidelines, and other scientific recommendations for these species. Guided by these recommendations, land management activities, including prescribed burning and timber stand improvements, will further address locally important species requirements and habitat needs.

For locally important species population monitoring, the FWC takes a tiered approach. Using taxa inventory monitoring and opportunistic observations, staff identify which species occur on the SLWMA and track diversity through time. In addition, when appropriate, staff monitor specific species to track population status. Wildlife experts help to identify the best monitoring approach for the area to inform how the management is influencing the populations. Using this tiered monitoring approach, the FWC will gather information about the species using the area and how select species are responding to management. Section 4.4.1 and Appendix 11.14 provide further information on FWC's comprehensive species management strategy for all locally important wildlife and their respective habitats.

#### **4.4.1 Locally Important Species: Wildlife Conservation Prioritization and Recovery**

The FWC has identified the need to: 1) demonstrate optimal wildlife habitat conservation on FWC-managed lands; 2) develop science-based performance measures to evaluate management; 3) recover imperiled species; and 4) prevent future imperilment of declining wildlife species. To help meet these needs, the FWC uses a comprehensive resource management approach to maintain FWC-managed areas. Restoring the form and function of Florida's natural communities is the foundation of this management philosophy. The FWC uses OBVM to monitor how specific vegetative parameters are responding to management and uses the WCPR program to ensure management is having the desired effect on wildlife.

The WCPR program helps assess locally important wildlife species' needs and opportunities, prioritize what the FWC does for locally important species, prescribe management actions to aid in species recovery, prescribe monitoring to allow evaluation of the species' response to management, and ensure the information is shared with others. To determine specific management and monitoring actions needed for each species, the FWC considers the species' status on the area; the current condition of the area's natural communities; the amount and spatial arrangement of the species' potential habitat on the area and adjacent lands; the species' response to management; and any local overriding factors (e.g., status of species in the region, local declines, or extirpations). Staff then combine these assessments with area-specific management considerations to develop a WCPR Strategy for the area. Each area-specific Strategy prescribes management actions to achieve and identifies monitoring to verify progress towards meeting desired outcomes. By providing FWC managers with information on actions they should undertake, the FWC intends for the Strategy to assure the presence and persistence of Florida's native wildlife.

Through the actions of this program, the FWC facilitates fulfilling the needs of locally important wildlife species. In the long-term, by implementing the WCPR Strategies on FWC-managed lands and continuing to assess wildlife species' needs, the FWC will continue to play an integral role in

aiding the recovery of locally important species and preventing the future imperilment of declining wildlife species.

The WCPR Strategy for the SLWMA was completed in 2019. More information on the SLWMA's WCPR Strategy can be found in Sections 4.4.4 and 5, as well as Appendix 11.14.

#### **4.4.2 Game Populations**

The FWC intends to manage game populations on a sustained-yield basis to assure healthy game populations and a high-quality recreational experience. In general, game populations will be managed to provide continued recreational sport hunting and wildlife watching opportunities. However, some of the hunting opportunities may be regulated through a limited entry hunt program to ensure the persistence of viable game species populations, as well as hunter safety and satisfaction. The potential for conflicts among recreational activities and user groups will also be considered and continually monitored.

#### **4.4.3 Nuisance Animal Species**

The FWC also works to address nuisance animal species on the SLWMA. The FWC will continue to monitor impacts of nuisance animal behavior on the area and implement mitigation strategies as needed and appropriate.

#### **4.4.4 Fish and Wildlife Management Activities and Accomplishments**

During the previous planning period, the FWC conducted monitoring activities for 7 locally important species. Locally important species projects will continue to be implemented in accordance with the WCPR Strategy. In addition to locally important species activities, the FWC will continue to monitor and manage for game and nuisance animal species. Following is a list of activities and monitoring outcomes that have occurred since 2016 to further FWC's mission for managing fish and wildlife on the SLWMA.

- FWC staff conducted annual Florida scrub-jay surveys and mourning dove (*Zenaida macroura*) banding, as well as biennial grassland bird surveys.
- The SLWMA was included in a statewide survey effort for eastern black rails (*Laterallus jamaicensis jamaicensis*) in 2017; eastern black rails were detected, prompting annual eastern black rail surveys.
- In 2017 and 2018, white-tailed deer (*Odocoileus virginianus*) spotlight surveys were conducted.
- Over the past 10-year period, locally important species occurrence records were documented in an internal database, and 37 bluebird nest boxes were maintained.
- Triannual bat box occupancy monitoring occurred for 4 bat houses, and in 2020, a bat pup survey was conducted.
- In Fiscal Year 2024/2025, meso-mammal species were inventoried on the area via camera survey.

## 4.5 Non-native Species Maintenance and Control

With invasive species populations continuing to grow in Florida, the FWC takes a proactive and comprehensive approach to the monitoring and management of non-native plants and animals, as well as pests and pathogens, on FWC-managed areas. Non-native species are those species that do not originate from Florida. These species are often introduced because of human activities and are closely monitored by the FWC for potential future impacts. If a non-native species is found to cause or is likely to cause environmental or economic harm to humans, it is classified as an invasive; as such, the Management Plan uses the term “invasive” where appropriate. On the SLWMA, the FWC has established a variety of control measures for the management of any non-native plant and animal species found, as further outlined in Section 5 of this Management Plan.

### 4.5.1 Non-native Plant Species

The FWC will continue efforts to control the establishment and spread of FISC Category I and II plants while using the most current control technologies (CCT), which may include mechanical, herbicide, and biological control. Treatments utilizing herbicides will comply with instructions found on the herbicide label and employ Best Management Practices and CCT for their application. More information regarding herbicides used on FWC’s lead managed areas can be found [here](#).

During the previous planning period, several control activities have occurred (Section 4.5.3). FWC staff strive to either eradicate infestations or achieve maintenance rotation. Maintenance rotation is defined as having a given area/acreage with invasive species infestations reduced to a level where no ecological harm will occur by skipping any treatment for a period of one- to several-years, depending on the species. Maintenance rotation is not necessarily synonymous with eradication, which is usually impractical to achieve.

Maintenance rotation intervals for invasive plants vary greatly by species. Generally, woody species that form canopies will need a thorough initial treatment and a follow-up treatment the next growing season. Thereafter, the maintenance rotation treatment will need to follow seed germination and seedling/sapling regrowth patterns, with subsequent treatments being necessary every two- to 10 years, depending on initial infestation level, seed bank presence, and likely new dispersal into the area from neighboring populations of these species. Woody species that dominate the midstory will need a treatment regimen like those that form canopies, except the subsequent retreatment rotation would be every two- to five years.

Herbaceous species that can affect the midstory and canopy, including vines, weak lianas, and climbing ferns, need to be detected and treated as early as possible. These need to have an aggressive initial treatment, followed by yearly treatments, until the populations no longer affect the midstory. At this point, a two- to three-year rotation, with treatment as necessary, will keep these infestations in maintenance rotation.

Herbaceous and weakly woody species that only dominate the groundcover can be particularly challenging. This group is diverse and includes species such as tropical soda apple (*Solanum viarum*), Caesar weed (*Urena lobata*), cogon grass (*Imperata cylindrica*), and Guinea grass

(*Urochloa maxima*). The rotation intervals can vary from treatments once every two- to three-years, to annual treatments, to as many as four treatments in a growing season, depending on the species. For this reason, rotation intervals for these species will be developed in coordination with the FWC's Invasive Plant Management Section. Infestations requiring multiple treatments in a growing season should also be mapped individually, because their treatment plans may differ from the rest of the invasive plants in any given unit.

The FWC will continue to focus control and maintenance activities on areas identified as having invasive plant occurrences, as well as treating any new occurrences as they are identified through continued monitoring activities. Natural disasters such as tropical cyclones, flooding, wildfire, and drought can both negatively and positively impact maintenance rotation of an area, and affected acreage should be re-surveyed following any of these events to reassess the maintenance state of the area.

The degree of maintenance effort for invasive plant occurrences often varies substantially by species; level of disturbance; environmental conditions; and other land management activities such as timber harvesting, groundcover restoration, etc.; and can also be affected by the status of ongoing eradication and control efforts. FWC staff will make special effort to treat invasive species in coordination with mechanical treatments and prescribed fire, so optimal results are achieved. Treatment strategies for invasive plants will be adjusted over time as conditions change on the SLWMA. Changes may include hydrological restoration, wildfire, and reintroduction of endangered plant/animal species.

Additionally, the FWC will continue efforts to control the introduction of non-native species, as well as pests and pathogens, on the SLWMA by requiring all personnel, both contracted and internal, to follow the FWC Decontamination Protocol. The SLWMA has a designated site, which can be used for decontamination of both equipment and personnel to allow for a proactive approach to controlling new introductions.

FWC area staff will continue to work closely with FWC's Invasive Plant Management Section for guidance and assistance on treatments and management of invasive species on the area. For areas on the SLWMA that require treatments for aquatic based invasive species, FWC area staff will work closely with both FWC's Invasive Plant Management Section and FWC's Aquatic Habitat Conservation and Restoration Section for assistance and guidance on aquatic plant control.

#### **4.5.2 Non-native Fish and Wildlife Species**

The FWC continues to work towards minimizing the adverse impacts of non-native fish and wildlife species in Florida. A non-native species may be considered invasive if it causes or is likely to cause adverse impacts to Florida's ecology, economy, or human health and safety. Minimizing adverse impacts is accomplished through prevention, early detection, rapid response, control and management, and education and outreach. Early detection and rapid response (EDRR) are a critical defense against the establishment of non-native fish and wildlife. The FWC monitors and removes these species, responds to new invasions, and continues to assess the risk of species not yet present in our state. Rule 68-5, F.A.C., Federal Lacey Act, and certain F.S. govern the

importation, possession, and use of invasive fish and wildlife. Rule 68-5, F.A.C., identifies Conditional and Prohibited invasive species in Florida. More information on these regulations can be found [here](#) and the rule may be found [here](#). Conditional species (formerly referred to as restricted species) and Prohibited species are dangerous to Florida's native species and habitats and could pose threats to health and welfare of the people of Florida or the economy. The FWC relies on monitoring efforts and current science, including risk determination, supplemental documentation, and research to identify possible invasive species. To further assist the FWC's effort on non-native fish and wildlife identification and removal, the FWC encourages the public to utilize the FWC's Invasive Species Hotline at 888-Ive-Got1 (483-4681) or report observations of non-native species [here](#). More information on these public reporting options and other components of the Wildlife Impact Management Section's Nonnative Fish and Wildlife Program can be found [here](#).

To address the presence of non-native fish and wildlife on the SLWMA, FWC area staff will continue to work closely with FWC's Wildlife Impact Management Section for guidance and assistance. The FWC also relies on public assistance and participation in the control of non-native fish and wildlife species. Executive Order 23-16 authorizes the lethal take and removal of non-native reptiles on 32 FWC-managed lands. Trappers and nuisance wildlife control operators can also apply for an eradication and control permit to assist in the capture of Prohibited species on private and public lands, including wildlife management areas. More information on this permit process can be found [here](#). Due to the growing concern related to the impacts of several invasive species, the FWC and partners take a proactive and coordinated approach towards the removal of these harmful non-native species.

An invasive animal of concern throughout the state and on the SLWMA is the wild hog. These animals have high reproductive rates, and when populations reach high densities, wild hogs can significantly degrade natural communities through foraging activity (rooting). The FWC will consult with other regional natural resource managing agencies and private landowners to coordinate wild hog control measures as necessary. Wild hog populations are managed by hunts during the wild hog-dog, archery, general gun, and muzzleloading gun seasons. Wild hog populations may also be managed by trapping, as necessary, to aid in minimizing the negative impacts caused by wild hog populations on the area.

#### **4.5.3 Non-native Activities and Accomplishments**

Invasive plant species known to occur include mimosa (*Albizia julibrissin*), alligator weed, wax begonia (*Begonia cucullata*), Durban crowfootgrass (*Dactyloctenium aegyptium*), Japanese climbing fern (*Lygodium japonicum*), and others (Table 5). During the previous planning period, FWC staff worked to survey and control non-native plant and wildlife species found. Following is a list of activities the FWC accomplished during the last planning period as well as activities that are still ongoing. Non-native species objectives and challenges for the SLWMA for the next 10 years are further detailed in Sections 5-6.

- 4,541 acres have been placed into maintenance rotation.

- Approximately 90% of the SLWMA is considered as having achieved maintenance rotation. An estimated 10% of the SLWMA remains to be surveyed, monitored, and treated as appropriate, as guided by the FWC's Invasive Plant Management Section.
- The FWC continues to offer hunts for control of the wild hog population.

## **4.6 Public Access and Recreational Opportunities**

To facilitate wildlife-focused outdoor recreational opportunities on the area, the FWC has continued to establish and maintain hiking trails, kiosks, and viewing platform (Figure 22).

In addition to recreational opportunities on the SLWMA, the FWC offers a variety of recreation and environmental education programs throughout the state. The FWC has several summer camp locations that provide programming on the theme of conservation-centered recreation. The FWC also hosts events that encourage Florida residents and visitors to get outdoors and enjoy the Wildlife Management Area system. For more information on the numerous recreation opportunities the FWC offers on all areas, visit [MyFWC.com/Recreation](http://MyFWC.com/Recreation).

Further planned public access, recreational, and educational opportunities on the area are detailed in Section 5. Ongoing public access and recreational opportunity management challenges are addressed in Section 6.

### **4.6.1 Americans with Disabilities Act**

When public facilities are developed on areas managed by the FWC, every effort is made to comply with the Americans with Disabilities Act (ADA) (Public Law 101-336). As new facilities are developed, the universal access requirements of this law are followed in all cases except where the law allows reasonable exceptions. Recreation facilities in semi-primitive or primitive zones will be planned to be universally accessible to the degree possible, except as allowed by the ADA<sup>6</sup> where:

1. Compliance will cause harm to historical resources or significant natural features and their characteristics.
2. Compliance will substantially alter the nature of the setting and therefore the purpose of the facility.
3. Compliance would not be feasible due to terrain or prevailing construction practices.
4. Compliance would require construction methods or materials prohibited by federal or state statutes or local regulations.

### **4.6.2 Public Access Assessments**

The FWC has adopted a comprehensive approach to the planning and administration of fish and wildlife-focused public outdoor recreational opportunities for the SLWMA. To accomplish this, the FWC will develop a Public Access Assessment for the SLWMA that will be used to further guide the design and development of appropriate infrastructure and interpretive materials that will support the recreational use of the area by the public. This Public Access Assessment will include information on local area demographics, natural features, and wildlife characteristics of the SLWMA that contribute to high-quality sustainable outdoor recreation experiences, assessment of current infrastructure, volunteer program opportunities, and interpretive themes.

### **4.6.3 Public Access Carrying Capacity**

Baseline carrying capacities for users on the FWC-managed lands are established by conducting a site-specific sensitivity analysis using available data for the site. The intent of the carrying capacity analysis is to minimize wildlife and habitat disturbance and provide the experience of being “immersed in nature” that visitors to the FWC-managed areas desire. Carrying capacities are just a first step; management of recreational use requires a means of monitoring visitor impacts. Responding to these impacts may require adjusting the carrying capacities as necessary. The carrying capacities generated through this process are used as a tool to help plan fish and wildlife-focused public outdoor recreation opportunities. Based on an analysis of the overall approved uses and supported public access user opportunities and the anticipated proportional visitation levels of the various user groups, the FWC has determined that the SLWMA can currently support 170 visitors per day. It is important to note that public access carrying capacities are not developed to serve as a goal for expanding the public use of a particular area to match the established carrying capacity. Rather, they are developed to establish maximum thresholds for public use of the respective area to protect the natural and cultural resources and to ensure that visitors will have a high-quality visitor experience while minimizing impacts to environmentally sensitive communities. The public access carrying capacity will be periodically reevaluated, and additional capacity may be contemplated.

### **4.6.4 Public Access and Recreational Activities and Accomplishments**

During the previous 10-year planning period, the FWC completed the following public access and recreational improvements and enhancements on the SLWMA:

- In Fiscal Year 2019/2020, the entrance on Dairy Road was updated to include ADA parking, a new kiosk, and a secondary entrance sign.
- In 2024, three plank walks were constructed adjacent to low water crossings and low areas on the trail system.
- The SLWMA recreation website was updated, and a new trail guide was developed.

## **4.7 Hydrological Preservation and Restoration**

A Hydrological Needs Assessment was completed on the SLWMA in 2007 (Appendix 11.15). FWC staff will work towards implementing hydrological restoration and improvement activities as recommended by the area’s assessment. Some recommendations may not be feasible during this planning period due to funding and potential adjacent land impacts. However, during this planning period, staff will work to improve and repair existing culverts and low water crossings, as well as install new culverts or low water crossings, as appropriate.

Currently, staff continue to communicate and collaborate as needed with the SJRWMD and the DEP on any ground or surface water quality or quantity monitoring and any monitoring protocols needed. In this capacity, the FWC will primarily rely on the expertise of the SJRWMD and the DEP to facilitate these monitoring activities as needed. If necessary, the FWC may independently conduct or contract for water resource monitoring on the SLWMA, as guided by the DEP and the SJRWMD.

#### **4.7.1 Hydrological Preservation and Restoration Activities and Accomplishments**

During the previous 10-year planning period, the FWC maintained five low water crossings and nine culverts on Bear Bluff and Powerline Roads.

### **4.8 Forest Resource Management**

A Timber Assessment of the timber resources of the SLWMA is currently being conducted by the Florida Forest Service (FFS) (Appendix 11.16). The management of timber resources will be considered in the context of the Timber Assessment and the overall land management goals and activities.

Pursuant to OBVM management goals, the FWC will continue to manage timber resources for wildlife benefits and natural community restoration. Management activities, including the use of timber thinning and harvesting, may be utilized. The primary management technique for encouraging reforestation is the protection of young trees and seedlings on these sites from damage. However, where natural regeneration is lacking, artificial reforestation may be implemented. Planting trees on these selected sites is used to increase the rate of reforestation and to ensure diversity. Forested wetlands are managed for stands with old growth characteristics. Snags, when possible, will be protected to benefit cavity-nesting species.

### **4.9 Cultural Resources**

A review of the FMSF indicates that seven cultural resources have been recorded on the SLWMA (Section 2.8). Additionally, one cultural resource survey has been conducted on the area. In cooperation with the DHR, the FWC will continue to monitor and report on all recorded sites annually.

The FWC will consult with the DHR to determine the procedures necessary to identify, assess, and preserve any unrecorded or unevaluated cultural resources that may be present within the SLWMA. In addition, the FWC will ensure area management staff have the latest DHR Archaeological Resource Management training. The FWC will follow the DHR's *Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties* found in Appendix 11.17, and, in accordance with Sections 267.061(2)(a,b), F.S., the FWC will consult with and allow the DHR a reasonable opportunity to comment prior to any undertaking that may impact historic properties. Furthermore, should any previously unidentified resources and/or their locations be found on the SLWMA, the FWC will prepare and submit all necessary documentation to the FMSF.

#### **4.9.1 Cultural Resource Management Activities and Accomplishments**

During the previous planning period, an assessment of the Cattle Dipping Vat was conducted in Fiscal Year 2024/2025 to determine contamination levels, and six cultural resource sites of known location were monitored annually.

### **4.10 Capital Facilities and Infrastructure**

The FWC's land management philosophy is designed to conserve the maximum amount of wildlife habitat while providing the minimal number of capital facilities and infrastructure necessary to

effectively conduct operational and resource management activities and provide ample opportunities for fish and wildlife-focused public outdoor recreation. For these reasons, planned capital facilities and infrastructure will focus on improving access, recreational potential, hydrology, or other resource and operational management objectives.

Current capital facilities and infrastructure on the SLWMA include kiosks, a parking area, trails, a vault toilet, and an observation deck. As described in Section 4.6.1 of this Management Plan, for any public facilities that are developed on areas managed by the FWC, every effort is made to comply with the ADA Act (Public Law 101-336). Maintenance and improvement activities of current and future capital facilities are further outlined in Section 5.9.

#### **4.10.1 Capital Facilities and Infrastructure Activities and Accomplishments**

During the previous 10-year planning period, the FWC completed several capital facilities and infrastructure improvements on the SLWMA, including:

- A new vehicle carport was constructed.
- Bear Bluff and Powerline roads were both maintained and repaired as needed with road stabilizing material.

### **4.11 Land Conservation and Stewardship Partnerships**

Land conservation and stewardship partnerships can create a resilient and adaptive landscape and economy that can support future generations of Florida. Thriving landscapes and habitats produce a range of benefits, such as protecting our water and air and providing habitat for fish, wildlife, and plants. In addition, productive landscapes power local and regional economies by supporting sustainable activities, including fishing, farming, ranching, forestry, recreation, and tourism. Maintaining these benefits as Florida is facing ever-increasing significant land and water issues is paramount. Population growth, habitat loss and fragmentation, land use changes, invasive species, water crises, and climate variability can threaten Florida's future. To successfully manage these challenges for the long term, there is a growing need for conservation work to be done at a larger scale and with multiple partners that can pool their resources and incorporate best scientific practices.

#### **4.11.1 Decision Support Tools**

##### Florida Conservation Blueprint

The Florida Conservation Blueprint (Blueprint) is a spatial plan that identifies shared conservation priorities across Florida. The Blueprint was developed by the Peninsular Florida Landscape Conservation Cooperative for the cooperative incorporation of strategies from a suite of partners. The Blueprint supports spatial conservation planning to inform conservation actions and investment. The Blueprint provides planners and managers across organizations the opportunity to align their efforts to protect fish and wildlife habitat, improve quality of life for people, and develop strong economies. The Blueprint can be accessed from the Florida Conservation Planning Atlas. The FWC uses the Blueprint to help guide and prioritize landscape conservation actions and acquisition opportunities (Figures 26-28).

### Other Decision Support Tools

There are additional data and tools that have been developed as decision support tools for identifying and prioritizing areas for conservation action as well as to guide resource (i.e., time, staff, and funding) allocation. These tools include, but are not limited to, FLAM (Section 4.2.2), Critical Lands and Water Identification Project, Florida Ecological Greenways Network, FNAI element occurrences database, Simple Map Viewer, Fire Map Viewer, Florida Springs Dashboard, Climate Adaptation Explorer, and Florida Ecological Report Cards. Tools and supporting data can be found at [www.FNAI.org](http://www.FNAI.org) or on the Florida Conservation Planning Atlas.

## **4.11.2 Conservation Stewardship and Partnership Opportunities**

### Private Lands Partnerships

The FWC recognizes the interconnected needs of protecting and enhancing private property values and rights, as well as creating new markets and economies that support the conservation value of private working lands. Private landowners seeking assistance with habitat management will likely find it offered within the FWC Landowner Assistance Program (LAP). The FWC LAP program provides many opportunities for conservation-minded landowners to obtain assistance and advice from FWC staff and programs for improving land conservation practices on their lands. The LAP routinely conducts workshops for interested landowners to interact with FWC staff and learn how they may participate in the program. The FWC employs biologists who are available to provide wildlife-related assistance with land use planning and habitat management. In addition, the LAP works with landowners to enroll in NRCS conservation cost-share programs to assist with the implementation of wildlife-friendly land management practices. There are many forms of assistance that include technical, financial, and educational, as well as various forms of recognition that seek to award landowners who manage their wildlife habitat responsibly. At the time of the plan development, no specific land stewardship workshops had been conducted for landowners adjacent to the SLWMA. The FWC will continue to evaluate the level of interest and efficacy of providing technical assistance to adjacent private landowners to enhance the conservation management of their lands. More information on the FWC's LAP program and online habitat management tools is available [online](#).

### Landscape Conservation Partnerships

The FWC will continue to work with partners including government entities, private organizations, and academic institutions on collaborative landscape conservation efforts and acquisition opportunities. Potential partners for the SLWMA and surrounding areas include SJRWMD, FFS, FNAI, USFWS, Brevard County, DEP, Conservation Florida, and other organizations and potential grant program opportunities. The FWC will continue to commit staff time and other resources to regularly providing information to partners regarding landscape conservation science, opportunities, and progress.

## **4.11.3 Land Acquisition**

Using identified tools outlined previously, the FWC works to identify lands within or adjacent to FWC-managed areas that are important for the conservation of fish and wildlife, serve as a link or corridor to other publicly owned property, enhance the protection or management of the property, create a more manageable boundary configuration, or have a high resource value that

would otherwise be unprotected. Preservation of these lands can be accomplished through fee-simple or less-than-fee acquisition. The FWC works to pursue these opportunities through the FWC Additions and Inholdings Acquisition program, supporting Board of Trustees acquisition and addition of lands within the Florida Forever program and continued partnership with other agencies and private organizations on the acquisition of identified lands.

#### Less-Than-Fee Acquisition

Less-than-fee acquisitions, also known as conservation easements, are voluntary agreements between a landowner and government agency or conservation organization that acquires certain rights to a landowner's property for long-term conservation of the land, while the landowner still retains ownership of their property. The agreement is designed for landowners to continue to manage their land to maintain a working landscape in a manner that also enhances the conservation benefits provided by their land. These voluntary agreements to conserve land support the goals of landscape conservation. Less-than-fee acquisition is not only a means of conserving land but is also a cost-effective means for governmental and non-governmental organizations to protect land, while also providing economic and tax benefits to the landowner and local economy.

#### Fee-Simple Acquisition

Fee-simple acquisition is the process of acquiring complete ownership of the land. Fee-simple acquisition can be accomplished through the Florida Forever program or through grant programs and acquisition partnerships. The Florida Forever program is a land acquisition program with the purpose of conserving natural and cultural resources throughout the State. The DEP, as staff to the Board of Trustees, oversees the program. The Florida Forever program replaced the Preservation 2000 program, and since these programs' inception, nearly three million acres have been conserved throughout the State.

#### FWC's Additions and Inholdings Acquisition Program

Per 18-2.021, F.A.C., the FWC identifies parcels located directly in or adjacent to the subject area which can be recommended for acquisition through the FWC Additions and Inholdings Acquisition program. Properties totaling approximately 3,655 acres have been identified for recommended acquisition under the auspices of the FWC's Additions and Inholdings Acquisition program for the SLWMA (Figures 29-31). Consistent with Florida Forever program criteria, parcels on the list have been ranked High, Medium, or Low priority based on a score generated by a GIS-based resource evaluation model, along with technical input from FWC staff. The order of acquisition priority may be changed as necessary based on factors including available funding necessary to complete a particular acquisition project, changing development pressures, landowner willingness, funding partnerships, unique acquisition opportunities like bargain sales (less than 80% of appraised value), and donations.

The FWC Additions and Inholdings Acquisition List is updated through time, thus staying up to date for land ownerships, County parcel records, land conservation opportunities, and evolving management challenges. The FWC frequently analyzes, evaluates, and prioritizes its recommended conservation actions in a systematic, comprehensive, and consistent manner over

time. Currently, the FWC often recommends fee-simple acquisition of the lands on the FWC Additions and Inholdings Acquisition List for the SLWMA to optimize the conservation of fish and wildlife, public access and use, and overall resource and operational management of the area. However, as mentioned previously, the FWC may also pursue less-than-fee acquisition with adjacent landowners; though it should be noted that landowner preference is often the key element in determining whether to pursue a fee-simple or less-than-fee acquisition.

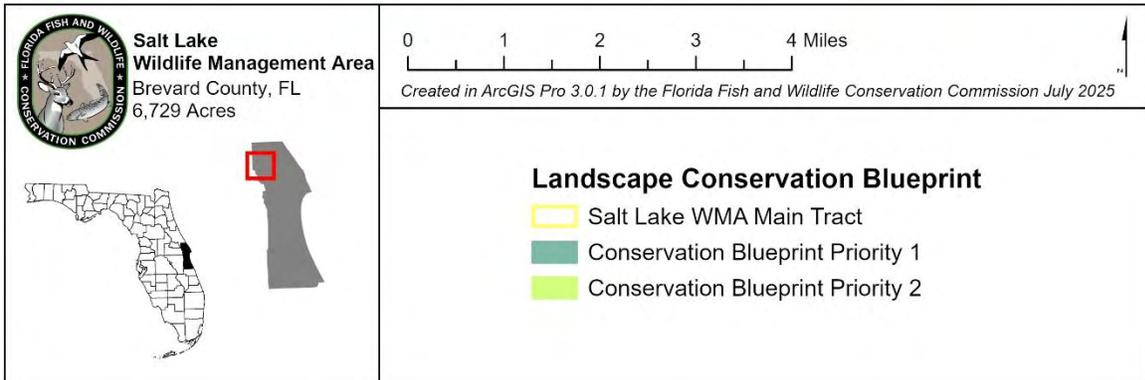
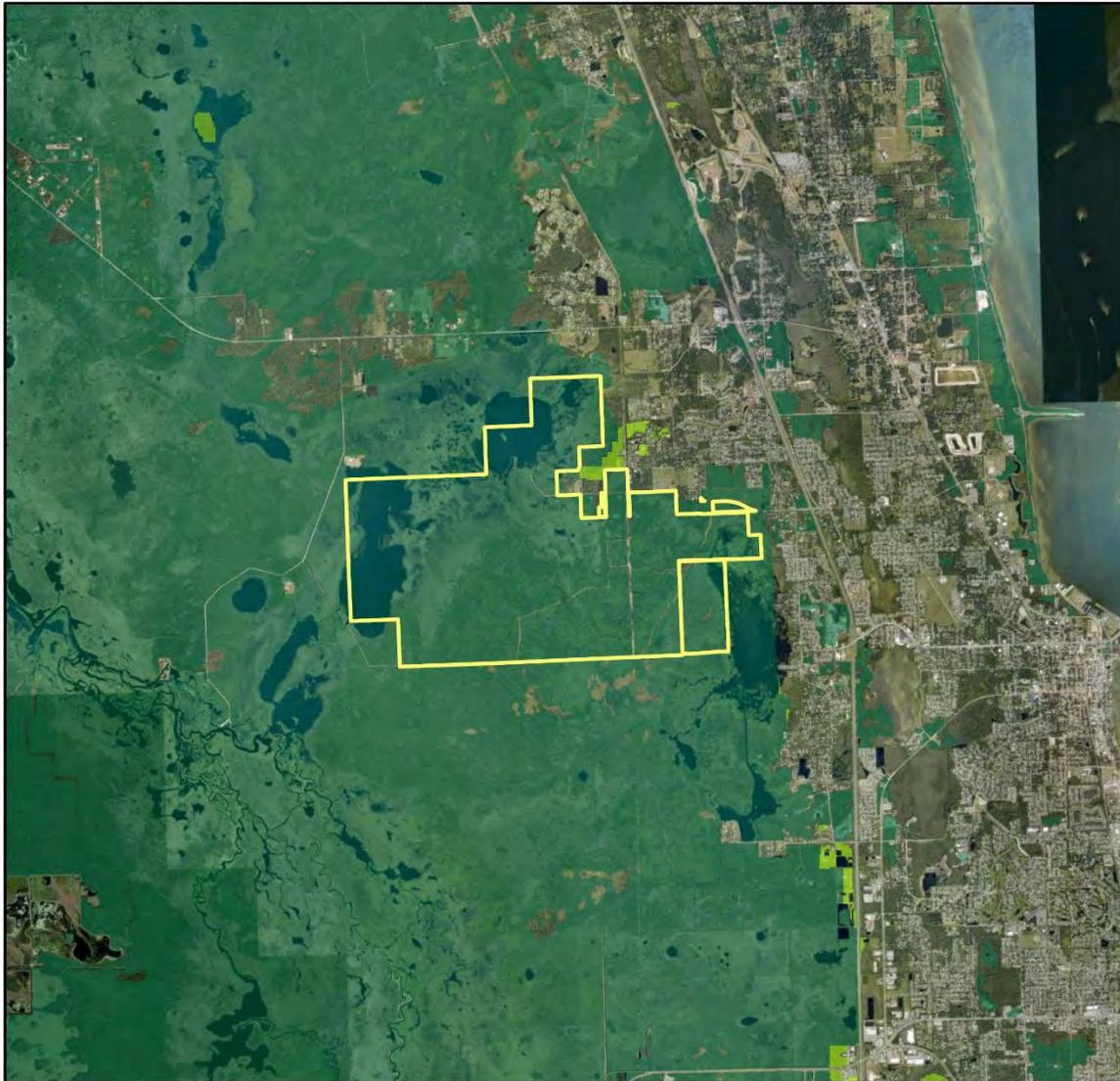
Parcels on the FWC Additions and Inholdings Acquisition List will be acquired if possible, according to their priority ranking for acquisition, as funding availability allows, and based on the landowner's willingness to sell their lands. Participation in any FWC acquisition is entirely voluntary and at the sole discretion of willing landowners. The FWC also continues to assist and support the DEP/Board of Trustees in the acquisition or recommend acquisition of the remaining lands within the nearby Florida Forever projects as essential to the long-term conservation of wildlife and other elements important to the ecosystem functions.

#### Alternative Options

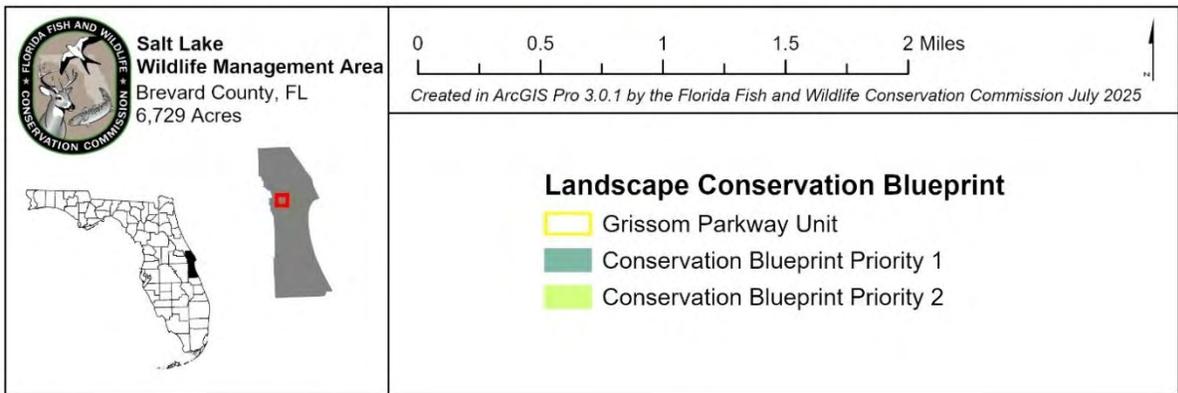
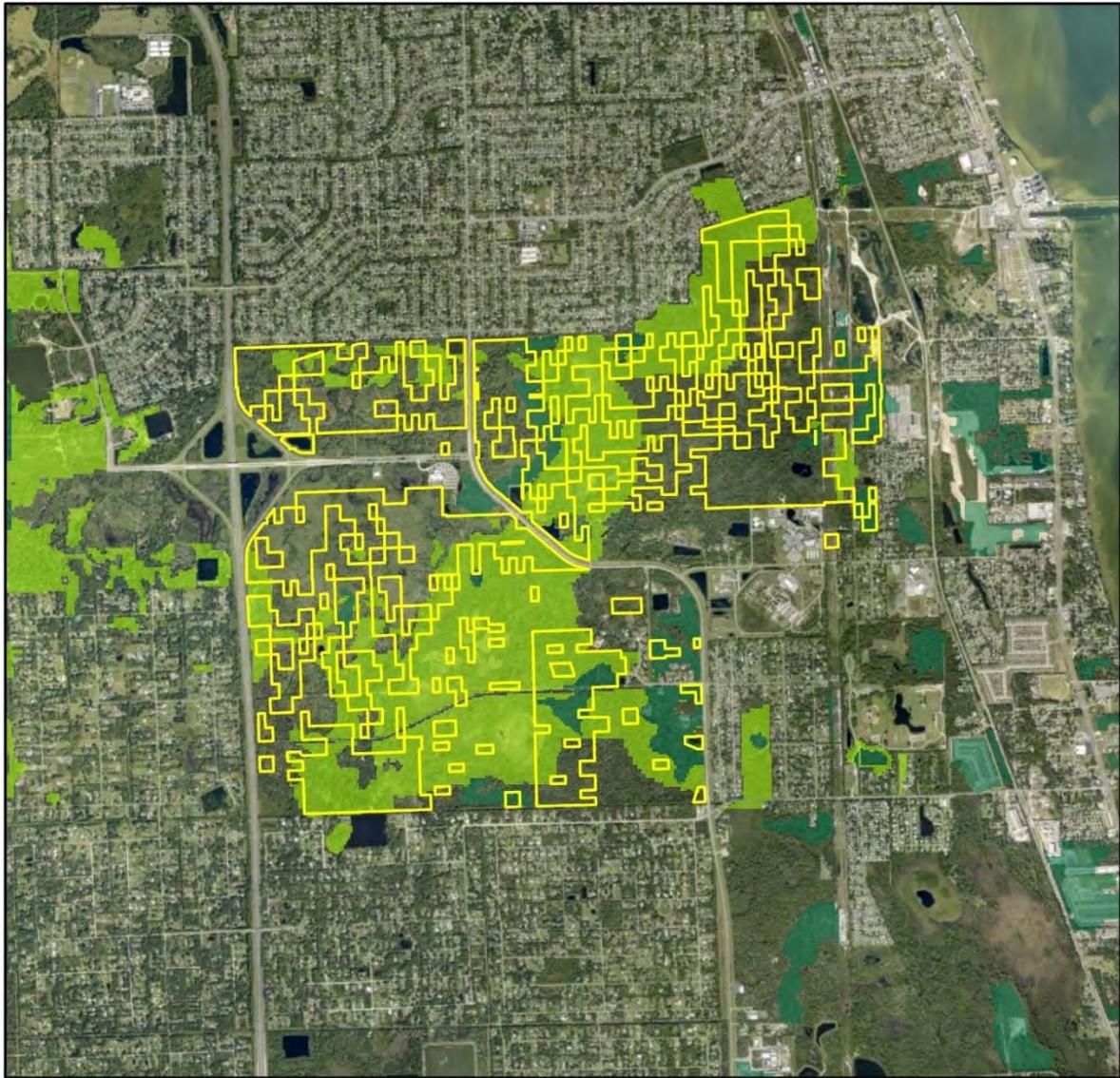
Along with the several land acquisition options described previously, alternative land protection methods are also available. The state accepts donations of land, life estate, and first-right-of-refusal. Life estate is an alternative that allows a landowner to reside on their property during their lifetime, however, ensures state ownership after passing. Additionally, there is also the option that a landowner could offer the state a first-right-of-refusal. After a first offer is denied by a landowner, the first-right-of-refusal option provides the state with a chance to purchase the land in the future. The state offers several alternative possibilities to obtaining the rights and/or ownership to land for conservation purposes, which furthers conversation-based goals and objectives for Florida's future.

#### **4.11.4 Landscape Conservation Activities and Accomplishments**

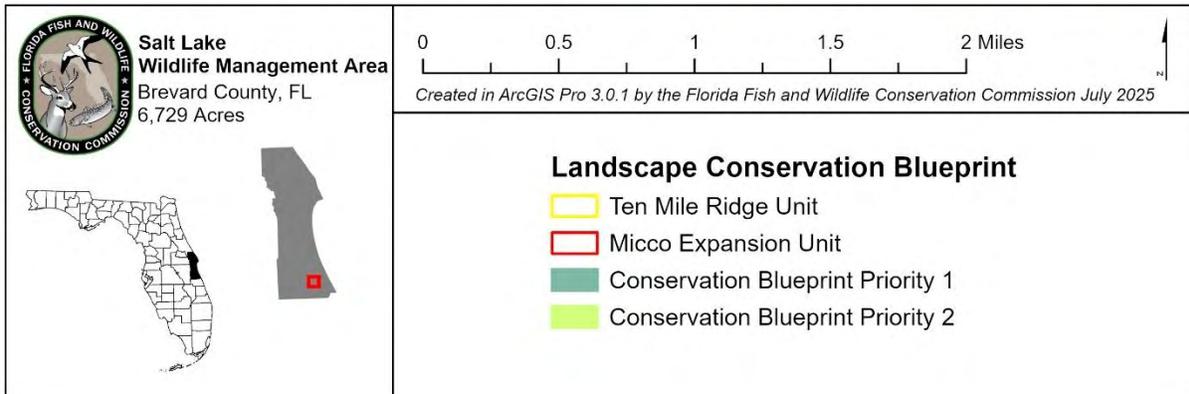
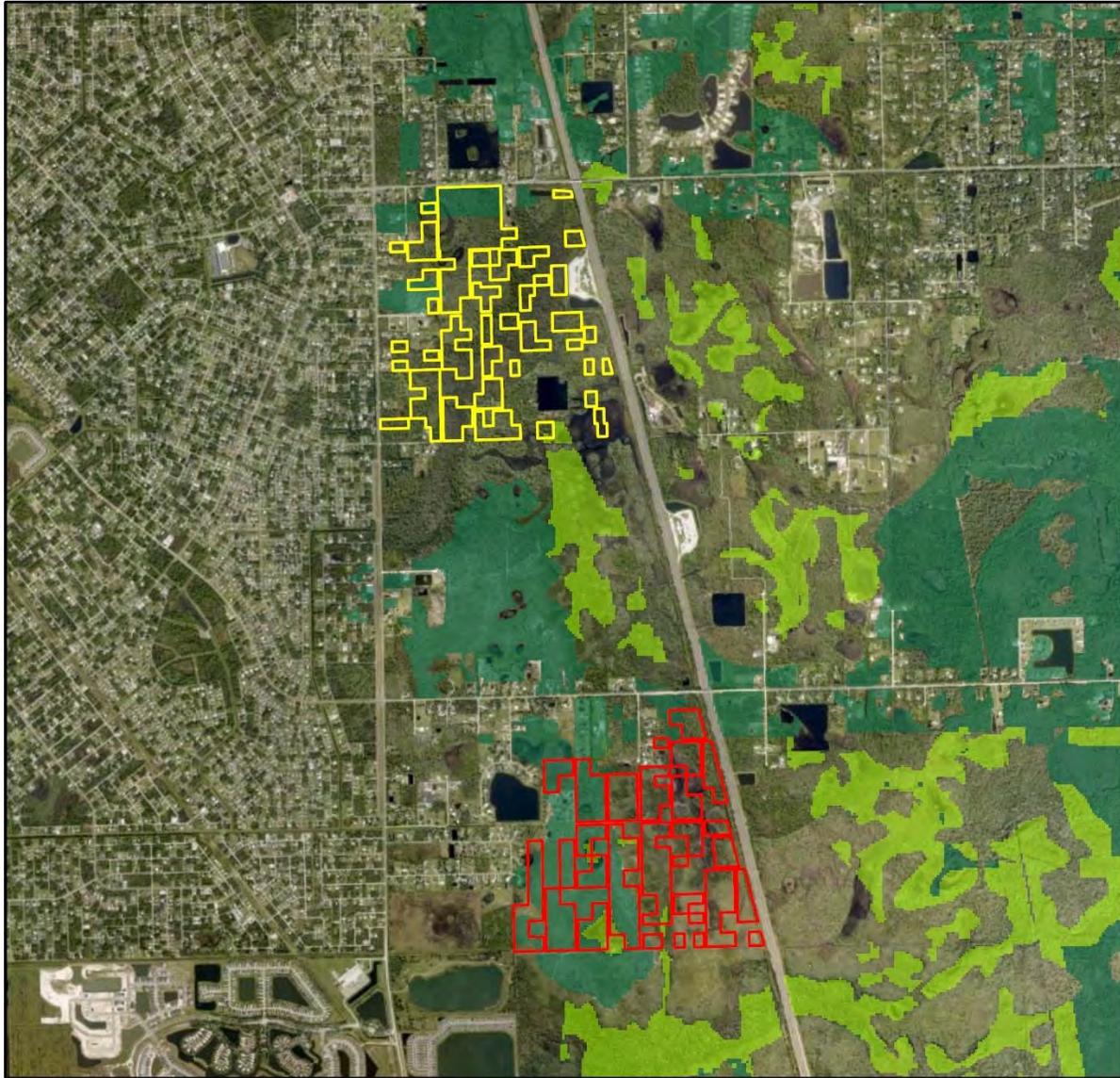
During the previous 10-year planning period, the FWC has worked to advance landscape conservation partnerships and pursue potential acquisition opportunities. Since 2016, approximately 634 acres have been acquired and added onto the SLWMA.



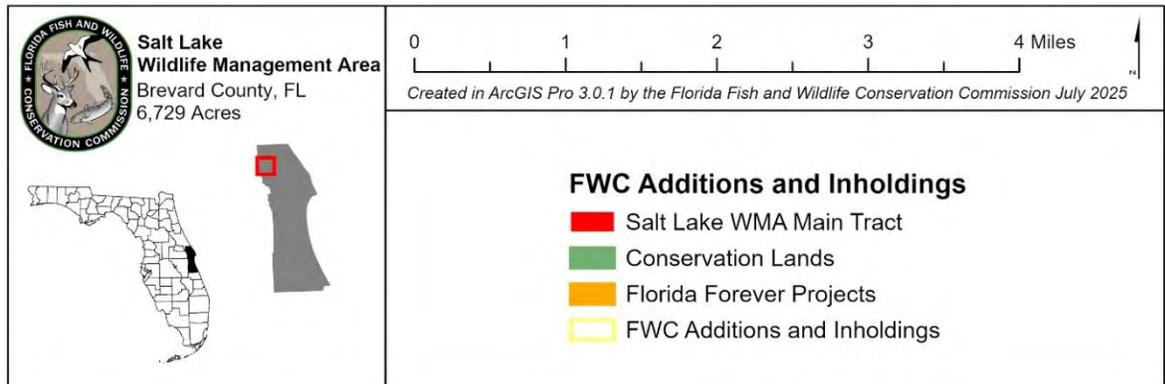
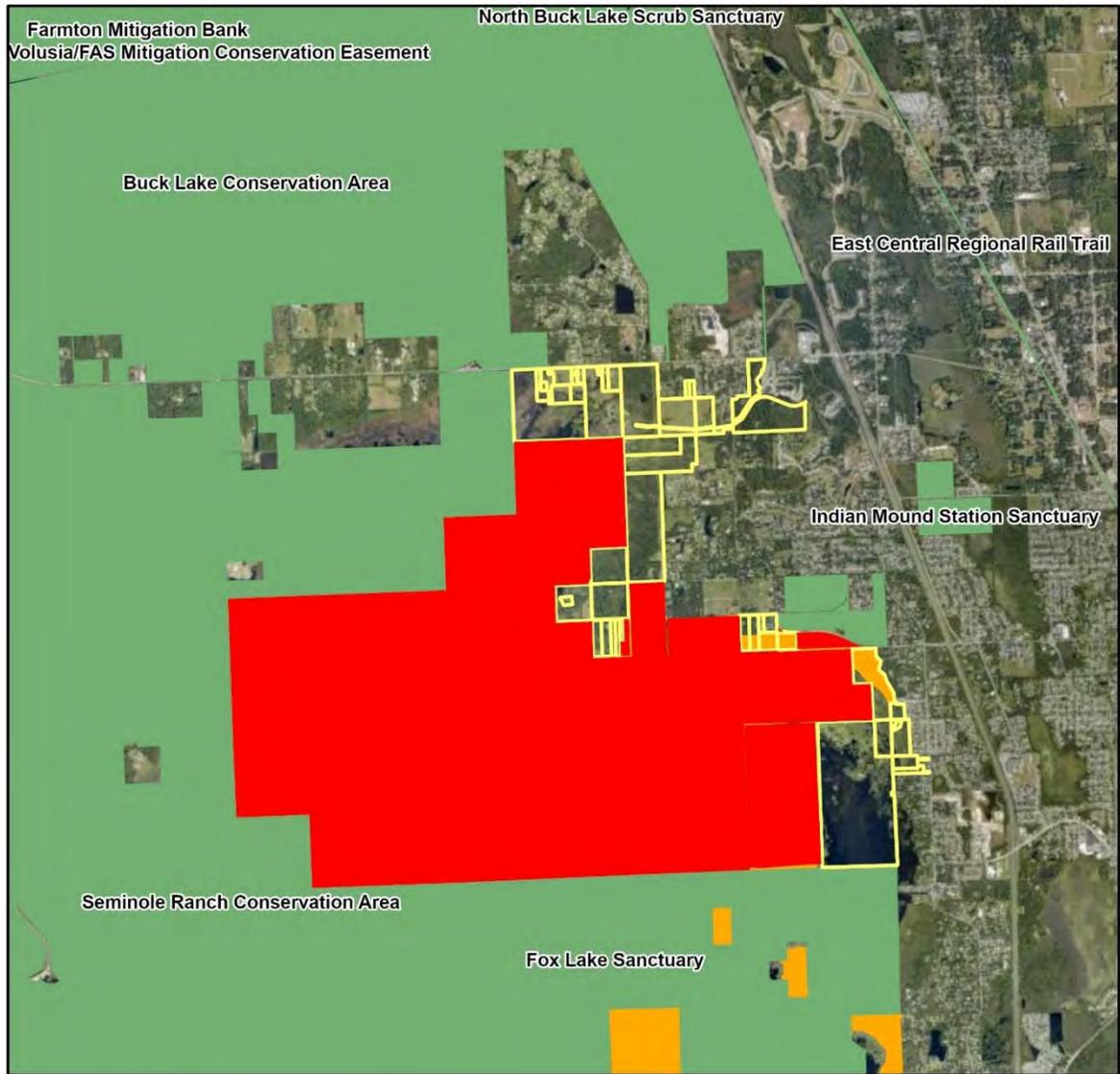
**Figure 26. Landscape Conservation Blueprint of the SLWMA Main Tract**



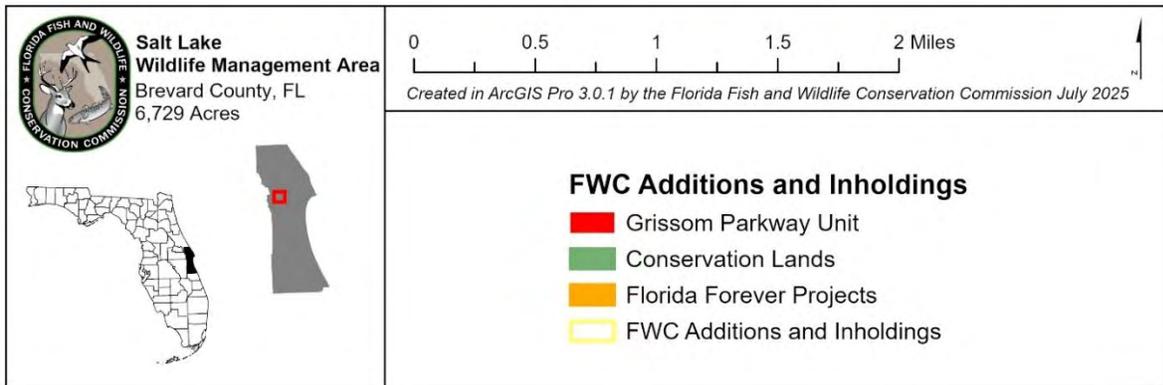
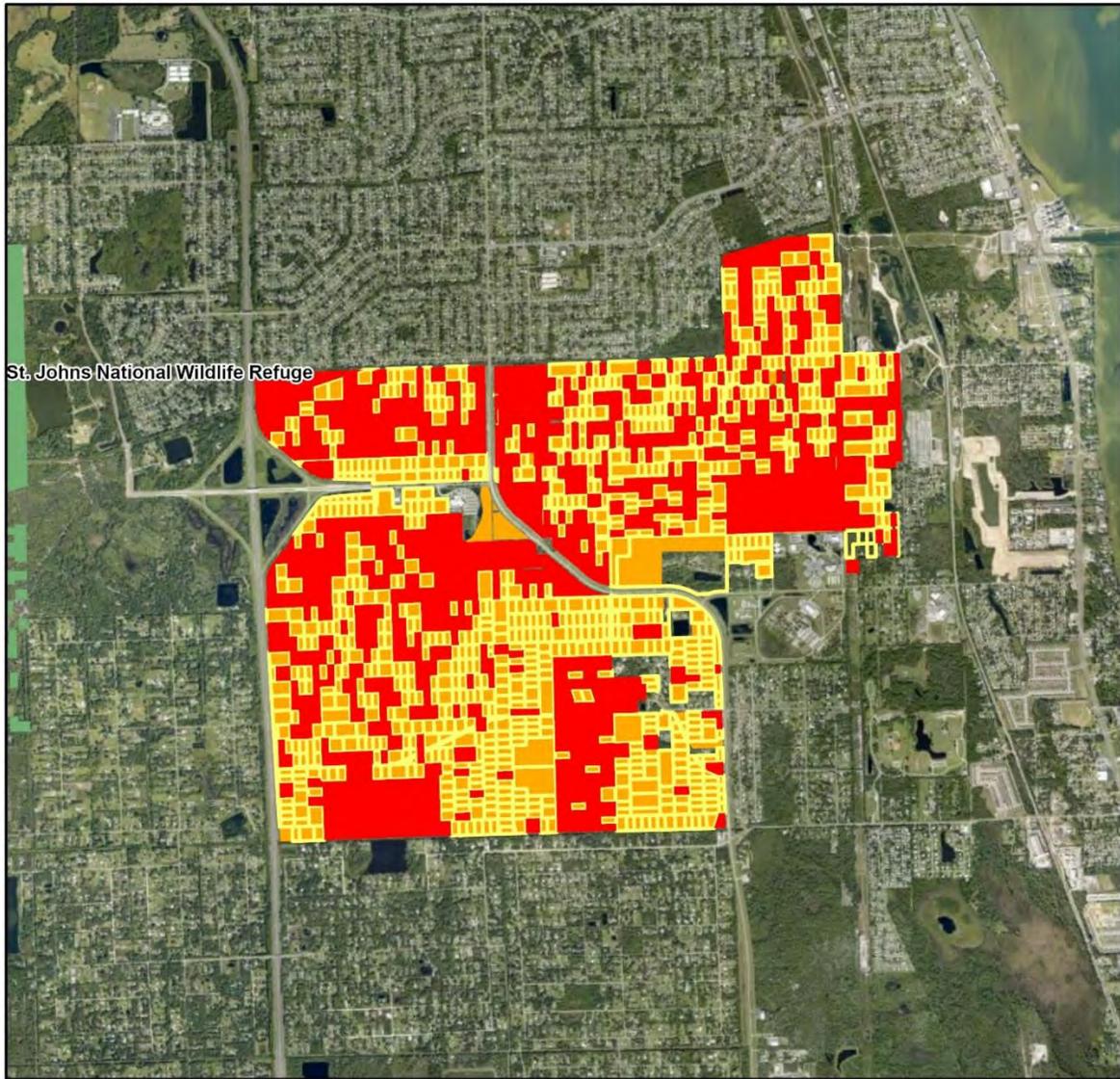
**Figure 27. Landscape Conservation Blueprint of the SLWMA Grissom Parkway Unit**



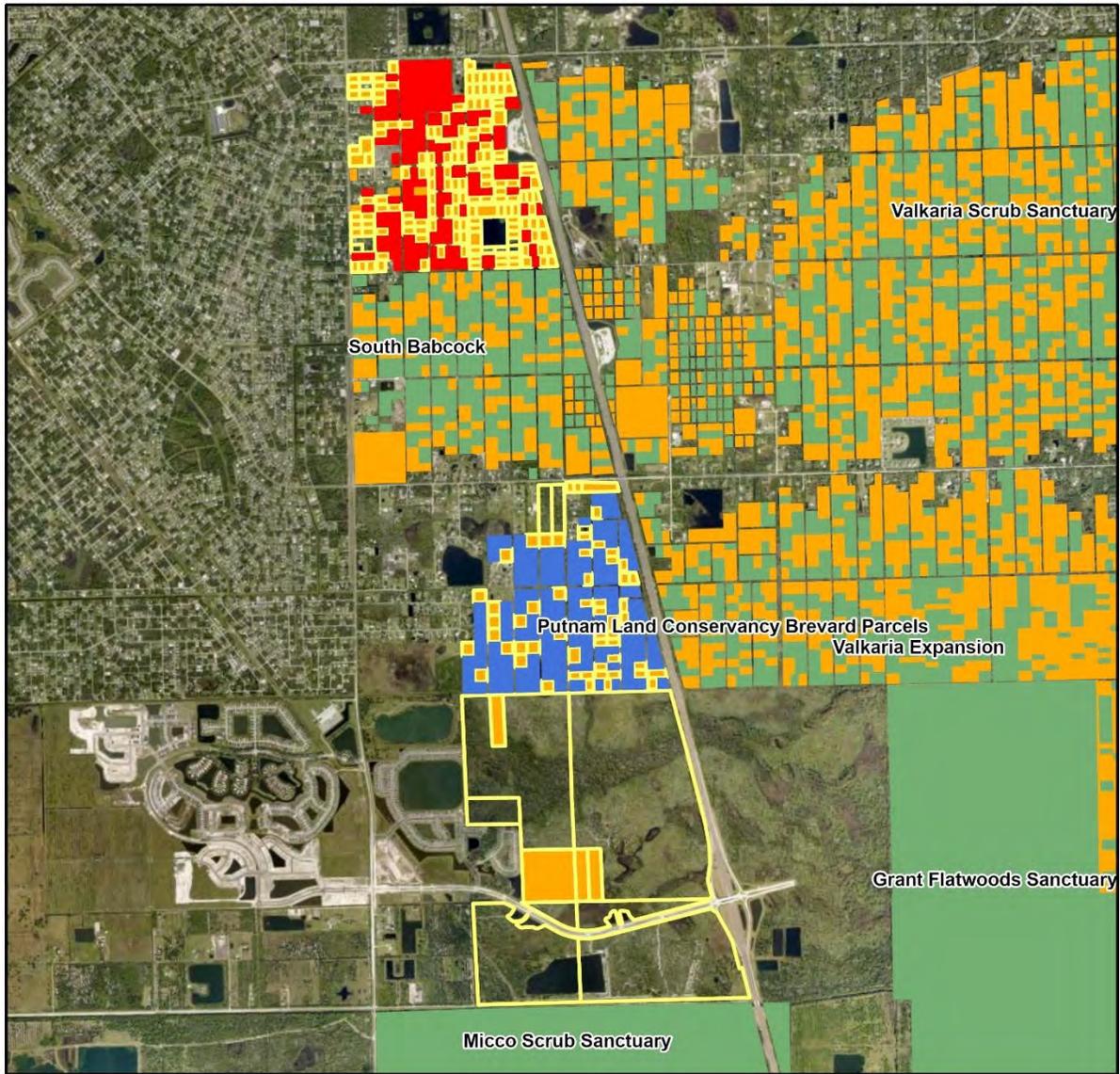
**Figure 28. Landscape Conservation Blueprint of the SLWMA Ten Mile Ridge and Micco Expansion Units**



**Figure 29. FWC Additions and Inholdings near the SLWMA Main Tract**



**Figure 30. FWC Additions and Inholdings near the SLWMA Grissom Parkway Unit**



**Figure 31. FWC Additions and Inholdings near the SLWMA Ten Mile Ridge and Micco Expansion Units**

## **4.12 Research Opportunities**

The FWC intends to cooperate with researchers, universities, and others as feasible and appropriate. For the SLWMA, the FWC will continue to assess and identify research and environmental education partnership opportunities as appropriate. All research activities must have prior approval by the FWC.

## **4.13 Cooperative Management and Special Uses**

### **4.13.1 Cooperative Management**

The FWC is responsible for the overall management and operation of the SLWMA as set forth in the lease agreements with the Board of Trustees and the SJRWMD. In keeping with the lease agreements and conducting its management operations in the most effective and efficient manner, the FWC cooperates with other agencies to achieve management goals and objectives described in this Management Plan. These include cooperating with the DHR to ensure the requirements of the *Management Procedures Guidelines - Management of Archaeological and Historical Resources* document are followed regarding any ground-disturbing activities. In addition, the FFS is a designated cooperating agency and assists the FWC by providing technical assistance on forest resource management. Also, the FWC cooperates and consults with the SJRWMD and DEP for the monitoring and management of both ground and surface water resources and the overall management of the SLWMA.

### **4.13.2 First Responder and Military Training**

First-responder and military training are conditionally allowed on the SLWMA. Such activities are considered allowable uses only when undertaken intermittently for short periods of time and in a manner that does not impede the management and public use of the SLWMA and cause no measurable long-term impact to the natural resources of the area. Additionally, FWC staff must be notified and approve of the training through the issuance of a permit prior to any such training taking place on the SLWMA.

### **4.13.3 Apiaries**

Currently, there is one apiary operating on the SLWMA (Contract No. 22206). Use of apiaries is conditionally approved for the SLWMA, so long as it is deemed to be consistent with purposes for acquisition, follows the Conceptual State Lands Management Plan, and is consistent with the FWC agency mission, goals, and objectives. Location, management, and administration of apiaries on the SLWMA will be guided by the FWC Division of Habitat and Species Conservation's Apiary Policy (Appendix 11.18).

## **4.14 Soil Conservation**

Soil disturbing activities will be confined to areas that have the least likelihood of experiencing erosion challenges. On areas that have been disturbed prior to acquisition, an assessment will be made to determine if soil erosion is occurring, and if so, appropriate measures will be implemented to stop or control the effects of this erosion.

## **5 Resource Management Goals and Objectives**

The management goals and objectives described in this section are broad, enduring statements designed to guide the general direction of management actions aimed at achieving an overall desired future outcome for the SLWMA. The objectives listed within each management goal offer more specific management guidance and measures and are considered the necessary steps to be completed to accomplish the management goals. The objectives are classified as having either short-term (less than two years) or long-term (up to 10 years) timelines for completion.

### **5.1 Habitat Restoration and Improvement**

**Goal: Improve extant habitat and restore disturbed areas.**

Long-term

1. Contract for recertification of current natural community mapping.
2. Utilize OBVM monitoring to evaluate actively managed natural communities and adjust management efforts to meet desired future conditions.
3. Continue to implement Prescribed Burn Plan.
4. Continue to conduct habitat/natural community improvement including roller chopping, mowing, shredding/mulching, invasive vegetation control, reforestation, and herbicide applications as appropriate.

### **5.2 Imperiled Species Habitat Maintenance, Enhancement, Restoration, or Population Restoration**

**Goal: Maintain, improve, or restore imperiled species populations and habitats.**

Short-term

1. Remove pine sapling regeneration in depression ponds adjacent to Florida scrub-jay habitat.

Long-term

1. Continue to implement the WCPR Strategy by managing identified habitats and monitoring imperiled species.
2. Continue to collect and record opportunistic wildlife species occurrence data.
3. Update the WCPR Strategy.

### **5.3 Other Wildlife (Game and Non-game) Habitat Maintenance, Enhancement, Restoration, and Population Restoration.**

**Goal: Monitor, maintain, improve, or restore game and non-game species populations and habitats.**

Long-term

1. Continue to monitor locally important wildlife species, as identified in the WCPR Strategy.
2. Continue to collect opportunistic wildlife occurrence data.
3. Continue to collect biological harvest data as needed.
4. Continue to maintain wildlife openings.

#### **5.4 Non-native Species Maintenance and Control**

**Goal: Remove non-native plants and animals and conduct needed maintenance and/or control.**

Short-term

1. Retreat targeted invasive plants in areas previously treated in the 2023 Invasive Plant Management Project.

Long-term

1. Monitor the SLWMA for FISC Category I and Category II invasive plant species and treat as needed.
2. When feasible, contract to conduct surveys and mapping of invasive and non-native plant species.
3. Ensure that staff are familiar with the identification, reporting procedures, and control measures of high priority nonnative plant and wildlife species.
4. Continue to implement control measures on non-native and nuisance animal species.

#### **6.6 Public Access and Recreational Opportunities**

**Goal: Provide public access and recreational opportunities.**

Long-term

1. Develop a Public Access Assessment.
2. Continue to maintain 29.26 miles of trails.
3. Monitor and maintain public access infrastructure as needed.
4. Maintain public access and appropriate recreational opportunities in accordance with the applicable public access and land use rules and laws, resulting in a recreational carrying capacity of 170 visitors per day.
5. Continue to provide at least one interpretive or educational program for conservation.
6. Continue to allow hunting opportunities.
7. Continue to provide interpretive products including a website, trail guide, and two interpretive signs.
8. Continue assessing and improving ADA accessibility for recreation and conservation education programming.
9. Explore potential trail connections with neighboring conservation lands.
10. Work with Brevard County to install directional signage along area roads.

## 5.6 Hydrological Preservation and Restoration

**Goal: Protect water quality and quantity, restore hydrology to the extent feasible, and maintain the restored condition.**

Long-term

1. Assess the need for an updated hydrological assessment, and if necessary, develop a hydrological restoration plan.
2. To maintain and enhance natural hydrological functions, install, maintain, or replace low-water crossings, bridges, and culverts as appropriate.
3. Continue to cooperate with the SJRWMD and DEP for the monitoring of surface and ground water quality and quantity.

## 5.7 Forest Resource Management

**Goal: Manage timber resources to improve or restore natural communities for the benefit of wildlife.**

Long-term

1. Implement, as appropriate, recommendations in the FFS drafted timber assessment.

## 5.8 Cultural Resources

**Goal: Protect, preserve, and maintain cultural resources.**

Long-term

1. Cooperate with the DHR in designing site plans for development of infrastructure.
2. Continue to follow the DHR's *Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties* for the management of cultural and historic resources.
3. Continue to monitor, protect, preserve, and report any changes on recorded sites on the SLWMA.
4. Ensure any newly identified sites are reported to the DHR for inclusion in the FMSF.
5. Coordinate with the DHR to ensure that staff have received updated Archaeological Resource Management training.

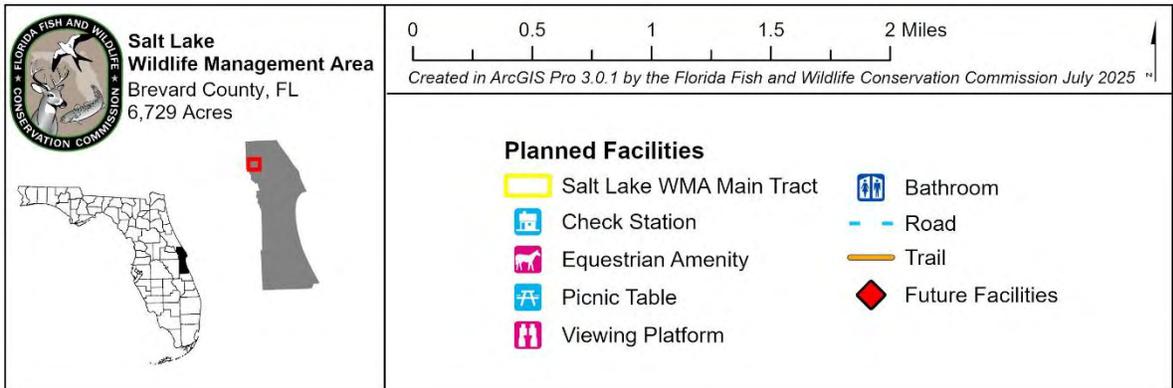
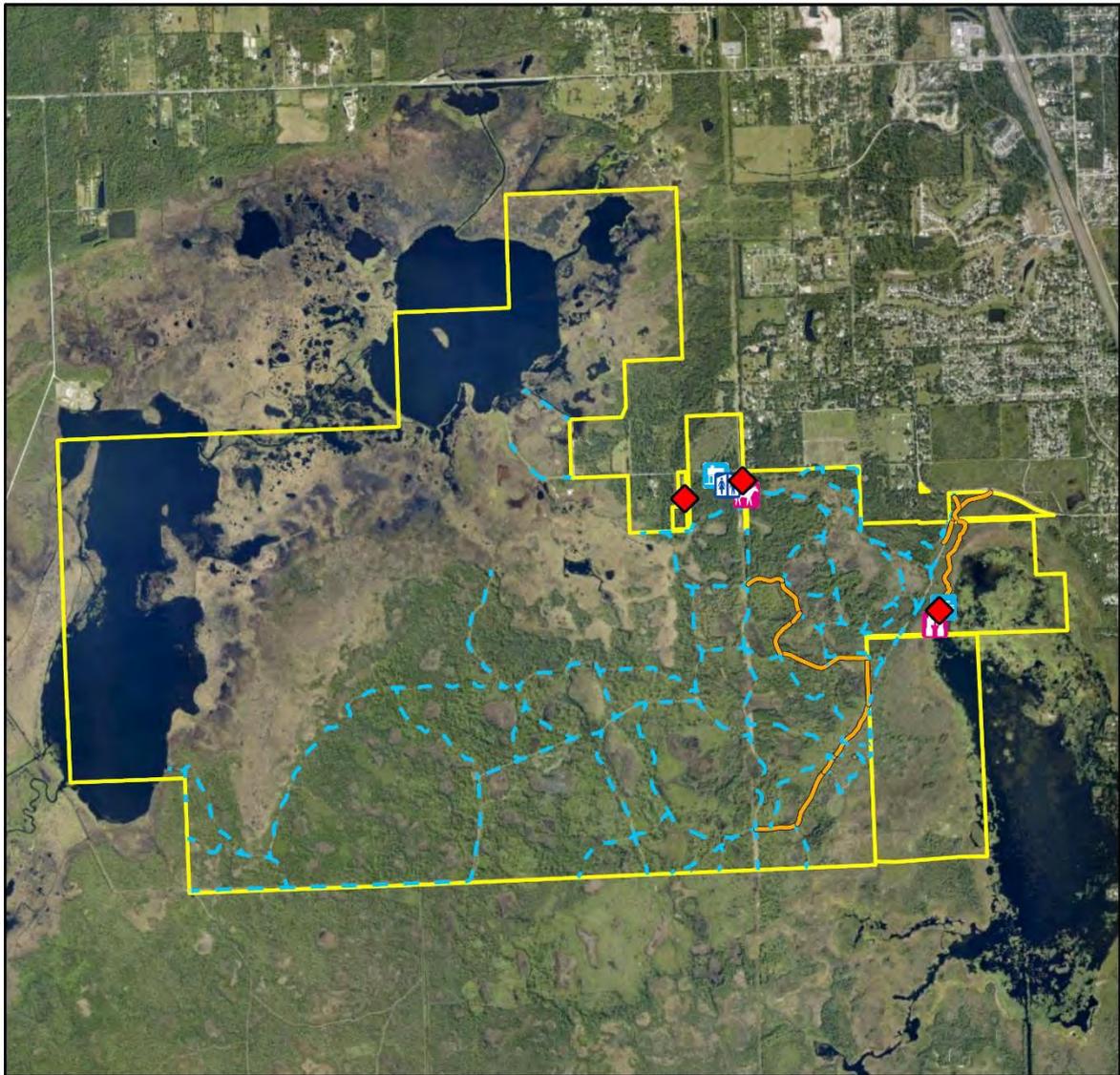
## 5.9 Capital Facilities and Infrastructure

**Goal: Develop the capital facilities and infrastructure necessary to meet the goals and objectives of this Management Plan.**

Long-term

1. Monitor trails and infrastructure annually for visitor impacts.
2. Continue to maintain, improve, or replace five facilities, including a shop, Arch Road entrance, Dairy Road entrance, Batson property structures, and the South Lake platform.

3. Continue to maintain 25.16 miles of roads.
4. Explore the feasibility of constructing a picnic shelter at South Lake (Figure 32).
5. Conduct a boundary survey, as needed.
6. Explore feasibility of adding an office, residence, sheds, and/or pole barn, and construct if necessary and budgets allow.
7. Maintain and improve the existing RV pad, water, and septic system on the Batson property.
8. Improve the entrance at Arch Road to include ADA parking, kiosk access, and sidewalk from the parking to the kiosk, as well as an accessible pathway to the restroom (Figure 32), if budgets allow.



**Figure 32. Planned Facilities**

## **5.10 Land Conservation and Stewardship Partnerships**

**Goal: Enhance fish and wildlife conservation, resource, and operational management through internal and external partnerships and programs.**

Long-term

1. Continue to identify and evaluate potential important wildlife habitat, landscape-scale linkages, wildlife corridors, and operational management needs for the SLWMA.
2. Continue to contact and inform adjoining private landowners about the FWC LAP, and coordinate with public entities to pursue conservation stewardship partnerships.
3. Continue to maintain relationships with adjoining private landowners for nomination for the LAP Wildlife Habitat Recognition Program.
4. Continue to evaluate and identify FWC inholdings and additions priority parcels for potential conservation acquisition and pursue acquisitions as funding allows.
5. Continue to maintain a GIS shapefile and other necessary data to facilitate nominations for the FWC landowner assistance and conservation acquisition programs.
6. Continue to identify potential non-governmental land stewardship organization partnerships and grant program opportunities.
7. Determine the efficacy of conducting a landowner assistance/conservation stewardship partnership workshop(s) and pursue as necessary and appropriate.
8. Continue to evaluate and determine if any portions of the SLWMA are no longer needed for conservation purposes and therefore may be designated as surplus lands.

## **5.11 Cooperative Management, Special Uses, and Research Opportunities**

**Goal: Provide access and use of the SLWMA to current cooperative managers and continue collaborative management and research efforts.**

Long-term

1. Continue to assess the need for and cooperate with researchers, universities, and others on research and environmental education partnership opportunities.
2. Coordinate and cooperate with Department of Defense military branches to allow for training opportunities for military personnel and other initiatives as appropriate and compatible with the conservation of the SLWMA.
3. Collaborate with non-governmental organizations, community groups, stakeholders, and other private entities to advance common goals.
4. Continue to cooperate with Brevard County and other partners in land management activities to ensure the persistence of scrub-dependent wildlife species within the SLWMA.
5. Continue to cooperatively manage the SLWMA with the SJRWMD and other partners.

## **6 Resource Management Challenges and Strategies**

The following section identifies and describes further management needs and challenges associated with the SLWMA and provides solution strategies that will address these challenges.

These specific challenges may not be fully addressed in the broader goals and objectives section above and are thereby provided here.

**Challenge 1: Meeting FWC law enforcement and management staff standards and needs can be challenging.**

Strategy: Agency staff levels will continue to be evaluated to determine if increased staffing or other alternatives can meet management needs.

Strategy: Explore potential volunteer resources for assisting with management, native landscaping, and area maintenance.

**Challenge 2: Potential future development on adjacent lands can result in incompatible land uses increasing management challenges for the area.**

Strategy: Cooperate and work with Brevard County to ensure land use and zoning designations adjacent to the SLWMA will continue to be compatible with the management of the area.

**Challenge 3: The SLWMA's proximity to roadways and residential areas presents smoke management challenges during prescribed burning.**

Strategy: Use available tools and resources to minimize smoke impact and increase outreach for areas of potential impact.

Strategy: Coordinate with the Division of Law Enforcement, Florida Highway Patrol, Florida Department of Transportation, FFS, and the Brevard County Sheriff's Office and Fire Department.

**Challenge 4: Unauthorized access, illegal dumping, vandalism, poaching, and unauthorized off-road vehicle use are an increasing challenge on the area.**

Strategy: Continue to provide area-wide security through FWC law enforcement patrols.

Strategy: Provide interpretive signs or explore other options to inform the public that 'mudding' and destructive off-road use is not allowed.

**Challenge 5: The SLWMA is not a well-known public outdoor recreation destination.**

Strategy: Work with local and Brevard County tourism boards to promote the SLWMA and cross-promote the SLWMA with other regional public conservation lands.

Strategy: Engage the local community in designing and delivering conservation education programs and recreational opportunities.

Strategy: Evaluate the impact that increased visitation and recreational use would have on wildlife and natural resources and adapt management activities as necessary.

**Challenge 6: There are adjacent lands and/or inholdings within the SLWMA Main Tract and other SLWMA units that can cause management challenges.**

Strategy: Explore conservation strategies for the inholdings, including, but not limited to, fee simple or less-than-fee acquisition to ensure long term conservation of the site.

Strategy: Maintain inholding information within the FWC Additions and Inholdings list.

Strategy: Coordinate with existing landowners regarding encroachment issues and management of non-native plant species and connect landowners with the FWC LAP for additional information and resources.

Strategy: Pursue acquisition of appropriate adjacent lands to further conservation and management goals and objectives.

**Challenge 7: Non-native plant infestations exist at a level beyond the ability of area staff to fully maintain.**

Strategy: Establish a treatment rotation and continue funding projects for contract spraying.

Strategy: Explore the feasibility of utilizing contractual services for appropriate activities.

Strategy: Cooperate with other nearby FWC staff to assist when needed.

**Challenge 8: Interpretive and educational materials for recreation and conservation programming may need updating.**

Strategy: Continue to include the area in statewide interpretive programming as needed, and support interpretation, education, and wildlife data sharing projects.

**Challenge 9: There is no access to potable water on the SLWMA.**

Strategy: Harvest rainwater or cooperate with the County and appropriate permitting authorities to transport water to an onsite storage tank.

## **7 Cost Estimates and Funding Sources**

The following represents the actual and unmet budgetary needs for managing the lands and resources of the SLWMA. This cost estimate was developed using data developed by the FWC and other cooperating entities and is based on actual costs for land management activities, equipment purchase and maintenance, and for development of fixed capital facilities. Funds needed to protect and manage the property and to fully implement the recommended program are derived primarily from the Land Acquisition Trust Fund and from State Legislative appropriations. However, private conservation organizations may be cooperators with the agency for funding of specific projects. Alternative funding sources, such as monies available through grants and potential project-specific mitigation, may be sought to supplement existing funding as needed.

The following cost estimate, although exceeding what the FWC typically receives through the appropriations process, is estimated to be what is necessary for optimal management and is consistent with the current and planned resource management and operation of the SLWMA. Cost estimate categories are those currently recognized by the FWC and the Land Management Uniform Accounting Council (Appendix 11.19). More information on these categories, as well as

the Fiscal Year 2025-2026 operational plan showing detailed cost estimates by activity and categories of expenditures, may be found in Appendix 11.20.

**SLWMA Management Plan Cost Estimate**

*Maximum expected one-year expenditure*

<u>Resource Management</u>	<u>Expenditure</u>
Prescribed Burning	\$33,615
Invasive Species Control	\$56,608
Cultural Resource Management	\$261
Timber Management	\$261
Hydrological Management	\$9,181
Vegetation Monitoring/Management	\$25,456
Wildlife Monitoring/Management	\$9,300
<b>Subtotal</b>	<b>\$134,143</b>
<u>Administration</u>	
General Administration	<b>\$31,918</b>
<u>Support</u>	
Land Management Planning	\$26,950
Management Reviews	\$941
Training/Staff Development	\$13,616
Vehicle Purchase	\$175,779
Vehicle Operation and Maintenance	\$66,007
Other (Technical Reports, Data Management, etc.)	\$4,606
Internal Program Review	\$1,307
Technology and Data Management	\$8,696
<b>Subtotal</b>	<b>\$297,902</b>
<u>Capital Improvements</u>	
New Facility Construction	\$213,505
Facility Maintenance	\$54,208
<b>Subtotal</b>	<b>\$267,712</b>
<u>Visitor Services/Recreation</u>	
Info./Education/Operations	<b>\$12,209</b>
<u>Law Enforcement</u>	
Resource protection	<b>\$6,307</b>
<u>Total</u>	<b>\$750,191</b>

\* Based on the characteristics and requirements of this area, 3 FTE positions would be optimal to fully manage this area. All land management funding is dependent upon annual legislative appropriations.

**SLWMA Management Plan**  
**Cost Estimate**

	<u>Expenditure</u>	<i>Ten-year projection</i>	
		<u>Priority</u>	<u>Priority schedule:</u>
<u>Resource Management</u>			
<b>Prescribed Burning</b>	\$380,077	(1)	<b>(1) Immediate (annual)</b>
<b>Invasive Species Control</b>	\$633,948	(1)	
<b>Cultural Resource Management</b>	\$2,956	(1)	(2) Other (5+ years)
<b>Timber Management</b>	\$2,956	(1)	
<b>Hydrological Management</b>	\$103,809	(1)	
<b>Vegetation Monitoring/Management</b>	\$287,821	(1)	
<b>Wildlife Monitoring/Management</b>	\$105,155	(1)	
<b>Subtotal</b>	<b>\$1,516,722</b>		
<u>Administration</u>			
<b>General Administration</b>	<b>\$360,884</b>	(1)	
<u>Support</u>			
<b>Land Management Planning</b>	\$304,717	(1)	
Management Reviews	\$10,642	(2)	
<b>Training/Staff Development</b>	\$153,950	(1)	
Vehicle Purchase	\$1,987,485	(2)	
<b>Vehicle Operation and Maintenance</b>	\$746,329	(1)	
<b>Other (Technical Reports, Data Management, etc.)</b>	\$52,075	(1)	
<b>Internal Program Review</b>	\$14,781	(1)	
<b>Technology and Data Management</b>	\$98,328	(1)	
<b>Subtotal</b>	<b>\$3,368,307</b>		
<u>Capital Improvements</u>			
<b>New Facility Construction</b>	\$2,414,044	(2)	
<b>Facility Maintenance</b>	\$612,914	(1)	
<b>Subtotal</b>	<b>\$3,026,958</b>		
<u>Visitor Services/Recreation</u>			
<b>Info./Education/Operations</b>	<b>\$138,039</b>	(1)	
<u>Law Enforcement</u>			
<b>Resource protection</b>	<b>\$71,314</b>	(1)	
<b>Total</b>	<b>\$8,482,225</b>	*	

\* Based on the characteristics and requirements of this area, 3 FTE positions would be optimal to fully manage this area. All land management funding is dependent upon annual legislative appropriations.

## 8 Analysis of Potential for Contracting Private Vendors for Restoration and Management Activities

The following management and restoration activities have been considered for outsourcing to private entities. It has been determined that items selected as “approved” are those that the FWC either does not have in-house expertise to accomplish or which can be done at less cost by an outside provider of services. Those items selected as “conditional” items are those that could be done either by an outside provider or by the agency at virtually the same cost or with the same level of competence. Items selected as “rejected” represent those for which the FWC has in-house expertise and/or which the agency has found it can accomplish at less expense than through contracting with outside sources:

	Approved	Conditional	Rejected
<b>Dike and levee maintenance</b>		✓	
<b>Invasive species control</b>		✓	
<b>Mechanical vegetation treatment</b>		✓	
<b>Public contact and educational facilities development</b>		✓	
<b>Prescribed burning</b>		✓	
<b>Timber harvest activities</b>	✓		
<b>Vegetation inventories</b>		✓	

## 9 Compliance with Federal, State, and Local Governmental Requirements

The operational functions of FWC personnel are governed by the agency’s Internal Management Policies and Procedures (IMPP) Manual. The IMPP Manual provides internal guidance regarding many subjects affecting the responsibilities of agency personnel including personnel management, safety issues, uniforms and personal appearance, and training, as well as accounting, purchasing, and budgetary procedures.

When public facilities are developed on areas managed by the FWC, every effort is made to comply with Public Law 101 - 336, the ADA Act. As new facilities are developed, the universal access requirements of this law are followed in all cases except where the law allows reasonable exceptions (e.g., where access accommodation is structurally impractical or where providing such access would change the fundamental character of the facility being provided).

Uses planned for the SLWMA are in compliance with the Conceptual State Lands Management Plan and its requirement for “balanced public utilization,” and are in compliance with the mission of the FWC. Such uses also comply with the authorities of the FWC as derived from Article IV, Section 9 of the Florida Constitution as well as the guidance and directives of Chapters 253, 259, 327, 370, 373, 375, 378, 379, 403, 487, 597, and 870, F.S.

The FWC has developed and utilizes an Arthropod Control Plan for the SLWMA in compliance with Chapter 388.4111, F.S. (Appendix 11.21). This plan was developed in cooperation with the local Brevard County arthropod control agency. This plan is also in conformance with the Local Government Comprehensive Plan as approved and adopted for Brevard County, Florida, (Appendix 11.22)

## 10 Endnotes

1. Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Official Soil Series Descriptions. Available online. Accessed [2019].
2. Administration, N. O. (n.d.). Climate at a Glance. Retrieved from NOAA: National Centers for Environmental Information [Time Series](#).
3. Kato, S. and J. Ahern. 2008. 'Learning by doing': Adaptive planning as a strategy to address uncertainty in planning. *Journal of Environmental Planning and Management* 51: 543-559.
4. Wilhere, G. F. 2002. Adaptive management in habitat conservation plans. *Conservation Biology* 16: 20-29.
5. Walters, C. J. and R. Hilborn. 1978. Ecological optimization and adaptive management. *Annual Review of Ecology and Systematics* 9: 157–188.
6. Architectural and Transportation Barriers Compliance Board on Final Accessibility Guidelines for Outdoor Developed Areas, Final Report (2013).

## **11 Appendices**

### **11.1 Definitions of Management Plan Terms**

## **Management Plan Goals and Objectives Terms and Definitions**

**Assessment:** Assessment—when a historic resource professional determines the possible effects—positive or negative—that an action or inaction may have on a historical resource (e.g., site, building, object or structures) by analyzing its current condition and documenting any modifications and changes to its original state as well as identifying any potential human or natural threats to its existence.

**Capital Improvement:** Capital improvement" or "capital project expenditure" means those activities relating to the acquisition, restoration, public access, and recreational uses of such lands, water areas, and related resources deemed necessary to accomplish the purposes of this chapter. Eligible activities include, but are not limited to: the initial removal of invasive plants; the construction, improvement, enlargement or extension of facilities' signs, firelanes, access roads, and trails; or any other activities that serve to restore, conserve, protect, or provide public access, recreational opportunities, or necessary services for land or water areas. Such activities shall be identified prior to the acquisition of a parcel or the approval of a project. The continued expenditures necessary for a capital improvement approved under this subsection shall not be eligible for funding provided in this chapter.

**Desired future condition:** Desired Future Condition is a description of the land or resource conditions that are believed necessary if management goals and objectives are fully achieved. Desired Future Condition varies by specific habitat and ecosystem. It can also vary, based upon a specific agency's management goals.

**Evaluation:** Review by a professional in archaeology, history or architecture as to the integrity and significance of the site, building or structure. The criteria of the National Register of Historic Places will be applied.

**Facility:** all developed structures and improvements provided for a specific purpose or contained within a clearly defined area.

**Fire management plan:** An element of the land management plan or an independent document that outlines the goals and objectives of a fire management program (prescribed and wildfire) for a predetermined period of time.

**Historic:** An object, site or structure that is 50 years or older.

**Hydrological assessment:** A documented, systematic evaluation by a qualified professional of the existing and historical quantity, quality, movement and function of water resources (e.g., computer modeling).

**Imperiled species:** A species or subspecies that is listed by the U.S. Fish and Wildlife Service as Endangered or Threatened; Florida Fish and Wildlife Conservation Commission (FWC) as Endangered, Threatened, or Special Concern; Florida Department of Agriculture and Consumer Services (FDACS) as Endangered or Threatened; or is tracked by Florida Natural Areas

Inventory (FNAI) as globally or state Critically Imperiled or Imperiled. Imperiled Species does NOT refer to species that are on the FDACS list of commercially exploited plants that are not Endangered or Threatened.

**Improve:** the enhancement or expansion of facilities, roads and trails.

**Maintenance:** the daily or regular work of keeping facilities, roads and trails in proper condition.

**Monitoring:** Periodic examination of the site, building or structure to determine the current condition and threats such as erosion, structural deterioration, vegetation intrusion, poaching or vandalism. An updated Florida Master Site File form is used to complete this assessment.

**Natural community/habitat/ecological improvement:** Similar to restoration but on a smaller less intense scale. Typically includes small scale vegetation management activities, spot treatments of exotic plants, or minor habitat manipulations. Any habitat alteration that increases the diversity of a habitat or increases the population of a particular species.

**Natural community/habitat/ecological restoration:** The process of assisting the recovery and natural functioning of degraded natural communities to desired future condition, including the re-establishment of biodiversity, ecological processes, vegetation structure, and physical characters. Activities may include vegetative treatments (e.g., hardwood removal, mechanical treatment, pine tree thinning, etc.), groundcover establishment, non-commercial tree plantings, erosion control, hydrological manipulation (filling ditches), and beach management.

**Not in maintenance condition:** Species composition and/or structure is outside the targeted range. The natural community is in need of more frequent or recurring management treatments that are beyond maintenance activities. Examples include natural communities with exotic plant or animal infestations that are at levels requiring significant treatment, natural communities that have exceeded maximum targeted fire return intervals, and natural communities in need of restoration treatments.

**Poor, fair, good condition:** Evaluating the condition of cultural resources is accomplished using a three part evaluative scale, expressed as good, fair and poor. These terms describe the present condition, rather than comparing what exists against the ideal. "Good" describes a condition of structural stability and physical wholeness, where no obvious deterioration other than normal occurs. "Fair" describes a condition in which there is a discernible decline in condition between inspections, and the wholeness or physical integrity is and continues to be threatened by factors other than normal wear. A "fair" assessment is cause for concern. "Poor" describes an unstable condition where there is palpable, accelerating decline, and physical integrity is being compromised quickly. A resource in poor condition suffers obvious declines in physical integrity from year to year. A poor condition suggests immediate action is needed to reestablish physical stability.

**Population survey:** Using broadly accepted methodologies to detect changes in population trends over time.

**Public access:** access by the general public to state lands and water, including vessel access made possible by boat ramps, docks, and associated support facilities, where compatible with conservation and recreation objectives.

**Recorded:** A Florida Master Site File form has been completed and filed with the Florida Department of State, Division of Historical Resources.

**Recreational/visitor opportunity:** measure of potential number of users based on existing resource conditions and developed facilities.

**Repair (major):** the restoration of facilities, road and trails to proper condition after damage or failure.

**Restoration underway:** restoration planning/design, executing, evaluating and reporting.

**Restored/Maintenance condition:** (refers to natural community) - within the range of target species composition and structure such that no significant, non-recurring alterations to structure or species composition are needed for ecological restoration. Invasive exotic plants or animals are absent or at levels requiring minimal recurring treatments, and prescribed fire rotations are within target intervals. Refers to Natural Communities. Includes NCs that meet DFC, and NCs that have received restoration action (such as thinning, clearcut and native species planting) and only require time and recurring maintenance actions such as prescribed fire, maintenance level exotics control, or sustainable forestry practices if applicable.

**Road:** a paved or unpaved motor vehicle route unless identified and managed as a trail.

**Significant:** Listed in or determined eligible for listing in the National Register of Historic Places as an individual property, element of a multiple listing or in an historic district. Cultural resource professionals are able to make the determination, but final determination rests with the Director of the Division of Historical Resources.

**Sustainable forestry:** The stewardship and harvest of forest products in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality, and potential to fulfill, now and in the future, relevant ecological, economic, and social functions at local, national and global levels, and that does not cause damage to other ecosystems.

**Systematic survey:** A sampling protocol designed to assess the occurrence or population status of a species or a suite of species (e.g., presence/absence, mark and recapture, transect survey, etc.).

**Trail:** a linear route or path which has been specifically prepared or designed for one or more recreational functions such as hiking, biking, horseback riding or multiple use. In many cases, unimproved service roads are also designated as trails.

**Treatment:** A mechanical, chemical, biological or manual action that changes the structure or composition of an area in order to facilitate restoration or improvement.

**Visitor carrying capacity:** An estimate of the number of users a recreation resource or facility can accommodate and still provide a high quality recreational experience and preserve the natural values of the site.

**Wildlife activities:** wildlife-associated recreation such as birdwatching, fishing, hunting, etc.

## **11.2 Leases and Agreements**

### **11.2.1 Parent Lease Agreement No. 4316**

(1) 4316

SAL3

621.81 Acres

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

---

LEASE AGREEMENT

BREVARD COASTAL SCRUB ECOSYSTEM

Lease Number 4316

This lease is made and entered into this 15<sup>th</sup> day of June, 2001, between the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, hereinafter referred to as "LESSOR", and the STATE OF FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION, hereinafter referred to as "LESSEE".

WITNESSETH:

WHEREAS, the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA holds title to certain lands and property being utilized by the State of Florida for public purposes, and

WHEREAS, the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA is authorized in Section 253.03, Florida Statutes, to enter into leases for the use, benefit and possession of public lands by State agencies that may properly use and possess them for the benefit of the people of the State of Florida;

NOW, THEREFORE, for and in consideration of the mutual covenants and agreements hereinafter contained, LESSOR leases the below described premises to LESSEE 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 Brevard, State of Florida and is more particularly described in Exhibit "A" attached hereto and hereinafter called the "leased premises".
3. TERM: The term of this lease shall be for a period of fifty years, commencing on June 15, 2001, and ending on June 14, 2051, unless sooner terminated pursuant to the provisions of this lease.
4. PURPOSE: LESSEE shall manage the leased premises only for the conservation and protection of natural and historical resources and resource based public outdoor recreation which is compatible with the conservation and protection of these public lands, as set forth in subsection 259.032(11), Florida Statutes, along with other related uses necessary for the accomplishment of this purpose as designated in the Management Plan required by paragraph 7 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. 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, within twelve months of the effective date of this lease. 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. The Management Plan shall emphasize the original management concept as approved by LESSOR at the time of acquisition which established the primary public purpose for which the leased premises were acquired. The approved Management Plan shall provide the basic guidance for all management activities and shall be reviewed jointly by LESSEE and LESSOR at least every five years. 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.

8. RIGHT OF INSPECTION: LESSOR or its duly authorized agents shall have the right at any and all times to inspect the leased premises and the works and operations thereon of LESSEE, in any matter pertaining to this lease.

9. INSURANCE REQUIREMENTS: LESSEE shall procure and maintain fire and extended risk insurance coverage, in accordance with Chapter 284, F.S., for any buildings and improvements located on the leased premises by preparing and delivering to the Division of Risk Management, Department of Insurance, a completed Florida Fire Insurance Trust Fund Coverage Request Form and a copy of this lease immediately upon erection of any structures as allowed by paragraph 4 of this lease. A copy of said form and immediate notification in writing of any erection or removal of structures or other improvements on the leased premises and any changes affecting the value of the improvements shall be submitted to the following: Bureau of Public Land Administration, Division of State Lands, Department of Environmental Protection, Mail Station 130, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000.

Page 3 of 43  
Lease No. 4316

Revised 03/16/2000

10. LIABILITY: LESSEE shall assist in the investigation of injury or damage claims either for or against LESSOR or the State of Florida pertaining to LESSEE'S respective areas of responsibility under this lease or arising out of LESSEE'S respective management programs or activities and shall contact LESSOR regarding the legal action deemed appropriate to remedy such damage or claims.

11. ARCHAEOLOGICAL AND HISTORIC SITES: Execution of this lease in no way affects any of the parties' obligations pursuant to Chapter 267, Florida Statutes. The collection of artifacts or the disturbance of archaeological and historic sites on state-owned lands is prohibited unless prior authorization has been obtained from the Department of State, Division of Historical Resources. The Management Plan prepared pursuant to Section 253.034, Florida Statutes, 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.

12. 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.

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

14. POST CLOSING RESPONSIBILITIES: In an effort to define responsibilities of the LESSOR and LESSEE with regard to resolving post closing management issues, the parties agree to the following:

- a. After consultation with the LESSEE, LESSOR agrees to provide the LESSEE with the title, survey and

environmental products procured by the LESSOR, prior to closing.

- b. LESSOR will initiate surveying services to locate and mark boundary lines of specific parcels when necessary for immediate agency management and will provide a boundary survey of the entire acquisition project at the conclusion of all acquisition within the project boundary. Provided, however, the LESSEE may request individual parcel boundary surveys, if necessary, prior to the conclusion of acquisition activities within the project boundaries.
- c. Unless otherwise agreed to by LESSEE, LESSOR shall at its sole cost and expense, make a diligent effort to resolve all issues pertaining to all title defects, survey matters or environmental contamination associated with the leased premises, including but not limited to trash and debris, which were either known or should have been reasonably known by LESSOR at the time LESSOR acquired the leased premises. Notwithstanding the foregoing, LESSOR will not be responsible for any of LESSEE'S attorney's fees, costs, or liability or damages incurred by the LESSEE in resolving any issue in which the LESSEE is named as a party in any litigation or other legal or administrative proceeding.
- d. With regard to all title defects, survey matters, or environmental contamination associated with the leased premises that were not known or could not have been reasonably known by LESSOR at the time LESSOR acquired the leased premises, LESSOR and LESSEE agree to cooperate in developing an appropriate strategy for jointly resolving these matters. LESSOR acknowledges and understands that LESSEE is unable to commit any

substantial amount of their routine operating funds for the resolution of any title defect, survey matter, or environmental contamination associated with the lease premises. Notwithstanding the foregoing, LESSOR will not be responsible for any of LESSEE'S attorney's fees, costs, or liability or damages incurred by the LESSEE in resolving any issue in which the LESSEE is named as a party in any litigation or other legal or administrative proceeding.

15. 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, written notification shall be made 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, at least six months prior to the release of all or any part 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 execution of a release of lease instrument with the same formality as this lease. Upon release of all or any part of the leased premises or upon expiration or termination of this lease, all permanent 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 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 shall perform an on-site inspection and the keys to any buildings on the leased premises shall be turned over to the Division. If the leased premises and

Page 6 of 43  
Lease No. 4316

Revised 03/16/2000

improvements located thereon do not meet all conditions set forth in paragraphs 18 and 21 herein, LESSEE shall pay all costs necessary to meet the prescribed conditions.

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

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

18. 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.

19. 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.

20. 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 placed on the leased premises by LESSEE that 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.

21. 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 at the date of this lease; provided, however, that any removal, closure, etc., of the above improvements shall be acceptable when the proposed activity is consistent with the goals of conservation, protection, and enhancement of the natural and historical resources within the leased premises and with the approved Management Plan.

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

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

force and effect and exercise all rights and remedies herein conferred upon LESSOR.

24. 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 and conditions, but the same shall continue in full force and effect, and no waiver of LESSOR of any one 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.

25. PROHIBITIONS AGAINST LIENS OR OTHER ENCUMBRANCES: Fee title to the leased premises is held by LESSOR. LESSEE shall not do or permit anything 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.

26. CONDITIONS AND COVENANTS: All of the provisions of this lease shall be deemed covenants running with the land included in the leased premises, and construed to be "conditions" as well as "covenants" as though the words specifically expressing or imparting covenants and conditions were used in each separate provision.

27. DAMAGE TO THE PREMISES: (a) LESSEE shall not do, or suffer to be done, in, on or upon the leased premises or as affecting said leased premises or adjacent properties, any act which may result in damage or depreciation of value to the leased premises or adjacent properties, or any part thereof. (b) LESSEE shall not generate, store, produce, place, treat, release or discharge any contaminants, pollutants or pollution, including, but not limited to, hazardous or toxic substances, chemicals or other agents on, into, or from the leased premises or any adjacent lands or waters in any manner not permitted by law. For the

purposes of this lease, "hazardous substances" shall mean and include those elements or compounds defined in 42 USC Section 9601 or which are contained in the list of hazardous substances adopted by the United States Environmental Protection Agency (EPA) and the list of toxic pollutants designated by the United States Congress or the EPA or defined by any other federal, state or local statute, law, ordinance, code, rule, regulation, order or decree regulating, relating to, or imposing liability or standards of conduct concerning any hazardous, toxic or dangerous waste, substance, material, pollutant or contaminant. "Pollutants" and "pollution" shall mean those products or substances defined in Chapters 376 and 403, Florida Statutes, and the rules promulgated thereunder, all as amended or updated from time to time. In the event of LESSEE'S failure to comply with this paragraph, LESSEE shall, at its sole cost and expense, promptly commence and diligently pursue any legally required closure, investigation, assessment, cleanup, decontamination, remediation, restoration and monitoring of (1) the leased premises, and (2) all off-site ground and surface waters and lands affected by LESSEE'S such failure to comply, as may be necessary to bring the leased premises and affected off-site waters and lands into full compliance with all applicable federal, state or local statutes, laws, ordinances, codes, rules, regulations, orders and decrees, and to restore the damaged property to the condition existing immediately prior to the occurrence which caused the damage. LESSEE'S obligations set forth in this paragraph shall survive the termination or expiration of this lease. 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

Page 10 of 43  
Lease No. 4316

Revised 03/16/2000

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.

28. 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 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.

29. RIGHT OF AUDIT: LESSEE shall make available to LESSOR all financial and other records relating to this lease and LESSOR shall have the right to audit such records at any reasonable time. 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 Chapter 119, Florida Statutes.

30. 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.

31. 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.

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

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

34. 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.

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

36. SPECIAL CONDITIONS: The following special conditions shall apply to this lease: None.

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 Witness Name

Jack C. Wolff  
Witness

JACK C. WOLFF  
Print/Type Witness Name

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

"LESSOR"

STATE OF FLORIDA  
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 15<sup>th</sup> day of June, 2001, by Gloria C. Nelson, as Operations and Management Consultant Manager, Bureau of Public Land Administration, Division of State Lands, Florida Department of Environmental Protection, acting as agent on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida.

Cheryl J. King  
Notary Public, State of Florida

Print/Type Notary Name

Commission Number:

Commission Expires



Approved as to Form and Legality

By: Frank J. [Signature]  
DEP Attorney

STATE OF FLORIDA FISH AND WILDLIFE  
CONSERVATION COMMISSION

Brenda Collins  
Witness  
Brenda Collins  
Print/Type Witness Name

Cynthia Ward  
Witness  
Cynthia Ward  
Print/Type Witness Name

By: Victor J. Heller (SEAL)

Victor J. Heller  
Print/Type Name

Title: Assistant Executive Director

"LESSEE"

STATE OF FLORIDA  
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 16th day of June, 2001, by Victor J. Heller, as Assistant Executive Director, State of Florida Fish and Wildlife Conservation Commission. He/she is personally known to me or produced \_\_\_\_\_ as identification.

Jimmie C. Bevis  
Notary Public, State of Florida

JIMMIE C. BEVIS

Print/Type Notary Name

Commission Number:  Jimmie C. Bevis  
MY COMMISSION # CC702862 EXPIRES  
December 28, 2001  
Commission Expires: BONDED THRU TROY FAIN INSURANCE, INC.

APPROVED AS TO FORM  
AND LEGAL SUFFICIENCY  
Walter V. Rosen  
Commission Attorney

EXHIBIT "A"

LEGAL DESCRIPTION OF THE LEASED PREMISES

WARRANTY DEED  
(STATUTORY FORM - SECTION 689.02, F.S.)

THIS INDENTURE, made this 18 day of October, A.D. 2000, between The B.D.M. Financial Corporation, a Florida Corporation and Jacob Aaron Corporation, a Florida Corporation whose address is c/o Richard Caster at 2601 Biscayne Boulevard, Miami, FL 33137, 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 Ten Dollars 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 grantee's successors and assigns forever, the following described land situate, lying and being in Brevard County, Florida, to-wit:

*See Exhibit "A" attached hereto and by reference made a part hereof.*  
*Attaches Final BSM legal*

Property Appraiser's Parcel Identification Number: *See Exhibit "B" attached hereto*

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.

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 whomsoever.

IN WITNESS WHEREOF the grantor has hereunto set grantor's hand and seal, the day and year first above written.

Signed, sealed and delivered in the presence of:

*Chris Hinselwood*  
(Signature of First Witness)

CHRIS HINSELWOOD  
(Printed name of First Witness)

*Milton M. Shapira*  
(Signature of Second Witness)

Milton M. Shapira  
(Printed Name of Second Witness)

*Chris Hinselwood*  
(Signature of First Witness)

CHRIS HINSELWOOD  
(Printed name of First Witness)

*Milton M. Shapira*  
(Signature of Second Witness)

Milton M. Shapira  
(Printed Name of Second Witness)

The B.D.M. Financial Corporation, a Florida Corporation

BY: *Roger Miller*  
Roger Miller as President

(CORPORATE SEAL)

Jacob Aaron Corporation, a Florida Corporation

BY: *Roger Miller*  
Roger Miller as President

(CORPORATE SEAL)

STATE OF Florida  
COUNTY OF Dade

The foregoing instrument was acknowledged before me this 11 day of October, 2000, by Roger Miller as President of The B.D.M. Financial Corporation, a Florida Corporation. Such person (notary Public must check applicable box):

- is personally known to me
- produced a current driver license
- produced \_\_\_\_\_ as identification

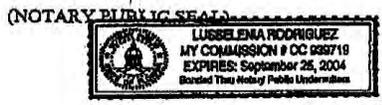


Lusselema Rodriguez  
Notary Public  
Lusselema Rodriguez  
(Printed, Typed or Stamped Name of Notary Public)  
Commission No.: CC 939719  
My Commission Expires: 9-25-04

STATE OF Florida  
COUNTY OF Dade

The foregoing instrument was acknowledged before me this 11 day of October, 2000, by Roger Miller as President of Jacob Aaron Corporation, a Florida Corporation, on behalf of the corporation. Such person (notary Public must check applicable box):

- is personally known to me
- produced a current driver license
- produced \_\_\_\_\_ as identification

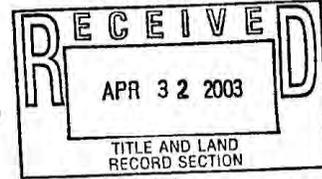


Lusselema Rodriguez  
Notary Public  
Lusselema Rodriguez  
(Printed, Typed or Stamped Name of Notary Public)  
Commission No.: CC 939719  
My Commission Expires: 09/25/04

### 11.2.2 Lease Agreement No. 4316-1

ATL1  
82.22 acres

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



AMENDMENT NUMBER 1 TO LEASE NUMBER 4316

BREVARD COASTAL SCRUB

THIS LEASE AMENDMENT is entered into this 22nd day of April, 2003, by and between the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, hereinafter referred to as "LESSOR" and the STATE OF FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION, hereinafter referred to as "LESSEE";

W I T N E S S E T H

WHEREAS, LESSOR, by virtue of Section 253.03, Florida Statutes, holds title to certain lands and property for the use and benefit of the State of Florida; and

WHEREAS, on June 15, 2001, LESSOR and LESSEE entered into Lease Number 4316; and

WHEREAS, LESSOR and LESSEE desire to amend the lease to add land to the leased property.

NOW THEREFORE, in consideration of the mutual covenants and agreements contained herein, the parties hereto agree as follows:

1. The legal description of the leased premises set forth in Exhibit "A" of Lease Number 4316 is hereby amended to include the real property described in Exhibit "A," attached hereto, and by reference made a part hereof.
2. It is understood and agreed by LESSOR and LESSEE that in each and every respect the terms of the Lease Number 4316 except as amended shall remain unchanged and in full force and effect and the same are hereby ratified, approved and confirmed by LESSOR and LESSEE.

IN WITNESS WHEREOF, the parties have caused this Lease Amendment 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

Tracy Peters  
Witness

Tracy Peters  
Print/Type Witness Name

Judy Woodard  
Witness

Judy Woodard  
Print/Type Witness Name

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

"LESSOR"

STATE OF FLORIDA  
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 22nd day of April, 2003, 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.



Sylvia S. Roberts  
MY COMMISSION # DD035841 EXPIRES  
July 25, 2005  
BONDED THRU TROY FAIR INSURANCE, INC.

Sylvia S. Roberts  
Notary Public, State of Florida  
Sylvia S. Roberts  
Print/Type Notary Name

Commission Number: DD035841

Commission Expires: July 25, 2005

Approved As to Form and Legality

By: David H. Hester  
DEP Attorney

FLORIDA FISH AND WILDLIFE  
CONSERVATION COMMISSION

PA Doerr  
Witness

PA Doerr  
Print/Type Witness Name

Sarah Williams  
Witness

Sarah Williams  
Print/Type Witness Name

By: Timothy A. Breault (SEAL)

Timothy A. Breault  
Print/Type Name

Title: Assistant Division Director  
Division of Wildlife

"LESSEE"

STATE OF FLORIDA  
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 18<sup>th</sup> day of April, 2003, by Timothy A. Breault as Asst. Division Director, of the FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION. He/she is personally known to me.

Florida Parrish  
Notary Public, State of Florida  
Florida Parrish  
Print/Type Notary Name

Commission Number:



Florida Parrish  
MY COMMISSION # DD041441 EXPIRES  
July 11, 2005  
BONDED THRU TROY FAIR INSURANCE, INC.

Commission Expires:

APPROVED AS TO FORM  
AND LEGAL SUFFICIENCY  
[Signature] 4/11/03  
Commission Attorney

### 11.2.3 Lease Agreement No. 4316-2

ATL1

110.73 acres

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

---

AMENDMENT NUMBER 2 TO LEASE NUMBER 4316

BREVARD COASTAL SCRUB - SALT LAKE

THIS LEASE AMENDMENT is entered into this 10th day of  
April, 2006, by and between the BOARD OF TRUSTEES OF  
THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA,  
hereinafter referred to as "LESSOR" and the FLORIDA FISH AND  
WILDLIFE CONSERVATION COMMISSION, hereinafter referred to as  
"LESSEE";

W I T N E S S E T H

WHEREAS, LESSOR, by virtue of Section 253.03, Florida  
Statutes, holds title to certain lands and property for the use  
and benefit of the State of Florida; and

WHEREAS, on June 15, 2001, LESSOR and LESSEE entered into  
Lease Number 4316; and

WHEREAS, LESSOR and LESSEE desire to amend the lease to add  
land to the leased property.

NOW THEREFORE, in consideration of the mutual covenants and  
agreements contained herein, the parties hereto agree as follows:

1. The legal description of the leased premises set forth in  
Exhibit "A" of Lease Number 4316 is hereby amended to include the  
real property described in Exhibit "A," attached hereto, and by  
reference made a part hereof.
2. It is understood and agreed by LESSOR and LESSEE that in  
each and every respect the terms of the Lease Number 4316 except  
as amended shall remain unchanged and in full force and effect  
and the same are hereby ratified, approved and confirmed by  
LESSOR and LESSEE.

IN WITNESS WHEREOF, the parties have caused this Lease Amendment 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 Witness Name

Rali  
Witness

Rita Robbins  
Print/Type Witness Name

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

"LESSOR"

STATE OF FLORIDA  
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 10<sup>th</sup> day of April, 2006, 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.

M. O. Brady  
Notary Public, State of Florida

Print/Type Notary ~~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: Laura A. Allen  
Attorney

FLORIDA FISH AND WILDLIFE  
CONSERVATION COMMISSION

[Signature]  
Witness

By: [Signature] (SEAL)

Richard C. Mogens  
Print/Type Witness Name

Timothy A. Breaux  
Print/Type Name

Magda Soliman  
Witness

Title: Division Director -HSC

Magda Soliman  
Print/Type Witness Name

"LESSEE"

APPROVED AS TO FORM  
AND LEGAL SUFFICIENCY  
[Signature]  
Commission Attorney

STATE OF FLORIDA  
COUNTY OF LEON

The foregoing instrument was acknowledged before me this  
22 day of March, 2006, by TA Breaux  
as Director DHSC, of the FLORIDA FISH AND WILDLIFE  
CONSERVATION COMMISSION. He/she is personally known to me.

[Signature]  
Notary Public, State of Florida

Print/Type Notary Name

Commission Number:

Commission Expires



P. S. McChesney  
MY COMMISSION # DD094931 EXPIRES  
April 28, 2006  
BONDED THRU TROY FARM INSURANCE, INC.

#### **11.2.4 Lease Agreement No. 4316-3**

ATL1

105.23 acres

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

---

AMENDMENT NUMBER 3 TO LEASE NUMBER 4316

BREVARD COASTAL SCRUB - SALT LAKE

THIS LEASE AMENDMENT is entered into this 10th day of April, 2006, by and between the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, hereinafter referred to as "LESSOR" and the FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION, hereinafter referred to as "LESSEE";

W I T N E S S E T H

WHEREAS, LESSOR, by virtue of Section 253.03, Florida Statutes, holds title to certain lands and property for the use and benefit of the State of Florida; and

WHEREAS, on June 15, 2001, LESSOR and LESSEE entered into Lease Number 4316; and

WHEREAS, LESSOR and LESSEE desire to amend the lease to add land to the leased property.

NOW THEREFORE, in consideration of the mutual covenants and agreements contained herein, the parties hereto agree as follows:

1. The legal description of the leased premises set forth in Exhibit "A" of Lease Number 4316 is hereby amended to include the real property described in Exhibit "A," attached hereto, and by reference made a part hereof.
2. It is understood and agreed by LESSOR and LESSEE that in each and every respect the terms of the Lease Number 4316 except as amended shall remain unchanged and in full force and effect and the same are hereby ratified, approved and confirmed by LESSOR and LESSEE.

IN WITNESS WHEREOF, the parties have caused this Lease  
Amendment 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 Witness Name  
RRA  
Witness  
RITA Robbins  
Print/Type Witness Name

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

"LESSOR"

STATE OF FLORIDA  
COUNTY OF LEON

The foregoing instrument was acknowledged before me this  
10th day of April, 2006, 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  
Commission Number Michelle Brady  
Commission # DD507113  
Expires: JAN. 16, 2010  
Commission Expires Place thru Atlantic Bonding Co., Inc.

Approved as to Form and Legality  
By: Shirley Hillier  
DEP Attorney

FLORIDA FISH AND WILDLIFE  
CONSERVATION COMMISSION

[Signature]  
Witness

Richard C Mospens  
Print/Type Witness Name

Maggie Solima  
Witness

Magda Soliman  
Print/Type Witness Name

STATE OF FLORIDA  
COUNTY OF LEON

The foregoing instrument was acknowledged before me this  
22 day of March, 2006, by JA Breault  
as Director DHSC, of the FLORIDA FISH AND WILDLIFE  
CONSERVATION COMMISSION. He/she is personally known to me.

By: [Signature] (SEAL)

Timothy A Breault  
Print/Type Name

Title: Division Director - HSC

"LESSEE"

APPROVED AS TO FORM  
AND LEGAL SUFFICIENCY  
[Signature]  
Commission Attorney

[Signature]  
Notary Public, State of Florida

Print/Type Notary Name

Commission Number:

Commission Expires:



P. S. McChesney  
MY COMMISSION # DD094931 EXPIRES  
April 28, 2006  
BONDED THE TROY FAIR INSURANCE, INC

### 11.2.5 Lease Agreement No. 4316-4

ATL1

53.27 Acres

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

AMENDMENT NUMBER FOUR TO LEASE NUMBER 4316  
BREVARD COASTAL SCRUB / SALT LAKE

THIS LEASE AMENDMENT is entered into this 9<sup>th</sup> day of  
APRIL, 2007, by and between the BOARD OF TRUSTEES OF THE  
INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, hereinafter  
referred to as "LESSOR" and the FLORIDA FISH AND WILDLIFE CONSERVATION  
COMMISSION, successor in interest to the FLORIDA GAME AND FRESH WATER FISH  
COMMISSION, referred to as "LESSEE";

W I T N E S S E T H

WHEREAS, LESSOR, by virtue of Section 253.03, Florida Statutes, holds  
title to certain lands and property for the use and benefit of the State of  
Florida; and

WHEREAS, on June 15, 2001, LESSOR and LESSEE entered into Lease  
Number 4316; and

WHEREAS, LESSOR and LESSEE desire to amend the lease to add land to  
the leased premises.

NOW THEREFORE, in consideration of the mutual covenants and agreements  
contained herein, the parties hereto agree as follows:

1. The legal description of the leased premises set forth in Exhibit "A"  
of Lease Number 4316 is hereby amended to include the real property  
described in Exhibit "A," attached hereto, and by reference made a part  
hereof.
2. It is understood and agreed by LESSOR and LESSEE that in each and  
every respect the terms of the Lease Number 4316, except as amended, shall  
remain unchanged and in full force and effect and the same are hereby  
ratified, approved and confirmed by LESSOR and LESSEE.
3. It is understood and agreed by LESSOR and LESSEE that this Amendment  
Number FOUR to Lease Number 4316 is hereby binding upon the parties hereto  
and their successors and assigns.

IN WITNESS WHEREOF, the parties have caused this Lease amendment 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

Dave Fawell  
Witness

DAVE FEWELL  
Print/Type Witness Name

Judy Woodard  
Witness

Judy Woodard  
Print/Type Witness Name

STATE OF FLORIDA  
COUNTY OF LEON

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

"LESSOR"

The foregoing instrument was acknowledged before me this 9<sup>th</sup> day of APRIL, 2007, by Gloria C. Barber, Operations and Management Consultant Manager, Bureau of Public Land Administration, Division of State Lands, State of Florida Department of Environmental Protection, as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida. She is personally known to me.

Sylvia S. Roberts  
Notary Public, State of Florida

Print/Type Notary Name

Commission Number:

Commission Expires:



Approved as to Form and Legality

By: Dave Fawell  
DEP Attorney

FLORIDA FISH AND WILDLIFE  
CONSERVATION COMMISSION, successor  
in interest to the FLORIDA GAME  
AND FRESH WATER FISH COMMISSION

[Signature]  
Witness

RICHARD C. MOSPENS  
Print/Type Witness Name

Magda Soliman  
Witness

Magda Soliman  
Print/Type Witness Name

By: Edwin J Mayer (SEAL)

Edwin J Mayer  
Print/Type Name

Title: Dep Dir, HSC

"LESSEE"

STATE OF FLORIDA  
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 3rd  
day of April, 2007, by Edwin J Mayer  
as Dep Dir HSC, on behalf of the FLORIDA FISH AND  
WILDLIFE CONSERVATION COMMISSION, successor in interest to the  
FLORIDA GAME AND FRESH WATER FISH COMMISSION. He she is personally  
known to me.

[Signature]  
Notary Public, State of Florida

Print/Type Notary Name

Commission Number:

 P. S. McChesney  
Commission # DD524435  
Expires April 28, 2010  
Bonded by Fen Insurance, Inc. 800-385-7019

Commission Expires:

APPROVED AS TO FORM  
AND LEGAL SUFFICIENCY  
[Signature]  
Commission Attorney

### 11.2.6 Lease Agreement No. 4316-5

ATL1

65.01 Acres

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

AMENDMENT NUMBER FIVE TO LEASE NUMBER 4316  
BREVARD COASTAL SCRUB / SALT LAKE

THIS LEASE AMENDMENT is entered into this 9<sup>th</sup> day of  
APRIL, 2007, by and between the BOARD OF TRUSTEES OF THE  
INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, hereinafter  
referred to as "LESSOR" and the FLORIDA FISH AND WILDLIFE CONSERVATION  
COMMISSION, successor in interest to the FLORIDA GAME AND FRESH WATER FISH  
COMMISSION, referred to as "LESSEE";

W I T N E S S E T H

WHEREAS, LESSOR, by virtue of Section 253.03, Florida Statutes, holds  
title to certain lands and property for the use and benefit of the State of  
Florida; and

WHEREAS, on June 15, 2001, LESSOR and LESSEE entered into Lease  
Number 4316; and

WHEREAS, LESSOR and LESSEE desire to amend the lease to add land to  
the leased premises.

NOW THEREFORE, in consideration of the mutual covenants and agreements  
contained herein, the parties hereto agree as follows:

1. The legal description of the leased premises set forth in Exhibit "A"  
of Lease Number 4316 is hereby amended to include the real property  
described in Exhibit "A," attached hereto, and by reference made a part  
hereof.
2. It is understood and agreed by LESSOR and LESSEE that in each and  
every respect the terms of the Lease Number 4316, except as amended, shall  
remain unchanged and in full force and effect and the same are hereby  
ratified, approved and confirmed by LESSOR and LESSEE.
3. It is understood and agreed by LESSOR and LESSEE that this Amendment  
Number FIVE to Lease Number 4316 is hereby binding upon the parties hereto  
and their successors and assigns.

IN WITNESS WHEREOF, the parties have caused this Lease Amendment 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

Dave Fume  
Witness

DAVE FEWELL  
Print/Type Witness Name

Judy Woodward  
Witness

Judy Woodward  
Print/Type Witness Name

STATE OF FLORIDA  
COUNTY OF LEON

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

"LESSOR"

The foregoing instrument was acknowledged before me this 9th day of APRIL, 2007 by Gloria C. Barber, Operations and Management Consultant Manager, Bureau of Public Land Administration, Division of State Lands, State of Florida Department of Environmental Protection, as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida. She is personally known to me.

Sylvia S. Roberts  
Notary Public, State of Florida

Print/Type Notary Name

Commission Number:

Commission Expires:



Approved as to Form and Legality

By: David J. [Signature]  
DEP Attorney

FLORIDA FISH AND WILDLIFE  
CONSERVATION COMMISSION, successor  
in interest to the FLORIDA GAME  
AND FRESH WATER FISH COMMISSION

[Signature]  
Witness

Richard C Mossens  
Print/Type Witness Name

Magda Soliman  
Witness

Magda Soliman  
Print/Type Witness Name

By: Edwin J Mayer (SEAL)

Edwin J Mayer  
Print/Type Name

Title: Dep Dir, HSC

"LESSEE"

STATE OF FLORIDA  
COUNTY OF LEON

APPROVED AS TO FORM  
AND LEGAL SUFFICIENCY  
[Signature]  
Commission Attorney

The foregoing instrument was acknowledged before me this 3rd  
day of April, 2007, by Edwin J Mayer  
as Dep Dir HSC, on behalf of the FLORIDA FISH AND  
WILDLIFE CONSERVATION COMMISSION, successor in interest to the  
FLORIDA GAME AND FRESH WATER FISH COMMISSION. He/she is personally  
known to me.

[Signature]  
Notary Public, State of Florida

Print/Type Notary Name

Commission Number:

Commission Expires:

 P S. McChesney  
Commission # DD524435  
Expires April 28, 2010  
Bonds Troy Fair Insurance, Inc. 800-365-7018

### 11.2.7 Lease Agreement No. 4316-6

ATL1

6.31 Acres

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

AMENDMENT NUMBER SIX TO LEASE NUMBER 4316  
BREVARD COASTAL SCRUB / SALT LAKE

THIS LEASE AMENDMENT is entered into this 8<sup>th</sup> day of  
JUNE, 2007, by and between the BOARD OF TRUSTEES OF THE INTERNAL  
IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, hereinafter referred to as  
"LESSOR" and the FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION,  
successor in interest to the FLORIDA GAME AND FRESH WATER FISH COMMISSION,  
referred to as "LESSEE";

W I T N E S S E T H

WHEREAS, LESSOR, by virtue of Section 253.03, Florida Statutes, holds  
title to certain lands and property for the use and benefit of the State of  
Florida; and

WHEREAS, on June 15, 2001, LESSOR and LESSEE entered into Lease  
Number 4316; and

WHEREAS, LESSOR and LESSEE desire to amend the lease to add land to  
the leased premises.

NOW THEREFORE, in consideration of the mutual covenants and agreements  
contained herein, the parties hereto agree as follows:

1. The legal description of the leased premises set forth in Exhibit "A"  
of Lease Number 4316 is hereby amended to include the real property  
described in Exhibit "A," attached hereto, and by reference made a part  
hereof.
2. It is understood and agreed by LESSOR and LESSEE that in each and  
every respect the terms of the Lease Number 4316, except as amended, shall  
remain unchanged and in full force and effect and the same are hereby  
ratified, approved and confirmed by LESSOR and LESSEE.
3. It is understood and agreed by LESSOR and LESSEE that this Amendment  
Number SIX to Lease Number 4316 is hereby binding upon the parties hereto  
and their successors and assigns.

Rev. 3/07

IN WITNESS WHEREOF, the parties have caused this Lease Amendment 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

Dave Fume  
Witness

DAVE FEWELL  
Print/Type Witness Name

Judy Woodard  
Witness  
Judy Woodard  
Print/Type Witness Name

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

"LESSOR"

STATE OF FLORIDA  
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 8th day of JUNE, 2007, by Gloria C. Barber, Operations and Management Consultant Manager, Bureau of Public Land Administration, Division of State Lands, State of Florida Department of Environmental Protection, as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida. She is personally known to me.

Sylvia S. Roberts  
Notary Public, State of Florida

Print/Type Notary Name

Commission Number:

Commission Expires:



Approved as to Form and Legality

By: [Signature]  
DEP Attorney

FLORIDA FISH AND WILDLIFE  
CONSERVATION COMMISSION, successor  
in interest to the FLORIDA GAME  
AND FRESH WATER FISH COMMISSION

[Signature]  
Witness

Richard C Maspens  
Print/Type Witness Name

[Signature]  
Witness

Magda Soliman  
Print/Type Witness Name

By: Edwin J Moyer (SEAL)

Edwin J Moyer  
Print/Type Name

Title: Dep Dir, HSC

"LESSEE"

STATE OF FLORIDA  
COUNTY OF LEON

APPROVED AS TO FORM  
AND LEGAL SUFFICIENCY  
[Signature]  
Commission Attorney

The foregoing instrument was acknowledged before me this 30<sup>th</sup>  
day of May, 2007, by Edwin J. Moyer  
as Dep Dir HSC, on behalf of the FLORIDA FISH AND  
WILDLIFE CONSERVATION COMMISSION, successor in interest to the  
FLORIDA GAME AND FRESH WATER FISH COMMISSION. He/she is personally  
known to me.

[Signature]  
Notary Public, State of Florida

Print/Type Notary Name

Commission Number:

Commission Expires:



### 11.2.8 Lease Agreement No. 4316-7

ATL1

18.06 Acres

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

AMENDMENT NUMBER SEVEN TO LEASE NUMBER 4316  
BREVARD COASTAL SCRUB / SALT LAKE

THIS LEASE AMENDMENT is entered into this 25<sup>th</sup> day of  
June, 2007, by and between the BOARD OF TRUSTEES OF THE INTERNAL  
IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, hereinafter referred to as  
"LESSOR" and the FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION,  
hereinafter referred to as "LESSEE";

W I T N E S S E T H

WHEREAS, LESSOR, by virtue of Section 253.03, Florida Statutes, holds  
title to certain lands and property for the use and benefit of the State of  
Florida; and

WHEREAS, on June 15, 2001, LESSOR and LESSEE entered into Lease  
Number 4316; and

WHEREAS, LESSOR and LESSEE desire to amend the lease to add land to  
the leased premises.

NOW THEREFORE, in consideration of the mutual covenants and agreements  
contained herein, the parties hereto agree as follows:

1. The legal description of the leased premises set forth in Exhibit "A"  
of Lease Number 4316 is hereby amended to include the real property  
described in Exhibit "A," attached hereto, and by reference made a part  
hereof.
2. It is understood and agreed by LESSOR and LESSEE that in each and  
every respect the terms of the Lease Number 4316, except as amended, shall  
remain unchanged and in full force and effect and the same are hereby  
ratified, approved and confirmed by LESSOR and LESSEE.
3. It is understood and agreed by LESSOR and LESSEE that this Amendment  
Number SEVEN to Lease Number 4316 is hereby binding upon the parties hereto  
and their successors and assigns.

Rev. 3/07

IN WITNESS WHEREOF, the parties have caused this Lease Amendment 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

Dave Fewell  
Witness

DAVE FEWELL  
Print/Type Witness Name

Robert Smith  
Witness

ROBERT T SMITH  
Print/Type Witness Name

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

"LESSOR"

STATE OF FLORIDA  
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 25<sup>th</sup> day of JUNE, 2007, by Gloria C. Barber, Operations and Management Consultant Manager, Bureau of Public Land Administration, Division of State Lands, State of Florida Department of Environmental Protection, as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida. She is personally known to me.

Sylvia S. Roberts  
Notary Public, State of Florida

Print/Type Notary Name

Commission Number:

Commission Expires:



Approved as to Form and Legality

By: [Signature]  
DEP Attorney

FLORIDA FISH AND WILDLIFE  
CONSERVATION COMMISSION

[Signature]  
Witness

RICHARD C MOSPENS  
Print/Type Witness Name

[Signature]  
Witness

Robbie D. Jones  
Print/Type Witness Name

By: Edwin J Moyer (SEAL)

Edwin J Moyer  
Print/Type Name

Title: Dep Dir, FSC

"LESSEE"

STATE OF FLORIDA  
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 18<sup>th</sup> day of June, 2007, by Edwin J Moyer as Dep Dir, FSC, on behalf of the FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION. He/she is personally known to me.

[Signature]  
Notary Public, State of Florida

Print/Type Notary Name

Commission Number:

Commission Expires:

 P. S. McChesney  
Commission # DD524435  
Expires April 28, 2010  
Bonded Fidelity Insurance, Inc. 800-345-7019

APPROVED AS TO FORM  
AND LEGAL SUFFICIENCY

[Signature]  
Commission Attorney

### **11.2.9 Lease Agreement No. 4316-8**

ATL1

79.55 Acres

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

AMENDMENT NUMBER EIGHT TO LEASE NUMBER 4316  
BREVARD COASTAL SCRUB / SALT LAKE WMA

THIS LEASE AMENDMENT is entered into this 10<sup>th</sup> day of SEPTEMBER, 2008, by and between the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, hereinafter referred to as "LESSOR" and the FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION, hereinafter referred to as "LESSEE";

W I T N E S S E T H

WHEREAS, LESSOR, by virtue of Section 253.03, Florida Statutes, holds title to certain lands and property for the use and benefit of the State of Florida; and

WHEREAS, on June 15, 2001, LESSOR and LESSEE entered into Lease Number 4316; and

WHEREAS, LESSOR and LESSEE desire to amend the lease to add land to the leased premises.

NOW THEREFORE, in consideration of the mutual covenants and agreements contained herein, the parties hereto agree as follows:

1. The legal description of the leased premises set forth in Exhibit "A" of Lease Number 4316 is hereby amended to include the real property described in Exhibit "A," attached hereto, and by reference made a part hereof.
2. It is understood and agreed by LESSOR and LESSEE that in each and every respect the terms of the Lease Number 4316, except as amended, shall remain unchanged and in full force and effect and the same are hereby ratified, approved and confirmed by LESSOR and LESSEE.
3. It is understood and agreed by LESSOR and LESSEE that this Amendment Number EIGHT to Lease Number 4316 is hereby binding upon the parties hereto and their successors and assigns.

Rev. 3/07

IN WITNESS WHEREOF, the parties have caused this Lease Amendment 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

Dave Fewell  
Witness

DAVE FEWELL  
Print/Type Witness Name

Judy Woodward  
Witness

Judy Woodward  
Print/Type Witness Name

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

"LESSOR"

STATE OF FLORIDA  
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 10<sup>th</sup> day of SEPTEMBER, 2008, by Gloria C. Barber, Operations and Management Consultant Manager, Bureau of Public Land Administration, Division of State Lands, State of Florida Department of Environmental Protection, as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida. She is personally known to me.



David L. Fewell  
Notary Public, State of Florida

Print/Type Notary Name

Commission Number:

Commission Expires:

Approved as to Form and Legality

By: [Signature]  
DEP Attorney

FLORIDA FISH AND WILDLIFE  
CONSERVATION COMMISSION

[Signature]  
Witness

Richard C Mospens  
Print/Type Witness Name

Magda Solin  
Witness

Magda Soliman  
Print/Type Witness Name

By: Edwin J Moyer (SEAL)

Edwin J Moyer  
Print/Type Name

Title: Dep Dir, HSC

"LESSEE"

APPROVED AS TO FORM  
AND LEGAL SUFFICIENCY

[Signature]  
Commission Attorney

STATE OF FLORIDA  
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 29<sup>th</sup> day of August, 2008, by Edwin J Moyer as Dep Dir HSC on behalf of the FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION. He/she is personally known to me.

[Signature]  
Notary Public, State of Florida

Print/Type Notary Name

Commission Number:

Commission Expires:

 P S McChesney  
Commission # DD524435  
Expires April 28, 2010  
Bonded Troy Fax Insurance Inc 95435

### **11.2.10 Lease Agreement No. 4316-9**

ATL1

59.28 Acres

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

AMENDMENT NUMBER NINE TO LEASE NUMBER 4316  
BREVARD COASTAL SCRUB / SALT LAKE WMA

THIS LEASE AMENDMENT is entered into this 27<sup>th</sup> day of OCTOBER, 2008, by and between the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, hereinafter referred to as "LESSOR" and the FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION, hereinafter referred to as "LESSEE";

W I T N E S S E T H

WHEREAS, LESSOR, by virtue of Section 253.03, Florida Statutes, holds title to certain lands and property for the use and benefit of the State of Florida; and

WHEREAS, on June 15, 2001, LESSOR and LESSEE entered into Lease Number 4316; and

WHEREAS, LESSOR and LESSEE desire to amend the lease to add land to the leased premises.

NOW THEREFORE, in consideration of the mutual covenants and agreements contained herein, the parties hereto agree as follows:

1. The legal description of the leased premises set forth in Exhibit "A" of Lease Number 4316 is hereby amended to include the real property described in Exhibit "A," attached hereto, and by reference made a part hereof.
2. It is understood and agreed by LESSOR and LESSEE that in each and every respect the terms of the Lease Number 4316, except as amended, shall remain unchanged and in full force and effect and the same are hereby ratified, approved and confirmed by LESSOR and LESSEE.
3. It is understood and agreed by LESSOR and LESSEE that this Amendment Number NINE to Lease Number 4316 is hereby binding upon the parties hereto and their successors and assigns.

Rev. 3/07

IN WITNESS WHEREOF, the parties have caused this Lease Amendment 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

Dave Fewell  
Witness

DAVE FEWELL  
Print/Type Witness Name

Gudy Woodward  
Witness

Gudy Woodward  
Print/Type Witness Name

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

"LESSOR"

STATE OF FLORIDA  
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 27<sup>th</sup> day of OCTOBER, 2008, by Gloria C. Barber, Operations and Management Consultant Manager, Bureau of Public Land Administration, Division of State Lands, State of Florida Department of Environmental Protection, as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida. She is personally known to me.



David L. Fewell  
Notary Public, State of Florida

Print/Type Notary Name

Commission Number:

Commission Expires:

Approved as to Form and Legality

By: [Signature]  
DEP Attorney

FLORIDA FISH AND WILDLIFE  
CONSERVATION COMMISSION

[Signature]  
Witness

Richard C Mosper  
Print/Type Witness Name

[Signature]  
Witness

Robbie N Jones  
Print/Type Witness Name

By: Lawson E Snyder (SEAL)

Lawson E Snyder  
Print/Type Name

Title: Dep Dir Div

"LESSEE"

STATE OF FLORIDA  
COUNTY OF LEON

APPROVED AS TO FORM  
AND LEGAL SUFFICIENCY  
[Signature]  
Commission Attorney

The foregoing instrument was acknowledged before me this 2<sup>nd</sup> day of October, 2008, by Lawson E Snyder as Dep Dir Div on behalf of the FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION. He/she is personally known to me.

[Signature]  
Notary Public, State of Florida

Print/Type Notary Name

Commission Number:

Commission Expires:

 P S McChesney  
Commission # DD524435  
Expires April 28, 2010  
Guaranteed Tally-Fair Insurance, Inc. 800-385-7019

### 11.2.11 Lease Agreement No. 4316-10

ATL1

[1.25 acres]

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

AMENDMENT NUMBER TEN TO LEASE NUMBER 4316

THIS LEASE AMENDMENT is entered into this 4<sup>th</sup> day of SEPTEMBER, 2014, by and between the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, hereinafter referred to as "LESSOR" and the FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION, hereinafter referred to as "LESSEE";

W I T N E S S E T H

WHEREAS, LESSOR, by virtue of Section 253.03, Florida Statutes, holds title to certain lands and property for the use and benefit of the State of Florida; and

WHEREAS, on June 15, 2001, LESSOR and LESSEE entered into Lease Number 4316 (the "lease"); and

WHEREAS, LESSOR and LESSEE desire to amend the lease to add land to the leased premises.

NOW THEREFORE, in consideration of the mutual covenants and agreements contained herein, the parties hereto agree as follows:

1. The legal description of the leased premises set forth in Exhibit "A" of Lease Number 4316 is hereby amended to include the real property described in Exhibit "A" attached hereto and by reference made a part hereof.
2. It is understood and agreed by LESSOR and LESSEE that in each and every respect the terms of Lease Number 4316, except as amended, shall remain unchanged and in full force and effect and the same are hereby ratified, approved and confirmed by LESSOR and LESSEE as of the date of this amendment.
3. It is understood and agreed by LESSOR and LESSEE that this Amendment Number ten to Lease Number 4316 is hereby binding upon the parties hereto and their successors and assigns.

IN WITNESS WHEREOF, the parties have caused this lease amendment 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

By: Cheryl C McCall (SEAL)  
CHERYL C. MCCALL, CHIEF,  
BUREAU OF PUBLIC LAND  
ADMINISTRATION, DIVISION OF  
STATE LANDS, STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL  
PROTECTION

Dave Fewell  
Witness

DAVE FEWELL  
Print/Type Witness Name

Kathy C Griffin  
Witness

Kathy C Griffin  
Print/Type Witness Name

"LESSOR"

STATE OF FLORIDA  
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 4<sup>th</sup> day of SEPTEMBER, 2014, by Cheryl C. McCall, Chief, Bureau of Public Land Administration, Division of State Lands, State of Florida Department of Environmental Protection, as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida. She is personally known to me.

David Lee Fewell  
Notary Public, State of Florida

Print/Type Notary Name

Commission Number:

Commission Expires:



Approved as to Form and Legality

By: [Signature]  
DEP Attorney

FLORIDA FISH AND WILDLIFE  
CONSERVATION COMMISSION

[Signature]  
Witness

RICHARD C. MORGAN  
Print/Type Witness Name

[Signature]  
Witness

Paul E. Woodruff  
Print/Type Witness Name

By: Thomas H. Sen (SEAL)  
Nick Wiley, Executive Director

Title: Director, HSC

"LESSEE"  
APPROVED AS TO FORM  
AND LEGAL SUFFICIENCY  
[Signature]  
Commission Attorney

STATE OF FLORIDA  
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 26 day of August, 2014, by Nick Wiley, as Executive Director, on behalf of the Florida Fish and Wildlife Conservation Commission. He is personally known to me or has produced \_\_\_\_\_ as identification.

[Signature]  
Notary Public, State of Florida  
Jamie Sorin  
Print/Type Notary Name

Commission Number:

Commission Expires:



**11.2.12 Lease Agreement No. 4316-11**

This instrument prepared by:  
Delbert Harvey  
Department of Environmental Protection  
Bureau of Public Administration  
Division of State Lands  
3900 Commonwealth Blvd. MS 130  
Tallahassee, Florida 32399-3000  
AID# 26811  
ATL1  
[53.27-acres]

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

**AMENDMENT NUMBER ELEVEN TO LEASE NUMBER 4316  
BREVARD COASTAL SCRUB/SALT LAKE**

THIS LEASE AMENDMENT is entered into this 13 day of October, 2015, by and between the **BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA**, hereinafter referred to as "LESSOR" and the **FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION**, successor in interest to the **FLORIDA GAME AND FRESH WATER FISH COMMISSION**, hereinafter referred to as "LESSEE";

**WITNESSETH:**

**WHEREAS**, LESSOR, by virtue of Section 253.03, Florida Statutes, holds title to certain lands and property for the use and benefit of the State of Florida; and

**WHEREAS**, on June 15, 2001, LESSOR and LESSEE entered into Lease Number 4316 (the "lease"); and

**WHEREAS**, on April 9, 2007, LESSOR and LESSEE amended Lease Number 4316 ("Amendment Number Four") to include real property purchased by LESSOR from Peter M. and Shirley L. Blynn (the "Blynns") on December 4, 2003, as described in the warranty deed recorded at Official Records Book 5162, Page 749 of the Public Records of Brevard County, Florida (the "Original Deed"); and

**WHEREAS**, the Original Deed contained a scrivener's error in the legal description; and

**WHEREAS**, on February 9, 2015, the Blynns provided LESSOR a corrective warranty deed recorded at Official Records Book 7321, Page 40 of the Public Records of Brevard County, Florida, which corrected the legal description in the Original Deed (the "Corrective Deed"); and

**WHEREAS**, LESSOR and LESSEE desire to amend the lease to correct the legal description for the Original Deed included in Amendment Number Four to properly reflect the corrected legal description contained in the Corrective Deed.

NOW THEREFORE, in consideration of the mutual covenants and agreements contained herein, the parties hereto agree as follows:

1. The legal description of the leased premises set forth in Exhibit "A" of Lease Number 4316 is hereby amended to include the real property described in Exhibit "A" attached hereto and by reference made a part hereof, which corrects and supersedes the legal description previously added to Lease Number 4316 by Amendment Number Four.

2. It is understood and agreed by LESSOR and LESSEE that in each and every respect the terms of Lease Number 4316, except as amended, shall remain unchanged and in full force and effect and the same are hereby ratified, approved and confirmed by LESSOR and LESSEE as of the date of this amendment.

3. It is understood and agreed by LESSOR and LESSEE that this Amendment Number 11 to Lease Number 4316 is hereby binding upon the parties hereto and their successors and assigns.

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

WITNESSES:

David Lee Fewell  
Original Signature

DAVE FEWELL  
Print/Type Name of Witness

Kathy C. Erwin  
Original Signature

Kathy C Erwin  
Print/Type Name of Witness

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

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

"LESSOR"

STATE OF FLORIDA  
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 13<sup>th</sup> day of OCTOBER, 2015, by Cheryl C. McCall, Chief, Bureau of Public Land Administration, Division of State Lands, State of Florida Department of Environmental Protection, as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida. She is personally known to me.

APPROVED SUBJECT TO PROPER EXECUTION:

[Signature] 9.9.15  
DEP Attorney Date

David Lee Fewell  
Notary Public, State of Florida

Printed, Typed or Stamped Name  
My Commission Expires: \_\_\_\_\_  
Commission/Serial No. \_\_\_\_\_



[Signature]  
Witness

Richard C. Mogens  
Print/Type Witness Name

[Signature]  
Witness

Deidre M. Crutcher  
Print/Type Witness Name

**FLORIDA FISH AND WILDLIFE CONSERVATION  
COMMISSION**

By: [Signature] (SEAL)  
for Nick Wiley, Executive Director

"LESSEE"

APPROVED AS TO FORM  
AND LEGAL SUFFICIENCY  
[Signature]  
Commission Attorney

STATE OF FLORIDA  
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 2 day of October, 2015, by Nick Wiley, Executive Director, on behalf of the Florida Fish and Wildlife Conservation Commission. He is personally known to me.

[Signature]  
Notary Public, State of Florida

Rosa M. Torres  
Print/Type Notary Name

My Commission Expires:  
Commission/Serial No.



### **11.2.13 Lease Agreement No. 4316 Partial Release**

This Partial Release of Lease was prepared by:  
Christopher Crenshaw  
Bureau of Public Land Administration  
Division of State Lands  
Department of Environmental Protection, MS 130  
3900 Commonwealth Boulevard,  
Tallahassee, Florida 32399-3000  
AID# 41942

PROL1  
[59.16 acres, +/-]

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

**PARTIAL RELEASE OF LEASE NUMBER 4316**

**STATE OF FLORIDA  
COUNTY OF BREVARD**

The undersigned lessee on the 17<sup>th</sup> day of June, 2021, do(es) hereby quitclaim, release and surrender unto lessor all right, title and interest in and to the leasehold estate of the lands described in Exhibit "A" attached hereto, which are a portion of the lands leased under Lease Agreement Number 4316, dated June 15, 2001, between the **BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA**, as LESSOR, and the **FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION**, as LESSEE, effective the 17<sup>th</sup> day of June, 2021.

*This space is intentionally left blank with signature page to follow.*

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

WITNESSES:  
Michele Stevens  
Original Signature  
Michele Stevens  
Print/Type Name of Witness  
Kathy C Griffin  
Original Signature  
Kathy C Griffin  
Print/Type Name of Witness

BOARD OF TRUSTEES OF THE INTERNAL  
IMPROVEMENT TRUST FUND OF THE STATE  
OF FLORIDA (SEAL)  
BY: BRAD  
Brad Richardson, Chief, Bureau of Public Land Administration,  
Division of State Lands, State of Florida Department of  
Environmental Protection, as agent for and on behalf of the  
Board of Trustees of the Internal Improvement Trust Fund  
of the State of Florida

"LESSOR"

STATE OF FLORIDA  
COUNTY OF LEON

The foregoing instrument was acknowledged before me by means of  physical presence or  online notarization this 17<sup>th</sup>  
day of June, 2021, by Brad Richardson, Chief, Bureau of Public Land Administration, Division of  
State Lands, State of Florida Department of Environmental Protection, as agent for and on behalf of the Board of Trustees of  
the Internal Improvement Trust Fund of the State of Florida. He is personally known to me.

APPROVED SUBJECT TO PROPER EXECUTION:  
[Signature] 07-20-2020  
DEP Attorney Date

Kathy C Griffin  
Notary Public, State of Florida

Printed, Typed or Stamped Name  
My Commission Expires  
Commission/Serial No.  
KATHY C. GRIFFIN  
MY COMMISSION # GG 827461  
EXPIRES: November 27, 2023  
Bonded Thru Notary Public Underwriters

WITNESSES:

Rosa M. Guthrie  
Original Signature

Rosa M. Guthrie  
Print/Type Name of Witness

[Signature]  
Original Signature

Johanna Poston  
Print/Type Name of Witness

FLORIDA FISH AND WILDLIFE  
CONSERVATION COMMISSION

BY: [Signature] (SEAL)  
Eric Sutton  
Executive Director

For

"LESSEE"

STATE OF Florida  
COUNTY OF Leon

The foregoing instrument was acknowledged before me by means of  physical presence or  online notarization this 9 day of June, 2021, by Eric Sutton, as Executive Director for and on behalf of the Florida Fish and Wildlife Conservation Commission. He is personally known to me or has produced as identification.

David B. Johnson, Deputy Division Director

Rosa M. Guthrie  
Notary Public, State of Florida

Rosa M. Guthrie  
Printed, Typed or Stamped Name

My Commission Expires

Commission/Serial No.



**11.2.14 Lease Agreement No. 4316-12**

This instrument prepared by:  
Christopher Crenshaw  
Department of Environmental Protection  
Bureau of Public Administration  
Division of State Lands  
3900 Commonwealth Blvd. MS 130  
Tallahassee, Florida 32399-3000  
AID# 41943

ATL1  
[206.66 +/- acres]

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

**AMENDMENT NUMBER 12 TO LEASE NUMBER 4316**

THIS LEASE AMENDMENT is entered into this 17<sup>th</sup> day of June, 2021, by and between the **BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA**, hereinafter referred to as "LESSOR" and the **FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION**, hereinafter referred to as "LESSEE";

WITNESSETH:

**WHEREAS**, LESSOR, by virtue of Section 253.03, Florida Statutes, holds title to certain lands and property for the use and benefit of the State of Florida; and

**WHEREAS**, on June 15, 2001, LESSOR and LESSEE entered into Lease Number 4316 (the "lease"); and

**WHEREAS**, LESSOR and LESSEE desire to amend the lease to add land to the leased premises.

**NOW THEREFORE**, in consideration of the mutual covenants and agreements contained herein, the parties hereto agree as follows:

1. The legal description of the leased premises set forth in Exhibit "A" of Lease Number 4316 is hereby amended to include the real property described in Exhibit "A" attached hereto and by reference made a part hereof.
2. It is understood and agreed by LESSOR and LESSEE that in each and every respect the terms of Lease Number 4316, except as amended, shall remain unchanged and in full force and effect and the same are hereby ratified, approved and confirmed by LESSOR and LESSEE as of the date of this amendment.
3. It is understood and agreed by LESSOR and LESSEE that this Amendment Number 12 to Lease Number 4316 is hereby binding upon the parties hereto and their successors and assigns.

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

WITNESSES:  
Michele Stevens  
Original Signature  
Michele Stevens  
Print/Type Name of Witness  
Kathy C Griffin  
Original Signature  
Kathy C Griffin  
Print/Type Name of Witness

**BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA**  
BRAD (SEAL)  
BY: Brad Richardson, Chief, Bureau of Public Land Administration, Division of State Lands, State of Florida Department of Environmental Protection, as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida

"LESSOR"

STATE OF FLORIDA  
COUNTY OF LEON

The foregoing instrument was acknowledged before me by means of  physical presence or  online notarization this 17<sup>th</sup> day of June 2021, by Brad Richardson, Chief, Bureau of Public Land Administration, Division of State Lands, State of Florida Department of Environmental Protection, as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida. He is personally known to me.

APPROVED SUBJECT TO PROPER EXECUTION: Kathy C Griffin  
Notary Public, State of Florida  
DEP Attorney 07-20-2020  
Date

Printed, Typed or Stamped Name KATHY C. GRIFFIN  
My Commission Expires MY COMMISSION # GG 927461  
EXPIRES: November 27, 2023  
Commission/Serial No. Bonded Thru Notary Public Underwriters

WITNESSES:

Rosa M. Guthrie  
Original Signature

Rosa M. Guthrie  
Print/Type Name of Witness

Johanna Poston  
Original Signature

Johanna Poston  
Print/Type Name of Witness

FLORIDA FISH AND WILDLIFE  
CONSERVATION COMMISSION

(SEAL)

BY: D. B. J.  
Eric Sutton  
Executive Director

For

"LESSEE"

STATE OF Florida  
COUNTY OF Leon

The foregoing instrument was acknowledged before me by means of  physical presence or  online notarization this 8 day of June, 2021, by Eric Sutton, as Executive Director, for and on behalf of the Florida Fish and Wildlife Conservation Commission. He is personally known to me or has produced David B. Johnson, Deputy Division Director as identification.

Rosa M. Guthrie  
Notary Public, State of Florida

Rosa M. Guthrie  
Printed, Typed or Stamped Name

My Commission Expires  
Commission/Serial No. 



**11.2.15 Lease Agreement No. 4316-13**

This instrument prepared by:  
Joel Pollock  
Department of Environmental Protection  
Bureau of Public Administration  
Division of State Lands  
3900 Commonwealth Blvd. MS 130  
Tallahassee, Florida 32399-3000  
AID# 43765

ATL1  
[63.45 +/- acres]

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

**AMENDMENT NUMBER 13 TO LEASE NUMBER 4316**

THIS LEASE AMENDMENT is entered into this 9<sup>th</sup> day of September, 2021, by and between the **BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA**, hereinafter referred to as "LESSOR" and **FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION**, hereinafter referred to as "LESSEE";

**WITNESSETH:**

**WHEREAS**, LESSOR, by virtue of Section 253.03, Florida Statutes, holds title to certain lands and property for the use and benefit of the State of Florida; and

**WHEREAS**, on June 15, 2001, LESSOR and LESSEE entered into Lease Number 4316 (the "lease"); and

**WHEREAS**, LESSOR and LESSEE desire to amend the lease to add land to the leased premises.

**NOW THEREFORE**, in consideration of the mutual covenants and agreements contained herein, the parties hereto agree as follows:

1. The legal description of the leased premises set forth in Exhibit "A" of Lease Number 4316 is hereby amended to include the real property described in Exhibit "A" attached hereto and by reference made a part hereof.
2. It is understood and agreed by LESSOR and LESSEE that in each and every respect the terms of Lease Number 4316, except as amended, shall remain unchanged and in full force and effect and the same are hereby ratified, approved and confirmed by LESSOR and LESSEE as of the date of this amendment.
3. It is understood and agreed by LESSOR and LESSEE that this Amendment Number 13 to Lease Number 4316 is hereby binding upon the parties hereto and their successors and assigns.

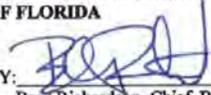
4. This lease amendment may be executed by electronic signature, which shall be considered as an original signature for all purposes and shall have the same force and effect as an original signature. Without limitation, "electronic signature" shall include faxed versions of an original signature or electronically scanned and transmitted versions (e.g., via pdf) of an original signature.

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

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

**"LESSOR"**

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

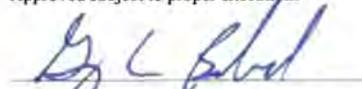


(SEAL)

BY:

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

Approved subject to proper execution:

  
DEP Attorney                      Date 07-22-2021

**"LESSEE"**

**FLORIDA FISH AND WILDLIFE  
CONSERVATION COMMISSION**

(SEAL)

David B. Johnson                      Digitally signed by David B.  
Johnson  
Date: 2021.09.08 08:47:16 -0400  
BY: \_\_\_\_\_  
David Johnson, Deputy Division Director,  
Division of Habitat and Species Conservation

**11.2.16 Lease Agreement No. 4316-14**

This instrument prepared by:  
Shanna Smith  
Department of Environmental Protection  
Bureau of Public Land Administration  
Division of State Lands  
3900 Commonwealth Blvd. MS 130  
Tallahassee, Florida 32399-3000  
Action No. 50636

ATL1  
[ +/- 7.166 acres]

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

**AMENDMENT NUMBER 14 TO LEASE NUMBER 4316**

THIS LEASE AMENDMENT is entered into this 13th day of May, 2025, by and between the **BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA**, hereinafter referred to as "**LESSOR**", and **FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION**, hereinafter referred to as "**LESSEE**".

WITNESSETH:

**WHEREAS**, LESSOR, by virtue of Section 253.03, Florida Statutes, holds title to certain lands and property for the use and benefit of the State of Florida; and

**WHEREAS**, on June 15, 2001, LESSOR and LESSEE entered into Lease Number **4316** (the "**lease**"); and

**WHEREAS**, LESSOR and LESSEE desire to amend the lease to add land to the leased premises.

**NOW THEREFORE**, in consideration of the mutual covenants and agreements contained herein, the parties hereto agree as follows:

1. The legal description of the leased premises set forth in Exhibit "A" of Lease Number **4316** is hereby amended to include the real property described in **Exhibit "A" attached hereto** and by reference made a part hereof.
2. It is understood and agreed by LESSOR and LESSEE that in each and every respect the terms of Lease Number **4316**, except as amended, shall remain unchanged and in full force and effect and the same are hereby ratified, approved and confirmed by LESSOR and LESSEE as of the date of this amendment.
3. It is understood and agreed by LESSOR and LESSEE that this Amendment Number **14** to Lease Number **4316** is hereby binding upon the parties hereto and their successors and assigns.

4. This lease amendment may be executed by electronic signature, which shall be considered as an original signature for all purposes and shall have the same force and effect as an original signature. Without limitation, "electronic signature" shall include faxed versions of an original signature or electronically scanned and transmitted versions (e.g., via pdf) of an original signature.

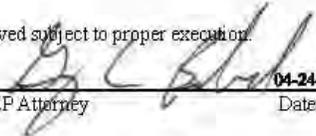
*[Remainder of page intentionally left blank; Signature page follows]*

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

**"LESSOR"**

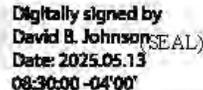
BOARD OF TRUSTEES OF THE INTERNAL  
IMPROVEMENT TRUST FUND OF THE STATE  
OF FLORIDA

BY:  (SEAL)  
\_\_\_\_\_  
Brad Richardson, Chief, Bureau of Public Land  
Administration, Division of State Lands, State of  
Florida Department of Environmental Protection, as  
agent for and on behalf of the Board of Trustees of the  
Internal Improvement Trust Fund of the State of  
Florida.

Approved subject to proper execution.  
BY:  04-24-2025  
DEP Attorney Date

**"LESSEE"**

FLORIDA FISH AND WILDLIFE  
CONSERVATION COMMISSION

BY: **David B.  
Johnson**  (SEAL)  
\_\_\_\_\_  
**David B. Johnson**, Deputy Division Director  
Division of Habitat and Species Conservation

**11.2.17 Lease Agreement No. 4344**

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

5,045.18 Acres

COOPERATIVE LEASE AGREEMENT  
BREVARD COASTAL SCRUB ECOSYSTEM

Lease Number 4344

This Lease is made and entered into this 5<sup>th</sup> day of April, 2002 between the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, (as to its undivided 50 % interest), hereinafter referred to as "TRUSTEES", and the GOVERNING BOARD OF THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT, (as to its undivided 50 % interest), hereinafter referred to as the "DISTRICT", and hereinafter collectively referred to as the "LESSORS", and the STATE OF FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION hereinafter referred to as the "LESSEE".

**WITNESSETH:**

WHEREAS, the LESSORS hold title to certain lands and property being utilized by the State of Florida for public purposes, and

WHEREAS, the TRUSTEES are authorized in Section 253.03, Florida Statutes, to enter into leases for the use, benefit and possession of public lands by State agencies, which may properly use and possess them for the benefit of the people of the State of Florida;

WHEREAS, the DISTRICT is empowered to enter into cooperative land management agreements with state agencies or local governments to provide for coordinated and cost-effective management of lands, pursuant to Section 373.1391 (4), Florida Statutes;

NOW, THEREFORE, for and in consideration of the mutual covenants and agreements hereinafter contained, LESSORS lease the below described premises to LESSEE subject to the following terms and conditions:

1. **DELEGATIONS OF AUTHORITY:** TRUSTEES' 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, known as the World Union/WU Titusville, Inc., and Guilford properties, is situated in the County of Brevard, State of Florida, and is more particularly described in Exhibit "A" attached hereto and hereinafter called the "Leased Premises".
3. **TERM:** The term of this Lease shall be for a period of five (5) years, commencing on April 5, 2002 and ending on April 4, 2007 unless sooner terminated

pursuant to the provisions of this Lease. Thereafter, this Lease will be automatically renewed, in twenty (20) year increments, unless terminated as otherwise set forth herein.

4. **PURPOSE:** LESSEE shall manage the Leased Premises only for the conservation and protection of natural and historical resources and resource based public outdoor recreation which is compatible with the conservation and protection of these public lands, as set forth in subsection 259.032 (11), Florida Statutes, and Section 373.59, Florida Statutes, as amended, along with other authorized uses necessary for the accomplishment of this purpose as designated in the Management Plan required by paragraph 9 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 LESSEE of the rights conveyed herein.

6. **AUTHORIZED USES:** Authorized uses for the purposes of the lease shall be defined as those management activities that LESSEE is authorized to perform under this Lease and the approved Management Plan. The authorized uses shall be consistent with statutory requirements that require that the Leased Premises be managed and maintained in an environmentally acceptable manner to restore and protect in its natural state and condition, including permitting of compatible recreational use. The authorized uses shall at a minimum always include essential site management measures including, but not limited to, security, resource protection, public access and recreational use, habitat management and enhancement of land use control.

7. **LESSORS' RIGHTS:**

A. Interim activities that are undertaken prior to the review and approval of the Management Plan shall be evaluated in accordance with guidance provided in the "List of LMAC/Division of State Lands Approved Interim Management Activities," issued May 5, 2001, and attached hereto as Exhibit "B". The DISTRICT shall be added to the list of review agencies for matters related to bridge or culvert replacement, prescribed burning, and replacing existing water control structures or devices. The implementation of these interim activities requires the review and consent of the DISTRICT staff. Correspondence should be directed to the Director, Division of Land Management, St. Johns River Water Management District, P.O. Box 1429, Palatka, Florida 32178-1429.

B. The DISTRICT may engage in construction or other activities necessary for water management purposes on the Leased Premises provided that such construction or activities are consistent with the approved Management Plan. The DISTRICT will provide reasonable notice to the LESSEE of any such activities prior to their commencement.

8. **UNAUTHORIZED USES:** LESSEE shall, through its agents and employees, prevent the unauthorized use of the Leased Premises or any use thereof not in conformance with approved interim management activities, this Lease, or the approved Management Plan.

9. **MANAGEMENT PLAN:** LESSEE shall prepare and submit a Management Plan for the Leased Premises, in accordance with Section 253.034, Florida Statutes, and chapter 18-2, Florida Administrative Code, within twelve (12) months of the effective date of this Lease. The Management Plan shall be submitted to LESSORS for review, comment and approval. 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 LESSORS until the Management Plan is approved. The Management Plan shall emphasize the original management concept as approved by LESSORS at the time of acquisition which established the primary public purpose for which the Leased Premises was acquired. The approved Management Plan shall provide the basic guidance for all management activities and shall be reviewed and revised jointly by LESSEE and LESSORS at least every five (5) years. LESSEE shall not use or alter the Leased Premises except as provided for in the approved Management Plan without the prior written approval of LESSORS. 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.

10. ANNUAL REPORTS: Annual reports that summarize management activities, accomplishments, and issues affecting the Leased Premises will be submitted by LESSEE to LESSORS pursuant to subsection 259.032(10), Florida Statutes.

11. RIGHT TO INSPECT:

A. LESSORS or their duly authorized agents and employees shall have the right, with reasonable notice, to inspect the Leased Premises and works and operations thereon of LESSEE in any matter pertaining to this Lease.

B. LESSORS or their duly authorized agents and employees shall also have the right, with reasonable notice, to inspect and audit the books and financial records of LESSEE and any of its licensees as they pertain to the management or recreational use of the Leased Premises.

12. INSURANCE REQUIREMENTS: LESSEE is insured through the State of Florida Department of Insurance. LESSEE shall be financially responsible for any loss due to failure to obtain insurance coverage for any improvements or structures located on the Leased Premises, and LESSEE'S failure to maintain such policies shall constitute a breach of this Lease.

13. LIABILITY: LESSEE shall assist in the investigation of injury or damage claims either for or against LESSORS or the State of Florida pertaining to LESSEE'S respective areas of responsibility under this lease or arising out of LESSEE'S respective management programs or activities and shall contact LESSORS regarding the legal action deemed appropriate to remedy such damage or claims. LESSEE shall maintain a program of insurance covering its liabilities as prescribed by Section 768.28, Florida Statutes, and shall be responsible for the acts or omissions of its officers, employees, servants, and agents in the event that such acts or omissions result in injury to persons or property. The District's liability is further limited by the provisions of Section 373.1395, Florida Statutes. However, nothing in the Lease is intended or is to be construed as a waiver of sovereign immunity as provided to the parties signatory hereto under Section 768.28, Florida Statutes, or as otherwise provided by law.

14. ARCHAEOLOGICAL AND HISTORIC SITES: Execution of this Lease in no way affects any of the parties' obligations pursuant to Chapter 267, Florida Statutes. The collection of artifacts or the disturbance of archaeological and historic sites on the Leased Premises is

prohibited unless prior authorization has been obtained from the Department of State, Division of Historical Resources. The Management Plan 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.

15. EASEMENTS: All easements including, but not limited to, utility easements are expressly prohibited without the prior written approval of LESSORS. Any easement not in effect at the time of the Lease, or not approved in writing by LESSORS, shall be void and without legal effect.

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

17. SURRENDER OF LEASED PREMISES: Upon termination or expiration of this Lease, LESSEE shall surrender the Leased Premises to LESSORS. In the event no further use of the Leased Premises or any part thereof is needed, written notification shall be made to LESSORS at least one (1) year prior to the release of all or any part of the Leased Premises. Notification shall include a legal description, this Lease and parcel number, and an explanation of the release. The release shall be valid only if approved by LESSORS through execution of a release of lease instrument with the same formality as this Lease. Upon termination of this Lease, all improvements, including both physical structures and modifications to the Leased Premises deemed by the LESSEE and the LESSORS as "permanent" shall become the property of the LESSORS. All improvements, including both physical structures and modifications to the Leased Premises deemed by the LESSEE and the LESSORS to be "temporary" shall be removed at the discretion of LESSORS and expense of the LESSEE. The LESSORS shall give written notice to the LESSEE of their intent to remove such temporary improvements prior to the termination of this Lease. The remaining improvements shall become the property of the LESSORS, unless the LESSORS give written notice to the LESSEE to remove any or all such "temporary" improvements at the expense of the LESSEE. Prior to surrender of all or any part of the leased premises, LESSORS' representative(s) shall perform an onsite inspection and the keys to any buildings or gates on the Leased Premises shall be turned over to the LESSORS. If the leased premises and improvements located thereon do not meet all conditions set forth in paragraph 24 herein, LESSEE shall pay all costs necessary to meet the prescribed conditions.

18. 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 LESSORS, LESSEE, or other land managing agencies for the protection and enhancement of the Leased Premises.

19. PUBLIC LANDS ARTHROPOD CONTROL PLAN: LESSEE shall identify and subsequently designate to the respective arthropod control district or districts within one (1) year of the effective date of this Lease all of the environmentally sensitive and biologically highly productive lands contained within the Leased Premises, in accordance with Section 388.41111,

Florida Statutes, and Chapter 5E-13, Florida Administrative Code, for the purpose of obtaining a public lands arthropod control plan for such lands.

20. ORIGINALS: This Lease is executed in three (3) originals, each of which shall be considered an original for all purposes.

21. 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.

22. ASSIGNMENT: This Lease shall not be assigned in whole or in part without the prior written approval of LESSORS. Any assignment made either in whole or in part without the prior written consent of LESSORS shall be void and without legal effect.

23. PLACEMENT AND REMOVAL OF IMPROVEMENTS: All buildings, structures, and improvements shall be constructed at the expense of LESSEE in accordance with plans prepared by professional designers and shall require the prior written approval of LESSORS as to the purpose, location and design. Except as identified in the approved Land Management Plan for the Leased Premises, no trees, other than non-native species, shall be removed or major land alterations done without the prior written approval of LESSORS. Removable equipment and removable improvements placed on the Leased Premises shall remain the property of LESSEE and may be removed by LESSEE upon termination of this Lease.

24. OPERATION AND MAINTENANCE OF LEASED PREMISES AND 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 Management Plan, meeting all building and safety codes in the location situated, and maintaining all existing roads, fences, ditches, culverts, canals, risers and the like in as good condition as the same may be at the date of this Lease and as required and needed to secure the Leased Premises and provide safe public access. Notwithstanding the foregoing, any removal, closure, etc. of the above improvements shall be acceptable when the proposed activity is consistent with the goals of conservation, protection, and enhancement of the natural and historical resources within the Leased Premises and the approved Management Plan. All costs for operation and maintenance of the Leased Premises and improvements, except those constructed or placed upon the Leased Premises by the LESSORS, shall be at the sole cost and expense of LESSEE.

25. ENTIRE UNDERSTANDING: This Lease sets forth the entire understanding between the parties and shall only be amended with the prior written approval of all parties.

26. DEFAULT BY THE LESSEE AND TERMINATION BY THE LESSORS: LESSORS may terminate this Lease if LESSEE proceeds in a manner that violates the terms of this Lease. Lease violations shall include, but not be limited to, the following:

A. LESSEE fails to submit a Management Plan in accordance with the terms of this Lease, or

B. LESSEE fails to proceed in a manner that will implement or complete the actions, tasks or other aspects of the Management Plan for essential site management, or

C. Construction of permanent structures or other improvements by LESSEE not authorized by LESSORS, either directly or indirectly through the approval of the Management Plan, or

D. LESSEE destructs or degrades natural systems, rare or endangered habitats that are targeted for preservation, or

E. LESSEE violates federal, state or local laws, rules, regulations, or ordinances, or

F. LESSEE causes the Leased premises to be contaminated with hazardous wastes or other pollutants or fails to properly secure the Leased Premises to prevent or impede illegal dumping or degradation of natural habitats, or other unauthorized uses, or

G. LESSEE fails to comply with the other terms of the Lease.

27. **VIOLATIONS:** If either of the LESSORS, in their sole opinion, find that LESSEE has committed a violation of this Lease, LESSORS will notify LESSEE in writing as to the nature of the violation and shall direct LESSEE on how LESSEE is to proceed to remedy, resolve, or rectify the Lease violation. LESSEE will have sixty (60) days from the receipt of the notification in which to perform the following:

A. Proceed in a manner or provide a schedule for the prompt implementation of corrective action, or

B. Advise the LESSORS how the LESSEE will implement its own corrective action, including a schedule for completion, provided it addresses the Lease violation.

If the LESSEE fails to respond to the LESSORS' notification regarding a Lease violation or fails to implement corrective action, the LESSEE will be in default of this Lease and either of the LESSORS may, at their sole option, terminate this Lease and recover from LESSEE all damages LESSORS may incur by reason of the default, including, but not limited to, the cost of recovering the Leased Premises, or maintain this Lease in full force and effect and exercise all rights and remedies herein conferred upon LESSORS.

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

29. **TERMINATION:** LESSEE, or either of the LESSORS, may terminate this Lease for convenience by giving one (1) year notice in writing of its intent to do so provided, however, LESSEE'S obligations pursuant to paragraphs 32 (B) shall survive the termination of this Lease.

30. **PROHIBITIONS AGAINST LIENS OR OTHER ENCUMBRANCES:** Fee title to the Leased Premises is held by LESSORS. LESSEE shall not do or permit anything that purports to create a lien or encumbrance of any nature against the Leased Premises including, but not limited

to, mortgages or construction liens against the Leased Premises or against any interest of LESSORS therein.

31. **CONDITIONS AND CONVENANTS:** All of the provisions of this Lease shall be deemed covenants running with the land included in the Leased Premises, and construed to be "conditions" as well as "covenants" as though the words specifically expressing or imparting covenants and conditions were used in each separate provision.

32. **DAMAGE TO THE PREMISES:**

A. LESSEE shall not do, or suffer to be done, in, on or upon the Leased Premises or as affecting said Leased Premises or adjacent properties, any act which may result in damage or depreciation of value to the Leased Premises or adjacent properties, or any part thereof.

B. LESSEE shall not generate, store, produce, place, treat, release or discharge any contaminants, pollutants or pollution, including, but not limited to, hazardous or toxic substances, chemicals or other agents on, into, or from the Leased Premises or any adjacent lands or waters in any manner not permitted by law. For the purposes of this Lease, "hazardous substances" shall mean and include those elements or compounds defined in 42 USC Section 9601 or which are contained in the list of hazardous substances adopted by the United States Environmental Protection Agency (EPA) and the list of toxic pollutants designated by the United States Congress or the EPA or defined by any other federal, state or local statute, law, ordinance, code, rule, regulation, order or decree regulating, relating to, or imposing liability or standards of conduct concerning any hazardous, toxic or dangerous waste, substance, material, pollutant or contaminant. "Pollutants" and "pollution" shall mean those products or substances defined in Chapters 376 and 403, Florida Statutes, and the rules promulgated thereunder, all as amended or updated from time to time. In the event of LESSEE'S failure to comply with this paragraph, LESSEE shall, at its sole cost and expense promptly commence and diligently pursue any legally required closure, investigation, assessment, cleanup, decontamination, remediation, restoration and monitoring of (1) the Leased Premises, and (2) all off-site ground and surface waters and lands affected by LESSEE'S such failure to comply, as may be necessary to bring the Leased Premises and affected off-site waters and lands into full compliance with all applicable federal, state, or local statutes, laws, ordinances, codes, rules, regulations, orders and decrees, and to restore the damaged Leased Premises 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. 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 LESSORS, all within the reporting periods of the applicable governmental agencies.

33. TAXES AND ASSESSMENTS: If any ad valorem taxes, intangible property taxes, personal property taxes, mechanic's or materialman's liens, or other taxes or assessments of any kind are assessed or levied lawfully on the Leased Premises based on the LESSEE'S use thereof during the term of this Lease, the LESSEE shall pay same within thirty (30) days after receiving written notice thereof from LESSORS. Provided, however, LESSEE shall not be responsible for payments in-lieu-of taxes required under Sections 373.5905 and 259.0322, Florida Statutes, or any successor statute. In the event the LESSEE fails to pay all the lawful taxes assessed or levied on the Leased Premises within thirty (30) days after receiving written notice thereof from LESSORS, the LESSORS may, at their sole option, pay said taxes subject to immediate reimbursement thereof in full together with any interest thereon at the maximum rate allowed by law and any administrative costs thereof incurred by LESSORS, including reasonable attorney's fees. Failure of LESSEE to pay said taxes shall constitute default under this Lease.
34. 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 or conducted on the Leased Premises.
35. SIGNAGE: At all public entrances, public information signage located on the leased premises shall inform the public of the cooperative project between LESSEE and LESSORS.
36. FEES AND REVENUES:
- A. LESSEE may charge an entrance or user fee to the visitors and users of the Leased Premises after receiving prior written approval from LESSORS. Any such fees charged by LESSEE shall be used for the sole purpose of reimbursing LESSEE of actual budgeted expenses incurred or to be incurred in the operation, maintenance and security of the Leased Premises.
- B. LESSEE may explore revenue-producing initiatives that are compatible with the purposes for which the Leased Premises were acquired and related statutory directive after obtaining written approval from LESSORS. Any revenue that is generated by LESSEE under these initiatives shall be applied to management and operation costs of the Leased Premises.
37. ACCESS BY LESSORS: The right is reserved by LESSORS, their officers, employees, agents and assigns to enter upon and travel through and across the Leased Premises which are the subject of this Lease, any time, for inspection, construction, maintenance, or for any purpose necessary or convenient in connection with water or resource management activities. LESSORS shall coordinate all construction or maintenance of water management facilities within the Leased Premises with LESSEE and shall comment on the need for any such facilities or activities when reviewing the Management Plan required by this Lease.
38. 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 LESSORS.
39. TIME: Time is expressly declared to be of the essence of this Lease.
40. GOVERNING LAW: This Lease shall be governed by and interpreted according to the laws of the State of Florida.

41. **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.

42. **BINDING EFFECT:** This Lease will be binding upon and inure to the benefit of the parties hereto, and their successors and assigns.

43. **AMENDMENTS:** This Lease may be amended in writing by mutual consent of LESSORS and LESSEE.

44. **NOTICES:** Any and all notices, requests or other communications hereunder shall be deemed to have been duly given if in writing and if transmitted by hand delivery with receipt therefore, or by registered mail posted prior to the expiration date for such notice, return receipt requested, first class postage prepaid, and by facsimile transmission as follows:

To LESSEE: STATE OF FLORIDA FISH AND WILDLIFE CONSERVATION  
COMMISSION  
620 SOUTH MERIDIAN STREET  
TALLAHASSEE, FL 32399-1600  
**ATTENTION: DIRECTOR**  
DIVISION OF WILDLIFE  
FACSIMILE: (850) 921-7793

To LESSORS: ST. JOHNS RIVER WATER MANAGEMENT DISTRICT  
P.O. BOX 1429  
PALATKA, FL 32178-1429  
**ATTENTION: DIRECTOR**  
DIVISION OF LAND MANAGEMENT  
FACSIMILE: (904) 329-4848  
and  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
DIVISION OF STATE LANDS  
BUREAU OF PUBLIC LAND ADMINISTRATION  
3900 COMMONWEALTH BOULEVARD  
MAIL STATION 130  
TALLAHASSEE, FLORIDA 32399-3000  
FACSIMILE: (850) 488-3379

45. **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, other water body, or of the waters or the air space thereabove.

46. **CONDITION OF LEASED PREMISES:** This Lease is made by LESSORS without representations or warranties of any kind. LESSORS assume no liability or obligation to LESSEE with reference to the condition of the Leased Premises or the suitability of the Leased Premises for any improvements. The Leased Premises are hereby leased by LESSORS to LESSEE in an "as is" condition, with LESSORS assuming no responsibility for the care, repair, maintenance or improvement of the Leased Premises for the benefit of LESSEE.

47. **NON-WAIVER OF REGULATORY AUTHORITY:** Nothing contained in this Lease shall be construed as a waiver of or contract with respect to the regulatory and permitting authority of the LESSORS as it now or hereafter exists under applicable laws, rules, and regulations.

48. **ADMINISTRATIVE FEE:** LESSEE shall pay the Department of Environmental Protection, Division of State Lands, an annual administrative fee of \$300. The initial annual

administrative fee shall be payable upon receipt of invoice 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, the fiscal year shall be the period extending from July 1 through June 30. Each annual payment thereafter shall be due and payable upon receipt of invoice 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 Witness Name

Florence Davis  
Witness

Florence Davis  
Print/Type Witness Name

By: Gloria C. Nelson  
Gloria C. Nelson, Operations and Management  
Consultant Manager  
Bureau of Public Land Administration  
Division of State Lands  
Department of Environmental Protection

"TRUSTEES"

STATE OF FLORIDA  
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 5<sup>th</sup> day of April 2002, by Gloria C. Nelson, as Operations and Management Consultant Manager, Bureau of Public Land Administration, Division of State Lands, Florida Department of Environmental Protection, acting 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.



Sylvia S. Roberts  
Notary Public, State of Florida  
Sylvia S. Roberts  
Print/Type Notary Name

Commission Number: DD035841  
Commission Expires: July 25, 2005

Approved as to Form and Legality  
By: David Husin  
DEP Attorney

ST. JOHNS RIVER WATER  
MANAGEMENT DISTRICT

By: Kirby Green (SEAL)  
KIRBY GREEN, Executive Director  
By authority of Section 373.083 (5) Florida Statutes and  
DISTRICT Policy Number 90-16, revised September 13, 2000

Gracie L. Pauling  
Witness

GRACIE L. PAULING  
Print/Type Witness Name

"DISTRICT"

Sharon G. Carlin  
Witness

SHARON G. CARLIN  
Print/Type Witness Name

STATE OF FLORIDA  
COUNTY OF PUTNAM

The foregoing instrument was acknowledged before me this 27<sup>th</sup> day of April 2002, by Kirby Green, Executive Director, acting as agent for and on behalf of the Governing Board of the St. Johns River Water Management District. He is personally known to me.



Sharon G. Carlin  
Notary Public, State of Florida

SHARON G. CARLIN  
Print/Type Notary Name

Commission Number: CC 961051

Commission Expires: 10/29/04

Approved as to Form  
and Legality

By: John W. Williams  
John W. Williams, Esq.  
Deputy General Counsel  
Office of General Counsel

STATE OF FLORIDA FISH AND WILDLIFE  
CONSERVATION COMMISSION

Brenda Collins  
Witness

BRENDA COLLINS  
Print/Type Witness Name

Cynthia Byrd  
Witness

Cynthia Byrd  
Print/Type Witness Name

By: Victor J. Heller (SEAL)

Victor J. Heller  
Print/Type Name

Title: Assistant Executive Director

"LESSEE"

STATE OF FLORIDA  
COUNTY OF LEON

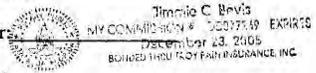
The foregoing instrument was acknowledged before me this 22<sup>nd</sup> day of February, 2002, by Victor J. Heller, as Assistant Executive Director of State of Florida Fish and Wildlife Conservation Commission. He/she is personally known to me or produced \_\_\_\_\_ as identification.

Jimmie C. Bevis  
Notary Public, State of Florida  
JIMMIE C. BEVIS

Print/Type Notary Name

Commission Number: \_\_\_\_\_

Commission Expires: \_\_\_\_\_



Approved as to Form  
and Legality

By: Preston T. Robertson  
LESSEE'S Attorney

**11.2.18 Contract No. 22270**

**COOPERATIVE LAND MANAGEMENT AGREEMENT (LEASE) FOR  
SALT LAKE WILDLIFE MANAGEMENT AND RECREATION AREA**

THIS COOPERATIVE LAND MANAGEMENT AGREEMENT (“Lease”), made and entered into the 05 day of Sept, 2023 (“Effective Date”), by and between **ST. JOHNS RIVER WATER MANAGEMENT DISTRICT**, a public body organized under the provisions of Chapter 373, Florida Statutes, with its office in Palatka, Florida, whose address is 4049 Reid Street, Palatka, Florida 32177 (“District”); and the **FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION**, with its primary office is Farris Bryant Building, 620 S. Meridian St., Tallahassee, Florida 32399 (“FWC”).

W I T N E S S E T H

WHEREAS, District jointly owns certain lands within the Salt Lake Wildlife Management Areas (“SLWMA”) with the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida (“BOT”), located in the Upper St. Johns Basin for water management and public purposes; and

WHEREAS, SLWMA is subject to a cooperative lease agreement, BOT Lease No. 4344, between the BOT, the District and FWC. A copy of the Lease is attached hereto and incorporated herein as Exhibit “A”; and

WHEREAS, the District solely owns two parcels within the SLWMA (“Donation Parcels”) and desires FWC to manage them consistent with BOT Lease No. 4344; and

WHEREAS, the District is authorized by Subsection 373.1391(4), Florida Statutes (“F.S.”), to enter into cooperative land management lease agreements with state agencies or local governments to provide for coordinated and cost-effective management of lands, and to properly use and possess such lands for public outdoor recreational purposes, including but not limited to hunting, fishing, hiking, horseback riding, bird watching and nature study, as long as these uses are consistent with the water management purposes of the District; and

WHEREAS, management of the Donation Parcels for resource-based outdoor recreational purposes may properly be served by operation as a Wildlife Management Area under the jurisdiction of the FWC.

NOW, THEREFORE, for and in consideration of the mutual covenants and agreements hereinafter contained, the District leases the below described premises to FWC subject to the following terms and conditions:

1. Description of Premises. The property subject to this Lease, known as the Donation Parcels (LRS # 2018-030-P4 and 2018-030-P6), is situated in Brevard County, Florida, and is more particularly described in Exhibit "B" attached hereto and hereinafter called the "Leased Premises". Lands may be added or removed from this Lease upon written request and approval by the Parties.

2. Term. The term of this Lease shall be for five (5) years, commencing on 05 September, 2023, and ending September 4, 2028, unless sooner terminated pursuant to the provisions of this Lease. This Lease will automatically renew for two (2) additional ten (10) year terms unless terminated as otherwise set forth herein. Thereafter, any additional renewals shall require both parties' agreement in the form of a written Lease renewal.

3. Purpose. FWC shall manage the Leased Premises for the conservation and protection of natural and historical resources and resource based public outdoor recreation consistent with Section 373.59, F.S., as amended, and this Lease, and for the purposes designated in the Management Plan required by paragraph 7 of this Lease. Additionally, FWC shall provide for public outdoor recreational hunting and fishing opportunities consistent with FWC rules.

4. Operation and Maintenance of Leased Premises and Improvements. FWC shall provide FWC law enforcement officers to provide security services and enforce laws and regulations on the Leased Premise. Additionally, FWC 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 Management Plan, meeting all building and safety codes in the location situated, and maintaining all existing roads, fences, ditches, culverts, canals, risers and the like in as good condition as the same may be on the Effective Date of this Lease and as required and needed to secure the Leased Premises and provide safe public access. Notwithstanding the foregoing, any removal, closure,

etc., of the above improvements shall be acceptable when the proposed activity is consistent with the goals of conservation, protection, and enhancement of the natural and historical resources within the Leased Premises and the approved Management Plan. All costs for operation and maintenance of the Leased Premises and improvements, except those constructed or placed upon the Leased Premises by the District, shall be at the sole cost and expense of FWC.

5. Authorized Uses. The District does hereby, upon and subject to the terms, conditions, and limitations hereinafter contained, gives to FWC a Wildlife Management Area Lease for those lands described in Exhibit B. Therefore, FWC is granted, subject to the maintenance of the hydrologic regime, the exclusive right to provide for public recreational use of these lands including:

a. The right to establish bag limits which limit the taking of legal game and fish in reasonable quantities consistent with habitat maintenance, and preservation of wildlife and fish populations;

b. The management of the lands and the creation of facilities as needed to support public recreational use of the area such as hunting, fishing, hiking, horseback riding, camping, and archeological studies;

c. Access by FWC agents and employees as necessary for such management of public recreational uses;

d. The right to conduct all public recreational uses compatible with the District's primary water management function, the District's property covenants, and limitations on development requiring these lands to be managed and maintained in an environmentally acceptable manner, so as to restore and protect its natural state and condition. Natural condition shall be interpreted to mean that only those minimum structure alterations to terrain, and impervious areas essential to public access and recreational use of these lands shall be constructed. District's written approval shall be obtained for any construction beyond routine maintenance of existing improvements.

e. The District hereby specifically reserves all other uses of the Leased Premises for its own use. Specifically including, but not limited to, all water management uses including periodic

inundation, construction of works and appurtenant works, access roads and supporting structures. Water management uses shall take priority over all other uses including those general public recreational uses herein granted to the FWC.

6. Unauthorized Uses. FWC shall, through its agents and employees, prevent the unauthorized use of the Leased Premises or any use thereof not in conformance with the approved Management Plan and this Lease.

7. Management Plan. FWC shall manage the Leased Premises in accordance with the Management Plan for the term of the Lease.

8. Best Management Practices. The FWC shall implement applicable Best Management Practices for all activities conducted under this Lease, which have been approved by the District, the FWC, or other land managing agencies for the protection and enhancement of the Leased Premises.

9. Annual Reports. Annual reports that summarize management activities, accomplishments, and issues affecting the Leased Premises will be submitted by FWC to the District no later than November 30th.

10. District Rights.

a. The District may engage in construction or other activities necessary for water management purposes, data collection or monitoring on the Leased Premises provided that such construction or activities are consistent with the approved Management Plan. The District will provide reasonable notice to FWC of any such activities prior to their commencement.

b. The District shall have authority to prohibit access and entrance onto the Leased Premises during periods of potential drought, flooding, fire hazard or other harm or disaster to the Leased Premises, as determined by the District, upon 48-hour notice to FWC.

11. Termination. FWC or District may terminate this Lease for convenience by giving one (1) year notice in writing of its intent to do so, or for cause as set forth in paragraph 27, below. The District reserves the right to terminate this Lease at any time in order to release, exchange or convey the

Leased Premises to others with 45 days advance notice to FWC. Notwithstanding the foregoing, FWC's obligation pursuant to paragraph 24.b., shall survive the termination of this Lease.

12. Right to Inspect. The District or its duly authorized agents and employees shall have the right, with reasonable notice, to inspect the Leased Premises and works and operations thereon of FWC in any matter pertaining to this Lease. The District, or its duly authorized agents and employees shall also have the right, with reasonable notice, to inspect and audit the books and financial records of FWC and any of its licensees as they pertain to the management or recreational use of the Leased Premises.

13. Assignment or Sublease. This Lease is for the purposes specified herein and assignment or sublease of any nature are prohibited without the prior written approval of the District. FWC shall neither transfer, nor assign, this Lease, nor sublet the Leased Premises or any part thereof, nor grant any interest, privileges, or license whatsoever in connection with this Lease, except for hunting, fishing, and access licenses.

14. Insurance Requirements. FWC is insured through the State of Florida Department of Insurance. FWC shall be financially responsible for any loss due to failure to obtain insurance coverage for any improvements or structures located on the Leased Premises, and FWC's failure to maintain such policies shall constitute a breach of this Lease.

15. Liability. FWC shall assist in the investigation of injury or damage claims either for or against the District or the State of Florida pertaining to FWC's respective areas of responsibility under this Lease or arising out of FWC's respective management programs or activities and shall contact the District regarding the legal action deemed appropriate to remedy such damage or claims. FWC shall maintain a program of insurance covering its liabilities as prescribed by Section 768.28, F.S., and shall be responsible for the acts or omissions of its officers, employees, servants, and agents in the event that such acts or omissions result in injury to persons or property. The DISTRICT's liability is further limited by recreational use immunity to the extent set forth in section 373.1395, F.S., and nothing contained in this Lease shall be construed as a limitation upon the DISTRICT's right to assert such immunity. It is the intention of the DISTRICT and FWC that in the event FWC seeks to charge a fee for the use of the

Leased Premise, the DISTRICT shall be entitled to recreational use immunity pursuant to section 373.1395(3), F.S. In such event, FWC, as a state agency, may assert any immunity it may have as to public recreational use of state lands under Florida law. However, nothing in the Lease is intended or is to be construed as a waiver of sovereign immunity as provided to the parties' signatory hereto under Section 768.28, F.S., or as otherwise provided by law.

16. Violations. If District, in its sole opinion, finds that FWC has committed a violation of this Lease, District will notify FWC in writing as to the nature of the violation and shall direct FWC on how FWC is to proceed to remedy, resolve, or rectify the Lease violation. FWC will have sixty (60) days from the receipt of the notification in which to perform the following:

- a. Proceed in a manner or provide a schedule for the prompt implementation of corrective action, or
- b. Advise District how FWC will implement its own corrective action, including a schedule for completion, provided it addresses the Lease violation.

If FWC fails to respond to District's notification regarding a Lease violation or fails to implement corrective action, FWC will be in default of this Lease and District may, at its sole option, terminate this Lease and recover from the FWC all damages the District may incur by reason of the default, including, but not limited to, the cost of recovering the Leased Premises, or maintain this Lease in full force and effect and exercise all rights and remedies herein conferred upon the District.

17. No Waiver Of Default. The failure of the District to insist in any one or more instances upon strict performance of any one or more of the terms and conditions of this Lease shall not be construed as a waiver of such terms and conditions, but the same shall continue in full force and effect, and no waiver by the District of any one of the provisions hereof shall in any event be deemed to have been made unless the waiver is set forth in writing and signed by the District.

18. Archaeological and Historic Sites. Execution of this Lease in no way affects any of the parties' obligations pursuant to Chapter 267, F.S. The collection of artifacts or the disturbance of archaeological and historic sites on the Leased Premises is prohibited unless prior authorization has been

obtained from the Department of State, Division of Historical Resources. The Management Plan shall be reviewed by the Division of Historical Resources to ensure that adequate measures have been planned to locate, identify, protect, and preserve the archaeological and historic sites and properties on the Leased Premises.

19. Placement and Removal of Improvements. All buildings, structures, and improvements shall be constructed at the expense of the FWC in accordance with plans prepared by professional designers and shall require the prior written approval of the District as to the purpose, location, and design. Except as identified in the approved Land Management Plan for the Leased Premises, no trees, other than non-native species, shall be removed or major land alterations done without the prior written approval of the District. Removable equipment and removable improvements placed on the Leased Premises shall remain the property of the FWC and may be removed by the FWC upon termination of this Lease.

20. Surrender Of Leased Premises. Upon termination or expiration of this Lease, FWC shall surrender the Leased Premises to the District. In the event no further use of the Leased Premises or any part thereof is needed, written notification shall be made to the District at least one (1) year prior to the release of all or any part of the Leased Premises. Notification shall include a legal description, this Lease and parcel number, and an explanation of the release. The release shall be valid only if approved by the District through execution of a release of lease instrument with the same formality as this Lease. Upon termination of this Lease, all improvements, including both physical structures and modifications to the Leased Premises deemed by FWC and the District as "permanent" shall become the property of the District. All improvements, including both physical structures and modifications to the Leased Premises deemed by FWC and the District to be "temporary" shall be removed at the discretion of the District and expense of FWC. The District shall give written notice to FWC of its intent to remove such temporary improvements prior to the termination of this Lease. The remaining improvements shall become the property of the District unless the District give written notice to FWC to remove any or all such "temporary" improvements at the expense of FWC. Prior to surrender of all or any part of the leased

premises, the District' representative(s) shall perform an onsite inspection and the keys to any buildings or gates on the Leased Premises shall be turned over to the District. If the leased premises and improvements located thereon do not meet all conditions set forth herein, FWC shall pay all costs necessary to meet the prescribed conditions.

21. Utility Fees. FWC 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.

22. Prohibitions Against Liens or Other Encumbrances. Fee title to the Leased Premises is held by the District. FWC shall not do or permit anything that purports to create a lien or encumbrance of any nature against the Leased Premises including, but not limited to, mortgages or construction liens against the Leased Premises or against any interest of the District therein.

23. Damage To The Premises.

a. FWC 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. FWC 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, F.S., and the rules promulgated thereunder, all as amended

or updated from time to time. In the event of FWC's failure to comply with this paragraph, FWC 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 the FWC's such failure to comply, as may be necessary to bring the Leased Premises and affected off-site waters and lands into full compliance with all applicable federal, state, or local statutes, laws, ordinances, codes, rules, regulations, orders and decrees, and to restore the damaged Leased Premises to the condition existing immediately prior to the occurrence which caused the damage. FWC's obligations set forth in this paragraph shall survive the termination or expiration of this Lease. Nothing herein shall relieve FWC 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 FWC'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, FWC shall report such violation to all applicable governmental agencies having jurisdiction, and to the District, all within the reporting periods of the applicable governmental agencies.

24. Authorities. It is understood and agreed that each party operates under its own legal authorities, policies and administration, and each party's obligations under this Lease are thereby limited. It shall be the responsibility of each party to interpret its own authorities and policies, and make decisions as required under law and policies applicable to each. This Lease is hereby entered into under the following authorities, and other applicable law:

- i. District, Chapter 373, F.S.
- ii. FWC, Article IV, Section 9, Florida Constitution.
- iii. FWC, Chapter 379, F.S.

25. Quiet Enjoyment and Right of Use. FWC 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 the FWC of the rights conveyed herein.

26. Entire Understanding. This Lease sets forth the entire understanding between the parties and shall only be amended with the prior written approval of all parties.

27. Default by the FWC and Termination by the District. The District may terminate this Lease with 30 days written notice to FWC if FWC proceeds in a manner that violates the terms of this Lease. Lease violations shall include, but not be limited to, the following:

- a. FWC fails to submit a Management Plan in accordance with the terms of this Lease, or
- b. FWC fails to proceed in a manner that will implement or complete the actions, tasks, or other aspects of the Management Plan for essential site management, or
- c. Construction of permanent structures or other improvements by FWC not authorized by the District, either directly or indirectly through the approval of the Management Plan, or
- d. FWC destructs or degrades natural systems, rare or endangered habitats that are targeted for preservation, or
- e. FWC violates federal, state, or local laws, rules, regulations, or ordinances, or
- f. FWC causes the Leased premises to be contaminated with hazardous wastes or other pollutants or fails to properly secure the Leased Premises to prevent or impede illegal dumping or degradation of natural habitats, or other unauthorized uses, or
- g. FWC fails to comply with the other terms of the Lease.

28. Taxes and Assessments. If any ad valorem taxes, intangible property taxes, personal property taxes, mechanic's or materialman's liens, or other taxes or assessments of any kind are assessed or levied lawfully on the Leased Premises based on the FWC's use thereof during the term of this Lease, the FWC shall pay same within thirty (30) days after receiving written notice thereof from the District. Provided, however, FWC shall not be responsible for payments in-lieu-of taxes required under Sections

373.5905 and 259.0322, Florida Statutes, or any successor statute. In the event the FWC fails to pay all the lawful taxes assessed or levied on the Leased Premises within thirty (30) days after receiving written notice thereof from the District, the District may, at their sole option, pay said taxes subject to immediate reimbursement thereof in full together with any interest thereon at the maximum rate allowed by law and any administrative costs thereof incurred by the District, including reasonable attorney's fees.

29. Access by the District. The right is reserved by the District, their officers, employees, agents and assigns to enter upon and travel through and across the Leased Premises which are the subject of this Lease, any time, for inspection, construction, maintenance, data collection or for any purpose necessary or convenient in connection with water or resource management activities. The District shall coordinate all construction or maintenance of water management facilities within the Leased Premises with FWC and shall comment on the need for any such facilities or activities when reviewing the Management Plan required by this Lease.

30. Compliance with Laws. FWC agrees that this Lease is contingent upon and subject to FWC 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 the District.

31. Effective Date. For all purposes of this Lease, the Effective Date hereof shall mean the date when the last of the District of FWC has executed the same, and that date shall be inserted at the top of the first page hereof.

32. Governing Law. This Lease shall be governed by and interpreted according to the laws of the State of Florida.

33. Amendments. This Lease may be amended in writing by mutual consent of District and FWC.

34. Notices. Any and all notices, requests or other communications hereunder shall be deemed to have been duly given if in writing and if transmitted by hand delivery with receipt therefore, or

by registered mail posted prior to the expiration date for such notice, return receipt requested, first class postage prepaid, electronic mail or by facsimile transmission as follows:

**FWC:** Florida Fish and Wildlife Conservation Commission  
620 South Meridian Street  
Tallahassee, FL 32399-1600  
Attention: Wildlife and Habitat Management Section Leader

**DISTRICT:** St. Johns River Water Management District  
Real Estate Services Program  
4049 Reid Street  
Palatka, FL 32177  
RealEstateServices@sjrwmd.com

All notices required by this Lease shall be considered delivered upon receipt. Should either Party changes its address, written notice of such new address shall promptly be sent to the other Party.

35. Condition of Leased Premises. This Lease is made by the District without representations or warranties of any kind. The District assumes no liability or obligation to FWC with reference to the condition of the Leased Premises or the suitability of the Leased Premises for any improvements. The Leased Premises are hereby leased by the District to FWC in an "as is" condition, with the District assuming no responsibility for the care, repair, maintenance, or improvement of the Leased Premises for the benefit of FWC.

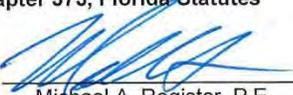
36. Non-Waiver Of Regulatory Authority. Nothing contained in this Lease shall be construed as a waiver of or contract with respect to the regulatory and permitting authority of the District as it now or hereafter exists under applicable laws, rules, and regulations.

37. Americans with Disabilities Act Accommodations. FWC, as lead manager, will be responsible for providing ADA accommodations throughout the year on the SLWMA.

*[signatures on following pages]*

The parties or their duly authorized representatives have signed this Lease on the dates below each signature, the last date of which shall be inserted into the first paragraph.

**ST. JOHNS RIVER WATER MANAGEMENT DISTRICT, a public body existing under Chapter 373, Florida Statutes**

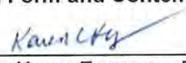
By:   
Michael A. Register, P.E.  
Executive Director

Date: 8/25/28

ATTEST:

By:   
Erin Preston, Esq.  
General Counsel

**For use and reliance only by  
St. Johns River Water Management District,  
Legal Form and Content Approved:**

By:   
Karen Ferguson, Esq.  
Office of General Counsel

**FLORIDA FISH AND WILDLIFE  
CONSERVATION COMMISSION**

By:   
\_\_\_\_\_  
Roger A. Young  
Executive Director

Date: 9/5/23

ATTEST:

By:   
\_\_\_\_\_

Print Name Jamie Pister

**Legal Form and Content Approved:**

By: Joseph Meyer

Print Name: Joseph Meyer

## **11.3 Public Involvement**

### **11.3.1 Management Advisory Group Meeting Report**

**Salt Lake Wildlife Management Area (SLWMA)  
Management Advisory Group (MAG)  
Consensus Meeting Results**

July 23, 2025 in Titusville, Florida

The intent of convening a consensus meeting is to involve a diverse group of stakeholders in assisting the Florida Fish and Wildlife Conservation Commission (FWC) in development of a rational management concept for lands within the agency’s managed area system. FWC does this by asking spokespersons for these stakeholders to participate in a half-day meeting to provide ideas about how FWC-managed lands should be protected and managed.

The MAG consensus meeting was held on the morning of July 23, 2025, at the Enchanted Forest Sanctuary, in Titusville, Florida in Brevard County. The ideas found below were provided by stakeholders for consideration in the 2026 - 2036 Management Plan (MP) with priority determined by vote. These ideas represent a valuable source of information to be used by biologists, planners, administrators, and others during the development of the MP. Upon approval by FWC, the Acquisition and Restoration Council (ARC), and the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees), the MP will guide the activities of FWC personnel over the ten-year duration of the management plan and will help meet agency, state, and federal planning requirements.

Numbers to the left of **bold-faced ideas** listed below represent the total number of votes and the score of each idea. Rank is first determined by the number of votes (vote cards received for each idea) and then by score. Score is used to break ties when two or more ideas have the same number of votes. A lower score indicates higher importance because each voter’s most important idea (recorded on card #1) received a score of 1, and their fifth most important idea (recorded on card #5) received a score of 5. Ideas not receiving any votes are listed, and were considered during the development of the MP, but carry no judgment with regard to priority.

Statements following the bold-faced ideas represent a synopsis of the clarifying discussion of ideas as transcribed and interpreted by the FWC recorder at the meeting. As indicated above, the ideas below are presented in priority order:

<u>Rank</u>	<u># of Votes</u>	<u>Score</u>	<u>Idea</u>
1.	[5]	[12]	1. <b>Continue to improve, maintain and restore the natural habitats on the SLWMA.</b> Utilizing prescribed fire and mechanical treatments, roller chopping, mowing, shredding/mowing, and herbicide application as appropriate. Continue to update mapping on natural communities and Objective Based Vegetative Management monitoring.

<u>Rank</u>	<u># of Votes</u>	<u>Score</u>	<u>Idea</u>
2.	[3]	[7]	2. <b>Focus on floodplain protection when acquiring land.</b> Make sure that state agencies understand what locals want. Target lands for acquisition that will help keep flooding out of people's homes and their lands. People in Brevard County have livestock that needs to be protected as well as the lands that the animals use.
3.	[2]	[4]	3. <b>Public engagement.</b> People need to know what is going on with public land and what their government is doing. FWC staff need to collaborate with local governments to make sure the public can engage more. Get kids engaged in wildlife and learn about the future career opportunities for them. Look at metrics on how many people's ideas get into the plans and promote citizen engagement. The FWC should make sure citizens know they are being heard.
4.	[2]	[4]	6. <b>Remove invasive species, and following a restoration plan, restore those areas to their natural/native species.</b> Identify desired native plant species and acquire them. Make sure invasives are gone and replace them with the desired native. If invasives are difficult to control, look at research to improve techniques.
5.	[2]	[5]	5. <b>Forming and/or reinvigorating a cross-agency Scrub Management Working Group that is specific to Brevard County.</b> When we look at Florida Scrub Jay populations, consider conservation land boundaries owned by different agencies to make sure we use the best approaches to manage the species.
6.	[2]	[5]	16. <b>Expand the use of community science and engagement activities.</b> Bring more community activists in to help expand outreach opportunities. Community engagement can benefit the FWC because the community scientists have a lot of helpful data we could use.

<u>Rank</u>	<u># of Votes</u>	<u>Score</u>	<u>Idea</u>
7.	[2]	[6]	14. <b>Continue to provide public access and recreational opportunities.</b> Maintain the current trail system and determine if we need to create more. Continue to offer all recreational opportunities on the area. Explore potential for trail connections between nearby conservation areas. Continue to provide interpretive opportunities.
8.	[2]	[6]	22. <b>Once land is designated state land, ensure that it is not sold and the designation does not change.</b> Help keep developers out of conservation lands and protect the floodplain. If possible, put a deed restriction on the properties. Make sure the designation as state land cannot be changed.
9.	[2]	[8]	17. <b>Consolidate ownership of the expansion units.</b> In the mega parcel sites, it's difficult to visualize the conservation value. Consolidate ownership to make areas more manageable.

**Two or more items of equal rank:**

10.	[1]	[1]	7. <b>Working with other agencies to establish the best management practices for the larger populations of Florida scrub jays.</b> We have a scientist who identified a corridor between Fox Lake, South Lake and Salt Lake that is the best spot for scrub jay population restoration. If scrub jays are reintroduced to this area, it could be very successful.
	[1]	[1]	20. <b>Expand the availability of Special Use – Other (SUO) permits.</b> Sometimes SUO permits get rejected with no explanation, and WMAs are not consistent with the SUO permits given out. There is so little property left where you can be outdoors, and the WMAs are one of those places.
11.	[1]	[2]	8. <b>Wild hog population control.</b> Explore methods other than hunts to control the populations. Hogs can be dangerous to people as well as the landscape, and we need to do more to control them. Consider hiring trappers.

<u>Rank</u>	<u># of Votes</u>	<u>Score</u>	<u>Idea</u>
	[1]	[2]	19. <b>Reduce pine trees in scrub and scrubby flatwoods.</b> In these communities, one tree per acre is the goal. Identify corridors between scrub to reduce canopy as well.
12.	[1]	[3]	9. <b>Continue using prescribed fire to accomplish management and restoration objectives and seek new ways to communicate about the prescribed fire program.</b> No comment, participant was absent.
	[1]	[3]	12. <b>Limit development near the SLWMA.</b> There may need to be a study of how far around the area, but all the new developments have impacted the Salt Lake WMA. We need to protect the Salt Lake WMA.
	[1]	[3]	23. <b>Maintain, improve, and restore imperiled species populations and their habitat.</b> Update the area specific wildlife strategy when necessary.
	[1]	[3]	27. <b>Develop a strategy for the invasive plant management and prioritization.</b> No comment, participant was absent.
	[1]	[3]	32. <b>Monitor, maintain, improve or restore game and non-game species and habitats.</b> Continue to follow the wildlife strategy, collect biological data from harvested game and collect opportunistic wildlife data.
13.	[1]	[4]	11. <b>Focus on outreach and education including youth education for hands-on experience, hunting, and other outdoors activities.</b> More community involvement is good exposure for the FWC. Doing outreach at schools has great reaction from the kids. The community near Salt Lake WMA is made up of outdoorsy people but they could benefit from more exposure to conservation to learn the right way to enjoy the outdoors. We have had good experiences with kids participating in summer camps and then later getting hired to work for the FWC.
	[1]	[4]	21. <b>Manage boundary encroachment or develop a strategy to manage boundary encroachment.</b> No comment, self-explanatory.

<u>Rank</u>	<u># of Votes</u>	<u>Score</u>	<u>Idea</u>
	[1]	[4]	33. <b>Develop capital facilities and infrastructure necessary to meet the goals and objectives of this management plan.</b> Make sure we have the feasibility to have an on-site residence or an office. Maintain roads and infrastructure. Continue to maintain a boundary survey on the property.
14.	[1]	[5]	10. <b>Update the interactive brochures to make the current rules and regs more available and user-friendly.</b> The current system is outdated, and the FWC should make current rules and regulations more user friendly. An updated system would make law enforcement easier as well as improve the visitor experience. This would be a win-win for everybody, and the technology exists.
	[1]	[5]	15. <b>Restore hydrology where it's been altered by human activities.</b> Identify alterations that have happened and engineer solutions to restore determined hydrology.
	[1]	[5]	18. <b>Documenting the prescribed burning intervals and collecting more data on how to properly manage cabbage palm variant wet flatwoods.</b> Use past vegetation surveys to look at past data. Work with the Tosohatchee WMA to look at their data and look at different strategies.
	[1]	[5]	26. <b>Pursue becoming an endangered species recipient site for rescued plants.</b> Bring in rescued plants, this raises the value and the ability to protect the property.
	[1]	[5]	29. <b>Use LiDAR data for management activities.</b> Consider it as a new technique to advance the goals of the area.

<u>Rank</u>	<u># of Votes</u>	<u>Score</u>	<u>Idea</u>
	[1]	[5]	35. <b>Provide access and use of the SLWMA to current cooperative managers and continue collaborative management efforts.</b> Continue working with researchers and adjacent landowners and researchers who want to come on the property. Continue to work with other organizations on an as needed basis.

The following item received no votes. All ideas represent valuable input, and are considered in development of the MP, but carry no rank with regard to the priority perceptions of the MAG.

	[ ]	[ ]	4. <b>Continue to control invasive species through the use of biological control.</b> Identify species that have a biological control available. Determine which controls might be suitable. Release the biological control and evaluate its success.
	[ ]	[ ]	13. <b>Continue with the current amount of permits for gator hunting season.</b> You don't want to overhunt to the point that conservation efforts are undone.
	[ ]	[ ]	24. <b>Continue to implement artificial habitat installments such as bat and bird boxes as well as brush piles.</b> No comment, self-explanatory.
	[ ]	[ ]	25. <b>To work on overall protection, study, monitor, etc. the Least terns and their habitats on the SLWMA.</b> No comment, self-explanatory.
	[ ]	[ ]	28. <b>Continue to protect and preserve the cultural resources on the area.</b> No comment, self-explanatory.
	[ ]	[ ]	30. <b>Continue the land management strategies that prevent impacts to the Indian River Lagoon's health.</b> If we succeed at protecting the floodplain, we want to make sure we can continue to protect it. Make sure what is working now doesn't get undone.
	[ ]	[ ]	31. <b>Manage timber resources to improve and restore natural communities for the benefit of wildlife.</b> Work with the Florida Forest Service or a private consultant to manage timber resources.

<u>Rank</u>	<u># of Votes</u>	<u>Score</u>	<u>Idea</u>
	[]	[]	34. <b>Enhance fish and wildlife conservation resources and operational management through internal and external partnerships and programs.</b> Explore the possibilities of working with groups to get programs going.

**Salt Lake Wildlife Management Area  
MAG Meeting Participants**

<b><u>Name</u></b>	<b><u>Affiliation</u></b>
<b>Active Participants</b>	
David Turner	FWC Area Biologist
Sean Gaudion	FWC Law Enforcement
Earl Bellemore	Indian River Coon Hunters Association
Katie Delaney	Brevard County Commissioner, District 1
Derrick Wyle	Natural Resources Conservation Service
Christa Rogers	Conservation Florida
Robert Rowell	Adjacent Private Landowner
Paul Schmalzer	Florida Native Plant Society, Sea Rocket Chapter
Dana Sussman	Florida Forest Services
Derrick Hughey	Brevard County Planning Department
Rochelle Hood	Audubon Society, Space Coast Chapter
Damien Keene	Brevard County Environmentally Endangered Lands
<b>Supportive Participants</b>	
Matt Hortman	FWC Habitat and Species Conservation (HSC), Regional Biologist
Melanie Macuso	FWC HSC, District Biologist
Jess Rodriguez	FWC HSC, Conservation Biologist
Tom Matthews	FWC Public Access Services Office (PASO), Public Access Planner
Katherine Burke	FWC PASO, Section Leader
Ben Rangel	FWC PASO, Outreach/Interpretive Representative
Matheu Woodall	FWC PASO, Public Access Technician
Paul Jacobs	FWC Regional Volunteer Coordinator
Kristin Lortie	Brevard County District 1, Chief of Staff
<b>Invited but Unable to Attend</b>	
Jason O'Donoghue	Division of Historical Resources
Kim Alexander	Florida Natural Areas Inventory
Brent Bachelder	St. Johns River Water Management District
Cindy Stafford	Department of Environmental Protection
Brittany Jones	Space Coast Birding and Wildlife Association
Beth Shephard	University of Florida Extension Office
Adam Fryska	Florida Trail Association
Dave Rich	Space Coast Biking
Lisa Smit	Brevard Equestrian Center
Tammy Wilson	Angling Representative
Logan Benedict	FWC HSC, Climate Resiliency Team
Mark Asleson	FWC Regional Landowner Assistance Program
Andrea Boliek	FWC Hunting and Game Management
<b>FWC Planning Personnel</b>	
Cedar Spirk	Land Conservation Planner IV, Facilitator
Savannah Atwell	Land Conservation Planner IV, Recorder
Christina Omran	Senior Land Conservation Planner, Recorder

### 11.3.2 Public Hearing Report

**PUBLIC HEARING REPORT  
FOR  
SALT LAKE WILDLIFE MANAGEMENT AREA  
MANAGEMENT PLAN  
HELD BY THE  
SALT LAKE WILDLIFE MANAGEMENT AREA MANAGEMENT ADVISORY GROUP  
AND THE  
FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION  
  
SEPTEMBER 25, 2025 – BREVARD COUNTY**

The following report documents the public input that was received at the Salt Lake Wildlife Management Area (SLWMA) Management Advisory Group’s (MAG) public hearing for the update to the Management Plan for the SLWMA that was held at 6:00-8:00 PM, on September 25, 2025, at the Harry T. and Harriette V. Moor Cultural Complex in Mims, Florida.

**SLWMA Management Advisory Group Introduction:**

The meeting was introduced by Ms. Rochelle Hood, a SLWMA Management Advisory Group participant, who represented the SLWMA MAG. Ms. Hood indicated that she was one of number stakeholders that attended the Florida Fish and Wildlife Conservation Commission (FWC) facilitated the SLWMA MAG meeting held on July 23, 2025. Ms. Hood stated that the elements of the Draft Management Plan were being presented tonight by FWC staff, and that hardcopies of the overview, management prospectus and the SLWMA MAG meeting report were available at the front door for the public’s review. Ms. Hood thanked everyone for attending and then introduced Cedar Spirk, Lead Land Conservation Planner, FWC, to facilitate and coordinate the presentation of an overview of the SLWMA, FWC’s planning process, and the draft components of the SLWMA Draft Management Plan.

**Presentation on an Overview of the SLWMA and the FWC Planning Process:**

FWC member Cedar Spirk welcomed everyone and thanked the public for their attendance. Cedar then went over an orientation of the material and explained that the purpose of the public hearing was to solicit public input regarding the Draft Management Plan for the SLWMA, and not hunting and fishing regulations, indicating there is a separate public input process for FWC rule and regulation development. Cedar then described the materials that were available at the door for public review, including the SLWMA Management Prospectus and the MAG Meeting Report. Cedar then presented the agenda for the public hearing and facilitated the introduction of all FWC staff in attendance to the audience. Cedar then presented an overview and orientation of the

SLWMA, including a description of the natural communities, data about the SLWMA visitation, revenue and economic benefits generated for the state and region by the area, wildlife species, recreational opportunities found on the area, surrounding conservation lands, surrounding Florida Forever Program Land Acquisition Projects, acquisition history, etc. They also explained FWC's planning process for the management of the public conservation land and asked if there were any questions regarding that process.

### **Questions, Answers and Discussion on the SLWMA Overview and FWC's Planning Process:**

Cedar facilitated an informal question and answers session where members of the public in attendance, without necessarily identifying themselves, could ask questions of the FWC staff, and discuss the answers. Cedar again emphasized that the exclusive purpose for the public hearing was to collect public input regarding the elements of the Draft Management Plan for the SLWMA, and not to discuss area hunting, fishing and use regulations since, as was noted earlier, FWC has a separate process for input on hunting and fishing regulations.

Public Question 1: An unidentified member of the audience provided the following comments and questions:

*What is geocaching?*

FWC Response: Cedar Spirk, Land Conservation Planner, responded:

*It's kind of like a scavenger hunt. There's a cache in different places throughout the area; it can be remote or not. Sometimes people will put trinkets or a log, people can find them.*

No (further) questions or comments were received at this stage of the SLWMA public hearing meeting.

### **Presentation of the SLWMA Draft Management Plan:**

At this point, David Turner, Lead Area Biologist, began the presentation of the SLWMA Draft Management Plan's Goals and Objectives as well as the Challenges and Strategies. Cedar then completed and concluded the presentation of the SLWMA Draft Management Plan.

### **Questions and Comments on the SLWMA Draft Management Plan Presentation:**

Cedar asked if there were any comments or questions from the public regarding the Draft Management Plan and encouraged everyone to fill out a speaker card for public testimony. They informed them that all comments, questions, and public testimony will be duly considered equally by FWC.

Public Question 1: An unidentified member of the audience provided the following comments and questions:

*Does the carrying capacity include all the tracts? Or just the main one?*

FWC Response: Tom Matthews, Public Access Planner, responded:

*The capacity really includes all of them, but it is primarily based on public trails and infrastructure, and the other tracts don't have that. So, it's pretty much the main tract.*

Public Question 2: An unidentified member of the audience provided the following comments and questions:

*Your previous slide, coordinating with Brevard County, about the EEL's land across the street on Dairy Road—Just, FYI, they are having some issues right now with their parking, and they may need to relocate it, so this might be a prime time to coordinate with the relocation of that.*

FWC Response: David Turner, Lead Area Biologist, responded:

*Yeah, and we do have that parking there right across the street.*

Public Response: The same unidentified member of the audience continued this line of comments and questions:

*There are some legal issues they are having with their parking right now, so they might have to design a whole new parking area. If that conversation is to happen soon, then maybe you could have a conversation about how to connect your parking with their parking. I'm not sure, I have no say in it, but that's just a process that is happening right now, so it might be a good time to buy into it.*

Public Question 3: An unidentified member of the audience provided the following comments and questions:

*I was wondering. . . Do people dump cats? Or are there house cats out there?*

FWC Response: David Turner, Lead Area Biologist, responded:

*There are no cats that I am aware of. I have seen a few of the neighbor's cats, and I recognize them because I see them at the neighbor's house. But we don't have any kind of feral cat issue.*

Public Response: The same unidentified member of the audience continued this line of comments and questions:

*But do you have a plan for it?*

FWC Response: David Turner, Lead Area Biologist, responded:

*Well, if we have a problem, then we would develop some kind of plan. We don't have any kind of pre-existing plan in place.*

Public Question 4: An unidentified member of the audience provided the following comments and questions:

*Is one of your reasons for building an RV pad to create housing for some potential work campers?*

FWC Response: David Turner, Lead Area Biologist, responded:  
*Potentially, yes, onsite residence for employees. It would help with staff retention.*

Public Question 5: An unidentified member of the audience provided the following comments and questions:

*I was wondering about the surplus land; have you dealt with that before?*

FWC Response: David Turner, Lead Area Biologist, responded:  
*We've never identified any on this project as far as I'm aware of. It is asked at every Land Management Review that we have, and we have never identified any as surplus.*

Public Question 6: An unidentified member of the audience provided the following comments and questions:

*I read this in the book; I didn't necessarily see this up there. What is being incorporated in the management plan to protect taxpayer investment of the land due to excessive flooding in the recent years and coming years? Has that been addressed or is it on the radar?*

FWC Response: David Turner, Lead Area Biologist, responded:  
*Well, I think the hydrologic assessment section or goals and objectives would cover some of that.*

Public Response: The same unidentified member of the audience continued this line of comments and questions:

*Modeling coming out of other agencies is talking about most of the Salt Lake, even up into homeowners, well into Tomato Farm Rd, continuing to be a new part of the flood zone, whereas 20 years ago, it was even outside of the 500-year flood zone. So, basically, it's taking storm water from south of the County and Orange County, because it bottlenecks at Lake Harney, and it pushes it back to us. There is not enough storage to facilitate it so it has expanded beyond its normal historical banks and floodplains. So, when you expand beyond the historical floodplain, is there a plan in place to protect the threatened species and the investment from the taxpayers? Is there something to prevent that from happening, or will it just be a loss?*

FWC Response: Christina Omran, Senior Land Conservation Planner, responded:  
*Well, on a five-year basis we review the Management Plans and what is being done on the area, and on a 10-year basis we update the Management Plans. It's a very adaptive strategy, so I would assume as those zones change, the Plans will adapt to meet the need. But again, in the fifth year, go through it, see how we are doing, and then see if there are changes to make on top of the statutorily required 10-year planning process, where we invite stakeholders, including the County, to inform them what goes into the plan.*

Public Response: The same unidentified member of the audience continued this line of comments and questions:

*I'm sure you can attest to this, Paces Landing Rd. has never been underwater the way that it has been for the past five years. State Rd 46 used to flood up, but not flood over, and now it not only floods over in one spot where it started in 2009, but when it finished up this last time it was flooding over a fourth or fifth spot. So, it is an increasing, serious problem that can cause a loss of conservation land, and it's not on people's radars. It's a massive problem, and a multi-agency thing to fix, that is why I want to put it on people's radars.*

FWC Response: David Turner, Lead Area Biologist, responded:

*You are right, two years ago after Hurricane Ian we had some of the highest flood levels I had seen on Salt Lake in my work there.*

Public Response: The same unidentified member of the audience continued this line of comments and questions:

*And that was all pushback from the river that came five days after, so that was all of everyone's stormwater getting pushed back and flooding the conservation area. That's not the conservation area flooding because it rained, that's pushback from the St. Johns because it can't handle the amount of development and what not that has been sent to it.*

FWC Response: David Turner, Lead Area Biologist, responded:

*I think to address what you were asking about some of the species and how we would deal with that, I think the species would sort of handle that on their own. I have what I call transitory gopher tortoises. You know, they'll be in this burrow today, but as the water table rises, they'll move to another that is higher and drier. They do kind of move around when some of that happens and can recover as the water recedes. But I do see what you're saying--*

Public Response: The same unidentified member of the audience continued this line of comments and questions:

*It's expected to continue to get worse.*

FWC Response: David Turner, Lead Area Biologist, responded:

*I think that is probably bigger than the scale of Salt Lake.*

Public Response: The same unidentified member of the audience continued this line of comments and questions:

*I've been to St. Johns up in Palatka speaking at their meetings too. It's not a here thing, it's a County, St. Johns, FWC if we are going to protect this and protect the investment and conservation lands along the St. Johns River. Not just Salt Lake, but with Salt Lake today it's a problem, and if we don't see any change then we are going to lose it all.*

FWC Response: Christina Omran, Senior Land Conservation Planner, responded:  
*Logan Benedict at the FWC is working on a five-year plan that does mention flood protection. Now that's specific to the WMA system, but it sounds like you're also talking about roads being underwater. What's being done about that?*

Public Response: The same unidentified member of the audience continued this line of comments and questions:

*We're working on it as best we can. There's been talk. . . So, when I spoke at St. Johns, I had a meeting with the executive director, and they facilitated some meetings between the Water Management District and Brevard County. Unfortunately, what came out of those meetings is that they don't have modeling for that yet, so they don't know what to do, because evidently the people who were talking to them about it don't have enough to be serious. I don't know. So they're telling us that we need to wait two years for them to even have the modeling for us to address the situation.*

FWC Response: Christina Omran, Senior Land Conservation Planner, responded:  
*The County doesn't have a vulnerability assessment?*

Public Response: The same unidentified member of the audience continued this line of comments and questions:

*They're working on theirs right now.*

FWC Response: Christina Omran, Senior Land Conservation Planner, responded:  
*That would probably be very useful information.*

Public Response: The same unidentified member of the audience continued this line of comments and questions:

*They have a west of 95 study that's going on right now, so it's going to be the entire County west of 95. Some of these things attempt to be addressed in that meeting, and I can show you a map. What they showed us was a map of Ian, and what we experienced with Ian, and they said this is going to be normal, and you're going to flood. My family is the third largest landowner out there, and I said to them, "So, this is going to put us underwater."*

*They said to me, "Yeah and we can't do anything about it."*

*I've been going to meetings ever since, because we refuse to accept that. And if that puts us underwater, you know where we live, and it's going to put Salt Lake underwater which makes it a bigger picture and a bigger issue. That's what we are being told, so that's part of the reason I came. I mean, we were thrilled when we went to the Salt Lake WMA and went in, and to protect that property, and to have it. You know, we're a family of hunters, and I know maybe Salt Lake doesn't directly make any money from that, but the State and the FWC do. If you lose the money to put back into these properties then it's a whole domino effect, and I don't think it's on anyone's radar.*

Public Question 7: An unidentified member of the audience provided the following comments and questions:

*I was curious if there are any plans for the public access on the Grissom Parkway Unit.*

FWC Response: David Turner, Lead Area Biologist, responded:

*Right now, that property is disjunct, I would have to defer to Tom on that.*

FWC Response: Tom Matthews, Public Access Planner, responded:

*We surveyed all the outlying parcels, some may have potential, but it makes it almost impossible with that patchwork. If there was opportunity with a more contiguous property, then we would certainly consider.*

Public Question 8: An unidentified member of the audience provided the following comments and questions:

*In July, this was a question that I raised when I asked about the original purpose of this land, and the documents included the fact that it related to the floodplain, and the health of the Indian River Lagoon. I know there was a city planner, I don't remember his name, but while this is a land management park, part of the land management is affected on whether it's going to keep flooding. That feeds into the wildlife plan, but also if you have a section where you're trying to manage for a certain type of habitat and it's going to be underwater for most of the year, then you're going to have to address that sooner than the five years. So I think it that is something that will be very important to consider, for example look at the trend for how much of that land has been wetter for longer in the past 10 years to figure out, as you start this plan, you may have to figure out how to adjust some of that to things that just won't be or wont exist, whether it be plants, animals, or whatever. You can't maintain that part of the land anymore if it's going to be wet for much longer. I know we talked about that a little bit at that meeting, but I don't think we got to it because there was no St. Johns River Water Management District person at that meeting, and so part of it relates to what happens upstream in the river and what their other plans that affect this. I'd love their input on that. Since they weren't there, and I don't think there's anyone present here today—*

Public Response: An unidentified member of the audience responded:

*I'm here, but I'm in land management so I don't really deal with the flooding issues. The upper basin project really doesn't affect the flood waters that happen this far north, but we have a bunch of water storage capacity down there. We don't have to turn river water out to the Indian River Lagoon anymore because of the storage capacity that we have, so we are protecting the lagoon. But unfortunately, the storage down there doesn't really affect river levels this far north.*

Public Response: An unidentified member of the audience responded:

*Are you talking like Turkey Creek area?*

Public Response: An unidentified member of the audience responded:

*No, even further south—*

Public Response: An unidentified member of the audience responded:

*Oh, because I know St. Johns pumps over into the St. Johns through Turkey Creek when they get so much water.*

Public Response: An unidentified member of the audience responded:

*Yeah, that is a newer project, but we are diverting water that used to flow from the Indian River back into the St. Johns as well, but the project doesn't affect any of the lands up in this direction.*

Public Response: An unidentified member of the audience responded:

*That's one of the concerns I've been talking about. It's not just Turkey Creek that they're flowing back into St. Johns. As a guesstimate, please it's a guesstimate show me a little bit of grace, but I want to say 6 projects where they are looking to turn it back into St. Johns. The city of Titusville has just approved another study through St. Johns. They are saying that they are just returning it, which I understand, but unfortunately when you return a flow when you've destroyed and filled in the wetlands, there's no room for that flow anymore, because all the storage space was taken from development. So, I understand that that is an effect that is trying to happen, and we appreciate that very much, but in what is happening down here, is not that.*

Public Question 9: An unidentified member of the audience provided the following comments and questions:

*Do you have monitoring in place that would catch the change in vegetation if the flow regime were permanently changed? David, the periodic mapping by FNAI be your, or what would you. . . ?*

FWC Response: David Turner, Lead Area Biologist, responded:

*That or our Objective Based Vegetation Management where every five years FNAI comes out and does veg-plots. Usually, a certain percentage of those will fall into an ecotonal area. We are only monitoring five communities, most of which are upland communities, but certainly those cabbage palm variant flatwoods or mesic flatwoods, they could potentially pick up a trend in that if there were large scale flooding events. This would be on a plot-by-plot basis, and we are usually looking at the bigger picture. It would show the general trend though.*

Public Response: The same unidentified member of the audience continued this line of comments and questions:

*Do you have any permanent plots or periodic mapping that would--*

FWC Response: Matt Hortman, Northeast Regional Biologist, responded:

*We recertify every 10 years. They'll do the OBVM monitoring every five years, and most of that is for actively managed communities. Some of that is wet flatwoods, which is where you would start to notice some real changes. They don't do that in marsh habitats.*

Public Response: The same unidentified member of the audience continued this line of comments and questions:

*Well, you could potentially be going from marsh to open water.*

FWC Response: Matt Hortman, Northeast Regional Biologist, responded:

*Yes, I think we have some general photo plot points out there too, so that would show the changes over time.*

Public Response: An unidentified member of the audience responded:

*I know at our agency we do wetland vegetation monitoring and mapping, but I don't think it includes Salt Lake. I'm not sure if it would be useful.*

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No further questions or comments were received at this stage of the SLWMA public hearing meeting.

### **Public Testimony on the SLWMA Draft Management Plan:**

Two members of the public audience submitted speaker cards indicating their intention to provide formal public testimony. Cedar Spirk again emphasized that the public hearing was for taking input regarding the SLWMA Draft Management Plan and called the first speaker to the podium.

Public Testimony 1: Jason Miller provided the following public testimony:

*From the last slide, I'm going to have to come to another meeting, because mine is about recreational use and public access. I'm a mountain biker, I use the Salt Lake WMA gravel roads, my kids and I ride out there all the time. It's great stuff, but the one thing I wanted to point out is that I am in the process of developing a mountain bike association in Titusville and the north Brevard County area, and that generates a lot of volunteers, which is a big part of some of the challenges you're facing and some of the strategies. When we go out on mountain bike trails, there's a lot of invasive plant removal we do, we can report on wildlife sightings, and we can really help with a lot of the issues with manpower that you struggle with all the time. Sometimes mountain bikers get a bad rap for being rowdy in the woods, I know Brevard County EELs has had some issues with our association that is in the south part of the County. But I am a conservationist, I am on the EELs SMC, I was just appointed to the Titusville Environmental Council, so that stuff is important to me. Controlled burns for scrub jay management, absolutely I'm all about it, I would like to address the conditions of the trail, but I know that the animals are more important. So, I'll absolutely be in touch for those other meetings, but I wanted to point out that I am developing a volunteer base right now to build trails in north Brevard. We're working with the city hopefully to build some, but I would love to build some more out here at Salt Lake. I just walked the trail for the first time yesterday out to the lake overlook, and if we could get some more of those single-track trails that would be amazing for mountain bikers. One of the biggest things is just maintenance, and I could get volunteers out there to help with that sort of thing.*

Public Testimony 2: Ruth Amato provided the following public testimony:

*I'm going to talk about flooding for a minute. My family has lived there since 1925. So, if you want to talk about historical knowledge, Dave is amazing, but my family has been out there for a long time, so we know exactly what flows, and we've been in agriculture. You can't be in agriculture unless you know the flow of water on the land and flooding. Somehow, we managed to survive*

*until recently when we lost the orange groves down by my uncle's house to greening a few years ago, never due to flooding. It's become a major issue; it is a stormwater issue. They switched to cattle because the orange groves wouldn't grow due to flooding. The past two years, my brother had moved a large flatbed truck down there so that he can put bales of hay on top to feed the cattle. It's a huge problem, and I'm explaining it this way so that you can see the enormity of it, because I can't explain in terms of what is happening across the street, but the same thing is happening across the street. The water that flows up from the river, the stormwater is polluted. Back in the day when people did agriculture, they stayed just outside the floodplain but right next to it, so occasionally there might be a little flooding that came along and dropped nutrients. It was nature's way of fertilizing the land, but now it kills it. It took six months for us to grow grass after the last time; it doesn't bring nutrients in like it used to. I don't know what's in it, but it isn't nutrients. I understand there's the hydrology and that animals adapt, and they are adapting now. You can look at maps from 1989 that were still certified in 2000, it shows that much of the top of Salt Lake was in zone A and it was not a marsh. In the current FWC maps, it shows almost the entire area as marsh. That shows the change in the landscape, which affects the threatened species that live on it. That is why I really employ anybody who cares to figure out a way to prevent it from flooding if you really want it to stay.*

**Adjournment:**

Cedar asked if there were any other members of the public that wished to give public testimony.

No other speakers offered further comments.

Then Cedar declared the public hearing adjourned.

## **11.4 Public Hearing Notice, Advertisements, and Press Release**

### **11.4.1 Public Hearing Notice**

# NOTICE

Florida Fish and Wildlife Conservation Commission  
Announces a

## PUBLIC HEARING

for the

Salt Lake

### Wildlife Management Area Management Plan

Brevard County, Florida

6:00 P.M. Thursday, September 25<sup>th</sup>, 2025

Harry T. and Harriette V. Moore Cultural Complex  
2130 Freedom Ave.  
Mims, FL 32754

**PURPOSE:** To receive public comment regarding considerations for the FWC 10-year Land Management Plan for the Salt Lake Wildlife Management Area (SLWMA). This hearing is being held **EXCLUSIVELY** for discussion of the SLWMA Management Plan, which outlines environmental and recreation management on the area. This Management Plan will not address hunting or fishing regulations, which are handled through a separate rule and regulation development process. For more information about the rule and regulation development process, go online to: <http://myfwc.com/about/rules-regulations/>

For a copy of the draft Management Plan, please contact Cedar Spirk via telephone at (386) 754-1660, via email at Cedar.Spirk@MyFWC.com, or via mail at Florida Fish and Wildlife Conservation Commission, Land Conservation and Planning, 620 South Meridian Street, Tallahassee, Florida 32399-1600.

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this meeting should notify the agency at least five calendar days before the meeting by calling 850-488-6411 or contact the agency using the Florida Relay Service at 800-955-8771 (TDD) or 800-955-8770 (Voice), if you are hearing or speech impaired. If you believe that you have been discriminated against in any program, activity, or facility, or if you need more information, contact the Florida Fish and Wildlife Conservation Commission at: FWC, Office of Human Resources, 620 S Meridian Street, Tallahassee, FL 32399, 850-488-6411. Or write to: Office of Diversity, Inclusion & Civil Rights, Department of the Interior, 1849 C Street, NW, Washington, D.C. 20240.

## 11.4.2 Regional FWC Press Release

Buy and Apply
Resolving a Wildlife Conflict
Engaging in Conservation
Things To Do
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**Florida Fish and Wildlife  
Conservation Commission**

Site Search

[Home](#) > [FWC News](#) > [Help plan the future of the Salt Lake WMA](#)

### Help plan the future of the Salt Lake WMA



[Photos available](#)

The Florida Fish and Wildlife Conservation Commission (FWC) will present the draft materials for the Salt Lake Wildlife Management Area 10-year Land Management Plan at a public hearing in Brevard County on Thursday, Sept. 25.

The public hearing will be held at 6 p.m. at the Harry T. and Harriette V. Moore Cultural Complex, 2130 Freedom Ave., Mims, FL 32754. The public is encouraged to attend and will have the opportunity to comment and ask questions regarding the draft plan for the Salt Lake WMA.

The Salt Lake WMA encompasses approximately 6,729 acres in Brevard County and is an important piece of the conservation lands buffering the Atlantic Coastal Ridge in east Florida. It is named for one of the three lakes that border the area – Salt Lake, Loughman Lake and South Lake. Conserving native scrub habitats along the St. Johns River and Indian River Lagoon system, the Salt Lake WMA protects vital watersheds and water quality while also providing connectivity within a major wildlife corridor.

"This is an opportunity for the public to provide input on the environmental planning and conservation land management that will occur on the area," said **Christina Omran, FWC Biological Administrator**. "This management plan will specify how we intend to accomplish conservation goals."

For more information and other [upcoming public hearings](#), visit [MyFWC.com/Conservation](#) then click "Terrestrial Conservation" and "Management." Hunting and fishing regulations are not included in this plan or public hearing; they are addressed through a separate public process. Visit [MyFWC.com/Hunting](#) or [MyFWC.com/Fishing](#) to learn more about [hunting](#) and [fishing regulations](#).

To obtain a copy of the draft elements of the management plan for the Salt Lake WMA, call Christina Omran at 850-510-1823 or email [Christina.Omran@MyFWC.com](mailto:Christina.Omran@MyFWC.com).

Pursuant to Chapters 253 and 259, Florida Statutes, all lands purchased with public funds must have a Land Management Plan that ensures the property will be managed in a manner that is consistent with the intended purposes of the purchase. To see more about [Land Management Plans](#), visit [MyFWC.com/Conservation](#), click "Terrestrial Conservation," then scroll to "Management Plans (WMA)."

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this meeting should notify the agency at least 5 calendar days before the meeting by calling 850-488-6411 or contacting the agency using the Florida Relay Service at 800-955-8777 (TDD) or 800-955-8770 (Voice), if you are hearing or speech impaired. If you believe that you have been discriminated against in any program, activity or facility, or if you need more information, contact the Florida Fish and Wildlife Conservation Commission at:

FWC, Office of Human Resources  
620 S. Meridian Street,  
Tallahassee, FL 32399

Or write to:

Office of Diversity, Inclusion & Civil Rights  
Department of the Interior  
1849 C Street, NW  
Washington, D.C. 20240

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Published by authority 12/17/16, Florida Statutes: the Fish and Wildlife Conservation  
Commission has published its 2008 Agency Regulatory Plan

### 11.4.3 Newspaper Ad

## Govt Public Notices

Originally published at floridatoday.com on 09/14/2025

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### Public Hearing Notice

The Florida Fish and Wildlife Conservation Commission (FWC) announces a PUBLIC HEARING for the FWC-Managed Portions of the Salt Lake Wildlife Management Area (WMA) located in Brevard County, Florida.

6:00 P.M. Thursday, September 25, 2025

Harry T. and Harriett V. Moore Cultural Complex

2130 Freedom Ave.

Mims, FL 32754

**PURPOSE:** To receive public comment regarding considerations for the FWC's ten-year Management Plan for the FWC Lead Managed Portions of the Salt Lake WMA.

This hearing is an opportunity for the public to provide input on the environmental planning and conservation land management that will occur on the area. It is being held EXCLUSIVELY for discussion of the DRAFT Salt Lake WMA Management Plan, otherwise referred to as the Management Prospectus. This meeting will not address area hunting or fishing regulations. For more information on the process for FWC rule and regulation development visit our Proposed Rules Changes webpage at <https://myfwc.com/about/rules-regulations/proposed-rule-changes/>.

A Management Prospectus for the Salt Lake WMA and a copy of the agenda is available upon request from Christina Omran by mail at the Florida Fish and Wildlife Conservation Commission, 620 South Meridian Street, Tallahassee, Florida 32399-160; by telephone at (850)510-1823; or by email at Christina.Omran@MyFWC.com.

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this meeting should notify the agency at least 5 calendar days before the meeting by calling (850) 488-6411 or contact the agency using the Florida Relay Service at (800) 955-8771 (TDD) or (800) 955-8770 (Voice), if you are hearing or speech impaired. If you believe that you have been discriminated against in any program, activity, or facility, or if you need more information, contact the Florida Fish and Wildlife Conservation Commission at:

FWC, Office of Human Resources

620 S Meridian Street  
Tallahassee, FL 32399, (850) 488-6411

Or write to:

Office of Diversity, Inclusion & Civil Rights  
Department of the Interior  
1849 C Street, NW  
Washington, D.C. 20240  
September 14 2025  
LSAR0365372



## 11.4.4 Florida Administrative Register Ad

### Notice of Meeting/Workshop Hearing

#### FISH AND WILDLIFE CONSERVATION COMMISSION

The Florida Fish and Wildlife Conservation Commission announces a hearing to which all persons are invited.

DATE AND TIME: Thursday, September 25, 2025, 6:00 p.m., ET

PLACE: Harry T. and Harriett V. Moore Cultural Complex, 2130 Freedom Ave., Mims, FL 32754

GENERAL SUBJECT MATTER TO BE CONSIDERED: The purpose of this hearing is to receive public comment regarding considerations for the FWC's ten-year Management Plan for the FWC Lead Managed Portions of the Salt Lake WMA. This hearing is an opportunity for the public to provide input on the environmental planning and conservation land management that will occur on the area. It is being held EXCLUSIVELY for discussion of the DRAFT Salt Lake WMA Management Plan, otherwise referred to as the Management Prospectus. This meeting will not address area hunting or fishing regulations. For more information on the process for FWC rule and regulation development, visit our Proposed Rules Changes webpage at <https://myfwc.com/about/rules-regulations/proposed-rule-changes/>

A copy of the agenda may be obtained by contacting: Christina Omran by mail at the Florida Fish and Wildlife Conservation Commission, 620 South Meridian Street, Tallahassee, Florida 32399-160; by telephone at (850)510-1823; or by email at [Christina.Omran@MyFWC.com](mailto:Christina.Omran@MyFWC.com).

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this workshop/meeting is asked to advise the agency at least 5 days before the workshop/meeting by contacting: the ADA Coordinator at (850)488-6411. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, 1(800)955-8771 (TDD) or 1(800)955-8770 (Voice).



## 11.5 Soil Series Descriptions

## Map Unit Description

Brevard County, Florida

[Minor map unit components are excluded from this report]

Map unit: 2 - Anclote sand, frequently ponded, 0 to 1 percent slopes

Component: Anclote (85%)

*The Anclote component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during July, August, September, October. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 3 - Anclote sand, frequently flooded

Component: Anclote, flooded (85%)

*The Anclote, flooded component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 6 - Basinger sand, depressional

Component: Basinger, depressional (90%)

*The Basinger, depressional component makes up 90 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 7 - Basinger sand, 0 to 2 percent slopes

Component: Basinger (85%)

*The Basinger component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during July, August, September, October. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 13 - Chobee mucky loamy fine sand, depressional

Component: Chobee, depressional (90%)

*The Chobee, depressional component makes up 90 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of loamy alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is*

## Map Unit Description

Brevard County, Florida

Map unit: 13 - Chobee mucky loamy fine sand, depressional

Component: Chobee, depressional (90%)

*frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 15 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 7 percent. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 17 - EauGallie sand, 0 to 2 percent slopes

Component: EauGallie (87%)

*The EauGallie component makes up 87 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 18 - EauGallie, Winder, and Riviera soils, depressional

Component: EauGallie, depressional (40%)

*The EauGallie, depressional component makes up 40 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Component: Winder, depressional (25%)

*The Winder, depressional component makes up 25 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions, marine terraces, coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 10 percent. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Component: Riviera, depressional (20%)

*The Riviera, depressional component makes up 20 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

## Map Unit Description

Brevard County, Florida

Map unit: 19 - Riviera sand, 0 to 2 percent slopes

Component: Riviera (95%)

*The Riviera component makes up 95 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during July, August, September, October. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 22 - Floridana sand, frequently ponded, 0 to 2 percent slopes

Component: Floridana (85%)

*The Floridana component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during July, August, September, October. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 23 - Floridana sand, 0 to 2 percent slopes, frequently flooded

Component: Floridana (85%)

*The Floridana component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during July, August, September, October. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 3w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 24 - Floridana, Chobee, and Felda soils, frequently flooded

Component: Floridana, flooded (36%)

*The Floridana, flooded component makes up 36 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 10 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Component: Chobee, flooded (27%)

*The Chobee, flooded component makes up 27 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of loamy alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during June, July, August, September. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 5 percent. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

## Map Unit Description

Brevard County, Florida

Map unit: 24 - Floridana, Chobee, and Felda soils, frequently flooded

Component: Felda, flooded (19%)

*The Felda, flooded component makes up 19 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 26 - Holopaw sand, 0 to 2 percent slopes

Component: Holopaw (84%)

*The Holopaw component makes up 84 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during July, August, September, October. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 27 - Holopaw sand, frequently ponded, 0 to 1 percent slopes

Component: Holopaw (88%)

*The Holopaw component makes up 88 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during July, August, September, October. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 28 - Immokalee sand, 0 to 2 percent slopes

Component: Immokalee (85%)

*The Immokalee component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 29 - Malabar sand, high

Component: Malabar, high (90%)

*The Malabar, high component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

## Map Unit Description

Brevard County, Florida

Map unit: 30 - Malabar sand, 0 to 2 percent slopes

Component: Malabar (85%)

*The Malabar component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during July, August, September, October. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 36 - Myakka sand, 0 to 2 percent slopes

Component: Myakka (85%)

*The Myakka component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 38 - Myakka sand, depressional

Component: Myakka, depressional (85%)

*The Myakka, depressional component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 43 - Paola fine sand, 0 to 8 percent slopes

Component: Paola (85%)

*The Paola component makes up 85 percent of the map unit. Slopes are 0 to 8 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 0 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 44 - Paola fine sand, 5 to 12 percent slopes

Component: Paola (90%)

*The Paola component makes up 90 percent of the map unit. Slopes are 5 to 12 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

## Map Unit Description

Brevard County, Florida

Map unit: 47 - Pineda sand, 0 to 2 percent slopes

Component: Pineda (85%)

*The Pineda component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during July, August, September, October. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 48 - Delray sand, occasionally flooded

Component: Delray, flooded (90%)

*The Delray, flooded component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on drainageways on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is occasionally flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during June, July, August, September. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 49 - Pomello sand, 0 to 5 percent slopes

Component: Pomello (85%)

*The Pomello component makes up 85 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 30 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 52 - Quartzipsamments, smoothed

Component: Quartzipsamments, smoothed (100%)

*The Quartzipsamments, smoothed component makes up 100 percent of the map unit. Slopes are 0 to 5 percent. This component is on fills on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 42 inches during June, July, August, September. Organic matter content in the surface horizon is about 0 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 54 - St. Johns sand, 0 to 2 percent slopes

Component: St. Johns (90%)

*The St. Johns component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during July, August. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

## Map Unit Description

Brevard County, Florida

Map unit: 55 - St. Johns sand, depressional

Component: St. Johns (90%)

*The St. Johns component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 56 - St. Lucie fine sand, 0 to 5 percent slopes

Component: St. Lucie (85%)

*The St. Lucie component makes up 85 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy eolian deposits and/or marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 59 - Udorthents, steep

Component: Udorthents (100%)

*The Udorthents component makes up 100 percent of the map unit. Slopes are 7 to 35 percent. This component is on fills on marine terraces on coastal plains. The parent material consists of altered marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 62 - Samsula muck, frequently ponded, 0 to 1 percent slopes

Component: Samsula (85%)

*The Samsula component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of herbaceous organic material over sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 75 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 63 - Tavares fine sand, 0 to 5 percent slopes

Component: Tavares (83%)

*The Tavares component makes up 83 percent of the map unit. Slopes are 0 to 5 percent. This component is on hills on marine terraces on coastal plains. The parent material consists of eolian or sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 30 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria. There are no saline horizons within 30*

## Map Unit Description

Brevard County, Florida

Map unit: 63 - Tavares fine sand, 0 to 5 percent slopes

Component: Tavares (83%)

*inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 64 - Terra Ceia muck, frequently flooded

Component: Terra Ceia, flooded (90%)

*The Terra Ceia, flooded component makes up 90 percent of the map unit. Slopes are 0 to 1 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of herbaceous organic material. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is frequently flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 80 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 67 - Tomoka muck, frequently ponded, 0 to 1 percent slopes

Component: Tomoka (85%)

*The Tomoka component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of herbaceous organic material over sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during July, August, September, October. Organic matter content in the surface horizon is about 75 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 68 - Tomoka muck, drained, frequently ponded, 0 to 1 percent slopes

Component: Tomoka, drained (85%)

*The Tomoka, drained component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of herbaceous organic material over sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 3 inches during January, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 75 percent. Nonirrigated land capability classification is 3w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 70 - Valkaria sand

Component: Valkaria (85%)

*The Valkaria component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during June, July, August, September. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

## Map Unit Description

Brevard County, Florida

Map unit: 71 - Wabasso sand, 0 to 2 percent slopes

Component: Wabasso (85%)

*The Wabasso component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer, strongly contrasting textural stratification, is 9 to 50 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 91 - Anclote sand

Component: Anclote (90%)

*The Anclote component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 3w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.*

Map unit: 99 - Water

Component: Water (100%)

*Generated brief soil descriptions are created for major soil components. The Water is a miscellaneous area.*

## Map Unit Description

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

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

The Map Unit Description (Brief, Generated) report displays a generated description of the major soils that occur in a map unit. Descriptions of non-soil (miscellaneous areas) and minor map unit components are not included. This description is generated from the underlying soil attribute data.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

## 11.6 FNAI Natural Communities and Altered Landcover Types Descriptions

### Natural Community Descriptions

#### **Basin Marsh (2,071.99 acres, 38.87%)**

Basin marshes are herb or shrub-dominated isolated wetlands. They are often situated in relatively large and irregularly shaped basins or in various-sized depressions surrounded by non-pyrogenic communities such as swamps or hammocks. The shallower marsh edges tend to be grassy and herbaceous and more diverse with some hydrophytic woody species, while deeper areas are often submerged in water and occupied by floating plants. Basin marshes tend to be larger than depression marshes, which are typically shallow and within fire-maintained communities.

Basin marshes may develop in large solution depressions that were formerly shallow lakes. The lake bottom has slowly filled with sediments from the surrounding uplands and with peat derived from plants. They are regularly inundated with stagnant water.

The hydroperiod is generally around 200 days per year. Natural fires occasionally burn basin marshes at the end of the dry season, and pyrogenic species like sawgrass (*Cladium jamaicense*) and maidencane (*Hymenachne hemitoma*) burn even when there is standing water. Hydrology and the surrounding communities dictate the fire return interval of this community, which can differ greatly depending on both. Long hydroperiods in conjunction with occasional fire maintain this community as a primarily herbaceous community.

Extensive basin marshes are located around the periphery of Salt Lake, Loughman Lake, and South Lake. These marshes are dominated by sand cordgrass (*Spartina bakeri*), and, in the Salt Lake area, saltpans may develop that are almost devoid of vegetation or have a mixture of salt marsh vegetation including saltgrass (*Distichlis spicata*), needle rush (*Juncus roemerianus*), shoreline seapurslane (*Sesuvium portulacastrum*), perennial glasswort (*Salicornia ambigua*), and saltwort (*Batis maritima*). In some deeper areas, especially around South Lake, coastalplain willow (*Salix caroliniana*) forms a dominant cover, and deeper basins of water support bulltongue arrowhead (*Sagittaria lancifolia*) and giant bulrush (*Schoenoplectus californicus*). The higher edges of these large marshes are being invaded with hammock species, specifically sabal palm (*Sabal palmetto*) and wax myrtle (*Morella cerifera*). The salt marsh shrub christmasberry (*Lycium carolinianum*) is also occasional. The basin marsh community also contains a few small islands that would be classified as hydric hammock (prairie hydric hammock variant) or flatwoods communities.

There is also a large marsh located in the northeast section of the Salt Lake Wildlife Management Area (SLWMA), near South Lake, and only separated by a narrow strip of hammock and scrub, which in the past allowed water to fill up the marsh during high water stages. The herbaceous layer still has sand cordgrass, especially in deeper areas, but the drier parts are now dominated by weedy vegetation such as bushy bluestem (*Andropogon glomeratus*) and purple thistle (*Cirsium horridulum*).

Disturbances to basin marshes on the SLWMA include invasion by non-native species, mainly Brazilian pepper (*Schinus terebinthifolius*) and torpedo grass (*Panicum repens*), canals, roads, and woody encroachment, mainly from southern bayberry.

### **Basin Swamp (18.99 acres, 0.36%)**

Basin swamps are forested, hydric depressions that are usually isolated and not associated with rivers, although they may provide drainage into floodplains. Due to their size or landscape position, basin swamps are not exposed to frequent fires. They are vegetated with hydrophytic trees and shrubs that withstand extended hydroperiods and thrive in nutrient poor, usually acidic peat soils, overlying an impervious soil layer.

The primary source of water in basin swamps is local rainfall, with input from runoff and seepage from the surrounding uplands.

Fire intervals are quite variable in basin swamps and depend on the dominant vegetation, fire exposure, and drought. The interior may go decades or centuries without fire, while the exposed outer edges can be susceptible to frequent fire from adjacent pyrogenic communities.

There are a small number of basin swamps mapped at the SLWMA. These generally have a canopy of swamp tupelo (*Nyssa sylvatica* var. *biflora*) and red maple (*Acer rubrum*) with common buttonbush (*Cephalanthus occidentalis*), fetterbush (*Lyonia lucida*), wax myrtle, sabal palm, dahoon (*Ilex cassine*), and swamp bay (*Persea palustris*) occurring commonly as short or tall shrubs. Although the canopy is usually closed, more open marshy areas may have an abundant herb cover of toothed midsorus fern (*Telmatoblechnum serrulatum*), pickerelweed (*Pontederia cordata*), shortbristle horned beaksedge (*Rhynchospora corniculata*), bladderwort (*Utricularia* sp.), and Virginia chain fern (*Woodwardia virginica*). Some Spanish moss (*Tillandsia usneoides*) may occasionally be found epiphytic on trees and laurel greenbrier (*Smilax laurifolia*) is a common vine.

Disturbances to basin swamps on the SLWMA are minor, and changes over time have probably been attributable to hydrologic changes.

### **Baygall (12.89 acres, 0.24%)**

Baygall is an evergreen forested wetland of bay species situated at the base of a slope or in a depression. The canopy and understory of baygall are generally similar strata and are typically quite dense with bay species, as well as a variety of other woody species that differ by region and hydrology. Vines are generally abundant and contribute to the often impenetrable understory, while herbaceous species are quite sparse.

Baygall typically develops on wet soils at the bases of slopes, edges of floodplains, in depressions, and in stagnant drainages. The soils are composed of peat and are generally quite acidic.

The deep peat soils and seepage from upland communities keeps the area saturated, limiting decomposition and accumulating leaf litter, generally inhibiting fire. Baygall communities can

withstand a moderate fire frequency since the bay trees re-sprout following fire. However, fire during a drought can kill the trees by burning into the organic soils and killing their roots.

At the SLWMA, these are small and may develop adjacent to depression marshes, hammocks, or swamps. Generally, the canopy is dominated by loblolly bay (*Gordonia lasianthus*) and sweetbay (*Magnolia virginiana*), with an understory of dahoon, large gallberry (*Ilex coriacea*), fetterbush, wax myrtle, and swamp bay. Herbs are sparse and may include toothed midsorus fern, longhorn false rein orchid (*Habenaria quinqueseta*), bladderwort, and Virginia chain fern. Laurel greenbrier is a common vine.

### **Depression Marsh (353.10 acres, 6.62%)**

Depression marsh is a shallow, usually rounded depression in sand substrate with herbaceous vegetation or subshrubs, often in concentric bands. Depression marshes typically occur in landscapes occupied by fire-maintained matrix communities such as mesic flatwoods, dry prairie, or sandhill. The concentric zones or bands of vegetation are related to length of the hydroperiod and depth of flooding. Hydroperiods can range widely from as few as 50 days or less to more than 200 days of inundation per year. Depression marshes often dry out during periods of low rainfall, and as a result, burn periodically.

The substrate is usually acidic sand, possibly with deepening peat toward the center. Water depth in depression marshes usually increases toward the center, so vegetation can form concentric zones of hydrophytic vegetation based on hydroperiod.

Fire is important for restricting invasion of shrubs and trees and typically occurs at an interval of one- to 10 years with the surrounding pyrogenic communities. Depression marshes with increasing amounts of woody plants typically suggest some degree of fire exclusion.

Depression marshes on the SLWMA are usually dominated by sand cordgrass or, in the case of slightly deeper marshes, sawgrass. Other common herbs include giant leather fern (*Acrostichum danaeifolium*), smallfruit beggarticks (*Bidens mitis*), toothed midsorus fern, flatsedge (*Cyperus* sp.), spikerush (*Eleocharis* sp.), flattened pipewort (*Eriocaulon compressum*), witchgrass (*Dichantherium* sp.), tenangle pipewort (*Eriocaulon decangulare*), primrose willow (*Ludwigia* sp.), knotweed (*Polygonum* sp.), combleaf mermaidweed (*Proserpinaca pectinata*), marshpennywort (*Hydrocotyle* sp.), bladderwort, herb-of-grace (*Bacopa monnieri*), soft rush (*Juncus effusus* ssp. *solutus*), needle rush, creeping primrose willow (*Ludwigia repens*), swamp smartweed (*Persicaria hydropiperoides*), pickerelweed, beaksedge (*Rhynchospora* sp.), bulltongue arrowhead, broadleaf cattail (*Typha latifolia*), Virginia chain fern, and fringed yellow-eyed grass (*Xyris fimbriata*). Trees may be scattered along the edge of the marsh, commonly red maple, swamp tupelo, and slash pine (*Pinus elliotii*). Shrubs are usually sparse and include wax myrtle, sawtooth blackberry (*Rubus argutus*), and coastalplain willow.

Disturbances to depression marshes in the SLWMA are mainly due to wild hog (*Sus scrofa*) rooting with a few cases of Brazilian pepper noted.

### **Hydric Hammock (129.43 acres, 2.43%)**

Hydric hammock is an evergreen hardwood and/or palm forest with variable understory, typically dominated by palms and ferns occurring on moist soils, often with limestone very near the surface. The community generally has a closed canopy of oaks and palms with an open understory and sparse groundcover. The species composition of this community is mainly influenced by flooding patterns with more hydrophytic trees occurring in forests with higher flood frequency.

Hydric hammocks occur on low, flat, wet sites with poor draining soils, which can be quite variable from slightly acidic to slightly alkaline.

Fire is not an important component of this community; however occasional fires can break through during dry years. Flooding plays a more important role in community composition than fire.

Hydric hammocks on the SLWMA are associated with basin marshes and are distinguished by having a canopy dominated by swamp laurel oak (*Quercus laurifolia*), sabal palm, sugarberry (*Celtis laevigata*), and American elm (*Ulmus americana*), with a subcanopy of red cedar (*Juniperus virginiana*) and sabal palm. Shrubs are occasional to common and include silverling (*Baccharis glomeruliflora*), St. Andrew's cross (*Hypericum hypericoides*), wax myrtle, and swamp bay. The herb layer may be dense to scattered with toothed midsorus fern, longleaf woodoats (*Chasmanthium sessiliflorum*), snow squarestem (*Melanthera nivea*), woodgrass (*Oplismenus hirtellus*), and redbow panicum (*Coleataenia rigidula*). Epiphytes such as golden polypody (*Phlebodium aureum*), ballmoss (*Tillandsia recurvata*), and Spanish moss are abundant.

Fewer historic hydric hammocks were mapped on the SLWMA than are currently present, especially along the fringe of the basin marsh on the east side of the property. The higher water level in the lakes at that time led to a more extensive marsh, which has since experienced woody encroachment and the expansion of the historic hydric hammock as water levels have lowered.

#### **Marsh Lake (903.40 acres, 16.95%)**

Marsh lake is a small, generally round or elliptical depression vegetated with concentric bands of hydrophytic herbaceous plants. It differs from a depression marsh by depth and slope of the depression and typically has more open water than would be expected of a marsh. If the open water zone is relatively small compared to the surrounding marsh, it is considered a marsh lake. If open water occupies most of the basin with only a narrow fringe of marsh, it is a flatwoods lake or prairie lake depending on the surrounding community. This community is generally formed through solution holes in the underlying limestone or high sea levels causing long term inundation.

The soils in a marsh lake are typically acidic sands with some peat and occasionally a clay lens. The water is typically from the run-off of the surrounding communities.

The marsh edges of the marsh lake likely will burn with the surrounding pyrogenic community, maintaining low shrub cover and promoting herbaceous growth. The deep inundated center will not be impacted except at times of drought. The water in a marsh lake often acts as an aquifer for the surrounding areas during drier times.

There are several marsh lakes at the SLWMA surrounded by a sand cordgrass marsh. These lakes have been altered through ditching that has altered the frequency of flooding into the marsh.

### **Mesic Flatwoods (768.56 acres, 14.42%)**

Mesic flatwoods are open canopied, pine forests with a diverse understory of shrubs and herbs occurring on low, flat terrain. Mesic flatwoods are a dominant upland community type and can occur intermingled with wet flatwoods or mesic hammock. Mesic flatwoods are distinguished from wet flatwoods by their abundance of shrubs, particularly saw palmetto (*Serenoa repens*), and herb species composition, which is less hydrophytic. The gradation between scrubby, mesic, and wet flatwoods may often be subtle, and boundaries can be difficult to determine.

This community generally has acidic soils made up of nutrient-poor fine sands with upper layers darkened by organic matter. Species occurring in mesic flatwoods must be tolerant of long-term soil saturation during the wet season and dry conditions during the rest of the year.

Fire is an important factor in maintaining high plant diversity and naturally occurs every two to four years during the late spring/early summer lightning season. Southern wiregrass (*Aristida beyrichiana*) is a key component of this community, carrying fire across the landscape. This species requires fire to flower though, so fire exclusion can have long and lasting impacts on the community.

At the SLWMA, saw palmetto cover is particularly dense, often forming impenetrable thickets. However, the flatwoods in the southeast corner of the SLWMA are quite open and resemble dry prairie with short saw palmetto and dwarf bayberry (*Morella pusilla*). The canopy is dominated by slash pine, although pines may be sparse or even absent in some areas. In addition to saw palmetto, the shrub layer may include tarflower (*Bejaria racemosa*), gallberry (*Ilex glabra*), rusty staggerbush (*Lyonia ferruginea*), coastalplain staggerbush (*Lyonia fruticosa*), Southern bayberry, live oak (*Quercus virginiana*), winged sumac (*Rhus copallinum*), highbush blueberry (*Vaccinium corymbosum*), dwarf huckleberry (*Gaylussacia dumosa*), runner oak (*Quercus pumila*), dwarf live oak (*Quercus minima*), and shiny blueberry (*Vaccinium myrsinites*). The herbaceous layer is diverse and dominated by Southern wiregrass in less disturbed areas. Other common herbs include broomsedge bluestem (*Andropogon virginicus* var. *decipiens*), bottlebrush threeawn (*Aristida spiciformis*), coastalplain chaffhead (*Carphephorus corymbosus*), vanillaleaf (*Trilisa odoratissima*), witchgrass, slender flattop goldenrod (*Euthamia caroliniana*), Elliott's milkpea (*Galactia elliotii*), rough hedgehyssop (*Sophronanthe hispida*), pinebarren frostweed (*Crocantemum corymbosum*), small butterwort (*Pinguicula pumila*), bracken fern (*Pteridium pseudocaudatum*), beaksedge, little bluestem (*Schizachyrium* sp.), dixie aster (*Sericocarpus tortifolius*), sweet goldenrod (*Solidago odora*), and yellow hatpins (*Syngonanthus flavidulus*). Vines are occasional, including earleaf greenbrier (*Smilax auriculata*), saw greenbrier (*Smilax bona-nox*), and muscadine (*Vitis rotundifolia*).

Some mesic flatwoods at the SLWMA are fire-excluded and have also been impacted by past cattle grazing on the land. Shrub density increases toward the west side of the property. Historically, the western area may have received slightly less frequent but more catastrophic fires since the lake system creates a fire shadow from the west. Aerial photographs from 1943 show that several patches of the far western flatwoods between Bear Bluff Road and Loughman Lake were quite dense and shrubby with few pine trees, particularly where they were shielded on one side by mesic hammock. Grazing evidence is also apparent in the 1943 aerial photographs, with some flatwoods patches just to the east that appear to have been partially cleared for grazing.

### **Mesic Hammock (188.37 acres, 3.53%)**

Mesic hammock is a well-developed evergreen hardwood and/or palm forest on soils that are rarely inundated. Typically, the canopy is closed and dominated by live oak and sabal palm, though other hardwoods can often be found in the canopy and subcanopy as well. The shrubby understory can vary in density but typically consists of a mix of less water-tolerant shrubs. The herbaceous layer is often sparse and patchy with a few ferns and graminoids.

The soils of mesic hammocks are sands mixed with organic matter and may have a thick layer of leaf litter. Rock outcrops may be common where limestone is near to the surface.

Mesic hammock is not a fire-adapted community and can arise in a pyrogenic community when shielded from fire. This can occur naturally because of the landscape typically caused by “tree islands” in or adjacent to a wetland. The extent of the edge of hammocks may extend or contract with the frequency and intensity of fire in the surrounding communities. Mesic hammocks differ from hydric hammocks by the dominance of live oak in the canopy and often more saw palmetto in the shrub layer.

Mesic hammocks occur throughout the SLWMA, often as small patches bordering basin marshes, and in a few cases as extensive, well-developed communities. The canopy is dense and usually dominated by live oak and sabal palm. The sub-canopy contains abundant sabal palm with dahoon, red cedar, southern magnolia (*Magnolia grandiflora*), swamp bay, and *Citrus* sp. (naturalized from nearby citrus groves). Shrubs are occasional and include gallberry, fetterbush, wax myrtle, swamp bay, saw palmetto, smallflower pawpaw (*Asimina parviflora*), American beautyberry (*Callicarpa americana*), St. Andrew’s cross, yaupon (*Ilex vomitoria*), wild coffee (*Psychotria nervosa*), myrsine (*Myrsine cubana*), and bluestem palmetto (*Sabal minor*). The herbaceous layer is sparse with toothed midorus fern, longleaf woodoats, witchgrass, woodsgrass, cinnamon fern (*Osmunda cinnamomea*), American pokeweed (*Phytolacca americana*), bracken fern, whip nutrush (*Scleria triglomerata*), caesarweed (*Urena lobata*), fireweed (*Erechtites hieraciifolius*), Florida Keys hempvine (*Mikania cordifolia*), and common blue violet (*Viola sororia*). Epiphytes are abundant with golden polypody, resurrection fern (*Pleopeltis michauxiana*), ballmoss, spreading air-plant (*Tillandsia utriculata*), Spanish moss, and shoestring fern (*Vittaria lineata*) common. Vines are occasional and include rattan vine (*Berchemia scandens*), yellow jessamine (*Gelsemium sempervirens*), saw greenbrier, bristly greenbrier (*Smilax tamnoides*), eastern poison ivy (*Toxicodendron radicans*), and muscadine.

Drainage ditches are commonly found in larger mesic hammocks, and there are common non-native invasive species, including Surinam cherry (*Eugenia uniflora*), Japanese honeysuckle (*Lonicera japonica*), guava (*Psidium guajava*), Brazilian pepper, caesarweed, and tropical soda apple (*Solanum viarum*).

It appears that some of the present-day mesic hammock may have once been mesic or wet flatwoods that has since been invaded by oaks and sabal palms, possibly due to fire exclusion.

**Scrub (40.42 acres, 0.76%)**

Scrub is a community of evergreen shrubs, primarily scrub oaks, with or without a canopy of pines. A dense cover is formed by the oaks with patchy openings of bare sand and sparse herbaceous cover scattered throughout.

Scrub forms on dry, infertile, sandy ridges. Generally, the white or yellow sands are low-nutrient, acid sands with little organic matter.

Scrub is a fire-maintained community, but due to its difficulty in igniting, the frequency at which it burns is much lower than many other pyrogenic communities found near it. Depending on the dominant woody species in the area, the fire interval may vary greatly. Scrub oak-dominated scrub generally burns at a natural interval of five- to 20 years, based on habitat requirements of scrub-jays.

At the SLWMA, scrub occupies a single ridge on the west side of South Lake and contains almost no sand pine (*Pinus clausa*), but scrubby oaks such as sand live oak (*Quercus geminata*), Chapman's oak (*Quercus chapmanii*), and myrtle oak (*Quercus myrtifolia*) are abundant, usually forming a very low canopy. Saw palmetto is also common, creating up to 25% cover in many areas. Other dominant shrubs include rusty staggerbush and scrub wild olive (*Cartrema floridanum*). Herbs are rare, including sandyfield beaksedge (*Rhynchospora megalocarpa*), sweet goldenrod, and fernleaf yellow false foxglove (*Aureolaria pectinata*). Epiphytes such as ballmoss and Spanish moss may be common on oak branches and earleaf greenbrier is an occasional vine.

Disturbances to the scrub are mainly from the road running along the ridge, which was also present in the historic photos. The extent of scrub at the SLWMA appears to be unchanged since the 1940s. The smooth signature of the community in the historic aerials indicates that the community was mostly treeless at that time.

**Scrubby Flatwoods (82.63 acres, 1.55%)**

Scrubby flatwoods have elements characteristic of both mesic flatwoods and scrub communities. This community has an open canopy of widely spaced pine trees with a low, shrubby understory dominated by scrub oaks and saw palmetto, often interspersed with areas of barren white sand. In addition to the dominant shrubs, grasses and dwarf shrubs make up a substantial portion of the groundcover in this community.

Scrubby flatwoods occur on slight rises within mesic flatwoods and in transitional areas between scrub and mesic flatwoods, on moderately well-drained sands.

The more continuous groundcover of scrubby flatwoods burns more readily than scrub, but less than mesic flatwoods. Ground fires in surrounding mesic flatwoods often enter scrubby flatwoods and extinguish forming a patchwork of burned portions. A natural fire return interval between five and 10 years (and occasionally up to 15 years) allows scrub oaks to maintain dominance in the community. These oaks produce acorns three years post-fire, with peak production at five years.

At the SLWMA, scrubby flatwoods occur in the driest part of mesic flatwoods, and these two communities often intergrade gradually. The clearest examples of scrubby flatwoods at the SLWMA generally have an open canopy of slash pine, with sand live oak and live oak often forming small trees. Shrubs may be dense, and dominants include gallberry, Chapman's oak, sand live oak, myrtle oak, live oak, runner oak, dwarf live oak, saw palmetto, shiny blueberry, and deerberry (*Vaccinium stamineum*). Herbs are frequent and dominated by Southern wiregrass, with pinebarren frostweed, Piedmont pinweed (*Lechea torreyi*), sweet goldenrod, and goldenrod (*Solidago* sp.). Earleaf greenbrier is an occasional vine.

Disturbances to this community are light, but fire exclusion of surrounding mesic flatwoods has allowed oaks to grow tall and cause these areas to take on a scrubby appearance.

#### **Wet Flatwoods (589.91 acres, 11.23%)**

Wet flatwoods are open, pine canopy forests with an understory of hydrophytic herbs and shrubs. Southern wiregrass is a dominant component of this community carrying and promoting fire in the ecosystem. Often, the herbaceous layer is quite diverse, containing various graminoids and pyrogenic herbaceous species. Shrubs vary greatly in density in this community, dependent on the soils, hydrology, and fire return intervals.

Wet flatwoods often occur in the ecotones between mesic flatwoods and shrub bogs, wet prairie, dome swamps or strand swamps, creating an occasionally difficult to distinguish mosaic of communities. Wet flatwoods are often intermingled with mesic flatwoods, basin marsh, and depression marsh. They are distinguished from mesic flatwoods by the general lack of saw palmetto and more hydrophytic species in the understory. Wet flatwoods have more canopy cover than wet prairies, where the canopy is absent or quite sparse. Generally, the soils of a shrubbier wet flatwoods are poorly drained sands, while more herbaceous wet flatwoods have more loamy sands when the fire regime is considered.

Fire is an important factor in maintaining species richness as well as composition and typically occurs every two- to five years during the late spring/early summer lightning season. Wet flatwoods with a more frequent fire return interval have a sparser understory and a dense complement of herbs and smaller shrubs. Conversely, thick, shrubby understory layers tend to suppress groundcover plants.

Wet flatwoods at the SLWMA are what is generally termed “sabal palm flatwoods” or “sweet flatwoods” for the dominance of sabal palm in the subcanopy and shrub layers. This sub-type of

wet flatwoods develops on more alkaline soils and is maintained by fire. Slash pine is the dominant canopy species with a few other species such as live oak occasionally forming sub-canopy trees along with the dense sabal palms. Other shrubs may be sparse to dense including large gallberry, dahoon, gallberry, roundpod St. John's wort (*Hypericum cistifolium*), St. Andrew's cross, and wax myrtle. Herbs are generally sparse but may typically overlap with marsh species. Dominants include blue maidencane (*Amphicarpum muehlenbergianum*), toothed midsorus fern, sawgrass, witchgrass, early whitetop fleabane (*Erigeron vernus*), tenangle pipewort, dogfennel (*Eupatorium capillifolium*), Mohr's thoroughwort (*Eupatorium mohrii*), slender flattop goldenrod, bracken fern, fascicled beaksedge (*Rhynchospora fascicularis*), whip nutrush, sand cordgrass, wood sage (*Teucrium canadense*), caesarweed, bog white violet (*Viola lanceolata*), and yellow-eyed grass (*Xyris* sp.). Vines such as saw greenbrier, laurel greenbrier, lanceleaf greenbrier (*Smilax smallii*), and muscadine are occasional.

Wet flatwoods, like most communities at the SLWMA, has been impacted by hydrologic changes in the area. Most areas of wet flatwoods appear to contain far fewer trees in the past, although the signature on the historic photographs is distinct from the adjacent basin marsh. It is probable that much of the network of wet flatwoods was once much more marsh-like in appearance, possibly with sand cordgrass being a dominant herb. Thus, the pine-dominated community present today represents a succession caused by hydrologic changes. There is one large wet flatwoods near South Lake that was clearly dominated by pines, and it is in this same area that the largest pines on the property persist today. According to 1844 surveyor notes, these areas did contain frequent sabal palms.

#### **Xeric Hammock (2.49 acres, 0.05%)**

Xeric hammock is a mature evergreen forest on well-drained sandy soils. The low canopy is closed and dominated by sand live oak with longleaf pine (*Pinus palustris*) occasionally emerging above. The understory is usually open and consists of shrubs characteristic of sandhill or scrub, depending on the origin of the hammock.

Xeric hammock generally develops on well-drained sands as "tree islands" within sandhill or scrub communities.

Xeric hammock forms where fire-exclusion allows for the establishment of an oak canopy. This can occur naturally from fire barriers in the landscape. Consequently, the edges of xeric hammock may fluctuate with changes in the frequency of fire in the surrounding communities, growing larger when fire is excluded for long periods or shrinking with frequent, intense fires.

At the SLWMA, the xeric hammock occurs along a linear strip on the east side of the scrub ridge and is composed of scrubby oaks such as sand live oak, Chapman's oak, myrtle oak, and saw palmetto. Herbs occasionally include sandyfield beaksedge and sweet goldenrod. Epiphytes such as ballmoss and Spanish moss may be common on oak branches and earleaf greenbrier is an occasional vine.

#### **Altered Landcover Types**

**Canal/Ditch (3.76 acres, 0.07%)**

There are two main canals leading into Salt Lake which bring abundant offsite runoff to the Salt Lake Basin. One canal is located along Paces Landing Road and the other is just north of that.

**Clearing/Regeneration (3.51 acres, 0.07%)**

Clearing/Regeneration areas on the SLWMA are a result of the area being under cattle grazing for many decades prior to State ownership.

**Developed (3.15 acres, 0.06%)**

At the SLWMA, developed areas include the shop/office compound, the Arch Road and Dairy Road entrances, the Batson property and its structures, and the South Lake viewing platform. The developed areas are within a small footprint and are surrounded by natural vegetation communities.

**Firebreak (12.92 acres, 0.24%)**

Firebreaks include long-term, routinely maintained features used to limit the spread of fire, but not frequently driven except by FWC staff in association with actions related to fire and restoration work.

**Linear Feature (2.55 acres, 0.05%)**

Linear features on the SLWMA refer to the 3.5 mile marked, multi-use loop trail, as well as the 0.6-mile-long trail that leads to the overlook by South Lake.

**Pasture - Improved (25.26 acres, 0.47%)**

Similar to the Clearing/Regeneration areas on the SLWMA, the Pasture-Improved altered landcover type is mainly due to the past cattle grazing activities.

**Road (66.61 acres, 1.25%)**

Roads are areas that are maintained by FWC staff and used for vehicular traffic. The SLWMA offers 25.2 miles of unpaved roads, including two-tracks used regularly by area staff to access and manage the SLWMA regardless of public accessibility. 4.9 miles of road are available for public vehicular access.

**Successional Hardwood Forest (12.04 acres, 0.23%)**

Successional hardwood forests are closed-canopied forests dominated by fast growing hardwoods such as laurel oak (*Quercus hemisphaerica*), water oak (*Quercus nigra*), and/or sweetgum (*Liquidambar styraciflua*), often with remnant pines. These forests are either invaded natural upland habitat (i.e., mesic flatwoods, sandhill, upland pine, upland mixed woodland) due to lengthy fire-suppression or old fields that have succeeded to forest. The subcanopy and shrub layers of these forests are often dense and dominated by smaller individuals of the canopy species. Successional hardwood forests can contain remnant species of the former natural community such as turkey oak (*Quercus laevis*), saw palmetto, gallberry, and infrequently wiregrass (*Aristida stricta*). Additionally, species such as American beautyberry, muscadine, and sparkleberry (*Vaccinium arboreum*) are common. Restoration of these forests includes mechanical tree removal and 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.

**Successional Hydric Shrubland/Forest (7.51 acres, 0.14%)**

Successional hydric shrubland/forest are fire-excluded or disturbed areas that are dominated by fast-growing hydrophilic hardwoods. These shrubland/forests may invade herbaceous habitats such as wet flatwoods due to lengthy fire-suppression and/or hydrological alterations. Although some shifts in community type may be better described with a natural community designation, the use of “successional hydric shrubland” is suitable to label areas that are known to be highly disturbed and altered, and where restoration efforts of hydrology restoration and/or re-introduction of fire would be particularly beneficial.

**Utility Corridor (22.64 acres, 0.42%)**

The utility corridor can be found on the Main Tract of the SLWMA. It runs along the west border of Arch Road and can be found on both sides of Powerline Road.

**11.7 Native Plant Species**

Scientific Name	Common Name
<i>Acalypha gracilens</i>	Slender threeseed mercury
<i>Acer rubrum</i>	Red maple
<i>Acrostichum danaeifolium</i>	Giant leather fern
<i>Agalinis linifolia</i>	Flaxleaf false foxglove
<i>Agalinis maritima var. grandiflora</i>	Saltmarsh false foxglove
<i>Agalinis sp.</i>	False foxglove
<i>Ageratina jucunda</i>	Hammock snakeroot
<i>Ageratina sp.</i>	Snakeroot
<i>Aletris lutea</i>	Yellow colic-root
<i>Amaranthus australis</i>	Southern amaranth
<i>Ambrosia artemisiifolia</i>	Common ragweed
<i>Amorpha fruticosa</i>	False indigobush
<i>Amphicarpum muehlenbergianum</i>	Blue maidencane
<i>Andropogon brachystachyus</i>	Shortspike bluestem
<i>Andropogon floridanus</i>	Florida bluestem
<i>Andropogon glomeratus</i>	Bushy bluestem
<i>Andropogon glomeratus var. glaucopsis</i>	Purple bluestem
<i>Andropogon sp.</i>	Bluestem
<i>Andropogon ternarius</i>	Splitbeard bluestem
<i>Andropogon virginicus var. decipiens</i>	Broomsedge bluestem

<i>Andropogon virginicus</i> var. <i>glaucus</i>	Chalky bluestem
<i>Ardisia escallonioides</i>	Marlberry
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit
<i>Aristida</i> sp.	Threeawn
<i>Aristida spiciformis</i>	Bottlebrush threeawn
<i>Aristida stricta</i>	Wiregrass
<i>Aronia arbutifolia</i>	Red chokeberry
<i>Arundinaria gigantea</i>	Switchcane
<i>Asclepias incarnata</i>	Swamp milkweed
<i>Asclepias lanceolata</i>	Fewflower milkweed
<i>Asclepias longifolia</i>	Longleaf milkweed
<i>Asclepias pedicellata</i>	Savannah milkweed
<i>Asclepias</i> sp.	Milkweed
<i>Asclepias verticillata</i>	Whorled milkweed
<i>Asimina angustifolia</i>	Slimleaf pawpaw
<i>Asimina obovata</i>	Bigflower pawpaw
<i>Asimina parviflora</i>	Smallflower pawpaw
<i>Asimina pygmea</i>	Dwarf pawpaw
<i>Asimina reticulata</i>	Netted pawpaw
<i>Asimina</i> sp.	Pawpaw
<i>Aureolaria pectinata</i>	Fernleaf yellow false foxglove
<i>Aureolaria</i> sp.	Yellow false foxglove
<i>Axonopus fissifolius</i>	Common carpetgrass
<i>Axonopus furcatus</i>	Big carpetgrass
<i>Axonopus</i> sp.	Carpetgrass
<i>Baccharis angustifolia</i>	Saltwater falsewillow
<i>Baccharis glomeruliflora</i>	Silverling
<i>Baccharis halimifolia</i>	Groundsel tree
<i>Baccharis</i> sp.	Falsewillow
<i>Bacopa caroliniana</i>	Lemon bacopa
<i>Bacopa monnieri</i>	Herb-of-grace
<i>Bacopa</i> sp.	Waterhyssop
<i>Bartonia verna</i>	White screwstem
<i>Batis maritima</i>	Saltwort
<i>Bejaria racemosa</i>	Tarflower
<i>Berchemia scandens</i>	Rattan vine
<i>Bidens laevis</i>	Smooth beggarticks
<i>Bidens mitis</i>	Smallfruit beggarticks
<i>Bigelovia nudata</i> ssp. <i>nudata</i>	Pineland rayless goldenrod
<i>Boehmeria cylindrica</i>	False nettle

<i>Buchnera americana</i>	American bluehearts
<i>Bulbostylis ciliatifolia</i>	Capillary hairsedge
<i>Bulbostylis</i> sp.	Hairsedge
<i>Bulbostylis stenophylla</i>	Sandyfield hairsedge
<i>Burmannia biflora</i>	Bluethread
<i>Burmannia capitata</i>	Southern bluethread
<i>Callicarpa americana</i>	American beautyberry
<i>Callisia graminea</i>	Grassleaf roseling
<i>Calopogon</i> sp.	Grass-pink
<i>Calystegia sepium</i> ssp. <i>limnophila</i>	Hedge false bindweed
<i>Campanula floridana</i>	Florida bellflower
<i>Canna flaccida</i>	Bandana-of-the-Everglades
<i>Carex</i> sp.	Sedge
<i>Carica papaya</i>	Papaya
<i>Carphephorus corymbosus</i>	Coastalplain chaffhead
<i>Carphephorus odoratissimus</i>	Vanillaleaf
<i>Carphephorus paniculatus</i>	Hairy chaffhead
<i>Carphephorus</i> sp.	Chaffhead
<i>Cartrema americanum</i>	Wild olive
<i>Cartrema floridanum</i>	Scrub wild olive
<i>Cartrema</i> sp.	Devilwood
<i>Carya aquatica</i>	Water hickory
<i>Carya floridana</i>	Scrub hickory
<i>Carya glabra</i>	Pignut hickory
<i>Carya</i> sp.	Hickory
<i>Celtis laevigata</i>	Sugarberry
<i>Celtis</i> sp.	Hackberry
<i>Centella asiatica</i>	Spadeleaf
<i>Cephalanthus occidentalis</i>	Common buttonbush
<i>Chamaecrista fasciculata</i>	Partridge pea
<i>Chamaecrista nictitans</i>	Sensitive pea
<i>Chamaecrista</i> sp.	Sensitive pea
<i>Chaptalia tomentosa</i>	Pineland daisy
<i>Chasmanthium laxum</i>	Slender woodoats
<i>Chasmanthium nitidum</i>	Shiny woodoats
<i>Chasmanthium sessiliflorum</i>	Longleaf woodoats
<i>Chasmanthium</i> sp.	Woodoats
<i>Cicuta maculata</i>	Spotted water hemlock
<i>Cirsium horridulum</i>	Purple thistle
<i>Cirsium nuttallii</i>	Nuttall's thistle

<i>Cirsium</i> sp.	Thistle
<i>Citrus</i> sp.	Citrus
<i>Cladium jamaicense</i>	Sawgrass
<i>Clematis</i> sp.	Leather flower
<i>Cnidioscolus stimulosus</i>	Tread-softly
<i>Coelorachis rugosa</i>	Wrinkled jointgrass
<i>Coleataenia anceps</i>	Beaked panicum
<i>Coleataenia rigidula</i>	Redtop panicum
<i>Commelina erecta</i>	Whitemouth dayflower
<i>Commelina</i> sp.	Dayflower
<i>Conoclinium coelestinum</i>	Blue mistflower
<i>Erigeron canadensis</i>	Canadian horseweed
<i>Coreopsis floridana</i>	Florida tickseed
<i>Cornus foemina</i>	Swamp dogwood
<i>Crinum americanum</i>	String lily
<i>Crinum</i> sp.	Swamplily
<i>Crocانthemum carolinianum</i>	Carolina frostweed
<i>Crocانthemum corymbosum</i>	Pinebarren frostweed
<i>Crocانthemum</i> sp.	Frostweed
<i>Crotalaria rotundifolia</i>	Rabbitbells
<i>Crotalaria</i> sp.	Rattlebox
<i>Cuphea</i> sp.	Waxweed
<i>Cuscuta</i> sp.	Dodder
<i>Cyperus croceus</i>	Baldwin's flatsedge
<i>Cyperus erythrorhizos</i>	Redroot flatsedge
<i>Cyperus neotropicalis</i>	American halfchaff sedge
<i>Cyperus odoratus</i>	Fragrant flatsedge
<i>Cyperus ovatus</i>	Pinebarren flatsedge
<i>Cyperus polystachyos</i>	Manyspike flatsedge
<i>Cyperus</i> sp.	Flatsedge
<i>Cyperus tetragonus</i>	Fourangle flatsedge
<i>Desmodium paniculatum</i>	Panicled tick-trefoil
<i>Dichantheium commutatum</i>	Variable witchgrass
<i>Dichantheium ensifolium</i> var. <i>unciphyllum</i>	Cypress witchgrass
<i>Dichantheium</i> sp.	Witchgrass
<i>Dichantheium strigosum</i> var. <i>strigosum</i>	Roughhair witchgrass
<i>Dichondra carolinensis</i>	Carolina ponysfoot
<i>Digitaria ciliaris</i>	Southern crabgrass
<i>Digitaria</i> sp.	Crabgrass
<i>Diodia</i> sp.	Buttonweed

<i>Diodia virginiana</i>	Virginia buttonweed
<i>Diospyros virginiana</i>	Common persimmon
<i>Distichlis</i> sp.	Saltgrass; Shoregrass
<i>Distichlis spicata</i>	Saltgrass
<i>Drosera brevifolia</i>	Dwarf sundew
<i>Drosera capillaris</i>	Pink sundew
<i>Drosera</i> sp.	Sundew
<i>Dyschoriste oblongifolia</i>	Oblongleaf twinflower
<i>Dyschoriste</i> sp.	Twinflower
<i>Eclipta prostrata</i>	False daisy
<i>Edrastima uniflora</i>	Clustered mille grains
<i>Eleocharis baldwinii</i>	Baldwin's spikerush
<i>Eleocharis cellulosa</i>	Gulf coast spikerush
<i>Eleocharis elongata</i>	Slim spikerush
<i>Eleocharis flavescens</i>	Yellow spikerush
<i>Eleocharis</i> sp.	Spikerush
<i>Eleocharis vivipara</i>	Viviparous spikerush
<i>Elephantopus elatus</i>	Tall elephantsfoot
<i>Eragrostis refracta</i>	Coastal lovegrass
<i>Eragrostis</i> sp.	Lovegrass
<i>Eragrostis spectabilis</i>	Purple lovegrass
<i>Erechtites hieraciifolius</i>	Fireweed
<i>Erigeron canadensis</i>	Canadian horseweed
<i>Erigeron quercifolius</i>	Oakleaf fleabane
<i>Erigeron</i> sp.	Fleabane
<i>Erigeron vernus</i>	Early whitetop fleabane
<i>Eriocaulon compressum</i>	Flattened pipewort
<i>Eriocaulon decangulare</i>	Tenangle pipewort
<i>Eriocaulon</i> sp.	Pipewort
<i>Eriochloa michauxii</i> var. <i>michauxii</i>	Michaux's cupgrass
<i>Eriogonum tomentosum</i>	Dogtongue wild buckwheat
<i>Eryngium baldwinii</i>	Baldwin's eryngo
<i>Eryngium</i> sp.	Eryngo
<i>Eryngium yuccifolium</i>	Button rattlesnakemaster
<i>Erythrina herbacea</i>	Coralbean
<i>Eugenia</i> sp.	Stopper
<i>Eulophia alta</i>	Wild coco
<i>Eupatorium album</i>	White thoroughwort
<i>Eupatorium capillifolium</i>	Dogfennel
<i>Eupatorium leptophyllum</i>	Falsefennel

<i>Eupatorium leucolepis</i>	Justiceweed
<i>Eupatorium mikanioides</i>	Semaphore thoroughwort
<i>Eupatorium mohrii</i>	Mohr's thoroughwort
<i>Eupatorium rotundifolium</i>	Roundleaf thoroughwort
<i>Eupatorium serotinum</i>	Lateflowering thoroughwort
<i>Eupatorium</i> sp.	Thoroughwort
<i>Euphorbia hypericifolia</i>	Graceful sandmat
<i>Euthamia caroliniana</i>	Slender flattop goldenrod
<i>Euthamia graminifolia</i>	Flattop goldenrod
<i>Fimbristylis autumnalis</i>	Slender fimbry
<i>Fimbristylis dichotoma</i>	Forked fimbry
<i>Fimbristylis puberula</i>	Hairy fimbry
<i>Fimbristylis spadicea</i>	Marsh fimbry
<i>Flaveria linearis</i>	Narrowleaf yellowtops
<i>Fraxinus caroliniana</i>	Carolina ash
<i>Fuirena breviseta</i>	Saltmarsh umbrellasedge
<i>Fuirena scirpoidea</i>	Southern umbrellasedge
<i>Fuirena</i> sp.	Umbrellasedge
<i>Funastrum clausum</i>	White twinevine
<i>Galactia elliotii</i>	Elliott's milkpea
<i>Galactia</i> sp.	Milkpea
<i>Galactia volubilis</i>	Downy milkpea
<i>Galium pilosum</i>	Hairy bedstraw
<i>Galium</i> sp.	Bedstraw
<i>Gaylussacia dumosa</i>	Dwarf huckleberry
<i>Gaylussacia frondosa</i>	Blue huckleberry
<i>Gaylussacia mosieri</i>	Woolly huckleberry
<i>Gelsemium sempervirens</i>	Yellow jessamine
<i>Geobalanus oblongifolius</i>	Gopher apple
<i>Geranium carolinianum</i>	Carolina cranesbill
<i>Gordonia lasianthus</i>	Loblolly bay
<i>Gordonia</i> sp.	Gordonia
<i>Gratiola brevifolia</i>	Sticky hedgehyssop
<i>Gratiola ramosa</i>	Branched hedgehyssop
<i>Gratiola</i> sp.	Hedgehyssop
<i>Habenaria floribunda</i>	Toothpetal false rein orchid
<i>Habenaria quinqueseta</i>	Longhorn false rein orchid
<i>Habenaria</i> sp.	False rein orchid
<i>Helenium pinnatifidum</i>	Southeastern sneezeweed
<i>Helianthus agrestis</i>	Southeastern sunflower

<i>Helianthus angustifolius</i>	Narrowleaf sunflower
<i>Helianthus floridanus</i>	Florida sunflower
<i>Hibiscus grandiflorus</i>	Swamp rosemallow
<i>Hieracium gronovii</i>	Queen-devil
<i>Hieracium megacephalon</i>	Coastalplain hawkweed
<i>Houstonia procumbens</i>	Roundleaf bluet
<i>Hydrocotyle ranunculoides</i>	Floating marshpennywort
<i>Hydrocotyle</i> sp.	Marshpennywort
<i>Hydrocotyle umbellata</i>	Manyflower marshpennywort
<i>Hydrocotyle verticillata</i>	Whorled marshpennywort
<i>Hymenachne hemitoma</i>	Maidencane
<i>Hymenocallis palmeri</i>	Alligatorlily
<i>Hymenocallis</i> sp.	Spiderlily
<i>Hypericum brachyphyllum</i>	Coastalplain St. John's wort
<i>Hypericum cistifolium</i>	Roundpod St. John's wort
<i>Hypericum fasciculatum</i>	Peelbark St. John's wort
<i>Hypericum gentianoides</i>	Orangegrass
<i>Hypericum hypericoides</i>	St. Andrew's cross
<i>Hypericum mutilum</i>	Dwarf St. John's wort
<i>Hypericum myrtifolium</i>	Myrtleleaf St. John's wort
<i>Hypericum</i> sp.	St. John's wort
<i>Hypericum tenuifolium</i>	Atlantic St. John's wort
<i>Hypericum tetrapetalum</i>	Fourpetal St. John's wort
<i>Hypoxis juncea</i>	Fringed yellow stargrass
<i>Hypoxis wrightii</i>	Bristleseed yellow stargrass
<i>Hyptis alata</i>	Clustered bushmint
<i>Ilex ambigua</i>	Sand holly
<i>Ilex cassine</i>	Dahoon
<i>Ilex coriacea</i>	Large gallberry
<i>Ilex glabra</i>	Gallberry
<i>Ilex vomitoria</i>	Yaupon
<i>Ipomoea sagittata</i>	Saltmarsh morning glory
<i>Ipomoea</i> sp.	Morning glory
<i>Ipomopsis rubra</i>	Spanish larkspur
<i>Iris hexagona</i>	Prairie iris
<i>Iris</i> sp.	Iris
<i>Iva microcephala</i>	Piedmont marshelder
<i>Juncus coriaceus</i>	Leathery rush
<i>Juncus effusus</i> ssp. <i>solutus</i>	Soft rush
<i>Juncus marginatus</i>	Grassleaf rush

<i>Juncus megacephalus</i>	Bighead rush
<i>Juncus polycephalos</i>	Manyhead rush
<i>Juncus roemerianus</i>	Needle rush
<i>Juncus scirpoides</i>	Needlepod rush
<i>Juncus</i> sp.	Rush
<i>Juniperus virginiana</i>	Red cedar
<i>Kellochloa verrucosa</i>	Warty panicgrass
<i>Kosteletzkya pentacarpos</i>	Virginia saltmarsh mallow
<i>Lachnanthes carolina</i>	Carolina redroot
<i>Lachnocaulon anceps</i>	Whitehead bogbutton
<i>Lactuca</i> sp.	Lettuce
<i>Lantana</i> sp.	Shrubverbena
<i>Lechea deckertii</i>	Deckert's pinweed
<i>Lechea</i> sp.	Pinweed
<i>Lechea torreyi</i>	Piedmont pinweed
<i>Liatris gracilis</i>	Slender gayfeather
<i>Liatris</i> sp.	Blazing star
<i>Liatris spicata</i>	Dense gayfeather
<i>Liatris tenuifolia</i>	Shortleaf gayfeather
<i>Linaria canadensis</i>	Canadian toadflax
<i>Lindernia dubia</i>	Moistbank pimpernel
<i>Lindernia</i> sp.	False pimpernel
<i>Linum floridanum</i>	Florida yellow flax
<i>Linum</i> sp.	Flax
<i>Liquidambar styraciflua</i>	Sweetgum
<i>Lobelia feayana</i>	Bay lobelia
<i>Lobelia glandulosa</i>	Glade lobelia
<i>Lobelia</i> sp.	Lobelia
<i>Ludwigia linearis</i>	Narrowleaf primrose willow
<i>Ludwigia maritima</i>	Seaside primrose willow
<i>Ludwigia microcarpa</i>	Smallfruit primrose willow
<i>Ludwigia octovalvis</i>	Mexican primrose willow
<i>Ludwigia palustris</i>	Marsh seedbox
<i>Ludwigia repens</i>	Creeping primrose willow
<i>Ludwigia</i> sp.	Primrosewillow
<i>Lupinus diffusus</i>	Skyblue lupine
<i>Lupinus villosus</i>	Lady lupine
<i>Lycium carolinianum</i>	Christmasberry
<i>Lycopus rubellus</i>	Taperleaf waterhorehound
<i>Lygodesmia aphylla</i>	Rose-rush

<i>Lyonia ferruginea</i>	Rusty staggerbush
<i>Lyonia fruticosa</i>	Coastalplain staggerbush
<i>Lyonia lucida</i>	Fetterbush
<i>Lythrum alatum</i>	Winged loosestrife
<i>Magnolia grandiflora</i>	Southern magnolia
<i>Magnolia virginiana</i>	Sweetbay
<i>Mecardonia acuminata</i>	Axilflower
<i>Melanthera nivea</i>	Snow squarestem
<i>Melothria pendula</i>	Creeping cucumber
<i>Mikania cordifolia</i>	Florida Keys hempvine
<i>Mikania scandens</i>	Climbing hempvine
<i>Mikania</i> sp.	Hempvine
<i>Mimosa quadrivalvis</i>	Sensitive brier
<i>Monotropa uniflora</i>	Indianpipe
<i>Morella cerifera</i>	Wax myrtle
<i>Morella</i> sp.	Bayberry
<i>Morus rubra</i>	Red mulberry
<i>Muhlenbergia capillaris</i>	Hairawn muhly
<i>Myrsine cubana</i>	Myrsine
<i>Najas guadalupensis</i>	Southern waternymph
<i>Nekemias arborea</i>	Peppervine
<i>Nothoscordum bivalve</i>	False garlic
<i>Nuphar advena</i>	Yellow pondlily
<i>Nymphaea odorata</i>	White waterlily
<i>Nyssa</i> sp.	Tupelo
<i>Nyssa sylvatica</i> var. <i>biflora</i>	Swamp tupelo
<i>Oclemena reticulata</i>	Pinebarren aster
<i>Oenothera simulans</i>	Southern beeblossom
<i>Oplismenus hirtellus</i>	Woodsglass
<i>Oplismenus setarius</i>	Shortleaf basketgrass
<i>Opuntia austrina</i>	Devil's-tongue
<i>Orthosia scoparia</i>	Leafless swallowwort
<i>Ostrya virginiana</i>	Eastern hophornbeam
<i>Oxalis corniculata</i>	Common yellow woodsorrel
<i>Oxalis</i> sp.	Woodsorrel
<i>Packera glabella</i>	Butterweed
<i>Palafoxia integrifolia</i>	Coastalplain palafox
<i>Panicum dichotomiflorum</i>	Fall panic grass
<i>Panicum hemitomom</i>	Mountain panic
<i>Panicum</i> sp.	Panic grass

<i>Panicum virgatum</i>	Switchgrass
<i>Parietaria floridana</i>	Florida pellitory
<i>Parthenocissus quinquefolia</i>	Virginia creeper
<i>Paspalum conjugatum</i>	Sour paspalum
<i>Paspalum eglume</i>	Florida reimargrass
<i>Paspalum praecox</i>	Early paspalum
<i>Paspalum setaceum</i>	Thin paspalum
<i>Paspalum</i> sp.	Crowngrass
<i>Paspalum vaginatum</i>	Seashore paspalum
<i>Passiflora incarnata</i>	Purple passion-flower
<i>Passiflora lutea</i>	Yellow passion-flower
<i>Passiflora suberosa</i>	Corkystem passion-flower
<i>Persea borbonia</i>	Red bay
<i>Persea borbonia</i> var. <i>humilis</i>	Silk bay
<i>Persea palustris</i>	Swamp bay
<i>Persea</i> sp.	Bay
<i>Persicaria hydropiperoides</i>	Swamp smartweed
<i>Persicaria punctata</i>	Dotted smartweed
<i>Phlebodium aureum</i>	Golden polypody
<i>Phragmites australis</i>	Common reed
<i>Phyla nodiflora</i>	Turkey tangle fogfruit
<i>Phyllanthus</i> sp.	Leaf-flower
<i>Physalis</i> sp.	Groundcherry
<i>Phytolacca americana</i>	American pokeweed
<i>Pinguicula pumila</i>	Small butterwort
<i>Pinus clausa</i>	Sand pine
<i>Pinus elliotii</i>	Slash pine
<i>Pinus elliotii</i> var. <i>densa</i>	South Florida slash pine
<i>Pinus palustris</i>	Longleaf pine
<i>Pinus taeda</i>	Loblolly pine
<i>Piptochaetium avenacioides</i>	Florida needlegrass
<i>Piriqueta cistoides</i> ssp. <i>caroliniana</i>	Pitted stripeseed
<i>Pityopsis graminifolia</i>	Narrowleaf silkgrass
<i>Pityopsis</i> sp.	Silkgrass
<i>Plantago virginica</i>	Virginia plantain
<i>Pleopeltis michauxiana</i>	Resurrection fern
<i>Pluchea baccharis</i>	Rosy camphorweed
<i>Pluchea foetida</i>	Stinking camphorweed
<i>Pluchea odorata</i>	Sweetscent
<i>Pluchea</i> sp.	Camphorweed

<i>Polygala balduinii</i>	Baldwin's milkwort
<i>Polygala cruciata</i>	Drumheads
<i>Polygala cymosa</i>	Tall pinebarren milkwort
<i>Polygala incarnata</i>	Procession flower
<i>Polygala lutea</i>	Orange milkwort
<i>Polygala nana</i>	Candyroot
<i>Polygala ramosa</i>	Low pinebarren milkwort
<i>Polygala rugelii</i>	Yellow milkwort
<i>Polygala setacea</i>	Coastalplain milkwort
<i>Polygala</i> sp.	Milkwort
<i>Polygonum pinicola</i>	Tall jointweed
<i>Polygonum</i> sp.	Knotweed
<i>Polypremum procumbens</i>	Rustweed
<i>Pontederia cordata</i>	Pickerelweed
<i>Proserpinaca palustris</i>	Marsh mermaidweed
<i>Proserpinaca pectinata</i>	Combleaf mermaidweed
<i>Prunus caroliniana</i>	Carolina laurelcherry
<i>Prunus</i> sp.	Cherry
<i>Prunus umbellata</i>	Flatwoods plum
<i>Pseudognaphalium obtusifolium</i>	Sweet everlasting
<i>Psilotum nudum</i>	Whisk-fern
<i>Psychotria nervosa</i>	Wild coffee
<i>Psychotria tenuifolia</i>	Shortleaf wild coffee
<i>Pteridium aquilinum</i> var. <i>caudatum</i>	Lacy bracken
<i>Pteridium aquilinum</i> var. <i>pseudocaudatum</i>	Tailed bracken
<i>Pteridium pseudocaudatum</i>	Bracken fern
<i>Pterocaulon pycnostachyum</i>	Blackroot
<i>Ptilimnium capillaceum</i>	Mock bishopsweed
<i>Quercus chapmanii</i>	Chapman's oak
<i>Quercus geminata</i>	Sand live oak
<i>Quercus hemisphaerica</i>	Laurel oak
<i>Quercus incana</i>	Bluejack oak
<i>Quercus laurifolia</i>	Swamp laurel oak
<i>Quercus minima</i>	Dwarf live oak
<i>Quercus myrtifolia</i>	Myrtle oak
<i>Quercus nigra</i>	Water oak
<i>Quercus pumila</i>	Runner oak
<i>Quercus</i> sp.	Oak
<i>Quercus virginiana</i>	Live oak
<i>Rhexia mariana</i>	Pale meadowbeauty

<i>Rhexia nashii</i>	Maid Marian
<i>Rhexia nuttallii</i>	Nuttall's meadowbeauty
<i>Rhexia petiolata</i>	Fringed meadowbeauty
<i>Rhexia</i> sp.	Meadowbeauty
<i>Rhexia virginica</i>	Handsome Harry
<i>Rhus copallinum</i>	Winged sumac
<i>Rhynchospora colorata</i>	Starrush white-top
<i>Rhynchospora corniculata</i>	Shortbristle horned beaksedge
<i>Rhynchospora fascicularis</i>	Fascicled beaksedge
<i>Rhynchospora fernaldii</i>	Fernald's beaksedge
<i>Rhynchospora filifolia</i>	Threadleaf beaksedge
<i>Rhynchospora inundata</i>	Narrowfruit horned beaksedge
<i>Rhynchospora megalocarpa</i>	Sandyfield beaksedge
<i>Rhynchospora microcarpa</i>	Southern beaksedge
<i>Rhynchospora microcephala</i>	Smallhead beaksedge
<i>Rhynchospora miliacea</i>	Millet beaksedge
<i>Rhynchospora plumosa</i>	Plumed beaksedge
<i>Rhynchospora</i> sp.	Beaksedge
<i>Rhynchospora tracyi</i>	Tracy's beaksedge
<i>Richardia</i> sp.	Mexican clover
<i>Rivina humilis</i>	Rougeplant
<i>Rubus cuneifolius</i>	Sand blackberry
<i>Rubus pensilvanicus</i>	Sawtooth blackberry
<i>Rubus</i> sp.	Blackberry
<i>Rubus trivialis</i>	Southern dewberry
<i>Ruellia caroliniensis</i>	Carolina wild petunia
<i>Rumex</i> sp.	Dock
<i>Sabal minor</i>	Bluestem palmetto
<i>Sabal palmetto</i>	Sabal palm
<i>Sabatia brevifolia</i>	Shortleaf rosegentian
<i>Sabatia decandra</i>	Bartram's rosegentian
<i>Sabatia grandiflora</i>	Largeflower rosegentian
<i>Sabatia</i> sp.	Rosegentian
<i>Saccharum</i> sp.	Sugarcane; Plumgrass
<i>Sacciolepis</i> sp.	Cupscale
<i>Sacciolepis striata</i>	American cupscale
<i>Sageretia minutiflora</i>	Smallflower mock buckthorn
<i>Sagittaria graminea</i>	Grassy arrowhead
<i>Sagittaria lancifolia</i>	Bulltongue arrowhead
<i>Sagittaria latifolia</i>	Common arrowhead

<i>Sagittaria</i> sp.	Arrowhead
<i>Salicornia ambigua</i>	Perennial glasswort
<i>Salix caroliniana</i>	Coastalplain willow
<i>Salvia lyrata</i>	Lyreleaf sage
<i>Sambucus nigra</i> ssp. <i>canadensis</i>	Elderberry
<i>Samolus ebracteatus</i>	Water pimpernel
<i>Samolus</i> sp.	Pimpernel
<i>Samolus valerandi</i> ssp. <i>parviflorus</i>	Pineland pimpernel
<i>Schizachyrium</i> sp.	Little bluestem
<i>Schizachyrium stoloniferum</i>	Creeping little bluestem
<i>Schoenoplectus californicus</i>	Giant bulrush
<i>Scirpus cyperinus</i>	Woolgrass
<i>Scirpus</i> sp.	Bulrush
<i>Scleria ciliata</i>	Curtiss' nutrush
<i>Scleria reticularis</i>	Netted nutrush
<i>Scleria</i> sp.	Nutrush
<i>Scleria triglomerata</i>	Whip nutrush
<i>Scoparia dulcis</i>	Licoriceweed
<i>Scutellaria elliptica</i>	Hairy skullcap
<i>Scutellaria integrifolia</i>	Helmet skullcap
<i>Scutellaria</i> sp.	Skullcap
<i>Senna ligustrina</i>	Privet wild sensitive plant
<i>Sericocarpus tortifolius</i>	Dixie aster
<i>Sesbania herbacea</i>	Danglepod
<i>Sesbania vesicaria</i>	Bladderpod
<i>Sesuvium portulacastrum</i>	Shoreline seapurslane
<i>Setaria magna</i>	Giant bristlegrass
<i>Setaria parviflora</i>	Knotroot foxtail
<i>Setaria</i> sp.	Bristlegass: Foxtail
<i>Sida rhombifolia</i>	Cuban jute
<i>Sideroxylon reclinatum</i>	Florida bully
<i>Sideroxylon</i> sp.	Bully
<i>Sideroxylon tenax</i>	Tough bully
<i>Sisyrinchium angustifolium</i>	Narrowleaf blue-eyed grass
<i>Smilax auriculata</i>	Earleaf greenbrier
<i>Smilax bona-nox</i>	Saw greenbrier
<i>Smilax laurifolia</i>	Laurel greenbrier
<i>Smilax smallii</i>	Lanceleaf greenbrier
<i>Smilax</i> sp.	Greenbrier
<i>Smilax tamnoides</i>	Bristly greenbrier

<i>Smilax walteri</i>	Coral greenbrier
<i>Solanum</i> sp.	Nightshade
<i>Solidago fistulosa</i>	Pinebarren goldenrod
<i>Solidago odora</i>	Sweet goldenrod
<i>Solidago odora</i> var. <i>chapmanii</i>	Chapman's goldenrod
<i>Solidago sempervirens</i>	Seaside goldenrod
<i>Solidago</i> sp.	Goldenrod
<i>Solidago stricta</i>	Wand goldenrod
<i>Sonchus</i> sp.	Sowthistle
<i>Sophranathe hispida</i>	Rough hedgehyssop
<i>Sophranathe pilosa</i>	Shaggy hedgehyssop
<i>Sorghastrum elliotii</i>	Slender Indiangrass
<i>Sorghastrum secundum</i>	Lopsided Indiangrass
<i>Spartina bakeri</i>	Sand cordgrass
<i>Spartina patens</i>	Saltmeadow cordgrass
<i>Spartina</i> sp.	Cordgrass
<i>Sphagnum</i> sp.	Peatmoss
<i>Spiranthes praecox</i>	Greenvein ladies'-tresses
<i>Spiranthes vernalis</i>	Spring ladies'-tresses
<i>Sporobolus virginicus</i>	Seashore dropseed
<i>Stachys floridana</i>	Florida betony
<i>Stenanthium densum</i>	Crowpoison
<i>Stillingia sylvatica</i>	Queen's delight
<i>Symphyotrichum carolinianum</i>	Climbing aster
<i>Symphyotrichum</i> sp.	Aster
<i>Symphyotrichum subulatum</i>	Annual saltmarsh aster
<i>Syngonanthus flavidulus</i>	Yellow hatpins
<i>Telmatoblechnum serrulatum</i>	Toothed midsorus fern
<i>Teucrium canadense</i>	Wood sage
<i>Thelypteris interrupta</i>	Hottentot fern
<i>Thelypteris kunthii</i>	Southern shield fern
<i>Tiedemannia filiformis</i> ssp. <i>filiformis</i>	Water cowbane
<i>Tillandsia bartramii</i>	Bartram's air-plant
<i>Tillandsia recurvata</i>	Ballmoss
<i>Tillandsia setacea</i>	Southern needleleaf
<i>Tillandsia</i> sp.	Air-plant
<i>Tillandsia usneoides</i>	Spanish moss
<i>Toxicodendron radicans</i>	Eastern poison ivy
<i>Toxicodendron vernix</i>	Poison sumac
<i>Tradescantia ohioensis</i>	Ohio spiderwort

<i>Tripsacum dactyloides</i>	Eastern gamagrass
<i>Typha latifolia</i>	Broadleaf cattail
<i>Ulmus americana</i>	American elm
<i>Utricularia foliosa</i>	Leafy bladderwort
<i>Utricularia gibba</i>	Humped bladderwort
<i>Utricularia purpurea</i>	Eastern purple bladderwort
<i>Utricularia</i> sp.	Bladderwort
<i>Utricularia subulata</i>	Zigzag bladderwort
<i>Vaccinium corymbosum</i>	Highbush blueberry
<i>Vaccinium darrowii</i>	Darrow's blueberry
<i>Vaccinium elliotii</i>	Elliott's blueberry
<i>Vaccinium myrsinites</i>	Shiny blueberry
<i>Vaccinium</i> sp.	Blueberry
<i>Vaccinium stamineum</i>	Deerberry
<i>Verbesina virginica</i>	White crownbeard
<i>Vernonia gigantea</i>	Giant ironweed
<i>Viburnum obovatum</i>	Walter's viburnum
<i>Viburnum</i> sp.	Viburnum
<i>Vicia acutifolia</i>	Fourleaf vetch
<i>Vicia</i> sp.	Vetch
<i>Vigna luteola</i>	Hairy-pod cowpea
<i>Viola lanceolata</i>	Bog white violet
<i>Viola primulifolia</i>	Primroseleaf violet
<i>Viola sororia</i>	Common blue violet
<i>Viola</i> sp.	Violet
<i>Vitis cinerea</i> var. <i>floridana</i>	Florida grape
<i>Vitis rotundifolia</i>	Muscadine
<i>Vitis shuttleworthii</i>	Calloose grape
<i>Vittaria lineata</i>	Shoestring fern
<i>Woodwardia virginica</i>	Virginia chain fern
<i>Ximenia americana</i>	Hog plum
<i>Xyris ambigua</i>	Coastalplain yellow-eyed grass
<i>Xyris brevifolia</i>	Shortleaf yellow-eyed grass
<i>Xyris caroliniana</i>	Carolina yellow-eyed grass
<i>Xyris elliotii</i>	Elliott's yellow-eyed grass
<i>Xyris fimbriata</i>	Fringed yellow-eyed grass
<i>Xyris flabelliformis</i>	Savannah yellow-eyed grass
<i>Xyris</i> sp.	Yellow-eyed grass
<i>Yucca aloifolia</i>	Spanish bayonet
<i>Yucca filamentosa</i>	Adam's needle



## 11.8 FNAI Natural Areas Inventory Ranking System and Definitions

## Elements and Element Occurrences

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

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

## Element Ranking and Legal Status

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

### **FNAI GLOBAL ELEMENT RANK**

- G1** = Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
- G2** = Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
- G3** = Either very rare and local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.
- G4** = Apparently secure globally (may be rare in parts of range).
- G5** = Demonstrably secure globally.
- GH** = Of historical occurrence throughout its range, may be rediscovered (e.g., ivory-billed woodpecker).
- GX** = Believed to be extinct throughout range.
- GXC** = Extirpated from the wild but still known from captivity or cultivation.
- G#?** = Tentative rank (e.g., G2?).
- G#G#** = Range of rank; insufficient data to assign specific global rank (e.g., G2G3).
- G#T#** = Rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definition as above (e.g., G3T1).
- G#Q** = Rank of questionable species - ranked as species but questionable whether it is species or subspecies; numbers have same definition as above (e.g., G2Q).
- G#T#Q** = Same as above, but validity as subspecies or variety is questioned.
- GU** = Unrankable; due to a lack of information no rank or range can be assigned (e.g., GLUT2).
- GNA** = Ranking is not applicable because the element is not a suitable target for conservation (e.g. a hybrid species).
- GNR** = Element not yet ranked (temporary).
- GNRTNR** = Neither the element nor the taxonomic subgroup has yet been ranked.

### **FNAI STATE ELEMENT RANK**

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

## **FEDERAL LEGAL STATUS**

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

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

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

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

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

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

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

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

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

**PE** = Species proposed for listing as endangered.

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

**PT** = Species proposed for listing as threatened.

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

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

**DL** = Delisted.

**UR** = Under review.

## **STATE LEGAL STATUS**

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

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

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

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

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

**FXN** = Federal listed as an experimental population in Florida

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

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

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

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

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

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

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

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

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

## Element Occurrence Ranking

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

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

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

FNAI also uses the following EO ranks:

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

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

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

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

## 11.9 Imperiled Plant Descriptions

Many-Flowered Grasspink (*Calopogon multiflorus*) - Many-flowered grasspink, state Threatened, is a terrestrial orchid with a pungent fragrance. This species prefers well-drained soils in open, dry to moist pine flatwoods and prairie. Many-flowered grasspink needs prescribed fire every two to three years during the growing season for it to survive, and it actually thrives with disturbance from fire, demonstrating a more vigorous flowering after fire. Soil and hydrologic disturbance negatively affect this species; therefore, avoid roller-chopping in areas of known occurrences. Flowering, which occurs primarily three to five weeks post-fire (often in April/May) but may occur from early March to July depending on fire management regime, is the best time for conducting surveys or verifying species identity.

Butterfly Orchid (*Encyclia tampensis*) - Butterfly orchid is epiphytic on many different trees and prefers moist to wet areas in depression marsh, glades marsh, rockland hammock, slough, strand swamp, tidal swamp, and wet flatwoods. It may occur in dome swamp, floodplain swamp, hydric hammock, and mesic hammock. This species does not require fire, but it is beneficial to allow fire to naturally enter and extinguish within its habitats when feasible. Illegal collecting negatively affects this species; therefore, protect known occurrences and make sure not to negatively influence areas with known occurrences. While plants are identifiable all year by their well-developed pseudobulbs, surveys for flowers can occur during peak flowering, which occurs May to September, and surveys for fruits can occur throughout the year.

Green-Fly Orchid (*Epidendrum conopseum*) – Green-fly orchid is an epiphytic orchid that grows on many different trees and prefers moist to wet areas in basin swamp, bottomland forest, depression marsh, maritime hammock, sinkhole, and upland hardwood forest. It may occur in dome swamp, floodplain swamp, hydric hammock, and mesic hammock. This species does not require fire, but it is beneficial to allow fire to naturally enter and extinguish within its habitats when feasible. Illegal collecting and hydrological disturbances negatively affect this species; therefore, protect areas with known occurrences and maintain and restore the natural hydrology where practicable. Flowering, which occurs from June to October, or fruiting, which occurs from September to January, are the best times for conducting surveys or verifying species identity.

Non-Crested Eulophia (*Eulophia ecristata*) - Non-crested eulophia is a perennial, deciduous herb that prefers open areas, with at least filtered sunlight and no dense shrub competition in mesic flatwoods, pine rockland, sandhill, scrub, scrubby flatwoods, and wet flatwoods. While this species may persist for long periods in xeric habitats without fire, occasional fire is needed to reduce competition and shading by shrubs. However, non-crested eulophia is dependent on frequent fire in moist habitats that experience rapid shrub growth, and prescribed fire should occur with a frequency that will create or maintain open areas, limit the shrub layer, and encourage diverse herbaceous cover. Excessive site preparation and illegal collecting negatively affect this species; therefore, protect areas with known occurrences. Flowering, which occurs from July to September, or fruiting, which occurs from September to November, are the best times for conducting surveys or verifying species identity.

Threadroot Orchid (*Harrisella porrecta*) - Threadroot orchid is Florida's smallest epiphytic orchid, and it prefers dome swamp, mesic hammock, hydric hammock, strand swamp, and wet flatwoods. Typically, this species prefers non-pyrogenic habitats that only experience occasional burns during drought conditions and not frequent fires. Illegal collecting and hydrological disturbances negatively affect this species; therefore, protect areas with known occurrences and maintain and

restore the natural hydrology where practicable. Fruiting, which occurs from March to June, is the best time for conducting surveys or verifying species identity.

Catesby Lily (*Lilium catesbaei*) - Catesby lily, also known as pine lily, is a perennial herb and is the largest of any North American lily. This species prefers open areas in wet pine flatwoods and wet prairie, especially in pitcher plant bog with sphagnum. Unlike most lily species, Catesby lilies require warm, moist, acidic soil and will grow in saturated soil conditions. This species requires a fire regime that includes frequent (two to three years) fire to maintain and promote the open grassy habitats that it favors, with most fire occurring during the growing season. This species thrives with disturbance from fire, demonstrating a more vigorous flowering. Soil and hydrologic disturbances negatively affect this species; therefore, limit the impact of disruptive activities and maintain and restore the natural hydrology where practicable. Flowering, which occurs from August to November, is the best time for conducting surveys or verifying species identity.

Southern Twayblade (*Listera australis*) - Southern twayblade is a small terrestrial orchid that prefers partially shaded to sunny areas in bottomland forest, baygall, mesic and wet flatwoods, ravines, banks of streams, hydric hammock, and upland hardwood forest. Botanists have not studied this species' fire ecology. However, this species occurs in mesic and wet flatwoods, which require frequent fire. Soil and hydrologic disturbance negatively affect this species; therefore, maintain and restore the natural hydrology where practicable and limit disruptive activities near documented occurrences. The best time for conducting surveys or verifying species identity is during flowering, which occurs from January to May.

Angle Pod (*Matelea gonocarpus*) - Angle pod is an herbaceous, perennial vine and like other members of the *Matelea* genus, their leaves and stems produce a milky sap when cut or injured. This species prefers moist, well-drained, sunny or semi-shaded areas in alluvial forest, basin swamp, baygall, blackwater stream, bottomland forest, hydric hammock, maritime hammock, mesic hammock, shell mound, upland hardwood forest, and upland pine communities. Angle pod may occur along wooded roadsides and on the edges of sinkholes. Even though angle pod occurs in upland pine communities, which require frequent fire (two to three years), it is sensitive to fire, surviving in fire shadows. Managers should vary the seasonality and severity of prescribed burns and allow prescribed fires from adjacent fire-maintained communities to naturally burn into and naturally extinguish in their preferred communities. Since angle pod is difficult to distinguish from other similar species without flowers or fruits, flowering or fruiting is the best time for conducting surveys or verifying species identity. Angle Pod flowers from June to August, and fruiting occurs from August to October. Staff may be able to distinguish this species from other similar species by its yellow or greenish-brown petals without a network of veins and its lance-shaped fruits that are smooth. Soil and hydrologic disturbances negatively affect this species; therefore, limit the impact of disruptive activities and maintain and restore the natural hydrology where practicable.

Simpson's Stopper (*Myrcianthes fragrans*) - Simpson's stopper is an evergreen, multi-stemmed shrub or small tree with reddish to light brown bark that prefers hydric hammock (including the variant coastal hydric hammock), mesic hammock, prairie hammock, and rockland hammock. This species occasionally occurs in dome swamp, floodplain swamp, and wet flatwoods. This species is not a fire-adapted species. While fires may reach the edges of hammocks, saturated soils and humid conditions within hammocks typically limit the extent of a burn. However, periodic burns in adjoining communities can reduce woody encroachment and lessen the likelihood of fires spreading into hammocks. Soil and hydrologic disturbance negatively affect this species; therefore, maintain and restore the natural hydrology where practicable and avoid using heavy machinery in wetlands with known occurrences of this species. Flowering, which occurs

throughout the year with the heaviest blooming occurring from February to June, is the best time for conducting surveys or verifying species identity.

Celestial Lily (*Nemastylis floridana*) - Celestial lily, endemic to Florida, is a perennial herb that prefers low, open, sunny areas in mesic flatwoods, wet flatwoods, and wet prairie. This species also occurs in hydric hammock and along the edges of basin marsh and dome swamp. Celestial lily needs a fire regime that includes frequent (two to three years) growing season fires that reduce the encroachment of woody species. This species blooms in large numbers in the season following a fire. Fire suppression and hydrologic disturbances negatively affect this species; therefore, avoid constructing fire breaks in ecotones, maintain and restore the natural hydrology, and apply natural community-specific fire regimes. Flowering, which occurs from August to October, is the best time for conducting surveys or verifying species identity and due to flowers opening in late afternoon, surveys should occur between 4:30-6:00 pm.

Hand Fern (*Ophioglossum palmatum*) – Hand fern is an epiphytic fern that prefers dome swamp, floodplain swamp, hydric hammock, mesic hammock, strand swamp, and wet flatwoods. This species mainly occurs on sabal palms. Although plants can be observed at various points along the trunks of palms, from near the bases to just below the crown, they are generally restricted to the upper parts of the palms. This species is not fire-tolerant, so protect host plants when applying fire around known occurrences. Illegal collecting and hydrological disturbances negatively affect this species; therefore, protect areas with known occurrences and maintain and restore the natural hydrology where practicable. Hand fern is identifiable throughout the year.

Cinnamon Fern (*Osmunda cinnamomea*) and Royal Fern (*O. regalis*) - These ferns, state Commercially Exploited, are terrestrial ferns that occur in many natural communities in Florida, both wet and dry. While these species grow in many communities that FWC typically does not actively manage, if conducting management activities near known occurrences, make efforts to protect known occurrences from chemical and mechanical treatments. These species do not require fire. However, some of the natural communities in which these species occur are fire-adapted, and these ferns resprout after fire. Illegal collecting and hydrological disturbances negatively affect these species; therefore, protect areas with known occurrences, and maintain and restore the natural hydrology where practicable. As fronds are present year-round, these species can be identified throughout the year.

Blue-Flowered Butterwort (*Pinguicula caerulea*) and Yellow-Flowered Butterwort (*P. lutea*) - These butterworts are perennial, carnivorous herbs that spend much of their life cycle as basal rosettes. They prefer open, moist to wet, sandy-peaty soils of pine flatwoods, wet prairie, and seepage bog and may occupy moist to wet ditches and roadsides. However, yellow-flowered butterwort frequently occupies somewhat drier habitats than other *Pinguicula* species. These species need a fire regime that includes frequent (two to three years) growing season fires that reduce the encroachment of woody species and create open areas allowing sunlight to reach the ground. Soil and hydrologic disturbances negatively affect these species; therefore, maintain and restore the natural hydrology where practicable and avoid using heavy machinery in wetlands with known occurrences of this species. Flowering, which occurs primarily from February to April, is the best time for conducting surveys or verifying species identity.

Snowy Orchid (*Platanthera nivea*) - Snowy orchid is a terrestrial perennial orchid that prefers full or partial sun and moist to wet acidic soils in dry prairie, dome swamp, hydric hammock, mesic flatwoods, mesic hammock, strand swamp, wet flatwoods, and wet prairie. It also occurs in cypress swamp and wet roadside ditches. The specific fire requirements are unknown for this

species. However, since it prefers full or partial sun, a fire regime in flatwoods and prairie that includes frequent (two to three years) growing season fires that reduce the encroachment of woody species will be beneficial for this species. Soil and hydrologic disturbance negatively affect this species; therefore, maintain and restore the natural hydrology where practicable and avoid using heavy machinery in wetlands with known occurrences of these species. Flowering, which occurs primarily from May to September (usually peaking during June), is the best time for conducting surveys or verifying species identity. Because flowering in this species is highly erratic from year to year, populations may be persisting even if not seen.

Needle Palm (*Rhapidophyllum hystrix*) – Needle palm is a small, shrubby palm that prefers basin swamp, bottomland forest, floodplain swamp, hydric hammock, mesic hammock, sinkhole, slope forest, and upland hardwoods forest. Even though this species is not fire-tolerant, allow fire to naturally enter and extinguish within its habitats when feasible. Illegal collecting and habitat alteration negatively affect this species; therefore, protect known occurrences and make sure not to negatively influence areas with known occurrences. Surveys or species identification may occur throughout the year for this species.

Saw Palmetto (*Serenoa repens*) - Saw palmetto is a small, fan palm that grows in clumps or dense thickets in many natural communities in Florida, both wet and dry. This species does not require fire for its survival. However, many of its preferred communities require periodic or frequent fire. Most fires defoliate and top kill saw palmetto, but it resprouts soon after a fire. Illegal collecting of saw palmetto berries negatively affects this species; therefore, take precautions to protect berries from harvest. Saw palmetto is identifiable throughout the year.

Lace-Lip Ladies' Tresses (*Spiranthes laciniata*) - Lace-lip ladies' tresses is a perennial orchid that prefers open areas in depression marsh, dome swamp, hydric hammock, marl prairie, mesic flatwoods, slough, slough marsh, wet flatwoods, and wet prairie. This species may occur along dry to moist roadsides and ditches. The specific fire requirements are unknown for this species. However, since this species occurs in fire-maintained communities, a fire regime that includes frequent growing season fires that reduce the encroachment of woody species and fires allowed to naturally enter and extinguish in wetlands and ecotones will be beneficial for this species. Hydrological disturbances and illegal collecting negatively affect this species; therefore, maintain and restore the natural hydrology where practicable and protect known occurrences. Flowering, which occurs from late May to August, is the best time for conducting surveys or verifying species identity. However, this species has a short blooming period (10 to 40 days) so surveys should be conducted as soon as blooming is observed.

Leafless Beaked Orchid (*Stenorrhynchos lanceolatus*) - Leafless beaked orchid is a terrestrial, perennial orchid that prefers dry to wet areas with full sunlight to partial shade in basin swamp, dome swamp, floodplain swamp, hydric hammock, mesic flatwoods, mesic hammock, sandhill, wet flatwoods, wet prairie, and strand swamp. This species may occur along dry to wet roadsides and ditches. The specific fire requirements are unknown for this species. However, since this species occurs in mesic flatwoods, sandhill, and wet prairie, a fire regime that includes frequent (two to three years) growing season fires that reduce the encroachment of woody species will be beneficial for this species when they occur in these natural communities. Fire suppression and hydrologic disturbances negatively affect this species; therefore, avoid constructing fire breaks in ecotones, maintain and restore the natural hydrology, and apply natural community-specific fire regimes. Flowering, which occurs from late March to July, is the best time for conducting surveys or verifying species identity.

Brittle Thatch Palm (*Thrinax morrisii*) - Brittle thatch palm is a small to medium palm tree with an ashy grey stem. This species prefers calcareous soils in rockland hammock, pine rockland, upper rock barren, keys tidal rock barren, and larger coastal berm. Brittle thatch palm does not require fire for its survival, but pine rockland requires fire every three to seven years to maintain community structure and to prevent the community from succeeding to rockland hammock. Habitat degradation and invasive species negatively affect this species; therefore, protect this species' habitat from alteration and treat invasive plant infestations, taking extra precautions to protect this species during herbicide treatments. The best time for conducting surveys or verifying species identity is during flowering, which occurs from March to August.

Common Wild-Pine (*Tillandsia fasciculata*), and Giant Wild-Pine (*T. utriculata*) - Airplants occur in many natural communities in Florida, both wet and dry. Most airplants are primarily epiphytes (plants that grow harmlessly upon another plant and derive their moisture and nutrients from the air, rain, and sometimes from debris accumulating around it) that grow on stumps, tree trunks, and branches. However, large individuals may fall to the ground and successfully continue to live. While many airplants grow in communities that FWC typically does not actively manage, if conducting management activities near known occurrences, make efforts to protect the plant and host plant from fire, chemicals, and mechanical treatments. When an individual plant occurs in a fire-maintained habitat, prior to conducting a prescribed fire, to the extent practicable, staff will take appropriate actions to protect known occurrences. Airplants are experiencing massive population losses due to the Mexican bromeliad weevil (*Metamasius callizona*), a non-native pest, making the protection and management of these plants from other threats all the more critical. The best time for conducting surveys or verifying species identity is during flowering, which occurs throughout the year (majority of flowering occurs from early spring to early fall).

Florida Arrowroot (*Zamia integrifolia*) - Florida arrowroot is a gymnosperm that produces seeds without flowers and is an evergreen Cycad in the *Zamiaceae* family, which is 'relict' genera that predate the dinosaurs. This species prefers moist, sunny to shaded areas in hydric hammock, maritime hammock, mesic flatwoods, mesic hammock, sandhill, scrub, scrubby flatwoods, shell mound, upland hardwood forest, and xeric hammock. Florida arrowroot does not require fire. However, some of the natural communities in which this species occurs are fire adapted, and Florida arrowroot's thick, underground stems make it resistant to fires as this species resprouts after fire. Illegal collecting and intensive forestry practices, such as site preparation that involves drastic soil disturbance, negatively affect this species; therefore, protect areas with known occurrences, and if evidence of illegal activities is observed, notify the appropriate authorities. This species is identifiable while producing cones, which occurs throughout the year with the heaviest production occurring primarily from December through March.

Simpson's Zephyr-Lily (*Zephyranthes simpsonii*) - Simpson's zephyr-lily is a perennial herb that prefers open-canopied mesic and wet flatwoods. However, this species may occur in bottomland forest, hydric hammock, mesic hammock, upland hardwood forest, upland mixed forest, and wet prairie. This species does not require fire. However, it vigorously flowers following fires. Hydrological disturbances, illegal collecting, and fire suppression in flatwoods negatively affect this species; therefore, restore the natural hydrology where practicable, protect areas with known occurrences, and conduct prescribed fires within flatwoods with a frequency that will create or maintain open areas, limit the shrub layer, and encourage diverse herbaceous cover. Flowering, which occurs from late February to May, is the best time for conducting surveys or verifying species identity.

## 11.10 Native Wildlife Species List

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### Amphibians

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<b>Scientific Name</b>	<b>Common Name</b>
<i>Acris gryllus</i>	Southern cricket frog
<i>Amphiuma means</i>	Two-toed amphiuma
<i>Anaxyrus quercicus</i>	Oak toad
<i>Anaxyrus terrestris</i>	Southern toad
<i>Dryophytes cinerea</i>	Green tree frog
<i>Dryophytes squirella</i>	Squirrel tree frog
<i>Gastrophryne carolinensis</i>	Eastern narrow-mouthed toad
<i>Hyla femoralis</i>	Pinewoods tree frog
<i>Lithobates capito</i>	Gopher frog
<i>Lithobates catesbeianus</i>	American bullfrog
<i>Lithobates grylio</i>	Pig frog
<i>Lithobates sphenoccephalus</i>	Southern leopard frog
<i>Pseudacris nigrita</i>	Southern chorus frog
<i>Pseudacris ocularis</i>	Little grass frog
<i>Scaphiopus holbrookii</i>	Eastern spadefoot toad
<i>Siren lacertina</i>	Greater siren

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### Birds

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<b>Scientific Name</b>	<b>Common Name</b>
<i>Accipiter cooperii</i>	Cooper's hawk
<i>Accipiter striatus</i>	Sharp-shinned hawk
<i>Actitis macularius</i>	Spotted sandpiper
<i>Agelaius phoeniceus</i>	Red-winged blackbird
<i>Aix sponsa</i>	Wood duck
<i>Anas acuta</i>	Northern pintail
<i>Anas crecca</i>	Green-winged teal
<i>Anas fulvigula</i>	Mottled duck
<i>Anhinga anhinga</i>	Anhinga
<i>Antigone canadensis pratensis</i>	Florida sandhill crane
<i>Antrostomus carolinensis</i>	Chuck-will's-widow
<i>Antrostomus vociferus</i>	Eastern whip-poor-will
<i>Aphelocoma coerulescens</i>	Florida scrub-jay
<i>Aramus guarauna</i>	Limpkin
<i>Archilochus colubris</i>	Ruby-throated hummingbird
<i>Ardea alba</i>	Great egret
<i>Ardea herodias</i>	Great blue heron

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<i>Aythya collaris</i>	Ring-necked duck
<i>Baeolophus bicolor</i>	Tufted titmouse
<i>Bombycilla cedrorum</i>	Cedar waxwing
<i>Botaurus lentiginosus</i>	American bittern
<i>Bubo virginianus</i>	Great horned owl
<i>Bubulcus ibis</i>	Cattle egret
<i>Buteo jamaicensis</i>	Red-tailed hawk
<i>Buteo lineatus</i>	Red-shouldered hawk
<i>Butorides virescens</i>	Green heron
<i>Calidris alpina</i>	Dunlin
<i>Calidris mauri</i>	Western sandpiper
<i>Calidris minutilla</i>	Least sandpiper
<i>Caracara plancus audubonii</i>	Audubon's crested caracara
<i>Cardinalis cardinalis</i>	Northern cardinal
<i>Cathartes aura</i>	Turkey vulture
<i>Catharus guttatus</i>	Hermit thrush
<i>Chaetura pelagica</i>	Chimney swift
<i>Charadrius semipalmatus</i>	Semipalmated plover
<i>Charadrius vociferus</i>	Killdeer
<i>Charadrius wilsonia</i>	Wilson's plover
<i>Chordeiles minor</i>	Common nighthawk
<i>Circus hudsonius</i>	Northern harrier
<i>Cistothorus palustris</i>	Marsh wren
<i>Cistothorus platensis</i>	Sedge wren
<i>Coccyzus americanus</i>	Yellow-billed cuckoo
<i>Colaptes auratus</i>	Northern flicker
<i>Colinus virginianus</i>	Northern bobwhite quail
<i>Columbina passerina</i>	Common ground-dove
<i>Coragyps atratus</i>	Black vulture
<i>Corthylio calendula</i>	Ruby-crowned kinglet
<i>Corvus brachyrhynchos</i>	American crow
<i>Corvus ossifragus</i>	Fish crow
<i>Cyanocitta cristata</i>	Blue jay
<i>Dendrocygna autumnalis</i>	Black-bellied whistling duck
<i>Dolichonyx oryzivorus</i>	Bobolink
<i>Dryobates pubescens</i>	Downy woodpecker
<i>Dryocopus pileatus</i>	Pileated woodpecker
<i>Dumetella carolinensis</i>	Gray catbird
<i>Egretta caerulea</i>	Little blue heron
<i>Egretta rufescens</i>	Reddish egret

<i>Egretta thula</i>	Snowy egret
<i>Egretta tricolor</i>	Tricolored heron
<i>Elanoides forficatus</i>	Swallow-tailed kite
<i>Eudocimus albus</i>	White ibis
<i>Falco columbarius</i>	Merlin
<i>Falco peregrinus</i>	Peregrine falcon
<i>Falco sparverius</i>	American kestrel
<i>Fulica americana</i>	American coot
<i>Gallinago delicata</i>	Wilson's snipe
<i>Gallinago gallinago</i>	Common snipe
<i>Gallinula galeata</i>	Common gallinule
<i>Geothlypis trichas</i>	Common yellowthroat
<i>Haematopus palliatus</i>	American oystercatcher
<i>Haliaeetus leucocephalus</i>	Bald eagle
<i>Himantopus mexicanus</i>	Black-necked stilt
<i>Hirundo rustica</i>	Barn swallow
<i>Hydroprogne caspia</i>	Caspian tern
<i>Ixobrychus exilis</i>	Least bittern
<i>Lanius ludovicianus</i>	Loggerhead shrike
<i>Larus delawarensis</i>	Ring-billed gull
<i>Laterallus jamaicensis jamaicensis</i>	Eastern black rail
<i>Leiothlypis celata</i>	Orange-crowned warbler
<i>Leuconotopicus villosus</i>	Hairy woodpecker
<i>Leucophaeus atricilla</i>	Laughing gull
<i>Mareca strepera</i>	Gadwall
<i>Megaceryle alcyon</i>	Belted kingfisher
<i>Megascops asio</i>	Eastern screech owl
<i>Melanerpes carolinus</i>	Red-bellied woodpecker
<i>Melanerpes erythrocephalus</i>	Red-headed woodpecker
<i>Meleagris gallopavo</i>	Wild turkey
<i>Melospiza georgiana</i>	Swamp sparrow
<i>Mimus polyglottos</i>	Northern mockingbird
<i>Mniotilta varia</i>	Black-and-white warbler
<i>Molothrus ater</i>	Brown-headed cowbird
<i>Mycteria americana</i>	Wood stork
<i>Myiarchus crinitus</i>	Great crested flycatcher
<i>Nyctanassa violacea</i>	Yellow-crowned night heron
<i>Nycticorax nycticorax</i>	Black-crowned night heron
<i>Pandion haliaetus</i>	Osprey
<i>Passerina caerulea</i>	Blue grosbeak

<i>Passerina ciris</i>	Painted bunting
<i>Passerina cyanea</i>	Indigo bunting
<i>Pelecanus erythrorhynchos</i>	American white pelican
<i>Pelecanus occidentalis</i>	Brown pelican
<i>Peucaea aestivalis</i>	Bachman's sparrow
<i>Phalacrocorax auritus</i>	Double-crested cormorant
<i>Pipilo erythrophthalmus</i>	Eastern towhee
<i>Piranga rubra</i>	Summer tanager
<i>Platalea ajaja</i>	Roseate spoonbill
<i>Plegadis falcinellus</i>	Glossy ibis
<i>Pluvialis squatarola</i>	Black-bellied plover
<i>Podilymbus podiceps</i>	Pied-billed grebe
<i>Poecile carolinensis</i>	Carolina chickadee
<i>Polioptila caerulea</i>	Blue-gray gnatcatcher
<i>Porphyrio martinica</i>	Purple gallinule
<i>Porzana carolina</i>	Sora
<i>Progne subis</i>	Purple martin
<i>Quiscalus major</i>	Boat-tailed grackle
<i>Quiscalus quiscula</i>	Common grackle
<i>Rallus crepitans</i>	Clapper rail
<i>Rallus elegans</i>	King rail
<i>Rallus limicola</i>	Virginia rail
<i>Recurvirostra americana</i>	American avocet
<i>Rynchops niger</i>	Black skimmer
<i>Sayornis phoebe</i>	Eastern phoebe
<i>Setophaga americana</i>	Northern parula
<i>Setophaga caerulescens</i>	Black-throated blue warbler
<i>Setophaga coronata</i>	Yellow-rumped warbler
<i>Setophaga discolor</i>	Prairie warbler
<i>Setophaga dominica</i>	Yellow-throated warbler
<i>Setophaga magnolia</i>	Magnolia warbler
<i>Setophaga palmarum</i>	Palm warbler
<i>Setophaga pinus</i>	Pine warbler
<i>Setophaga ruticilla</i>	American redstart
<i>Sialia sialis</i>	Eastern bluebird
<i>Sitta pusilla</i>	Brown-headed nuthatch
<i>Spatula discors</i>	Blue-winged teal
<i>Sphyrapicus varius</i>	Yellow-bellied sapsucker
<i>Spinus tristis</i>	American goldfinch
<i>Spizella passerina</i>	Chipping sparrow

<i>Stelgidopteryx serripennis</i>	Northern rough-winged swallow
<i>Sterna forsteri</i>	Forster's tern
<i>Sternula antillarum</i>	Least tern
<i>Strix varia</i>	Barred owl
<i>Sturnella magna</i>	Eastern meadowlark
<i>Tachycineta bicolor</i>	Tree swallow
<i>Thalasseus maximus</i>	Royal tern
<i>Thryothorus ludovicianus</i>	Carolina wren
<i>Toxostoma rufum</i>	Brown thrasher
<i>Tringa flavipes</i>	Lesser yellowlegs
<i>Tringa melanoleuca</i>	Greater yellowlegs
<i>Troglodytes aedon</i>	House wren
<i>Turdus migratorius</i>	American robin
<i>Tyrannus tyrannus</i>	Eastern kingbird
<i>Vireo griseus</i>	White-eyed vireo
<i>Vireo olivaceus</i>	Red-eyed vireo
<i>Vireo solitarius</i>	Blue-headed vireo
<i>Zenaida asiatica</i>	White-winged dove
<i>Zenaida macroura</i>	Mourning dove

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### **Mammals**

<b>Scientific Name</b>	<b>Common Name</b>
<i>Canis latrans</i>	Coyote
<i>Cryptotis parva</i>	Least shrew
<i>Lasiurus intermedius</i>	Northern yellow bat
<i>Dasyus novemcinctus</i>	Nine-banded armadillo
<i>Didelphis virginiana</i>	Virginia opossum
<i>Lontra canadensis</i>	North American river otter
<i>Lynx rufus</i>	Bobcat
<i>Neofiber alleni</i>	Round-tailed muskrat
<i>Ochrotomys nuttalli</i>	Golden mouse
<i>Odocoileus virginianus</i>	White-tailed deer
<i>Oryzomys palustris</i>	Marsh rice rat
<i>Peromyscus gossypinus</i>	Cotton mouse
<i>Procyon lotor</i>	Raccoon
<i>Scalopus aquaticus</i>	Eastern mole
<i>Sciurus carolinensis</i>	Eastern gray squirrel
<i>Sigmodon hispidus</i>	Hispid cotton rat
<i>Sylvilagus aquaticus</i>	Swamp rabbit
<i>Sylvilagus floridanus</i>	Eastern cottontail

<i>Sylvilagus palustris</i>	Marsh rabbit
<i>Tadarida brasiliensis</i>	Mexican free-tailed bat
<i>Urocyon cinereoargenteus</i>	Gray fox
<i>Ursus americanus</i>	Black bear

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## Reptiles

Scientific Name	Common Name
<i>Agkistrodon conanti</i>	Florida cottonmouth
<i>Alligator mississippiensis</i>	American alligator
<i>Anolis carolinensis</i>	Green anole
<i>Apalone ferox</i>	Florida softshell turtle
<i>Aspidoscelis sexlineata</i>	Six-lined racerunner
<i>Cemophora coccinea</i>	Scarlet snake
<i>Chelydra serpentina</i>	Common snapping turtle
<i>Coluber constrictor</i>	Southern black racer
<i>Crotalus adamanteus</i>	Eastern diamondback rattlesnake
<i>Diadophis punctatus</i>	Ring-necked snake
<i>Drymarchon couperi</i>	Eastern indigo snake
<i>Farancia abacura</i>	Eastern mud snake
<i>Gopherus polyphemus</i>	Gopher tortoise
<i>Kinosternon baurii</i>	Striped mud turtle
<i>Kinosternon subrubrum</i>	Eastern mud turtle
<i>Liodytes alleni</i>	Striped swamp snake
<i>Liodytes pygaea</i>	Black swamp snake
<i>Liodytes rigida</i>	Glossy swamp snake
<i>Micrurus fulvius</i>	Eastern coral snake
<i>Nerodia fasciata</i>	Southern water snake; Banded water snake
<i>Nerodia floridana</i>	Florida green water snake
<i>Opheodrys aestivus</i>	Rough green snake
<i>Ophisaurus ventralis</i>	Eastern glass lizard
<i>Pantherophis alleghaniensis</i>	Eastern rat snake
<i>Pantherophis guttatus</i>	Red rat snake; Corn snake
<i>Plestiodon inexpectatus</i>	Southeastern five-lined skink
<i>Plestiodon laticeps</i>	Broad-headed skink
<i>Pseudemys nelsoni</i>	Florida red-bellied cooter
<i>Pseudemys peninsularis</i>	Peninsula cooter
<i>Rhadinaea flavilata</i>	Pine woods snake
<i>Scincella lateralis</i>	Little brown skink
<i>Sistrurus miliarius</i>	Pygmy rattlesnake
<i>Storeria victa</i>	Florida brown snake

<i>Terrapene carolina</i>	Eastern box turtle
<i>Thamnophis saurita</i>	Eastern ribbon snake
<i>Thamnophis saurita sackenii</i>	Peninsula ribbon snake
<i>Thamnophis sirtalis</i>	Common gartersnake

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## Fish

Scientific Name	Common Name
<i>Ameiurus natalis</i>	Yellow bullhead catfish
<i>Esox americanus</i>	American pickerel
<i>Fundulus chrysotus</i>	Golden topminnow
<i>Fundulus cingulatus</i>	Banded topminnow
<i>Fundulus seminolis</i>	Seminole killifish
<i>Gambusia affinis</i>	Mosquitofish
<i>Heterandria formosa</i>	Least killifish
<i>Jordanella floridae</i>	Flagfish
<i>Labidesthes sicculus</i>	Brook silverside
<i>Lepisosteus osseus</i>	Longnose gar
<i>Lepisosteus platyrhincus</i>	Florida gar
<i>Lepomis gulosus</i>	Warmouth
<i>Lepomis macrochirus</i>	Bluegill
<i>Lepomis marginatus</i>	Dollar sunfish
<i>Micropterus salmoides floridanus</i>	Florida largemouth bass
<i>Notemigonus crysoleucas</i>	Golden shiner
<i>Poecilia latipinna</i>	Sailfin molly
<i>Pomoxis nigromaculatus</i>	Black crappie

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## Arthropods

Scientific Name	Common Name
<i>Agraulis vanillae</i>	Gulf fritillary
<i>Anartia jatrophae</i>	White peacock
<i>Ascia monuste</i>	Great Southern white
<i>Automeris io</i>	Io moth
<i>Brephidium pseudofea</i>	Eastern pygmy blue
<i>Calycopis cecrops</i>	Red-banded hairstreak
<i>Copaeodes minima</i>	Southern skipperling
<i>Danaus gilippus</i>	Queen
<i>Danaus plexippus</i>	Monarch
<i>Erynnis horatius</i>	Horace's duskywing
<i>Eurema daira</i>	Barred yellow
<i>Heliconius charithonia</i>	Zebra longwing

<i>Heraclides cresphontes</i>	Giant swallowtail
<i>Hermeuptychia sosybius</i>	Carolina satyr
<i>Hylephila phyleus</i>	Fiery skipper
<i>Junonia coenia</i>	Common buckeye
<i>Limenitis archippus</i>	Viceroy
<i>Papilio palamedes</i>	Palamedes swallowtail
<i>Papilio polyxenes</i>	Black swallowtail
<i>Papilio troilus</i>	Spicebush swallowtail
<i>Parrhasius malbum</i>	White M hairstreak
<i>Phidippus regius</i>	Regal jumping spider
<i>Phoebis sennae</i>	Cloudless sulphur
<i>Polites vibex</i>	Whirlabout
<i>Pontia protodice</i>	Checkered white
<i>Protographium marcellus</i>	Zebra longwing
<i>Pterourus glaucus</i>	Eastern tiger swallowtail
<i>Scolopendra viridis</i>	Florida blue centipede
<i>Scolopocryptops sexspinosus</i>	Red centipede
<i>Strymon melinus</i>	Gray hairstreak
<i>Urbanus proteus</i>	Long-tailed skipper

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## 11.11 FNAI Element Occurrence Data Usage Letter



1018 Thomasville Road  
Suite 200-C  
Tallahassee, FL 32303  
850-224-8207  
fax 850-681-9364  
www.fnai.org

November 15, 2021

Dylan Hasse, Senior Conservation Planner  
Land Conservation and Planning Subsection  
Florida Fish and Wildlife Conservation Commission  
Tallahassee, FL

Dear Dylan,

By virtue of this letter, we are updating and continuing our agreement that it is unnecessary for your office to request FNAI Element Occurrence data for each land management plan you prepare, under the following conditions:

- FNAI will continue to provide our Florida Element Occurrence Map Package to FWC on a quarterly basis
- The FNAI GIS data will be available to FWC staff for reference and incorporation as required in management plan review and preparation with the following restrictions.
- FWC will limit spatial reference to Element Occurrence locations in public documents to the Management Area level (i.e., EOs will not be displayed on public maps to protect sensitive resources, habitats, and data sources)
- For Management Areas less than 160 acres in size, FWC will not list occurrences of resources (i.e., species and natural communities) coded as Data Sensitive. If desired, these sensitive resources can be included in a table as a count of occurrences and resource (e.g., three additional occurrences of two species/resources are coded as sensitive)
- When possible, FWC should use the FNAI provided Element Occurrence polygons, and consider the Representational Accuracy and Locational Uncertainty of each record, when determining which species occur on a Management Area

The FNAI Data Manager currently provides this update to FWC staff on a quarterly basis. Current FWC contacts are Rene Baumstark, Christi Santi, Steven Nicholl, Kristal Walsh, Kristen Sella, and yourself. We are pleased to continue this beneficial collaboration with the Florida Fish and Wildlife Conservation Commission.



Florida Resources  
and Environmental  
Analysis Center

Institute of Science  
and Public Affairs

The Florida State University

Sincerely,

Frank Price  
Assistant Director  
Florida Natural Areas Inventory

*Tracking Florida's Biodiversity*

## 11.12 Land Management Review Report

# 2022 Land Management Review Team Report for Salt Lake Wildlife Management Area

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### Table of Contents

<a href="#">Introduction</a> .....	284
<a href="#">Property Reviewed in this Report</a> .....	285
<a href="#">Property Map</a> .....	286
<a href="#">Overview of Land Management Review Results</a> .....	0
<a href="#">Consensus Commendations for the Managing Agency</a> .....	0
<a href="#">Consensus Recommendations to the Managing Agency</a> .....	0
<a href="#">Field Review Details</a> .....	1
<a href="#">Field Review Checklist Findings</a> .....	1
<a href="#">Items Requiring Improvement Actions in the Field</a> .....	2
<a href="#">Field Review Checklist and Scores</a> .....	2
<a href="#">Land Management Plan Review Details</a> .....	5
<a href="#">Items Requiring Improvements in the Management Plan</a> .....	5
<a href="#">Management Plan Review Checklist and Scores</a> .....	5
<a href="#">Appendix A: Scoring System Detail</a> .....	8

## **Introduction**

Section 259.036, F.S. requires a periodic on-site review of conservation and recreation lands titled in the name of the Board of Trustees to determine (1) whether the lands are being managed for the purposes for which they were acquired and (2) whether they are being managed in accordance with their land management plan adopted pursuant to s. 259.032, F.S. In cases where the managed areas exceed 1,000 acres in size, such a review must be scheduled at least every five years. In conducting this review, a statutorily constructed review team “shall evaluate the extent to which the existing management plan provides sufficient protection to threatened or endangered species, unique or important natural or physical features, geological or hydrological functions or archaeological features. The review shall also evaluate the extent to which the land is being managed for the purposes for which it was acquired and the degree to which actual management practices, including public access, are in compliance with the adopted management plan.”

The land management review teams are coordinated by the Division of State Lands and consist of representatives from the Division of Recreation and Parks (DEP), the Florida Forest Service (DACS), the Fish and Wildlife Conservation Commission, the local government in which the property is located, the DEP District in which the parcel is located, the local soil and water conservation district or jurisdictional water management district, a conservation organization member, and a local private land manager.

Each Land Management Review Report is divided into three sections. Section 1 provides the details of the property being reviewed as well as the overall results of the report. Section 2 provides details of the Field Review, in which the Review Team inspects the results of management actions on the site. Section 3 provides details of the Land Management Plan Review, in which the team determines the extent to which the Management Plan provides for and documents adequate natural and recreational resource protection.

Finally, each report may also contain an Appendix that lists individual team member comments. This is a compilation of feedback, concerns or other thoughts raised by individual team members, but not necessarily indicative of the final consensus reached by the Land Management Review Team.

## **Property Reviewed in this Report**

**Name of Site:** Salt Lake Wildlife Management Area

**Managed by:** Florida Fish and Wildlife Conservation Commission

**Acres:** 5,045

**County:** Brevard

**Purpose(s) for Acquisition:** To preserve a few of the best remaining fragments of coastal scrub in Indian River and Brevard Counties, thus helping to ensure the survival of the endangered scrub jay and scrub itself in the county, and providing areas where the public can learn about and appreciate this unique landscape.

**Acquisition Program(s):** P2000/Florida Forever

**Original Acquisition Date:** 12/7/99

**Area Reviewed:** Entire Property

**Last Management Plan Approval Date:** 8/19/16

**Review Date:** 6/8/22

### **Agency Manager and Key Staff:**

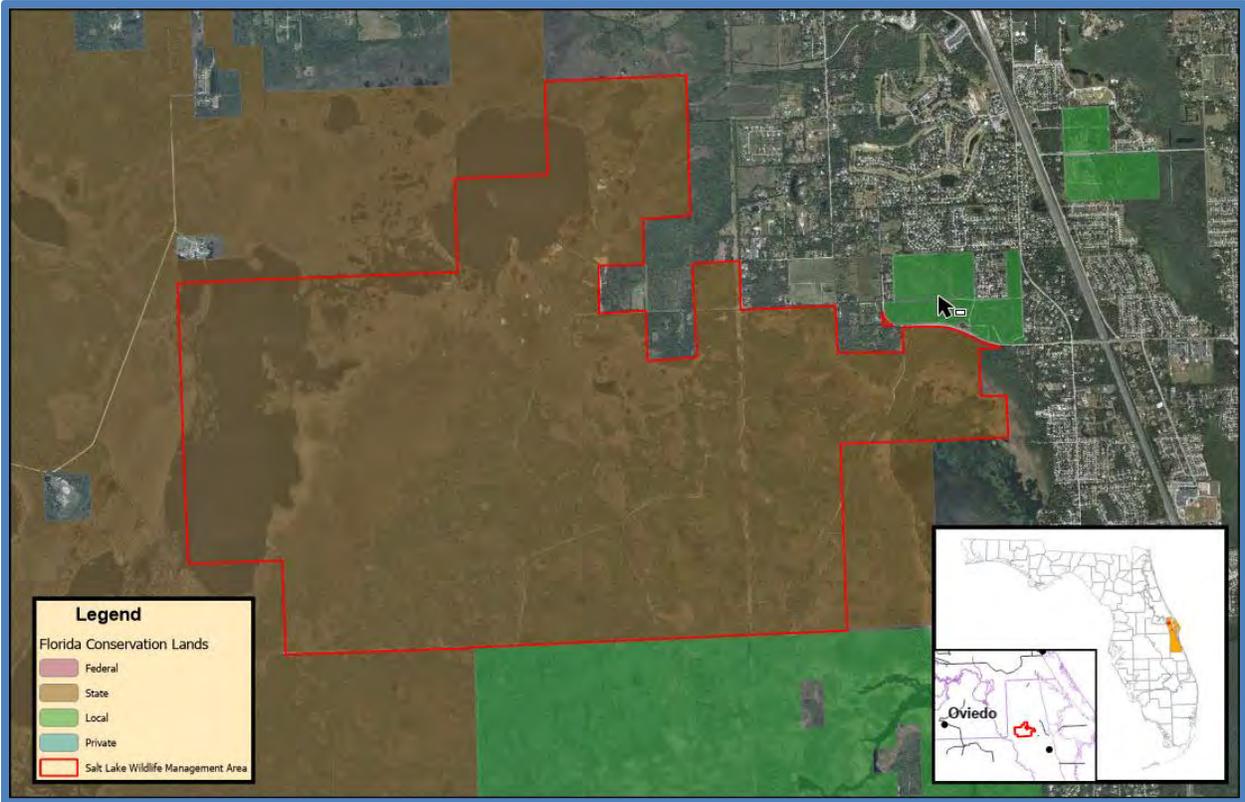
- David Turner, Manager
- Tom Shupe, District Biologist
- Matthew Hortman, Regional Biologist
- Matt Vance

### **Review Team Members (voting)**

- Samantha McGee, DRP District
- Michael Edwards, FFS
- Mike Knight, Local Gov't.
- Graham Williams, SJRWMD
- Jess Rodriguez, FWC
- Vince Lamb, Conservation Org.
- Courtney Puckett, DEP District
- Private Land Manager, None

### **Non-Team Members (attending)**

## Property Map



## Overview of Land Management Review Results

*Is the property managed for purposes that are compatible with conservation, preservation, or recreation?*

*Yes = 7, No = 0*

*Are the management practices, including public access, in compliance with the management plan?*

*Yes = 7, No = 0*

Table 1 shows the average scores received for each applicable category of review. *Field Review* scores refer to the adequacy of management actions in the field, while *Management Plan Review* scores refer to adequacy of discussion of these topics in the management plan. Scores range from 1 to 5 with 5 signifying excellence. For a more detailed key to the scores, please see *Appendix A*.

Table 9: Results at a glance.

Major Land Management Categories	Field Review	Management Plan Review
Natural Communities / Forest Management	4.33	4.39
Prescribed Fire / Habitat Restoration	4.32	4.65
Hydrology	4.42	4.19
Imperiled Species	4.39	4.45
Exotic / Invasive Species	4.60	4.67
Cultural Resources	4.64	4.58
Public Access / Education / Law Enforcement	4.68	4.43
Infrastructure / Equipment / Staffing	4.45	N/A
Color Code (See Appendix A for detail)		
Excellent	Above Average	Below Average
		Poor

### **Consensus Commendations for the Managing Agency**

The following commendations resulted from discussion and vote of the review team members:

1. The team commends the Fish and Wildlife Conservation Commission (FWC) for their aggressive efforts in the control of invasive plant species. (7+, 0-)
2. The team commends the FWC staff for experimenting with management techniques/rotations to overcome management challenges and enhance habitat for wildlife, and for their ongoing efforts to monitor the effects of the experimental treatments. (7+, 0-)
3. The team commends the manager and staff for their efforts to keep frequent fire on the landscape and for the quality of burns that have been carried out. (7+, 0-)
4. The team commends the staff for their efforts to protect the unique shoreline of Salt Lake from negative human impacts. (7+, 0-)
5. The team commends the staff for ensuring this property is well covered by survey efforts for the Black Rail and for their efforts to manage potential habitat in an appropriate manner to benefit this species. (7+, 0-)
6. The team commends the manager and staff for prioritization of limiting the feral hog population. (7+, 0-)

7. The team commends the staff for their prior and ongoing efforts to clean up solid waste and other refuse from the property. (7+, 0-)

### **Consensus Recommendations to the Managing Agency**

The following recommendations resulted from a discussion and vote of review team members. The next management plan update should include information about how these recommendations have been addressed:

1. The team recommends FWC explore the creation of sandy openings in scrub habitat to benefit scrub dependent species. (7+, 0-)

#### ***Managing Agency Response:***

*The FWC will investigate and implement treatments in the currently managed scrub as well as the newly acquired Mancini Tract to create and promote openings with bare, sandy ground as appropriate.*

2. The team recommends WMA staff continue collaborating with adjacent agencies on spraying and burning, and to explore assistance from other agencies and regional FWC staff to assist with management efforts. (7+, 0-)

#### ***Managing Agency Response:***

*The FWC will continue to collaborate with cooperative agencies and neighboring landowners/managers to treat and control invasives and to increase prescribed burn efforts on the WMA and surrounding lands. FWC staff will continue to recruit and utilize regional FWC staff and volunteers to enhance management efforts.*

3. The team recommends staff continue to evaluate former dipping vat sites on the property and assess the need for, and feasibility of, any potential remediation efforts. (7+, 0-)

#### ***Managing Agency Response:***

*The FWC will investigate the need for, and feasibility of, remediation efforts at the one former dipping vat site located on the WMA.*

## **Field Review Details**

### **Field Review Checklist Findings**

The following items received high scores on the review team checklist, which indicates that management actions exceeded expectations.

1. **Natural communities, specifically basin marsh, basin swamp, baygall, depression marsh, hydric hammock, mesic flatwoods, mesic hammock, flatwoods/prairie/marsh lake, scrub, scrubby flatwoods and wet flatwoods.**
2. **Listed species, listed animals and plants in general and specifically scrub-jay, gopher tortoise, and black rail.**
3. **Natural resources survey/monitoring resources, specifically listed species or their habitat monitoring, other non-game species or their habitat monitoring, fire effects monitoring, other habitat management effects monitoring, and invasive species survey and monitoring.**

4. Cultural resources, specifically cultural resource survey, and protection and preservation.
5. Prescribed fire, specifically area being burned, frequency, and quality.
6. Restoration, specifically scrub and hydrologic restoration.
7. Forest management, specifically timber inventory.
8. Non-native, invasive, and problem species, specifically prevention and control of plants, animals, and pests/pathogens.
9. Hydro-alteration, specifically roads and culverts, ditches and hydro-period alteration.
10. Ground water monitoring, specifically quality, and quantity.
11. Surface water monitoring, specifically quantity.
12. Resource protection, specifically boundary survey, gates and fencing, signage, and law enforcement presence.
13. Adjacent property concerns, specifically regarding the mitigation trust, sovereign submerged lands, and inholdings/additions.
14. Public access, specifically roads, parking, and boat access.
15. Environmental education and outreach, specifically wildlife, invasive species, habitat management activities, interpretive facilities and signs, recreational opportunities, and management of visitor impacts.
16. Management resources, specifically waste disposal, sanitary facilities, buildings, equipment, staff and funding.
17. Short-term goals, specifically habitat restoration and improvement, public access and recreational opportunities, hydrological preservation and restoration, sustainable forest management, exotic and invasive species maintenance and control, capital facilities and infrastructure, cultural and historical resources, and imperiled species habitat maintenance.

**Items Requiring Improvement Actions in the Field**

The following items received low scores on the review team checklist, which indicates that management actions noted during the Field Review were not considered sufficient (less than 3.0 score on average). Please note that overall good scores do not preclude specific recommendations by the review team requiring remediation. The management plan update should include information on how these items have been addressed:

*The review team scores did not identify items requiring improvement actions in the field.*

**Field Review Checklist and Scores**

Field Review Item	Reference #	Anonymous Team Members								Average
		1	2	3	4	5	6	7	8	
<b>Natural Communities (I.A)</b>										
Basin Marsh	I.A.1	5	5	4	5	4	5	4		4.57
Basin Swamp	I.A.2	5	5	4	5	4		4		4.50
Baygall	I.A.3	5	5	4	5	5	5	4		4.71

Depression Marsh	I.A.4	5	5	5	5	5	5	5	5	5.00
Hydric Hammock	I.A.5	4	5	5	5	4	5	4	4.57	
Mesic Flatwoods	I.A.6	4	5	4	4	3	5	4	4.14	
Mesic Hammock	I.A.7	5	5	5	4	4	5	3	4.43	
Flatwoods / Prairie / Marsh Lake	I.A.8	5	5	5	5	4	5	4	4.71	
Scrub	I.A.9	5	5	5	4	4	4	4	4.43	
Scrubby Flatwoods	I.A.10	4	5	5	5	4	5	4	4.57	
Wet Flatwoods	I.A.11	4	5	4	4	3	5	4	4.14	
<b>Natural Communities Average Score</b>										4.53
<b>Listed species: Protection &amp; Preservation (I.B)</b>										
Animals	I.B.1	5	5	4	5	4	4	4	4.43	
Scrub Jay	I.B.1.a	5	5	4	4	4	3	4	4.14	
Gopher Tortoise	I.B.1.b	5	5	4	4	4	4	3	4.14	
Black rail	I.B.1.c	5	5	4	4	5	5	4	4.57	
Plants	I.B.2	5	5	5	5	4	5	4	4.67	
<b>Listed Species Average Score</b>										4.39
<b>Natural Resources Survey/Management Resources (I.C)</b>										
Listed species or their habitat monitoring	I.C.2	5	5	5	5	4	5	4	4.71	
Other non-game species or their habitat monitoring	I.C.3	5	5	5	5	4	5	4	4.71	
Fire effects monitoring	I.C.4	5	5	5	5	4	5	4	4.71	
Other habitat management effects monitoring	I.C.5	5	5	5	5	4	5	4	4.71	
Invasive species survey / monitoring	I.C.6	5	5	4	5	4	5	4	4.57	
<b>Cultural Resources (Archeological &amp; Historic sites) (II.A, II.B)</b>										
Cultural Res. Survey	II.A	5	5	4	5	4	5	4	4.57	
Protection and preservation	II.B	5	5	5	5	4	5	4	4.71	
<b>Cultural Resources Average Score</b>										4.64
<b>Resource Management, Prescribed Fire (III.A)</b>										
Area Being Burned (no. acres)	III.A.1	4	5	4	5	4	4	4	4.29	
Frequency	III.A.2	4	5	4	5	3	4	4	4.14	
Quality	III.A.3	5	5	5	5	4	4	3	4.43	
<b>Resource Management, Prescribed Fire Average Score</b>										4.29
<b>Restoration (III.B)</b>										
Scrub	III.B.1	5	5	4	4	4	5	3	4.29	
Hydrologic	III.B.2	5	5	4	5	4	5	3	4.43	
<b>Restoration Average Score</b>										4.36
<b>Forest Management (III.C)</b>										
Timber Inventory	III.C.1	4	5	3	5	4	4	4	4.14	
<b>Forest Management Average Score</b>										4.14
<b>Non-Native, Invasive &amp; Problem Species (III.D)</b>										
<b>Prevention</b>										
prevention - plants	III.D.1.a	5	5	5	5	4	5	4	4.71	
prevention - animals	III.D.1.b	5	5	5	5	3	5	4	4.57	
prevention - pests/pathogens	III.D.1.c	5	5	5	5	3	5	4	4.57	
<b>Control</b>										
control - plants	III.D.2.a	5	5	5	5	4	5	4	4.71	

control - animals	III.D.2.b	5	5	5	4	3	5	4		4.43
control - pests/pathogens	III.D.2.c	5	5	5	5	3	5	4		4.57
<b>Non-Native, Invasive &amp; Problem Species Average Score</b>										4.60
<b>Hydrologic/Geologic function Hydro-Alteration (III.E.1)</b>										
Roads/culverts	III.E.1.a	5	5	4	5	4	5	4		4.57
Ditches	III.E.1.b	5	5	4	5	3	5	4		4.43
Hydro-period Alteration	III.E.1.c	5	5	4	5	X	5	4		4.67
<b>Hydrologic/Geologic function, Hydro-Alteration Average Score</b>										4.56
<b>Ground Water Monitoring (III.E.2)</b>										
Ground water quality	III.E.2.a	5	5	4	5	3	5	3		4.29
Ground water quantity	III.E.2.b	5	5	4	5	3	5	3		4.29
<b>Ground Water Monitoring Average Score</b>										4.29
<b>Surface Water Monitoring (III.E.3)</b>										
Surface water quantity	III.F.3.b	5	5	4	5	4	5	3		4.43
<b>Surface Water Monitoring Average Score</b>										4.43
<b>Resource Protection (III.F)</b>										
Boundary survey	III.F.1	5	5	5	5	4	5	4		4.71
Gates & fencing	III.F.2	5	5	5	5	3	5	5		4.71
Signage	III.F.3	5	5	5	5	4	5	5		4.86
Law enforcement presence	III.F.4	5	5	5	5	3		4		4.50
<b>Resource Protection Average Score</b>										4.70
<b>Adjacent Property Concerns (III.G)</b>										
<b>Land Use</b>										
Mitigation Trust	III.G.1.a	5	5	4	5	3	4	4		4.29
Sovereign Submerged Lands	III.G.1.b	5	5	4	5	3	5	4		4.43
Inholdings/additions	III.G.2	5	5	3	5	3	5	5		4.43
<b>Public Access &amp; Education (IV.1, IV.2, IV.3, IV.4, IV.5)</b>										
<b>Public Access</b>										
Roads	IV.1.a	5	5	5	5	4	5	5		4.86
Parking	IV.1.b	5	5	5	5	4	5	5		4.86
Boat Access	IV.1.c	5	5	5	4	3	5	4		4.43
<b>Environmental Education &amp; Outreach</b>										
Wildlife	IV.2.a	5	5	5	5	4	5	4		4.71
Invasive Species	IV.2.b	5	5	5	5	3	5	4		4.57
Habitat Management Activities	IV.2.c	5	5	5	5	3	5	4		4.57
Interpretive facilities and signs	IV.3	5	5	5	5	3	5	5		4.71
Recreational Opportunities	IV.4	5	5	5	5	3	5	4		4.57
Management of Visitor Impacts	IV.5	5	5	5	5	3	5	5		4.71
<b>Public Access &amp; Education Average Score</b>										4.67
<b>Management Resources (V.1, V.2, V.3, V.4)</b>										
<b>Maintenance</b>										
Waste disposal	V.1.a	5	5	5	5	3	5	5		4.71
Sanitary facilities	V.1.b	5	5	4	5	3	5	4		4.43
<b>Infrastructure</b>										
Buildings	V.2.a	5	5	4	5	4	5	4		4.57
Equipment	V.2.b	5	5	5	5	4	4	4		4.57

Staff	V.3	5	3	4	5	4	5	4		4.29	
Funding	V.4	5	3	4	5	4	5	3		4.14	
<b>Management Resources Average Score</b>										<b>4.45</b>	
<b>Short-Term Goals (VII)</b>											
Habitat restoration and improvement	VII.A	5	5	5	5	3	5	4		4.57	
Public access and recreational opportunities	VII.B	5	5	5	5	4	5	4		4.71	
Hydrological preservation and restoration	VII.C	5	5	4	5	4	5	3		4.43	
Sustainable forest management	VII.D	5	5	4	5	4	5	3		4.43	
Exotic and invasive species maintenance and control	VII.E	5	5	5	5	4	5	4		4.71	
Capital facilities and infrastructure	VII.F	5	5	4	5	4	5	4		4.57	
Cultural and historical resources	VII.G	5	5	4	5	4	5	4		4.57	
Imperiled species habitat maintenance	VII.H	5	5	4	5	4	5	4		4.57	
Color Code:		Excellent	Above Average	Below Average	Poor						See Appendix A for detail
			Missing Vote	Insufficient Information							

## Land Management Plan Review Details

### Items Requiring Improvements in the Management Plan

The following items received low scores on the review team checklist, which indicates that the text noted in the Management Plan Review does not sufficiently address this issue (less than 3.0 score on average.). Please note that overall good scores do not preclude specific recommendations by the review team requiring remediation. The next management plan update should address the checklist items identified below:

*The review team scores did not identify items requiring improvements in the management plan.*

### Management Plan Review Checklist and Scores

Plan Review Item	Reference #	Anonymous Team Members								Average
		1	2	3	4	5	6	7	8	
<b>Natural Communities (I.A)</b>										
Basin Marsh	I.A.1	3	5	4	5	3	5	5		4.29
Basin Swamp	I.A.2	3	5	4	5	3	5	5		4.29
Baygall	I.A.3	3	5	4	5	3	5	5		4.29
Depression Marsh	I.A.4	3	5	4	5	3	5	5		4.29
Hydric Hammock	I.A.5	3	5	5	5	3	5	5		4.43
Mesic Flatwoods	I.A.6	3	5	5	5	3	5	5		4.43
Mesic Hammock	I.A.7	3	5	5	5	3	5	5		4.43
Flatwoods / Prairie / Marsh Lake	I.A.8	3	5	5	5	3	5	5		4.43
Scrub	I.A.9	3	5	5	5	3	5	5		4.43
Scrubby Flatwoods	I.A.10	3	5	5	5	3	5	5		4.43
Wet Flatwoods	I.A.11	3	5	4	4	3	5	5		4.14

<b>Natural Communities Average Score</b>										4.35
<b>Listed species: Protection &amp; Preservation (I.B)</b>										
Animals	I.B.1	5	5	4	5	4	4			4.50
Scrub Jay	I.B.1.a	5	5	4	5	4	4	4		4.43
Gopher Tortoise	I.B.1.b	5	5	4	5	4	5	4		4.57
Black rail	I.B.1.c	5	4	4	5	4		3		4.17
Plants	I.B.2	5	5	4	5	4	5	4		4.57
<b>Listed Species Average Score</b>										4.45
<b>Natural Resources Survey/Management Resources (I.C)</b>										
Listed species or their habitat monitoring	I.C.2	4	5	5	5	5	4	5		4.71
Other non-game species or their habitat monitoring	I.C.3	4	5	5	5	4	5	5		4.71
Fire effects monitoring	I.C.4	4	5	5	5	4	5	3		4.43
Other habitat management effects monitoring	I.C.5	4	5	5	5	4		3		4.33
Invasive species survey / monitoring	I.C.6	4	5	4	5	4	5	5		4.57
<b>Cultural Resources (Archeological &amp; Historic sites) (II.A, II.B)</b>										
Cultural Res. Survey	II.A		5	4	5	4	5	4		4.50
Protection and preservation	II.B		5	5	5	4	5	4		4.67
<b>Cultural Resources Average Score</b>										4.58
<b>Resource Management, Prescribed Fire (III.A)</b>										
Area Being Burned (no. acres)	III.A.1	5	5	4	5	4	5	5		4.71
Frequency	III.A.2	5	5	4	5	4	5	5		4.71
Quality	III.A.3	5	5	4	5	4	5	4		4.57
<b>Resource Management, Prescribed Fire Average Score</b>										4.67
<b>Restoration (III.B)</b>										
Scrub	III.B.1	5	5	4	4	4	5	5		4.57
Hydrologic	III.B.2	5	5	4	5	4	5	5		4.71
<b>Restoration Average Score</b>										4.64
<b>Forest Management (III.C)</b>										
Timber Inventory	III.C.1	5	5	3	5	4	5	4		4.43
<b>Forest Management Average Score</b>										4.43
<b>Non-Native, Invasive &amp; Problem Species (III.D)</b>										
<b>Prevention</b>										
prevention - plants	III.D.1.a		5	5	5	4	5	5		4.83
prevention - animals	III.D.1.b		5	5	5	3	5	5		4.67
prevention - pests/pathogens	III.D.1.c		5	5	5	3	5	4		4.50
<b>Control</b>										
control - plants	III.D.2.a		5	5	5	4	5	5		4.83
control - animals	III.D.2.b		5	5	5	4	5	4		4.67
control - pests/pathogens	III.D.2.c		5	5	5	3	5	4		4.50
<b>Non-Native, Invasive &amp; Problem Species Average Score</b>										4.67
<b>Hydrologic/Geologic function, Hydro-Alteration (III.E.1)</b>										
Roads/culverts	III.E.1.a		5	4	5	4	5	5		4.67
Ditches	III.E.1.b		5	4	5	4	5	5		4.67
Hydro-period Alteration	III.E.1.c		5	3	5	3	5	5		4.33
<b>Hydrologic/Geologic function, Hydro-Alteration Average Score</b>										4.56

<b>Ground Water Monitoring (III.E.2)</b>										
Ground water quality	III.E.2.a		5	3	5	3	5	3		4.00
Ground water quantity	III.E.2.b		5	3	5	3	5	3		4.00
<b>Ground Water Monitoring Average Score</b>										4.00
<b>Surface Water Monitoring (III.E.3)</b>										
Surface water quantity	III.E.3.b		5	3	5	3	5	3		4.00
<b>Surface Water Monitoring Average Score</b>										4.00
<b>Resource Protection (III.F)</b>										
Boundary survey	III.F.1	2	5	4	5	3	5	5		4.14
Gates & fencing	III.F.2	3	5	5	5	3	5	5		4.43
Signage	III.F.3	3	5	5	5	3	5	5		4.43
Law enforcement presence	III.F.4	3	5	5	5	3	5	3		4.14
<b>Resource Protection Average Score</b>										4.29
<b>Adjacent Property Concerns (III.G)</b>										
<b>Land Use</b>										
Mitigation Trust	III.G.1.a	1	5	4	5	3	5	4		3.86
Sovereign Submerged Lands	III.G.1.b	1	5	4	5	3	5	4		3.86
Inholdings/additions	III.G.2	4	5	3	5	3	5	4		4.14
Discussion of Potential Surplus Land Determination	III.G.3	4	5	4	5	3	5	5		4.43
Surplus Lands Identified?	III.G.4	5	5	4	5	3	5	5		4.57
<b>Public Access &amp; Education (IV.1, IV.2, IV.3, IV.4, IV.5)</b>										
<b>Public Access</b>										
Roads	IV.1.a	5	5	5	5	3	5	5		4.71
Parking	IV.1.b	5	5	5	5	3	5	5		4.71
Boat Access	IV.1.c	5	5	5	4	3	5	4		4.43
<b>Environmental Education &amp; Outreach</b>										
Wildlife	IV.2.a	4	5	5	5	4	5	4		4.57
Invasive Species	IV.2.b	4	5	5	5	4	5	4		4.57
Habitat Management Activities	IV.2.c	4	5	5	5	3	5	4		4.43
Interpretive facilities and signs	IV.3	4	5	5	5	3	5	5		4.57
Recreational Opportunities	IV.4	4	5	5	5	4	5	4		4.57
Management of Visitor Impacts	IV.5	4	5	5	5	4	5	4		4.57
<b>Public Access &amp; Education Average Score</b>										4.57
<b>Managed Area Uses (VI.A, VI.B)</b>										
<b>Existing Uses</b>										
Resource conservation	VI.A.1	5	5	5	5	5	5	5		5.00
Hunting	VI.A.2	4	5	5	5	4	5	3		4.43
Fishing	VI.A.3	4	5	5	5	4	5	4		4.57
Hiking	VI.A.4	4	5	5	5	4	5	5		4.71
Biking	VI.A.5	4	5	5	5	4	5	5		4.71
Horseback riding	VI.A.6	4	5	5	5	4	5	3		4.43
Environmental education	VI.A.7	4	5	5	5	5	5	5		4.86
Wildlife observation	VI.A.8	5	5	5	5	4	5	5		4.86
Timber Harvesting	VI.A.9	5	4	3	5	4	5	3		4.14
Geocaching	VI.A.10	5	5	4	5	4	5	5		4.71
Apiary	VI.A.11	4	4	5	5	3	5	3		4.14

Short-Term Goals (VII)										
Habitat restoration and improvement	VII.A	4	5	5	5	4	5	5		4.71
Public access and recreational opportunities	VII.B	4	5	5	5	4	5	5		4.71
Hydrological preservation and restoration	VII.C	4	5	4	5	4	5	5		4.57
Sustainable forest management	VII.D	4	5	5	5	4	5	4		4.57
Exotic and invasive species maintenance and control	VII.E	4	5	5	5	4	5	4		4.57
Capital facilities and infrastructure	VII.F	4	5	4	5	4	5	5		4.57
Cultural and historical resources	VII.G	4	5	4	5	4	5	4		4.43
Imperiled species habitat maintenance	VII.H	4	5	5	5	4	5	5		4.71
Color Code:		Excellent	Above Average	Below Average	Poor					
			Missing Vote	Insufficient Information						
										See Appendix A for detail

## Appendix A: Scoring System Detail

### Explanation of Consensus Commendations:

Often, the exceptional condition of some of the property’s attributes impress review team members. In those instances, team members are encouraged to offer positive feedback to the managing agency in the form of a commendation. The teams develop commendations generally by standard consensus processes or by majority vote if they cannot obtain a true consensus.

### Explanation of Consensus Recommendations:

Subsection 259.036(2), F.S., specifically states that the managing entity shall consider the findings and recommendations of the land management review. We ask team members to provide general recommendations for improving the management or public access and use of the property. The teams discuss these recommendations and develop consensus recommendations as described above. We provide these recommendations to the managing agency to consider when finalizing the required ten-year management plan update. We encourage the manager to respond directly to these recommendations and include their responses in the final report when received in a timely manner.

### Explanation of Field Review Checklist and Scores, and Management Plan Review Checklist and Scores:

We provide team members with a checklist to fill out during the evaluation workshop phase of the Land Management Review. The checklist is the uniform tool used to evaluate both the management actions and condition of the managed area, and the sufficiency of the management plan elements. During the evaluation workshop, team members individually provide scores on each issue on the checklist, from their individual perspective. Team members also base their evaluations on information provided by the managing agency staff as well as other team member discussions. Staff averages these scores to evaluate the overall conditions on the ground, and how the management plan addresses the issues. Team members must score each management issue 1 to 5: 1 being the management practices are clearly insufficient, and 5 being that the management practices are excellent. Members may choose to abstain if they have inadequate expertise or information to make a cardinal numeric choice, as indicated by an “X” on the checklist scores, or they may not provide

a vote for other unknown reasons, as indicated by a blank. If a majority of members failed to vote on any issue, that issue is determined to be irrelevant to management of that property or it was inadequately reviewed by the team to make an intelligent choice. In either case staff eliminated the issue from the report to the manager.

**Average scores are interpreted as follows:**

Scores 4.0 to 5.0 are *Excellent*

Scores 3.0 to 3.99 are *Above Average*

Scores 2.0 to 2.99 are *Below Average*

Scores 1.0 to 1.99 are considered *Poor*

**11.13 Prescribed Burn Plan**

## **Pending Leadership Review and Finalization**

## **11.14 Wildlife Conservation Prioritization and Recovery Strategy**

**Salt Lake  
Wildlife Management Area  
Wildlife Management Strategy**

July 2019

Florida Fish and Wildlife Conservation Commission  
Division of Habitat and Species Conservation  
Wildlife and Habitat Management Section



## **Executive Summary**

The Florida Fish and Wildlife Conservation Commission's (FWC) Wildlife and Habitat Management Section (WHM) takes a proactive, science-informed approach to wildlife management on lands in the Wildlife Management Area (WMA/WEA) system. This approach uses information from statewide models, in conjunction with input from species experts and local staff, to create a Wildlife Management Strategy for the area. The FWC intends for this Strategy to (1) provide land managers with information on management and monitoring actions that should be taken, provided the necessary resources are available, (2) promote the presence and facilitate the persistence of wildlife species on the area, and (3) provide measurable objectives that can be used to evaluate the success of wildlife management on the area.

This document presents the results of a science-informed process for evaluating the needs of locally important species on Salt Lake Wildlife Management Area (SLWMA). The basis of FWC's management is an understanding of natural communities of plants and animals. By restoring and maintaining natural communities, management will benefit the greatest suite of native species reliant upon those natural communities. Monitoring select species verifies whether natural community management is having the desired effect on wildlife. To maximize the potential wildlife conservation benefit, staff considers the role of SLWMA in regional and statewide conservation initiatives throughout the process.

[Section 1](#) introduces the reader to the Strategy.

[Section 2](#) describes historic and ongoing habitat management and monitoring actions on the property.

[Section 3](#) provides an assessment of the area's role in the conservation of locally important species.

This section includes habitat management, monitoring, coordination recommendations, and measurable objectives identified during the WCPR workshop.

[Section 4](#) identifies coordination and "beyond the boundaries" opportunities that will assist in conserving locally important species.

[Section 5](#) contains a summary of SLWMA's role in the landscape.

Continuation of resources at current levels would be required to provide for most of the land management recommended in this document. Some of the monitoring recommendations may require additional resources, while FWC can accomplish others with continuation of existing resources.

## **Acknowledgements**

The WCPR Strategy development process is intended to be a collaborative effort between multiple Divisions and Sections within the agency, and coordination with experts beyond the FWC. Without the support of these experts, we could not have successfully prioritized our management, monitoring, and coordination efforts for areas like the Salt Lake WMA. As such, we would like to highlight the agency, local, and statewide experts that helped shape the discussion, including, Mark Asleson, Ron Bielefeld, Tim Dellinger, Terry Doonan, Adrienne Doyle, Kevin Enge, Craig Faulhaber, Alex Kropp, Amy Schwarzer, Dave Telesco, and others. Thank you for taking the time and effort to consider our management lands within context of the conservation needs for the region, as well as the State of Florida.

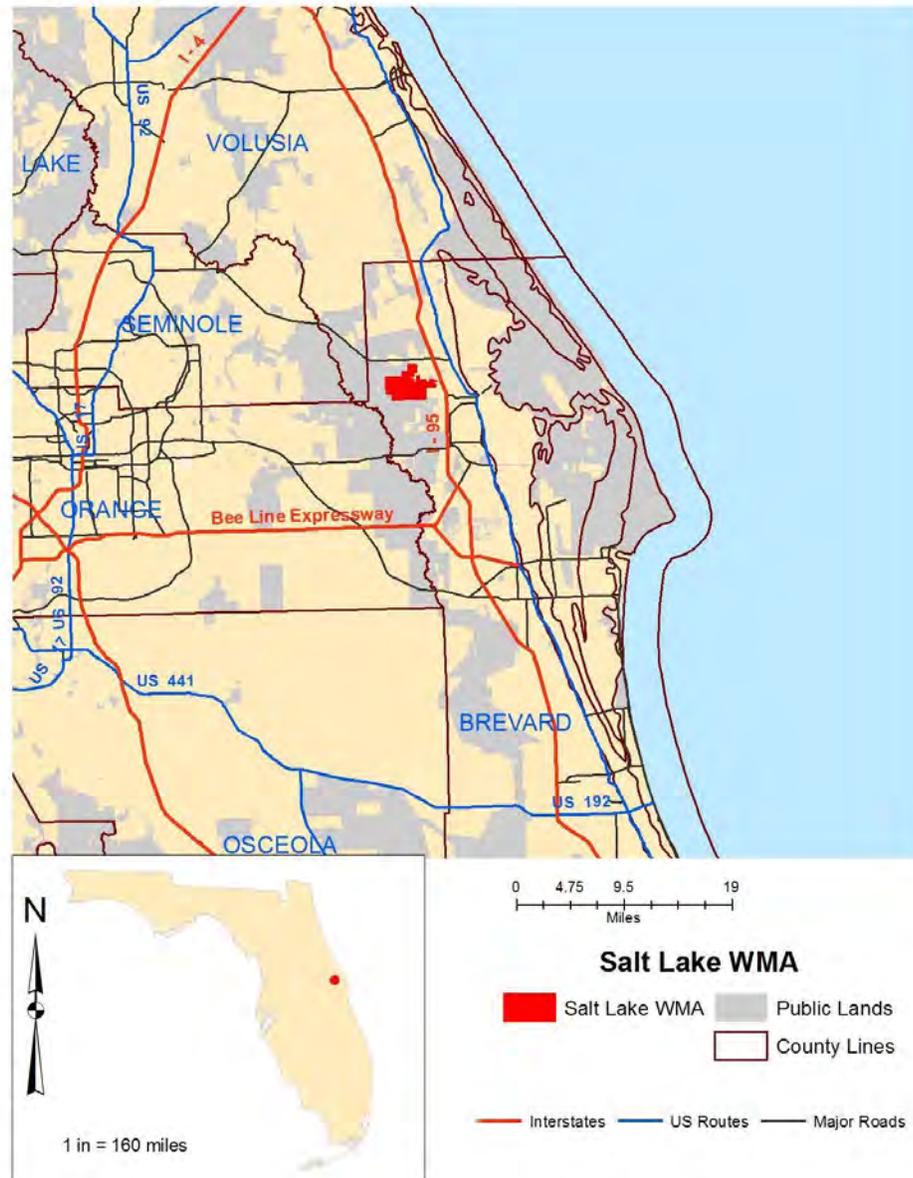
## Table of Contents

Executive Summary .....	i
Acknowledgements .....	i
Acronym List.....	iii
Locator Map .....	iv
Section 1: Introduction.....	5
Section 2: Historic, Current, and Planned Management .....	5
2.1 Past Habitat Management.....	6
2.2 Current Management .....	7
2.3 Planned Management .....	7
2.4 Strategic Management Areas.....	9
2.5: Monitoring.....	9
Section 3: Species Assessments .....	11
3.1: Gopher Frog.....	12
3.2: Eastern Indigo Snake .....	13
3.3: Gopher Tortoise.....	14
3.4: Bachman’s Sparrow .....	15
3.5: Black Rail .....	16
3.6: Florida Sandhill Crane.....	17
3.7: Florida Scrub-jay.....	17
3.8: Florida Black Bear.....	18
Section 4: Coordination and Beyond the Boundaries Considerations .....	19
Section 5: Summary of Area’s Role .....	19
Appendix 1. Natural communities on SLWMA with GIS-calculated acreages. ....	21
Appendix 2. SLWMA locally important species. ....	22

### **Acronym List**

BMU	Bear Management Unit
FNAI	Florida Natural Areas Inventory
F.S.	Florida Statutes
FWC	Florida Fish and Wildlife Conservation Commission
FWRI	Fish and Wildlife Research Institute
ISMP	Imperiled Species Management Plan
OBVM	Objective Based Vegetation Monitoring (program)
SaMP	Survey and Monitoring Protocol (database)
SAP	Species Action Plan
SLWMA	Salt Lake Wildlife Management Area
SMA	Strategic Management Area
SJRWMD	St Johns River Water Management District
USFWS	United States Fish and Wildlife Service
WCPR	Wildlife Conservation Prioritization and Recovery (program)
WHM	Wildlife and Habitat Management (section)
WMA	Wildlife Management Area

### Locator Map



## **Section 1: Introduction**

FWC manages the lands in the Wildlife Management Area (WMA) system using a science-informed, proactive approach, which includes an understanding of natural communities of plants and animals. As applied by FWC, natural community management starts by classifying lands into distinct natural communities that we then manage in a way to maintain or enhance the communities' unique structure and function. Land management that has a positive influence on natural community conditions benefits the wildlife living in these habitats.

While natural community management provides benefits to a host of species reliant upon these natural communities, imperiled species sometimes require specific attention. Additionally, subsection 253.034(5) of the Florida Statutes (F.S.) requires all land management plans to include an analysis of the property to determine if significant natural resources, including listed species, occur on the property. If significant natural resources occur, the plan shall contain management strategies to protect the resources. The Florida Forever Act (s. 259.105, F.S.) adds that all State lands that have imperiled species habitat shall include restoration, enhancement, management, and repopulation of such habitats as a consideration in the management plan.

FWC's Wildlife Conservation Prioritization and Recovery Program (WCPR) created this Wildlife Management Strategy for Salt Lake Wildlife Management Area (SLWMA) to document the area's role in wildlife conservation, to ensure the management needs for wildlife diversity on the WMA system are met, and to identify the appropriate species monitoring for the area. This Strategy (1) provides land managers with information on management and monitoring actions that should be taken, provided the necessary resources are available, (2) facilitates the persistence of locally important wildlife species on the area, and (3) provides measurable objectives that can be used to evaluate the success of wildlife management on the area. By implementing the actions in this Strategy, FWC believes that management will promote the persistence of locally important species, aid in the recovery of imperiled species, and ensure staff are managing all wildlife species on the area for their long-term well-being and for the benefit of people.

## **Section 2: Historic, Current, and Planned Management**

Creation of SLWMA began with the purchase of portions of the area by the Saint Johns River Water Management District (SJRWMD) in 1982. The purpose of this initial acquisition was for protecting the watershed of the St. Johns River. The Board of Trustees of the Internal Improvement Trust Fund of the State of Florida and SJRWMD jointly acquired other parcels under the Preservation 2000 Program and Brevard Coastal Scrub Ecosystem Florida Forever Project beginning in September 1999 with the purpose of protecting remaining coastal scrub. The state shares title on these parcels with the SJRWMD, and both parties have leased the 5,045-acre WMA to FWC for management activities. FWC received the initial lease for SLWMA in 2002. The current [Management Plan](#) was approved in 2016.

Prior to state acquisition the land that is now SLWMA was used for cattle grazing. During this time fire was excluded and a significant amount of solid-waste dumping occurred. The fire exclusion significantly altered the plant communities' structure and function by allowing woody shrubs to shade the ground cover.

### **2.1 Past Habitat Management**

Actively managed natural communities on the area include basin marsh, wet flatwoods, mesic flatwoods, scrubby flatwoods, and scrub. Exotic species have been treated in mesic hammocks, depressional wetlands, and other natural communities on the area. A small portion of the property is in ruderal condition where a power-line runs north to south through the area and where extensive solid waste dumping previously occurred. Nearly all habitat management activities fall into one of three categories: prescribed burning, mechanical treatments, and chemical treatments.

SLWMA staff have conducted mechanical treatments over the past 10-years, with roller chopping as the primary mechanical technique utilized. The initial roller chopping on SLWMA focused on reducing fuel heights. More recent mechanical treatments are mosaic treatments (sloppy chop) of scrub and scrubby flatwoods and in the wetter mesic flatwoods to reduce shrub cover and facilitate prescribed fire.

Wildfires over the past 10 years have been limited to a few lightning strike fires in the cordgrass marsh and one large (1,700 acres) escaped prescribed fire in 2009 originating from an adjacent conservation area. The 2009 escaped fire resulted in a pine beetle outbreak that necessitated a subsequent timber salvage on the area. The salvage halted the pine beetle progression but unfortunately logging disturbance increased infestations of exotic plants.

Prescribed fire has been the main management tool on the area. Over the past 10-year cycle the average annual prescribed burn acreage was 530 acres, with 25% dormant seasons fire, and 75% growing season fire. A large portion of SLWMA is low lying and wet, resulting in portions of the year when fire will not carry into desired habitats. In the wet flatwoods abundant cabbage palms present a high spotting/escape potential during drier prescribed burn windows and often create a ladder fuel platform which can be a detriment to pine canopy species if conditions are too dry. These same areas quickly become too wet to burn for much of the growing season. Fuel conditions in most of the mesic flatwoods are shrub dominated with little herbaceous ground fuels making ignition difficult where pines are thin or absent. This limits ignition techniques to hard flank fires or head fires.

Over 40 species of invasive and exotic species have been identified and treated on SLWMA. Most occur at very low levels, however, staff regularly treat the following species: Brazilian pepper (*Schinus terebinthifolius*), guava (*Psidium cattleianum*), cogongrass (*Imperata cylindrica*), Caesar's weed (*Urena lobata*), old world climbing fern (*Lygodium microphyllum*), and Guinea grass (*Panicum maximum*). Herbicides are the main treatment option used, however, the recent release of the air potato beetle (*Lilioceris cheni*) bio-control has helped to reduce herbicide treatments for air potato (*Dioscorea bulbifera*) on the area.

SJRWMD evaluated the hydrology and water flow on SLWMA and concluded that much of the area's ditches would affect water flow to neighboring private properties if restored to natural conditions; their recommendation was to leave them in their current condition. SJRWMD also recommended the installation of low-water crossings in several places and staff installed 1,000 feet of geo-web material and rock to create the recommended low-water crossings. Historically, locals used SLWMA as an illegal dump site, and over 5 tons of tires, 35 tons of solid waste, and 4.5 miles of interior fencing have been removed since FWC assumed management authority.

## **2.2 Current Management**

Section 4 of [SLWMA's Management Plan](#), completed in 2016, lists in detail objectives staff accomplished over the last 10 years. In addition, actively managed communities are monitored using the Objective-Based Vegetation Management (OBVM) program. Following program changes in 2012, OBVM now evaluates habitat condition at the natural community level and not the management unit level. The current OBVM-monitored natural communities at SLWMA are mesic flatwoods, wet flatwoods, scrubby flatwoods, and scrub.

The focal point for ongoing management is prescribed fire. The use of prescribed fire continues to be critical to the maintenance and restoration of the various natural communities found on SLWMA. With much of the area within recommended fire return intervals, staff will work to increase the quality of the fires. Varying the season of fire for individual units provides benefits to many species. With most of the acres burned being during the growing season, area staff are well positioned to accomplish this. The largest amount of extant habitat on SLWMA is within basin marsh and marsh lake communities. Multiple species depend on the periodic burning of marsh vegetation, and area staff plan to conduct burns in the ephemeral and lake marshes when conditions are appropriate.

In the past, area managers have utilized mechanical treatments such as roller-chopping and mowing in addition to prescribed fire. In the scrub, it will be necessary to continue treating the edges and to mosaic chop through the interior of the units. Roller chopping and mowing are also valuable tools in pre-fire preparations. Staff will continue using mechanical treatments as a more targeted approach to reducing fuel loads along fire lines and other areas that may be sensitive to fire.

The need for chemical treatment of invasive exotic plants is ongoing. Staff regularly search for and treat exotics on the area and have been successful in minimizing infestations. Staff will request funds to hire contractors through the Invasive Plant Management section of FWC if future infestations are more than staff can address.

## **2.3 Planned Management**

Over the next 10 years, maintenance and enhancement of current scrub, scrubby flatwoods, mesic flatwoods, and ephemeral wetlands communities, will be the focus of habitat management on SLWMA.

The actions outlined below are designed to improve habitat for several listed and locally important species, including Bachman's sparrow (*Peucaea aestivalis*), Florida scrub-jay (*Aphelocoma coerulescens*), gopher tortoise (*Gopherus polyphemus*), Florida sandhill crane (*Grus canadensis pratensis*), and black rail (*Laterallus jamaicensis*). In addition, the SJWMD may acquire the Mancini Tract parcel to be managed as a part of SLWMA. Some of this tract is comprised of scrub and scrubby flatwoods, and the parcel is bordered by SLWMA on three sides. Should this transfer occur, area staff plan to follow FWC's [Scrub Management guidelines](#) to bring conditions in sync with surrounding habitat.

#### *Prescribed Fire*

- Area staff plan to continue burning upland and wetland habitat at appropriate intervals to improve conditions for these species. For mesic flatwoods this is every 2-4 years. In the scrub and scrubby flatwoods, staff will apply a longer (5-10 year) return. Basin marsh should be burned on a 1-5 year fire return to maintain vegetation conditions preferred by marsh birds.
- Whenever practical, staff will conduct prescribed burns in late spring or early summer when wetlands are dry so that fire carries through the basins. If this isn't possible, staff should then prioritize burning wetlands in blocks where the surrounding units have recently received fire.
- Staff will continue to avoid applying prescribed fire in rail-occupied marshes during the black rail flightless period (August-September) to prevent direct mortality during molting.
- Staff will continue to apply prescribed fire ignition techniques that promote a mosaic structure in upland habitat and avoid burning natural fire shadows.

#### *Mechanical Treatments*

- Staff will plan to follow-up with a prescribed fire in the upcoming year when planning mechanical treatments.
- In areas of scrub where fine fuels are needed to facilitate burning, staff plan to pre-treat these areas with mechanical and hand treatments.
- Staff will remove slash pine saplings as needed within the basins of depression marshes.
- Staff will use mechanical treatments to remove shrub encroachment in wetlands if shrubs impede fire from carrying through the basin.
- When using mechanical methods, staff will take precautions to prevent rutting and soil disturbance that could reduce desirable herbaceous vegetation.

#### *Chemical Treatments*

- Area staff will utilize herbicide treatments, as needed, to control invasive non-native vegetation (Brazilian pepper, guava, Lygodium, etc.).

- Staff will consider the use of herbicides to reduce excess shrubs in the ‘shrubby’ mesic flatwoods if this is found to be an acceptable method.

#### 2.4 Strategic Management Areas

The [2009 WCPR Strategy](#) delineated a Strategic Management Areas (SMA) to target restoration efforts for the Florida scrub-jay. The 149-acre SMA included scrub, scrubby flatwoods, and some mesic flatwoods. The objectives focused on improving the area’s suitability for scrub-jays. The Strategy recommended applying mechanical treatment, prescribed burns, and thinning the basal area in and around suitable scrub-jay habitat. Staff accomplished these recommendations during the 10 years of the Strategy’s implementation. As all the actions in the SMA have been achieved and the area can be managed following FWC’s Scrub Management Guidelines, there is no need to continue the SMA designation. The management actions in the guidelines will result in the maintenance of suitable habitat for Florida scrub-jays.

#### 2.5: Monitoring

##### 2.5.1 Past Monitoring

Monitoring recommendations in the 2009 Strategy included surveys for gopher frog (*Lithobates capito*), gopher tortoise, northern bobwhite (*Colinus virginianus*), Bachman’s sparrow, brown-headed nuthatch (*Sitta pusilla*), Florida scrub-jay, painted bunting (*Passerina ciris*), Florida mouse (*Peromyscus floridanus*), and opportunistic monitoring of all other focal species. Staff accomplished all but the gopher frog monitoring recommendations during the 10-year lifetime of the Strategy. Results from these efforts informed the species assessments in [Section 3](#). Three species were not found on SLWMA: Florida mouse, painted bunting (during breeding season), and brown-headed nuthatch. As part of the 2018 Workshop update, staff also agreed to discontinue annual bobwhite monitoring.

In addition to the monitoring actions outlined in the 2009 Strategy, staff conducted spotlight counts for white-tailed deer (*Odocoileus virginianus*) through 2018 – which will not be continued – and collected harvest data at SLWMA’s check station. Staff run a dove banding station and maintain a variety of bird nest boxes and 4 bat houses, which will continue to be monitored and maintained. In cooperation with other Sections, FWC conducted a black rail survey in 2017, and a survey for the coastal dunes crowned snake (*Tantilla relicta pamlica*).

The Florida Natural Areas Inventory (FNAI) completed a rare plant survey on SLWMA in 2007 and found the following rare species: celestial lily (*Nemastylis floridana*), pine lily (*Lilium catesbaei*), angle pod (*Matelea gonocarpus*), cardinal airplant (*Tillandsia fasciculata*), and giant airplant (*Tillandsia utriculata*).

##### 2.5.2 Species Specific Monitoring

Some species warrant dedicated monitoring for one or more reasons. Imperiled species that are rare or declining may justify a dedicated effort to monitor local populations.

In other cases, the species being monitored fulfills the role of an indicator species, a species whose presence indicates well managed natural communities that will also benefit other species. Some species exist as both imperiled and as an indicator, and SLWMA staff monitor both types. The Area-Specific Species Assessments ([Section 3](#)) detail species' status and specific monitoring actions. On SLWMA the following species will receive dedicated monitoring: Bachman's sparrow, black rail, and Florida scrub-jay. Brown-headed nuthatches and bald eagles were included in the 2009 Strategy, but they were not documented with enough frequency during that period to warrant continued monitoring. If sightings become more prevalent, staff will consider reevaluating this assessment.

#### *2.4.3 Inventories*

Conducting periodic inventories on lands within the WMA system accomplishes several purposes. Inventories inform staff about species on the area, provide an up-to-date species list for the area, and may alert staff to potential species declines that warrant further investigation. Additionally, conducting an inventory may be a more effective way to document species occurrence than other methods, such as opportunistic monitoring.

During the 10-year lifetime of this Strategy, staff or contractors will conduct taxa inventory surveys for the main terrestrial vertebrate species as resources allow, with a goal to repeat at approximately 10-year intervals. Surveys on SLWMA will include a drift fence array for reptiles and amphibians, small mammal and meso-mammal surveys, avian surveys and an acoustic bat survey. For species that are unlikely to be captured by current methods, surveyors will consider adding enhancements to existing survey methodologies to detect cryptic species and other special cases modifications.

#### *2.4.4 Document Occurrence*

To improve the area-specific documented species list, staff document opportunistic observations of species as they are encountered. While staff only need enter opportunistic observations for common species on an occasional basis, there are other species for which staff should document every encounter. The following species could potentially occur on SLWMA and should be documented when observed. Collecting this information will help further our understanding of the species' ranges statewide as well as the area's role in the conservation of these species. Record observations of these species when encountered using WHM's [Opportunistic Observations for Wildlife protocol](#) and enter the data into Sampling and Monitoring Protocol (SaMP) so it will be available to other FWC sections and divisions, as well as cooperating agencies and organizations.

- Coastal dunes crowned snake (*Tantilla relieta pamlica*)
- Eastern diamondback rattlesnake (*Crotalus adamanteus*)
- Florida pine snake (*Pituophis melanoleucus mugitus*)
- Gopher tortoise (*Gopherus polyphemus*) – juveniles and novel locations

- Bald Eagle (*Haliaeetus leucocephalus*) - Follow the current [federal guidelines](#) when conducting management activities nearby and report new nests to [BaldEagle@myfwc.com](mailto:BaldEagle@myfwc.com)
- Brown-headed nuthatch – if sightings become frequent, monitor with the FWC standardized playback protocol along with Bachman’s sparrow
- Florida mottled duck (*Anas fulvigula*) - nesting
- Florida sandhill crane (*Grus canadensis pratensis*) - nesting and juveniles
- Crested caracara (*Caracara cheriway*)
- Limpkin (*Aramus guarauna*)
- Shorebirds - nesting, which WHM will report to [Florida shorebird database](#)
- Swallow-tailed kite (*Elanoides forficatus*) - nests and nesting behavior
- Wading birds - nests of tri-colored heron, little blue heron, reddish egret, or roseate spoonbill
- Eastern spotted skunk (*Spilogale putorius*)
- Florida long-tailed weasel (*Mustela frenata peninsulae*)
- Round-tailed muskrat (*Neofiber alleni*)

### Section 3: Species Assessments

Creating these assessments for locally important species on SLWMA involved a number of steps. First, WCPR staff created a list of locally important species for the area, starting with the listed and recently delisted species in the Imperiled Species Management Plan (ISMP) that are known to occur or could potentially occur on the area. Staff then considered adding additional species to this list, including: species that were identified in the area’s purpose for acquisition; species for which staff conduct significant monitoring or management for conservation, recreation, or public-viewing purposes; candidates for federal listing; species recognized as habitat management indicators, keystone species, or umbrella species; and species for which occurrence data is lacking. In addition to the ISMP, references staff used when creating the list included: statewide potential habitat models created by the FWC’s Fish and Wildlife Research Institute using Cooperative Land Cover V.3.2, agency documents such as the previous WCPR Strategy and the area’s Management Plan, and input from local staff and species experts.

After creating the species list, WCPR staff drafted assessments outlining proposed management actions for each species (except those for which documenting occurrence was the only needed action identified by experts). Then staff conducted a workshop December 5-6, 2018, at which area managers, species experts, and section leaders reviewed the draft species assessments and discussed SLWMA’s potential role in the conservation of locally important species. To determine management actions needed for each species, workshop participants considered the species’ status on the area; the current condition of the area’s natural communities; the amount and spatial arrangement of the species’ potential habitat on the area and adjacent lands; the species’ response to management; and any local overriding

factors (e.g., status of species in the region, local declines or extirpations). Additionally, staff considered management actions identified in FWC's [Species Action Plans](#) (SAPs), Regional Assessments, and the area's Management Plan. Using the information from the workshop, staff drafted the Strategy and sent it to species experts for review. Following the review, the Strategy was finalized and implemented.

This section summarizes the assessment for each species discussed in the workshop and the actions agreed on by workshop participants and species experts. Each assessment outlines the species' status on the area and the current condition of its habitat, planned habitat management actions, planned monitoring actions, and the area's role in conservation of the species. In addition, some assessments may identify species management recommendations, which refer to actions such as translocation, restocking, or installing artificial cavities.

### **3.1: Gopher Frog**

*Current Condition:* The gopher frog, formerly a Species of Special Concern, was removed from the imperiled species list with the adoption of the ISMP in 2016. As a part of the ISMP process, subject matter experts developed a [Gopher Frog SAP](#) for this species. As a gopher tortoise commensal, gopher frogs are limited to the few hundred acres of SLWMA where tortoises occur. These uplands are in good condition and require only a few more treatments to be in maintenance condition. The overall condition of the ephemeral wetlands needed by gopher frogs for breeding is good. Occasionally, slash pine saplings encroach on the shallower depression marshes, and area staff will manually remove them. To date, the species has been heard calling multiple times on SLWMA, but area staff have not conducted a gopher frog-specific survey to determine their location.

*Habitat Management:* Prescribed fire in both upland and wetland habitat at appropriate intervals will improve conditions for this species. For mesic flatwoods this is every 1-3 years. In the scrub and scrubby flatwoods the interval is longer (3-8 years). Whenever possible, staff will conduct prescribed burns in late spring or early summer when wetlands are dry so that fire carries through the basins. Staff will continue to avoid placing firebreaks along wetland ecotones because they can alter or destroy the herbaceous component preferred by this species and other amphibians, as well as prevent fire originating in the uplands from reaching the wetlands. If necessary, wet-lining can be an alternative to mineral firebreaks.

A combination of mechanical treatments, herbicide treatments, and prescribed fire could be necessary in overgrown sites where the use of fire alone is not effective. When using these methods, area staff will continue to take precautions to prevent soil rutting and overspray from herbicides that could damage desirable herbaceous vegetation.

*Monitoring:* Gopher frogs can be detected using several different methods, such as drift fence surveys, dip-netting, incidental sightings in gopher tortoise burrow cameras, and recording night calls for identifying breeding wetlands. On SLWMA either method can be implemented to document the distribution of gopher frog breeding sites. Acceptable methods include, but are not limited to, dip-netting potential breeding wetlands using WHM's

[Standard Protocol for Ephemeral Wetland Dip-netting Surveys](#) or using the [Gopher Frog Call Survey Protocol](#). Species experts did not identify SLWMA as a priority area for the gopher frog, and therefore species-specific monitoring is not required. However, staff will continue to document the species' presence during other activities. It is possible gopher frogs will be detected during drift fence surveys, dip-netting, and opportunistic observation when hearing their distinct call.

*Area's Role:* The role of SLWMA in the conservation of the gopher frog is to provide suitable habitat to support the local population. Staff will fulfill this role by continuing to apply prescribed fire at the appropriate rotation in upland communities and ensuring fire carries through ephemeral wetlands.

### **3.2: Eastern Indigo Snake**

*Current Condition:* Eastern indigo snakes are a federally-Threatened species. The most recent sighting of an Eastern indigo was in 2016 along the northern portion of the scrub ridge. Eastern indigo snakes are commonly associated with sandhill and scrubby flatwoods, but use a variety of natural and altered plant communities. Gopher tortoise burrows are important refuge sites for indigo snakes and provide protection from cold and desiccation. The better-drained uplands that tortoises inhabit are well managed and in good condition, however, due to the limited amount of these xeric uplands and the large home range of indigo snakes, individuals found on SLWMA likely also use adjacent lands.

*Habitat Management:* Indigo snakes are generalists that can inhabit most natural communities and often seek refuge in gopher tortoise, rodent, and armadillo burrows. They will seek refuge in hollow logs, root channels, and artificial objects. Prescribed fire is necessary to create and maintain suitable upland habitat for this species. Frequency of fire should mimic natural fire return intervals for the natural community.

Area staff will continue to avoid stump removal, as it removes an alternative refugia for smaller snakes, especially in areas without gopher tortoises. When pile burning, area managers will continue to light piles from only one side to allow for escape. When site prep is necessary, managers will use low intensity site preparation such as prescribed fire or light mechanical work over more intensive actions like root raking.

*Monitoring:* Because there is no adequate monitoring technique available for this species specifically, opportunistic monitoring is recommended. As part of inventory-style monitoring, FWC plans to conduct general herpetological drift-fence surveys on SLWMA in the next 10 years, which will potentially document this species. Drift fence arrays in upland habitats should include large box traps in addition to funnel and pit-fall traps, as this type of trap is more likely to capture large snakes like the indigo snake. While these surveys will not provide population-level information, they can indicate that the WMA is being used by indigo snakes and is contributing to its conservation.

*Area's Role:* The role of SLWMA is to enhance and maintain the suitability of habitat to support indigo snakes. Staff will fulfill this role by maintaining upland communities through prescribed fire applied at the appropriate intervals as well as mechanical and

chemical treatments. However, even if FWC management continues to accommodate the needs of this species, the persistence of indigo snakes likely depends on management actions occurring on adjacent public and private lands.

### **3.3: Gopher Tortoise**

*Current Condition:* The gopher tortoise is State-Threatened and a candidate for federal listing, making it a high statewide priority. Gopher tortoises occur on SLWMA, mostly occupying the drier eastern and southeastern areas. In 2009, FNAI completed a gopher tortoise burrow survey, and the estimated population size was 201 tortoises. In 2015, the Wildlife and Habitat Management Section in coordination with the Gopher Tortoise program prioritized WMAs that should receive long-term monitoring using Line-Transect Distance Sampling. Due to the lower encounter rate of SLWMA's pilot survey, the limited amount of potential habitat on the area, and larger, more emblematic gopher tortoise areas within the vicinity, SLWMA was not identified as a priority for long-term monitoring.

The previous WCPR Strategy included an objective to conduct a baseline tortoise survey, and area staff contracted with FNAI to complete this monitoring in 2009. Using natural community mapping and area staff's knowledge of the area, we identified 276 acres of potential habitat for tortoises on SLWMA. This potential habitat included scrub, scrubby flatwoods, and a drier portion of mesic flatwoods (locally termed "wiry" mesic flatwoods). In addition, 198 acres of shrub-dominated mesic flatwoods found within 400 meters of potential habitat were included in the survey. As mentioned before, 201 tortoises were estimated to occupy the survey area. Densities were highest in the wiry mesic flatwoods and lowest in the surrounding shrub dominated mesic flatwoods buffer, indicating they are poor quality for gopher tortoises.

The consensus among species experts is that 250 acres of contiguous, suitable habitat is necessary to support a viable population of tortoises. SLWMA likely lacks this amount, in fact there are less than 100 acres of well drained soils. However, when including adjacent county property and private lands, including the County properties to the north, subject matter experts agree this local population is likely viable.

*Habitat Management:* FWC's [Gopher Tortoise Management Plan](#) outlines actions to improve the status of the species. The plan recommends managing potential tortoise habitat to achieve the conditions identified for FNAI reference sites, primarily with prescribed fire. The plan recommends a fire return interval of 1-3 years for mesic flatwoods, and longer for scrub and scrubby flatwoods. Staff will continue following methods that prevent burrow-collapse and direct mortality during management activities, such as flagging burrows before heavy equipment-treatments.

Since gopher tortoises are generally less active and remain in burrows during the winter months, staff conduct mechanical treatments that use heavy equipment (e.g., roller chopping, timber harvesting) during the winter in sites where tortoises occur. Conducting activities during the winter will avoid disturbing burrow aprons during the time when eggs or hatchlings are most likely to be present (May-September), and when hatchlings are most

abundant (September-October). However, staff will consider how timing of the treatment may affect management results when planning mechanical treatments, as growing season treatments are frequently more successful in creating the diverse groundcover required by tortoises. When using contractors to conduct mechanical treatments, staff should ensure the contractors take precautions to avoid damaging tortoises and tortoise burrows.

*Monitoring:* SLWMA was not identified as a priority for long-term gopher tortoise monitoring. In lieu of repeated monitoring, staff will opportunistically document opportunistic observations of juvenile tortoises.

*Area's Role:* The role of SLWMA in the conservation of the gopher tortoise is to provide suitable habitat to support the regional population. Staff will achieve this role by maintaining scrub, scrubby flatwoods and the wiry mesic flatwoods in maintenance condition, while also following management recommendations to protect the species. Even with proper management, long-term persistence of gopher tortoises likely depends on management actions occurring on adjacent lands.

### **3.4: Bachman's Sparrow**

*Current Condition:* The Bachman's sparrow is recognized as an 'indicator species' whose continued presence indicates well-managed pine communities that contain a healthy herbaceous component important for many wildlife species. From 2010 to 2016, SLWMA staff conducted a passive listening survey for Bachman's sparrows at 8 stations. In 2016, staff adopted the WCPR Bachman's sparrow survey and 12 survey stations were established for this playback survey. During these surveys, staff documented Bachman's at 2 points, both located in the 'wiry' mesic flatwoods in the southeast portion of the WMA. Regionally, there are [eBird.org](http://eBird.org) records for most nearby conservation lands. With occupied habitat close by, there is opportunity for Bachman's sparrows to disperse between properties.

The Bachman's sparrow is a habitat specialist that is closely associated with natural communities containing diverse herbaceous groundcover maintained by frequent fire ( $\leq 3$  year rotation). The species requires open spaces between grass clumps since it spends most of its time on the ground. The drier 'wiry' mesic flatwoods provide suitable habitat for Bachman's sparrows while the remainder of the shrub dominated mesic flatwoods are unsuitable.

*Habitat Management:* Frequent ( $\leq 3$  year rotation) use of prescribed fire improves habitat quality for Bachman's sparrows, and staff will use prescribed fire as the primary land management tool to restore and maintain habitat for them on SLWMA. The occurrence of fire is critical to sustaining this species, as Bachman's sparrow use declines rapidly around 18 months post-fire, and the species may abandon habitat if fire is excluded for  $>3$  years. Since males use small shrubs as singing perches, staff will continue to retain some small patches of shrubs during mechanical treatments. Whenever possible, area staff will follow mechanical treatments with a prescribed burn to stimulate growth of grasses and forbs.

*Monitoring:* Since the Bachman's sparrow can serve as a habitat indicator, continued monitoring will help gauge the effectiveness of management. Trends in distribution and

relative abundance are expected to increase over time as habitat improves. Therefore, we identified the following objective related to monitoring:

**Objective 1:** Continue the current [playback survey](#) in compliance with the guidelines, following interval recommendations for the protocol.

*Area's Role:* The role of SLWMA in the conservation of the Bachman's sparrow is to provide suitable habitat to support the regional population. Staff will fulfill this role by maintaining flatwoods communities through prescribed fire on a  $\leq 3$  year rotation.

### **3.5: Black Rail**

*Current Condition:* In 2018, the United States Fish and Wildlife Service (USFWS) proposed listing the Eastern Black Rail under the Endangered Species Act after serious declines were documented across large portions of their range. The black rail's status in Florida is unknown. Until 2017, there were no records of black rails on SLWMA as biologists first detected them as part of a statewide effort to document distribution. According to experts, the Upper St. Johns River basin, of which SLWMA is a part, is an important area for black rails in Florida. Due to  $>2,000$  acres of basin marsh on SLWMA, species experts identified the WMA as having an important role for black rail conservation and population monitoring.

The black rail is a cryptic bird the size of sparrow that lives in the shallowest reaches of freshwater and saltwater marshes. The structure of the habitat, open understory near or over water, is the most important feature. The Eastern black rail inhabits marshes from the Atlantic seaboard west to Kansas, Colorado, and Texas. Despite its broad distribution, the subspecies has undergone a range contraction in the northeast U.S. and major populations in Maryland, Virginia, and North Carolina seem to be declining rapidly.

*Habitat Management:* Burning in marshes is an important tool in maintaining the vegetation structure needed by black rails. Most importantly, black rails need open ground underneath the vegetation to move about within the marshes. Fires help create this open ground by removing vegetation that has grown too thick for rails. However, when applied at certain times of the year, fire can be detrimental to black rails. Unlike many birds, they molt all flight feathers simultaneously and therefore cannot fly until new feathers are formed. Staff will avoid burning occupied marshes during this flightless period (August-September). As part of the rule proposing listing of the black rail, the USFWS proposed regulations that may influence management. Regional staff will make local area managers aware of any such rules as they are approved by the appropriate agencies.

*Monitoring:* Continued monitoring of black rails is important for determining the species status in Florida, however, black rails are very secretive and difficult to survey.

**Objective 1:** SLWMA will monitor black rails annually using the call back protocol initiated in 2017. Species experts are currently testing alternative survey methods that may

yield better results. SLWMA staff will work with the Conservation Biologist and adapt if alternate monitoring methods are recommended by species experts.

*Area's Role:* The role of SLWMA in the conservation of the black rail is to provide suitable habitat to support the regional population. By managing and protecting marsh areas, SLWMA staff will achieve the area's conservation role for black rails. Black rails will likely persist on SLWMA due to the area's location within the upper St. Johns River basin.

### **3.6: Florida Sandhill Crane**

*Current Condition:* Florida sandhill cranes, a State-designated Threatened species, are common on SLWMA and have nested in at least 2 wetlands on the area. Cranes often forage in the mowed powerline corridor, along the shorelines of the lakes, and in the wet grassy area known as the crevasse. Regionally, the upper St. Johns River basin, with large amounts of freshwater marsh, constitutes an important area for cranes.

*Habitat Management:* According to the [Florida Sandhill Crane SAP](#), cranes use a variety of upland habitats that are relatively open with a majority of the vegetative cover < 20 inches in height. Area staff plan to apply frequent prescribed fire in flatwoods and wetlands, which will benefit cranes. Florida sandhill cranes require marshes with standing water with little or no shrub component for breeding, and staff plan to prevent shrubby vegetation with regular fire and/or mechanical treatments. Ongoing natural communities' management, including frequent use of prescribed fire in both the depression and basin marsh systems, will improve habitat conditions and continue to promote use of the area by sandhill cranes.

*Monitoring:* No formal monitoring is warranted, however opportunistic observations of nesting or flightless young should be documented in SaMP.

*Area's Role:* The role of SLWMA in the conservation of the Florida sandhill crane is to provide suitable habitat to support the regional population. Staff will achieve this role through the application of prescribed fire to marshes and surrounding uplands. Additionally, Florida sandhill cranes using the area will benefit from the protections to water quality provided by SLWMA and neighboring conservation lands.

### **3.7: Florida Scrub-Jay**

*Current Condition:* The Florida scrub-jay is a federally-Threatened species. On SLWMA, the population in 2008 consisted of 3 family groups composed of approximately 7 individuals. Since that time, the population has decreased to just a single group. There are 2 conservation areas with additional Florida scrub-jay family groups: South Lake Conservation Area and Fox Lakes Sanctuary, both managed by the Brevard County Environmentally Endangered Lands' program. Both of these areas have single scrub-jay family groups, and scrub-jays from those areas often spend part of their time on SLWMA. Staff have not documented any additional family groups on adjacent properties in recent years.

Scrub and scrubby flatwoods combined account for just under 100 acres on SLWMA, with the majority found on a narrow ridge on the eastern portion of the area, bordered by South Lake and mesic flatwoods. In addition, there are approximately 40 acres

of scrubby flatwoods near the entrance. This ridge connects scrub on county conservation lands on both the north and south boundaries. The last few years, area staff have observed less than 10 birds and no fledglings.

Ideal habitat for Florida scrub-jays is oak-dominated scrub predominantly 3 to 6 feet tall with an average of <1 pine per acre. Increased pine densities and decreased distance to forest edge will decrease habitat suitability for scrub-jays by providing cover and perches for predators. Small patches of taller scrub (6-9 feet) cumulatively comprising no more than an acre per territory provide habitat heterogeneity and possibly increased acorn production.

*Habitat Management:* The primary tools for habitat management are mechanical treatments and fire. Since the scrub has received multiple mechanical treatments and fire, the previous SMA is no longer necessary ([Section 2.4](#)). Staff will continue to manage the scrub according to the FWC Scrub Management Guidelines. Some of the scrubby flatwoods may need to be burned on the longer end of the accepted 5-10 year interval to increase oak densities.

**Objective 1:** Maintain scrub and scrubby flatwoods for scrub-jays by following the FWC's [Scrub Management Guidelines](#).

To the north, Brevard County manages over 100 acres of scrub and to the south Fox Lake Sanctuary (also Brevard County) has some suitable habitat. Due to the scarcity of suitable habitat, it is important that staff coordinate management actions across agencies. With the goal of keeping as much of the scrub suitable for jays across the three properties, managers will coordinate management actions in order to compliment the others' management across the fence, and avoid making large amounts of habitat unusable for jays.

*Monitoring:* Currently, area staff monitor the Florida scrub-jays in the spring. Going forward a Jay Watch style survey will be utilized to inform group numbers, territories, and productivity of local breeding groups.

**Objective 2:** Staff will conduct Jay Watch style monitoring to determine how many territories are on the area and productivity.

*Area's Role:* The role of SLWMA is to contribute to the stability of the local metapopulation. While maintaining suitable habitat is important, the amount and linear layout of SLWMA's scrub dictate that the area's primary role is to serve as a connector between conservation lands.

### **3.8: Florida Black Bear**

*Current Condition:* The Florida black bear was first documented on SLWMA depredating an apiary in 2018. SLWMA is within the fringe or just outside of the common portion of the Central Bear Management Unit (BMU) according to the [Black Bear Management Plan](#). In 2014 the FWC estimated the bear population of the Central BMU to be 1,200 bears, making it the most populous populations in the state.

Until the 2018 sighting, bears were not known to occur on the area. The area is part of a large network of conservation lands along the St. Johns River and as the bear population expands, species experts expect that sightings on the WMA will increase. While the large

marsh associated with the lakes on SLWMA is not suitable for bears, the remainder of SLWMA provides foraging and some limited denning opportunities.

*Habitat Management:* Bears require a mosaic of natural communities and vegetation structure. Efforts to restore natural communities on the area to a more open landscape with lower shrub height, and reduced shrub cover may reduce denning and escape cover for bears. However, these efforts will also increase availability of forage such as berries and tubers. Avoid “burning out” patches of vegetation that remain after an initial fire or forcing fire into fire shadows. Secure garbage and other attractants at field offices and recreation areas.

*Monitoring:* Due to large home ranges and the ability for long distance movements, monitoring by SLWMA staff is not practical. FWRI periodically conducts statewide population surveys. Staff will participate in statewide monitoring efforts as needed and as work schedules allow.

*Area's Role:* The role of SLWMA in the conservation of the Florida black bear is to provide suitable habitat to support the Ocala subpopulation. Bears will likely continue to traverse SLWMA due to the area's diversity of natural communities maintained by varying fire-regimes, and its location within a corridor of conservation lands along the St. Johns River. By conducting management that provides a variety of forage types and cover, area staff will continue to provide habitat for bears.

#### **Section 4: Coordination and Beyond the Boundaries Considerations**

As discussed in the above assessments, several locally important species regularly disperse between SLWMA and neighboring conservation lands. Therefore, coordinating wildlife management efforts with neighboring land managers will help ensure SLWMA fulfills its conservation role for species identified in this Strategy. SLWMA shares boundaries with land managed by both Brevard County and SJRWMD. Staff currently coordinate with Brevard County staff on management of scrub and will continue these efforts in the future.

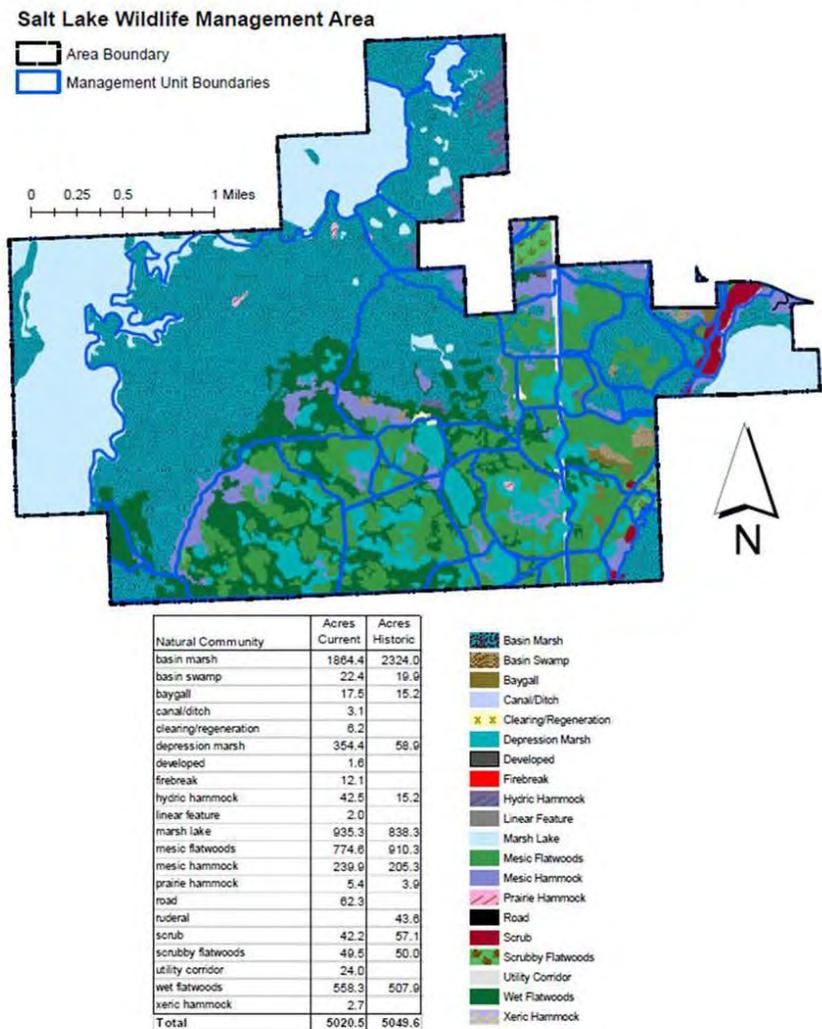
In addition to conservation lands SLWMA has private property to the north and east. Of note is the Mancini tract which is bordered by SLWMA on three sides. Currently there are talks of this parcel being conveyed to the state and managed as a part of SLWMA. Adding this land would add important uplands and wetlands to SLWMA. Currently the scrub is overgrown and would require mechanical treatment to restore. Once restored around 50 acres of suitable habitat would be added for the Florida scrub-jay, gopher frog, Eastern indigo snake, and gopher tortoise.

#### **Section 5: Summary of Area's Role**

With just over 5,000 acres total and less than 2,500 acres of uplands, SLWMA on its own does not wholly support entire populations of many imperiled species. However, looking at a map of SLWMA with other conservation lands included highlights the area's importance. SLWMA is a part of a larger network of conservation lands. As an important piece of this larger area of lands, SLWMA provides not only suitable habitat for many

species, but serves as a connection with other areas. The combined value of these connected conservation lands is greater than the sum of each area taken independently. Many of the imperiled species that call SLWMA home move through this landscape ignoring fences and boundaries. While SLWMA may not be large enough to support a viable population of several species, the area serves an important link in the conservation lands of central Florida.

**Appendix 1.** Natural communities on SLWMA with GIS-calculated acreages.



**Appendix 2.** SLWMA locally important species.

<b>Species</b>	<b>Location in Document</b>
Bachman's sparrow ( <i>Peucaea aestivalis</i> )	<a href="#">Species Assessments</a>
Black rail ( <i>Laterallus jamaicensis</i> )	<a href="#">Species Assessments</a>
Brown-headed nuthatch ( <i>Sitta pusilla</i> )	<a href="#">Past Monitoring</a>
Bald eagle ( <i>Haliaeetus leucocephalus</i> )	<a href="#">Document Occurrence</a>
Colonial bats (multiple species)	<a href="#">Monitoring</a>
Coastal dunes crowned snake ( <i>Tantilla relicta pamlica</i> )	<a href="#">Monitoring</a>
Crested caracara ( <i>Caracara cheriway</i> )	<a href="#">Document Occurrence</a>
Eastern diamondback rattlesnake ( <i>Crotalus adamanteus</i> )	<a href="#">Document Occurrence</a>
Eastern indigo snake ( <i>Drymarchon couperi</i> )	<a href="#">Species Assessments</a>
Eastern spotted skunk ( <i>Spilogale putorius</i> )	<a href="#">Document Occurrence</a>
Florida black bear ( <i>Ursus americanus floridanus</i> )	<a href="#">Species Assessments</a>
Florida long-tailed weasel ( <i>Mustela frenata peninsulae</i> )	<a href="#">Document Occurrence</a>
Florida mottled duck ( <i>Anas fulvigula</i> )	<a href="#">Document Occurrence</a>
Florida pine snake ( <i>Pituophis melanoleucus mugitus</i> )	<a href="#">Document Occurrence</a>
Florida sandhill crane ( <i>Grus canadensis pratensis</i> )	<a href="#">Species Assessments</a>
Florida scrub-jay ( <i>Aphelocoma coerulescens</i> )	<a href="#">Species Assessments</a>
Gopher frog ( <i>Lithobates capito</i> )	<a href="#">Species Assessments</a>
Gopher tortoise ( <i>Gopherus polyphemus</i> )	<a href="#">Species Assessments</a>
Limpkin ( <i>Aramus guarauna</i> )	<a href="#">Document Occurrence</a>
Round-tailed muskrat ( <i>Neofiber alleni</i> )	<a href="#">Document Occurrence</a>
Shorebirds (multiple species)	<a href="#">Document Occurrence</a>
Swallow-tailed kite ( <i>Elanoides forficatus</i> )	<a href="#">Document Occurrence</a>
Wading birds (multiple species)	<a href="#">Document Occurrence</a>
White-tailed deer ( <i>Odocoileus virginianus</i> )	<a href="#">Monitoring</a>

## 11.15 Hydrologic Needs Assessment



# St. Johns River Water Management District

Kirby B. Green III, Executive Director • David W. Fisk, Assistant Executive Director

4049 Reid Street • P.O. Box 1429 • Palatka, FL 32178-1429 • (386) 329-4500  
On the Internet at [www.sjrwmd.com](http://www.sjrwmd.com).

March 20, 2007

Florida Fish and Wildlife Conservation Commission  
Attn: David Turner, Wildlife Biologist  
28 Sweetwater Creek Circle  
Oviedo, Florida 32765

RE: Hydrologic needs Assessment for the Salt Lake Wildlife Management Area

Dear Mr. Turner:

In July 2005 you requested assistance from the District in developing a Hydrologic Needs Assessment of the property. District staff completed a review of historic and recent aerial photography then made observations of onsite conditions during periods of high water flow and had discussions with the Salt Lake Wildlife Management Area (SLWMA) management staff. Despite a history of cattle ranching and human activity, the area comprising the SLWMA contains only minor hydrologic alterations as compared with other similarly managed parcels within the St Johns River floodplain.

Immediate needs have been identified and are being addressed. Access roads within the WMA appear to follow the highest contours and provide some obstruction to historic sheet flow. SLWMA staff have identified the existing culverts as well as additional locations in the internal roadway where new culverts or low water crossings should be added to improve wetland connectivity and drainage.

Prior to 1943 conveyance ditches were cut through the property draining from areas further east to the St. Johns River. These ditches appear ineligible for restoration as they also provide drainage for offsite and adjacent property owners. If additional lands are acquired this condition may change and further evaluation and hydrological modeling is recommended.

Although we discussed these results some time ago, I felt it necessary to provide this letter as written confirmation. I appreciate the opportunity to learn about the SLWMA. If I can provide any further assistance, please contact me at 386-312-2345.

Sincerely,

A handwritten signature in black ink that reads "Tom Workman".

Tom Workman  
Land Assessment Specialist

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11.16 Timber Assessment

# TIMBER ASSESSMENT



FOR

## Salt Lake Marsh Wildlife Management Area

Written by:  
Dana Sussmann  
Senior Forester  
January 2026



Florida Department of Agriculture & Consumer Services  
Wilton Simpson Commissioner

# **TIMBER ASSESSMENT**

## **FOR**

### **SALT LAKE WILDLIFE MANAGEMENT AREA**

Prepared by  
Dana Sussmann  
Senior Forester  
Florida Forest Service  
January 2026

#### **1. Purpose**

This document is intended to fulfill the timber assessment requirements for public lands in the state of Florida as required in section 253.036, Florida Statutes. It is being written for The Florida Fish and Wildlife Conservation Commission's Salt Lake Wildlife Management Area.

The Main Tract of SLWMA lies in all or part of Sections 22,23, 25-29, and 32-35 in Township 21 South, Range 34 East of Brevard County, Florida. STR location info for the Brevard Coastal Scrub Ecosystem Florida Forever Project (BCSEFFP) units:

Grissom Parkway Unit: Sections 23-25, 34, and 35 in Township 23 South, Range 35 East

Micco Expansion Unit: Section 22 in Township 29 South, Range 34 East

Ten Mile Ridge Unit: Sections 34 and 35 in Township 29 South, Range 34 East

The goal of this assessment is to evaluate the potential and feasibility of utilizing silvicultural techniques to help managers with the timber resources being managed by Florida Fish and Wildlife Conservation Commission.

#### **2. General Information:**

Salt Lake Wildlife Management Area (SLWMA) encompasses 6,729 acres in northern Brevard County, Florida. The SLWMA is comprised of a 5,262-acre Main Tract and an additional 1,467 acres spread over three noncontiguous units: Grissom Parkway, Mico Expansion, and Ten Mile Ridge. The Florida Fish and Wildlife Conservation Commission (FWC) is assigned lead management authority and assumes management responsibilities for all acres and resources within SLWMA.

SLWMA is located within the Fox Lake portion of the Brevard Coastal Scrub Ecosystem Florida Forever Project (BCSEFFP) and is owned by the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees) and the St Johns River Water Management District (SJRWMD).

The SLWMA was purchased under the Save Our Rivers (SOR) Program, Scrub Jay Refugia Conservation and Recreational Lands Priority List (CARL), Brevard Coastal Scrub Ecosystem Florida Forever Project (BCSEFFP) and the Scrub-Jay Refuge Preservation 2000 (P-2000).

Portions of the SLWMA tract were originally purchased by the SJRWMD beginning in February 1982. Other significant parcels were purchased jointly by the Trustees and the SJRWMD under the Preservation 2000 Program and the BCSEFFP beginning in September 1999. Additional land purchases and donations have occurred as recently as 2021.

The State of Florida shares title on these tracts with the SJRWMD, and both entities lease SLWMA to FWC for management. The FWC received the initial lease from the Trustees and the SJRWMD in 2000. Lease Agreement No. 4316 was entered into on June 15, 2001. Lease Agreement No. 4344 was entered into on April 5, 2022 and has a term of 50 years.

### **3. Previous use**

The following uses are known to have occurred on the lands comprising SLWMA: Cattle grazing (lease terminated December 12, 2002), apiary lease, hunting lease, cabbage palm harvesting, pine timber harvesting, and turpentine – Naval stores production.

### **4. Current Ecological Conditions and Recommendations**

The Salt Lake Wildlife Management Area lands encompass approximately 6,700 acres with about half the acres suitable for timber management. The remaining acres would not adequately support forestry activities as they are too wet, have high salinity soil, or are a water resource. This timber assessment applies only to the main tract of SLWMA as the other BCSEFFP Units have not yet been mapped.

Figure 13 shows the natural communities which have potential for timber production: Mesic Flatwoods, Wet Flatwoods, Scrubby Flatwoods and Scrub.

Identifying and defining individual stands and prescribing treatments for each is not the goal of this assessment. Detailed stand descriptions would be necessary to help plan for long term timber management on suitable acres. While timber management is not the primary goal for the SLWMA, many of the silvicultural recommendations can be implemented along with other land management activities to maintain or restore habitats in their natural condition.

Although SLWMA has a diversity of ecosystem types and maintaining the integrity of each community is a guiding management principle, this timber assessment will address the two dominant natural forest communities, mesic flatwoods and wet flatwoods. Silvicultural treatments in these communities would benefit the timber resource.

The most recent Objective-Based Vegetation Management (OBVM) Monitoring Report indicates the Desired Future Condition (DFCs) are being met or transitioned towards in most of the natural communities. This indicates effective implementation of the resource management practices recommended in the current land management plan.

Timber harvesting and excessive grazing had converted much of this land to a fire climax community of saw palmetto. The consistent and effective use of prescribed fire since the 2007 Timber Assessment has transitioned many sites to a dominant overstory of slash pine and an understory of palmetto, gallberry, wiregrass, scrub oaks and other grasses and woody plants. In addition, some sites now support the unique palm flatwoods ecosystem which has an overstory with codominance of cabbage palm and slash pine.

Each of these forested communities have pines of merchantable size and, if the land manager decides a timber harvest would be beneficial a more accurate measurement of this resource is needed. Working with a private consulting forester to do a timber inventory is recommended.

Given the importance of pine duff as a fuel source for prescribed fire the impact of harvesting pine timber may outweigh the benefits. Harvesting pines from the palm flatwoods might decrease pine regeneration and lead to cabbage palms as the dominant canopy tree. Strategic removal of individual pines might be needed to determine the most beneficial management regime.

The economic viability of planning and conducting a timber sale should be considered as SLWMA is some distance from wood processing plants and mills. However, the ecological benefit of tree removal may outweigh any cost.

If a forested community is the goal in those areas where saw palmetto is still dominant, supplementing prescribed burning with other management activities will be needed.

Saw palmetto (*Serenoa repens*) responds to fire by resprouting immediately and can return to preburn levels in as little as 1 year. This hinders pine regeneration as the seedlings do not receive enough sunlight and are vulnerable to the fire intensity generated when saw palmetto burns. If a more expansive tree canopy can be established, the shade created may slow palmetto growth and allow for pine regeneration. Where practical and cost-effective mechanical removal of saw palmetto is recommended as it does not regenerate well following mechanical removal. The land manager will need to consider the size of the area to be treated before implementing this practice.

Mechanical disturbance which dislodges, uproots, and cuts saw-palmetto stems and rhizomes provides effective control. Roller-drum choppers pulled in tandem at offset angles or perpendicular to each other may reduce saw-palmetto cover by 90 percent 2 years after treatment. It is recommended that a safe distance be maintained around existing trees to avoid causing root damage and mortality to the existing seed source. After the saw palmetto has been sufficiently reduced, it is recommended that longleaf pine be reintroduced in the drier areas as there is evidence that it existed in the mesic flatwoods in the past and it is more fire resistant than slash pine.

## **5. General Timber Management Guidelines**

A useful measurement of tree stocking and density is its Basal Area per acre (BA). Basal Area is the cross-sectional area in square feet of a tree measured four and one-half feet above the ground. (The diameter of individual trees measured at this height is referred to as its diameter breast height or DBH.) Fully stocked pine stands have enough trees per acre of a size large enough to utilize the growing space without causing overcrowding. (Longleaf, North Florida and South Florida slash

pine stands with 70 to 100 square feet of BA are considered fully stocked.) It requires more smaller diameter trees than it does larger diameter trees to equal one square foot of basal area. (For example: It takes 357 evenly spaced, six-inch diameter breast height trees to equal 70 sq. ft. BA. Whereas only 89 twelve-inch DBH trees per acre equal the same 70 sq. ft. BA.)

Basal Area can be roughly correlated to crown coverage and therefore needle-cast. About 40 to 60 sq. ft. BA should provide sufficient needle-cast to carry prescribed fire and allow adequate sunlight for native grasses to be maintained.

Natural communities are dynamic and a stand of scattered pine trees is one phase of an ecosystem's life cycle. In natural pine dominated forest systems trees age and die and become more susceptible to insect and disease attack. (Slash pine has a life expectancy of about 100 years, whereas longleaf pines can easily live for over 200 years.) Bark beetles might invade a weakened tree then spread and kill adjacent trees. Lightning strikes and windstorms can cause pockets of mortality and create holes of various sizes in the canopy. These openings allow full sunlight to reach the forest floor. Lightning caused fires consume leaf litter and expose bare mineral soil. The bare soil and canopy openings permit large numbers of sun loving pine seedlings to become established and grow straight and tall.

Naturally occurring fire keeps the understory open and allows pine seedlings to establish in these canopy openings at very high densities. It is not uncommon to have thousands of seedlings per acre in scattered openings. Recurrent wildfires and competition for sunlight, moisture, and nutrients favor the strongest, fastest growing pine saplings. The others die off continually as the stand matures, new openings are created and the cycle repeats. The result is an uneven aged stand where each group of trees created by a canopy opening is about the same age. The overall stand is a mosaic of clusters that have different ages and densities. The long-term BA will fluctuate around a constant figure depending on soil productivity (as low as 20 sq.ft. on extremely poor sites up to 80 sq. ft. on highly productive sites). The goal of ecologically based timber management is to mimic these natural processes and harvest trees before they senesce. The challenge is to capture the value of the timber while minimizing any negative impact on the overall system.

Thinning harvests in pine stands help maintain the health and vigor of the stand by removing weak, diseased and deformed trees. Enough co-dominant trees are removed during thinning to ensure crown retention and continued growth in the remaining trees. To create uneven aged pine stands, group selection openings are cut during thinning activities. These openings allow young trees to become established by natural regeneration or by planting seedlings. Pine seedlings require direct sunlight to grow so all trees within the opening must be removed. To minimize the visual impact, openings can be as small as one-half acre. For natural regeneration, the minimum width of the openings is about two to three chains (120-180'). Animal foraging and migration patterns may be impeded by the lack of cover created by large openings and the dense stands of young pines which develop. (For example: To prevent saplings growing in these openings from becoming barriers to RCW flight patterns, group selections should not exceed five acres in size.)

Combined acreage of all openings cut within a stand during each thinning should not exceed five to ten percent of the total stand acreage. Since each stand only gets thinned every ten+ years, over-harvesting of old-growth trees is avoided, and a steady supply of young trees is ensured.

Assume today there is a stand of 20 year-old pine trees. Every 10 years 95% of a stand gets thinned to keep the canopy open and 5% clear cut to allow regeneration of young pines. At the end of the tenth cutting cycle (100 years from now) 50 % of a stand would have 120+ year-old trees and 50% would range from seedlings to 100 year-old trees. If the cutting cycle is extended to 20 years (which is more likely on poorer soils) and 10% is cut for openings, the age distribution at the end of 100 years is the same as for the 10-year cycle.

Planting seedlings, clearing openings, palmetto control measures, and natural regeneration within openings in thinned stands will produce young tree stands of various sizes. A well stocked stand of young pine trees will usually require the removal of weak, diseased, and some overcrowded trees around 15 to 20 years of age. At this point canopy closure has occurred and ground cover begins to get shaded out. Harvesting a portion of the timber maintains healthy pine growth and provides sunlight to the forest floor.

Trees removed in the thinning process can be sold to generate revenue to be used in other land management projects. Potential markets for early thinnings from pine stands may include pulpwood, fence posts and landscape mulch. However, in Central Florida the options for sale of these products may be limited.

Due to shading effects, trees grown in tight spacing produce fewer and smaller lower limbs. The shedding of the lower limbs makes them more desirable for fence posts and more valuable products. Maintaining a stocking level of at least 400 evenly spaced seedlings per acre helps ensure the marketability of the pine trees and increases future management options.

The need for second and later thinnings will depend on how low the BA was taken in the first thinning and the stand's growth response. If the BA was reduced to 50 to 70 sq. ft. in, another harvest may be needed in ten to fifteen years. Trees removed from the second and succeeding operations produce more valuable products and should generate more revenue. The goal is increasing revenue with each thinning cut while still maintaining a healthy ecosystem. However, current market conditions and a lack of mills in Central Florida may hinder this goal.

Red-cockaded woodpecker populations are often used as an indicator of the overall health of flatwoods and sand hill ecosystems. Conditions that favor RCW colonies (i.e. mature pine overstory with frequently burned, grassy groundcover and little understory) are also beneficial for other species found in these habitat types. Although there is not a current population of RCWs anywhere in the SLWMA, following RCW recovery guidelines is a reasonable approach to maintaining ecosystem health. Ideal RCW foraging habitat should include a Basal Area per acre of at least 40 square feet of 60+ year old pine trees. These stands should also include a range of younger age classes up to about 60 square feet BA. Increasing stocking levels of pine trees in severely understocked stands will increase future options for land managers.

## **6. Access**

Unimpeded access to all areas of the SLWMA is a necessity for land management activities. Law enforcement patrols, prescribed burning activities, fire suppression and recreational activities benefit from easy access via roads, two trails and waterways. Internal access to some of the

SLWMA is limited due to weather conditions during certain times of the year. Low areas become very wet and high areas become excessively dry depending on the season. Parts of the road system may need improvements to facilitate movement of heavy equipment for restoration or maintenance purposes. Widening current roads, installing culverts or low water crossings, or capping soft roads with shell, rock or clay are some of the possibilities for needed upgrades.

## **7. Economics**

It is difficult to predict the amount of revenue that can be derived through timber harvests on the Salt Lake Wildlife Management Area. SLWMA is approximately 100 miles from the nearest major wood processing facilities in Palatka, Florida. Market conditions, harvest prescriptions, product mix, logging conditions and distance to manufacturing facilities are factors in stumpage prices. These economic factors should be analyzed before making any management decisions. Although there may not be a significant monetary benefit to harvesting timber, the ecological impact of selective tree removal may be of great value to overall forest health.

While not a traditional timber harvest, one economic avenue which could be pursued is sale of live cabbage palms. Typical specifications for sale are 8-10' of clear trunk, either booted or unbooted. The impact cabbage palm removal would have on the palm flatwoods ecotype needs to be considered before this option is chosen.

## **8. Summary**

There are approximately 6,700 acres in the SLWMA with about half those acres having current or future potential for timber management. Managing exclusively for timber production would not meet the objectives for which this property was purchased. However, silvicultural practices can be a valuable tool to help restore and maintain native ecosystems, increase species diversity and improve wildlife habitat. It may be possible to maintain the natural appearance of the mesic, wet, and scrubby flatwoods as well as the ruderal areas and produce revenue through timber harvests. However, an examination of current market conditions in Central Florida and a detailed timber inventory are needed to ensure this is a viable economic strategy.

## **11.17 Management Procedures Guidelines - Management of Archaeological and Historical Resources**

**Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties**  
(revised June 2021)

**These procedures apply to state agencies, local governments, and non-profits that manage state-owned properties.**

**A. Historic Property Definition**

Historic properties include archaeological sites and historic structures as well as other types of resources. Chapter 267, Florida Statutes states: “ ‘Historic property’ or ‘historic resource’ means any prehistoric district, site, building, object, or other real or personal property of historical, architectural, or archaeological value, and folklife resources. These properties or resources may include, but are not limited to, monuments, memorials, Indian habitations, ceremonial sites, abandoned settlements, sunken or abandoned ships, engineering works, treasure trove, artifacts, or other objects with intrinsic historical or archaeological value, or any part thereof, relating to the history, government, and culture of the state.”

**B. Agency Responsibilities**

Per Chapter 267, F.S. and state policy related to historic properties, state agencies of the executive branch must provide the Division of Historical Resources (Division) the opportunity to comment on any undertakings with the potential to affect historic properties that are listed, or eligible for listing, in the National Register of Historic Places, whether these undertakings directly involve the state agency, i.e., land management responsibilities, or the state agency has indirect jurisdiction, i.e. permitting authority, grants, etc. No state funds should be expended on the undertaking until the Division has the opportunity to review and comment on the undertaking. (267.061(2)(a))

State agencies must consult with the Division when, as a result of state action or assistance, a historic property will be demolished or substantially altered in a way that will adversely affect the property. State agencies must take timely steps to consider feasible and prudent alternatives to the adverse effect. If no feasible or prudent alternatives exist, the state agency must take timely steps to avoid or mitigate the adverse effect. (267.061(2)(b))

State agencies must consult with Division to establish a program to locate, inventory and evaluate all historic properties under ownership or controlled by the agency. (267.061(2)(c))

State agencies are responsible for preserving historic properties under their control. State agencies are directed to use historic properties available to the agency when that use is consistent with the historic property and the agency’s mission. State agencies are also directed to pursue preservation of historic properties to support their continued use. (267.061(2)(d))

**C. Statutory Authority**

The full text of Chapter 267, F.S. and additional information related to the treatment of historic properties is available at:

<https://dos.myflorida.com/historical/preservation/compliance-and-review/regulations-guidelines/>

**D. Management Implementation**

Although the Division sits on the Acquisition and Restoration Council and approves land management plans, these plans are conceptual and do not include detailed project information. Specific information for individual projects must be submitted to the Division for review and comment.

Managers of state lands must coordinate any land clearing or ground disturbing activities with the Division to allow for review and comment on the proposed project. The Division's recommendations may include, but are not limited to: approval of the project as submitted, recommendation for a cultural resource assessment survey by a qualified professional archaeologist, and modifications to the proposed project to avoid or mitigate potential adverse effects.

Projects such as additions or alterations to historic structures as well as new construction must also be submitted to the Division for review. Projects involving structures fifty years of age or older must be submitted to the Division for a significance determination. In rare cases, structures under fifty years of age may be deemed historically significant.

Adverse effects to historic properties must be avoided when possible, and if avoidance is not possible, additional consultation with the Division is necessary to develop a mitigation plan. Furthermore, managers of state property should make preparations for locating and evaluating historic properties, both archaeological sites and historic structures.

#### **E. Archaeological Resource Management (ARM) Training**

The ARM Training Course introduces state land managers to the nature of archaeological resources, Florida archaeology, and the role of the Division in managing state-owned archaeological resources. Participants gain a better understanding of the requirements of state and federal laws with regard to protecting and managing archaeological sites on state managed lands. Participants also receive a certificate recognizing their ability to conduct limited monitoring activities in accordance with the Division's Review Procedure, thereby reducing the time and money spent to comply with state regulations. Additional information regarding the ARM Training Course is available at:

<https://dos.myflorida.com/historical/archaeology/education/arm-training-courses/>

#### **F. Matrix for Ground Disturbance on State Lands**

The matrix is a tool designed to help streamline the Division's Review Procedure. The matrix allows state land managers to make decisions about balancing ground disturbance and stewardship of historic resources. The matrix establishes types of undertakings that are either minor or major disturbances and then guides the land manager to consult the Division, conduct ARM-trained project monitoring, or proceed with the project. Additional information regarding the matrix is available at:

<https://dos.myflorida.com/historical/archaeology/education/dhr-matrix-for-ground-disturbance-on-state-lands/>

#### **G. Human Remains Treatment**

Chapter 872, *Florida Statutes* makes it illegal to willfully and knowingly disturb human remains. In the event human remains are discovered, cease all activity in the area that may disturb the remains. Leave the bones and nearby items in place. Immediately notify law enforcement or the local district medical examiner of the discovery and follow the provisions of Chapter 872, FS. Additional information regarding the treatment of human remains and cemeteries is available at:

<https://dos.myflorida.com/historical/archaeology/human-remains/>  
<https://dos.myflorida.com/historical/archaeology/human-remains/abandoned-cemeteries/what-are-the-applicable-laws-and-regulations/>

#### **H. Division of Historical Resources Review Procedure**

Projects on state owned or controlled properties may submit projects to the Division for review using the streamlined State Lands Consultation Form. The form provides instructions to submit projects for review and outlines the necessary information for the Division to complete the review process. The State Lands Consultation Form and additional information about the Division's review process is available at:

<https://dos.myflorida.com/historical/preservation/compliance-and-review/state-lands-review/>

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Questions relating to the treatment of archaeological and historic resources on state lands should be directed to:

Compliance and Review Section  
Bureau of Historic Preservation  
Division of Historical Resources  
R. A. Gray Building  
500 South Bronough Street  
Tallahassee, FL 32399-0250

[StateLandsCompliance@dos.myflorida.com](mailto:StateLandsCompliance@dos.myflorida.com)

Phone: (850) 245-6333  
Toll Free: (800) 847-7278  
Fax: (850) 245-6435

## 11.18 FWC Apiary Policy

**FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION**

# Apiary Policy

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Division of Habitat and Species Conservation

Issued by:  
Terrestrial Habitat Conservation and Restoration Section  
9/1/2010

Enclosed is the HSC/THCR Apiary Policy for all Florida Fish and Wildlife Conservation Commission's Wildlife Management Areas and Wildlife and Environmental Areas.

1

## **DIVISION OF HABITAT AND SPECIES CONSERVATION POLICY**

**Issued September 2010**

**SUBJECT:     APIARY SITES ON FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION  
              WILDLIFE MANAGEMENT AREAS AND WILDLIFE AND ENVIRONMENTAL AREAS**

**STATEMENT OF PURPOSE:** It is the intent of this policy to determine which Florida Fish and Wildlife Conservation Commission (FWC) Wildlife Management Areas or Wildlife and Environmental Areas (WMA/WEA) may have apiary sites, and provides direction on site location, management and administration of said apiaries.

### Definitions

**Apiary** – A place where bees and beehives are kept, especially a place where bees are raised for their honey.

**Apiary Site** – An area set aside on a WMA/WEA for the purpose of allowing a beekeeper to locate beehives in exchange for a fee as established by contract between the beekeeper and FWC.

**Apiary Wait List** – An apiary wait list will be maintained by the Terrestrial Habitat Conservation and Restoration (THCR) Section Leader’s Office based on applications received from interested beekeepers. Only qualified apiarists will be added to the list. To become qualified the new apiarist must submit an application form and meet the criteria below under the section titled “Apiary Wait List and Apiary Application.”

**Beekeeper/Apiarist** – A person who keeps honey bees for the purposes of securing commodities such as honey, beeswax, pollen; pollinating fruits and vegetables; raising queens and bees for sale to other farmers and/or for purposes satisfying natural scientific curiosity.

**Best Management Practices** – The Florida Department of Agriculture & Consumer Services (FDACS; Division of Plant Industry (DPI), Apiary Inspection Section, P.O. Box 147100, Gainesville, FL 332614-1416) provides Best Management Practices (BMP) for maintaining European Honey Bee colonies and FWC expects apiarists to follow the BMP.

**Hive/Colony** – Means any Langstroth-type structure with movable frames intended for the housing of a bee colony. A hive typically consists of a high body hive box with cover, honey frames, brood chambers and a bottom board and may have smaller super hive boxes stacked on top for the excess honey storage. A hive/colony includes one queen, bees, combs, honey, pollen and brood and may have additional supers stacked on top of a high body hive box.

### Establishment of Apiary Sites on WMA/WEA

During the development of an individual WMA/WEA Management Plan, apiaries will be considered under the multiple-use concept as a possible use to be allowed on the area. "Approved" uses are deemed to be in concert with the purposes for state acquisition, with the Conceptual State Lands Management Plan, and with the FWC agency mission, goals, and objectives as expressed in the agency strategic plan and priorities documents. Items to consider when making this determination can also include:

- Were apiaries present on the area prior to acquisition?
- Are there suitable available sites on the WMA/WEA?
- Will the apiary assist in pollination of an onsite FWC or offsite (adjacent landowner) citrus grove or other agricultural operation?

For those WMA/WEAs that have not considered apiaries in their Management Plan, upon approval of this policy Regional Staff will work with the Conservation Acquisition and Planning (CAP) staff and THCR Section leadership to determine if apiaries are an approved use on the area. If apiaries are considered an approved use then a request will be made to the Division of State Lands to allow this use as part of an amended Management Plan. This request will be made through the THCR's Section Leader's office and coordinated by the CAP.

Determination of apiary site locations on WMA/WEAs should be done using the following guidelines:

- Apiary sites should be situated so as to be at least one-half mile from WMA/WEA property boundary lines, and at least one mile from any other known apiary site. Exceptions to this requirement must be reviewed by the Area Biologist and presented to the THCR Section Leader for approval.
- Site should be relatively level, fairly dry, and not be prone to flooding when bees would normally be present.
- Site should be accessible by roads which allow reasonable transfer of hives to the site by vehicle.
- If a site is to be located near human activity, such as, an agricultural field, food plot, wildlife opening, campsites, etc., or if the site may be manipulated by machinery at a time when bees would be present, then the apiary site should be located at a minimum of 150 to 200 yards from the edge of that activity. This will ensure minimal disturbance to the bees and minimize incidents with anyone working in the area.

- It is preferable to have apiary sites located adjacent to or off roads whenever possible. If traditional apiary sites were located on roads and the Area Biologist determines that the site will not impact use of the road by visitors then it will be allowed.
- FWC Area Biologist shall select apiary site(s) and the site(s) selected should not require excessive vegetation clearing (numerous large trees, dense shrubs) or ground disturbance (including fill).

#### WMA/WEA Staff Responsibilities

Area Biologist on WMAs/WEAs with approved apiary sites will forward a GIS shapefile depicting all the apiary site polygon(s), including a name or number with coordinates for each apiary site, to the THCR Contract Manager.

Area Biologist will monitor each apiary site no less than once a year to determine if the beekeeper is abiding by the contract requirements. If violations are noted, staff should bring them to the attention of the beekeeper for correction. If violations continue staff should notify the THCR Contract Manager who will determine if or what additional action is warranted.

Area Biologist will establish and maintain firelines around the apiary site to ensure the apiary site is ready when a planned burn is scheduled.

Area Biologist will advise the beekeeper of burn plans, road work, gate closures, or other site conditions and management activities that may affect the beekeeper's ability to manage or access the apiary site.

Area Biologist is not responsible to ensure access roads are in condition suitable for beekeepers to access their hives with anything other than a four wheeled drive vehicle. (The site of the apiary may be high and dry, but the roads accessing them may be difficult to impossible to get a two wheeled drive vehicle into during extreme weather, e.g., heavy rainfall events.)

#### Apiary Wait List and Apiary Application

An electronic waiting list for apiary sites will be maintained by the THCR's Contract Manager for each WMA/WEA. To be placed on the waiting list an interested beekeeper must submit an apiary application form to the contract manager (See Enclosed Application Form). Each applicant will be considered based on the following criteria:

- Proof of a valid registration with the FDACS/DPI.
- Proof of payment of outstanding special inspection fees for existing sites.
- A validated history of being an apiary manager.
- Three references that can attest to the applicant's beekeeping experience.

If an apiary site is becomes available on a WMA/WEA and there are beekeepers on the waiting list interested in that particular area, those individuals meeting the criteria above will be given preference. If there is more than one beekeeper meeting the criteria with their name on the list then a random drawing will be held by the THCR Contract Manager to determine who will receive the site. Beekeepers on the waiting list will be notified in writing of the random drawing's date/location and will be invited to attend. The individual's name selected during this drawing will be awarded the contract.

Apiary agreements are non-transferable. Each agreement serves as a contract between a specific individual or company and FWC, and the rights and responsibilities covered by an individual agreement cannot be transferred.

#### Contracts

Apiary contracts are for five (5) years and renewals are contingent upon a satisfactory performance evaluation by Area Biologist and concurrence of the THCR Section Leader. Approval is based on apiarist performance, adherence to rules and regulations and general cooperation. If an Area Biologist decides an apiarist whose contract is expiring is unacceptable he may recommend not approving the new contract. If this transpires then the wait list process using random selection will be used. If there is no apiarist on a current wait list then the apiarists who are in good standing with existing contracts will be notified to see if any want to be put on the wait list for the drawing. If none are interested then the site will be put on hold pending a valid request.

#### Pricing of Apiary Site(s)

Cost of each apiary site will be \$40 annually which will include up to 50 beehives. Additional beehives will be charged at the rate of \$40 per 50 beehives.

Pricing examples:

- A beekeeper is leasing 2 apiary sites with up to 100 beehives - the fee per year is \$80.
- A beekeeper is leasing 3 apiary sites with up to 200 beehives - the fee per year is \$160.

**Note:** The maximum number of hives/colonies allowed on an apiary site will be at the discretion of the apiarist. However, the apiarist is strongly recommended to follow the BMP as recommended by the FDACS/DPI. In addition to providing the BMP, FDACS/DPI's management has recommended 50 hives per site in pineland communities and no more than 100 hives per site in areas with bountiful resources. However, FWC will not dictate the number of hives on a site unless they create land management issues.

#### Bear Depredation Control at Apiary Site(s)

Beekeepers are required to consult with the WMA/WEA Area Biologist to see if electric fencing is required for their apiary sites. If the Area Biologist requires electric fencing then the

Beekeeper shall construct and maintain electric fences for each apiary site. Numerous electric fence designs have been used to varying success and FWC as a courtesy provides an electric fence technical information bulletin with each Agreement. This bulletin is attached in order to assist the Beekeeper and/or provide a design that has been proven to be reasonable effective.

SUBJECT MATTER REFERENCES

Apiary Inspection Law - Chapter 586, Florida Statutes (see <http://www.leg.state.fl.us/Statutes/>), Rule Chapter 5B-54, Florida Administrative Code (see [www.flrules.org](http://www.flrules.org)).

The Board of Trustees of the Internal Improvement Trust Fund – Recommended Apiary Agreement Guidelines For Apiaries & Revisions to an Agreement for Apiary Activities on State Lands on September 23, 1986  
[S:\HSC\THCR\APIARY.BACKUP.POLICY\dlissupport@dos.state.fl.us\\_20100903\\_111446.pdf](S:\HSC\THCR\APIARY.BACKUP.POLICY\dlissupport@dos.state.fl.us_20100903_111446.pdf)

Senate Resolution 580, September 21, 2006: [http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=109\\_cong\\_bills&docid=f:sr580ats.txt.pdf](http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=109_cong_bills&docid=f:sr580ats.txt.pdf)

Attachments

Sample Apiary Agreement W/Attachments (Map Placeholder & Electric Fence Bulletin)

Sample Apiary Site Application Form W/Mission Statement

Best Management Practices for Maintaining European Honey Bee Colonies

Sample of Random Selection Process Procedure

**APPROVED:**

\_\_\_\_\_  
Division Director or Designee

DATE: \_\_\_\_\_

## APIARY AGREEMENT

### AGREEMENT FOR APIARY ACTIVITIES ON STATE LANDS

THIS AGREEMENT is made by and between the Florida Fish and Wildlife Conservation Commission, 620 South Meridian Street, Tallahassee, FL 32399-1600, hereinafter known as "the COMMISSION," and (Insert Name and Address of Apiarist Here), telephone number (Insert Phone Number of Apiarist Here), hereinafter known as "the USER."

#### WITNESSETH

In consideration of the mutual promises to be kept by each and the payments to be made by the USER, the parties agree as follows:

1. TERM: This Agreement will begin (insert date here) or the date signed by both parties, whichever is later, and will end five (5) years from the date of execution. Issuance of a new five (5) year Agreement is contingent upon satisfactory performance evaluation by the Area Biologist and approval of the THCR Section Leader.
2. The COMMISSION Agrees:
  - a. To provide apiary sites on state lands, which will be identified by the COMMISSION staff and located on the property identified in (4)(f) below.
  - b. To provide technical assistance for bear-proofing, if required by Area Biologist, of sites made available under this Agreement.
  - c. To allow the USER to place a total number of (insert number of hive boxes here) hive boxes on the COMMISSION-managed property at the apiary site(s).
3. The USER Agrees:
  - a. To pay (Insert Total Dollars Here) on or before the execution date of this Agreement and each year thereafter on or before anniversary date of the original contract execution date, with check or money order payable to the Florida Fish and Wildlife Conservation Commission. All payments shall be remitted to The Florida Fish and Wildlife Conservation Commission, Finance and Budgeting, Accounting Section, PO Box 6150, Tallahassee, FL 32399-6150, and a copy of the check to The Florida Fish and Wildlife Conservation Commission, Terrestrial Habit Conservation and Restoration Section, Attn: Section Leader, 620 South Meridian Street, Tallahassee, Florida 32399-1600.

- b. To have no more than (Insert Number of Hive boxes here) hive boxes on the property at one time.
- c. To comply with the Florida Honey Certification and Honeybee Law, Chapter 586, Florida Statutes, and Rule 5B-54, Florida Administrative Code, and all other applicable federal, state, or local laws, rules or ordinances.
- d. To not damage, cut or remove any trees in the course of preparing for or conducting operations under this Agreement.
- e. To repair within 30 days of occurrence any damage to roads, trails, fences, bridges, ditches, or other public property caused by USER'S operations under this Agreement based on discretion of the COMMISSION to ensure the WMA/WEA management goals are met. All repairs will be coordinated with the Area Biologist to ensure management goals are met. If USER does not comply within the 30 day requirement, then the COMMISSION may use a third party to perform the repairs and charge the USER accordingly.
- f. To report any forest fires observed and to prevent forest fires during the course of operations under this Agreement.
- g. To abide by all WMA/WEA rules and regulations in addition to items in this Agreement.
- h. To notify the Area Biologist within 24 hours when a bear depredation event occurs.
- i. To post their name in an agreed upon location at each site covered by this Agreement or otherwise use an identifying system that is approved by the Area Biologist.
- j. To furnish proof of general liability insurance prior to starting apiary activities on state property or within 30 days of execution of this Agreement, whichever is earlier, and proof of annual renewal of the general liability insurance policy prior to or upon expiration date of the policy. The USER shall maintain continuous general liability insurance throughout the term of this Agreement for no less than \$300,000 for bodily injury and \$100,000 for property damage for each occurrence. Such a policy shall name the COMMISSION as the Certificate Holder. The USER's current certificate of insurance shall contain a provision that the insurance will not be canceled for any reason during the term of this Agreement except after thirty (30) days written notice to the COMMISSION.

- k. To be liable for all damage to persons or property resulting from operations under this Agreement, and to release, acquit, indemnify, save and hold harmless the COMMISSION, its officers, agents, employees and representatives from any and all claims, losses, damages, injuries and liabilities whatsoever, whether for personal injury or otherwise, resulting from, arising out of or in any way connected with activities under this Agreement or activities occurring from any other source not under this Agreement and the USER further agrees to assume all risks of loss and liabilities incidental to any natural or artificial condition occurring on state lands cover by this Agreement.
  - l. To construct and maintain electric fences, if required by the Area Biologist at the Area Biologist's discretion, to provide protection of apiaries from black bear depredation consistent with the technical information bulletin attached to this agreement, and, if so required, to maintain an open buffer around the fencing of five (5) feet or more. (See Attachment 1)
  - m. To remove all personal property from the site within thirty (30) days of termination or expiration of this Agreement. The USER understands that after this time, all the USER'S personal property remaining on the WMA/WEA shall be deemed abandoned and become the property of the COMMISSION, which will be utilized or disposed of at the sole discretion of the COMMISSION, and that reasonable storage and/or disposal fees and/or costs may be charged to the USER.
4. The parties mutually agree:
- a. This Agreement is not transferable.
  - b. The USER's failure to submit payment by the due date established herein may result in cancellation of the Agreement by the COMMISSION.
  - c. The USER's failure to submit proof of general liability insurance or proof of annual renewal in compliance with (3) (j) above may result in cancellation of this Agreement by the COMMISSION.
  - d. This Agreement shall be in effect for a period of five (5) years and issuance of a new agreement will be contingent upon a satisfactory performance evaluation and approval of the Area Biologist and THCR Section Leader.
  - e. Each apiary site shall be situated so as to be at least one-half (1/2) mile inward from state property lines and there shall be at least one (1) mile separation between sites. Exceptions to this rule must be reviewed by Area Biologist

presented to and approved by the Terrestrial Habitat Conservation and Restoration Section Leader.

- f. The property covered by this Agreement is described as follows: That the property sites (Insert Area Name) Wildlife Management Area are represented by Attachment 2.
- g. In accordance with Section 287.134, Florida Statutes, an entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid, proposal or reply on a contract to provide goods or services to any public entity; may not submit a bid, proposal or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant with any public entity; and may not transact business with a public entity.
- h. As part of the consideration of this Agreement, the parties hereby waive trial by jury in action brought by either party pertaining to any matter whatsoever arising out of or in any way connected with this Agreement. Exclusive venue for all judicial actions pertaining to this Agreement is in Leon County, Florida.
- i. This Agreement may be terminated by the COMMISSION upon thirty (30) days written notice to the USER in the event the continuation of the apiary activities are found to be incompatible with the COMMISSION'S management plans or for any other reason at the sole discretion of the COMMISSION.

**This Area Intentionally Left Blank**

IN WITNESS WHEREOF, the parties have executed this Agreement on the day and year last below written.

\_\_\_\_\_  
USER SIGNATURE

Date: \_\_\_\_\_

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Witness

FLORIDA FISH AND WILDLIFE  
CONSERVATION COMMISSION

\_\_\_\_\_  
Mike Brooks, Section Leader  
Terrestrial Habitat Conservation and  
Restoration

Date: \_\_\_\_\_

Approved as to form and legality

\_\_\_\_\_  
Commission Attorney

Date: \_\_\_\_\_

**AGREEMENT**  
**ATTACHMENT 1**

**Use of Electric Fencing to Exclude Bears  
And Prevent Property Damage**

Florida Fish and Wildlife Conservation Commission  
Technical Information Bulletin (2001)

Electric fencing has proven effective in deterring bears from entering landfills, apiaries (beehives), livestock pens, gardens, orchards, and other high-value properties. Numerous electrical fence designs have been used with varying degrees of success. Design, quality of construction, and proper maintenance determine the effectiveness of an electric fence. The purpose of this technical bulletin is to assist the property owner in understanding and implementing electrical fencing as a tool to exclude and prevent damage caused by black bears.

**Understanding Electric Fencing**

Electric fencing provides an electrical shock when an animal comes into contact with the electrically charged wires of the fence. People unfamiliar with electric fencing often are afraid that it will injure, permanently damage, or kill an individual or pet that contacts the fence. **This is not true!** A properly constructed electric fence is safe to people, pets, and bears.

**Components of Electric Fencing**

An electric fence is composed of four main elements: a charger, fence posts, wire, and the ground rod.

**Fence Charger.** On a small scale electric fence (like that typically needed for bear exclusion), the largest cost is normally the fence charger. A fence charger's job is to send an electrical pulse into the wire of the fence. Contrary to popular belief, there is not a continuous charge of electricity running through the fence. Instead the charger emits a short pulse or burst of electricity through the fence. The intensity and duration of the electrical pulse varies with the type of charger or controller unit. Chargers with a high-voltage, short duration burst capacity are the best because they are harder to ground out by tall grass and weeds. These types are also the safest, because, even though the voltage is high (5 kilovolts) the duration of the burst is very short (2/10,000 of a second) (FitzGerald, 1984).

Two basic energy sources for chargers are batteries (12-volt automotive type) and household current (110 volt). Battery-type chargers are typically cheaper to purchase but require more maintenance because of the necessity of charging the battery. The advantage of a battery powered charger is that it can be used in a remote location where 110-volt current is not available. Most units that are powered by a fully charged 12-volt deep-cycle batteries can last three weeks before needing a charge. Addition of a solar trickle charger will help prolong the duration of effective charge in 12-volt batteries.

**Fence Posts.** On small scale fences, the posts are normally the second largest expense involved in construction. Therefore, when planning an electric fence it is a good idea to utilize existing fencing in order to save money. If no existing fence is available, posts will need to be placed around the area needing protection. Posts may be wood, metal, plastic, or fiberglass. Wood and metal posts will need to have plastic insulators attached to them which prevent the electric wire from touching the post causing it to ground out. Plastic and fiberglass posts do not need insulators, the wire may be affixed directly to these posts. Wood and metal posts are typically more expensive and require the added expense of insulators, however, they are more durable and generally require less maintenance.

**Wire.** Fourteen to seventeen gauge wire is the most common size range used in electric fencing. Heavier wire (a lower gauge number) is more expensive but carries current with less resistance and is more durable (FitzGerald, 1984).

The two most common types of wire are galvanized and aluminum. Galvanized wire is simply a steel wire with a zinc coating to prevent rust, which makes the wire last longer. Some wire is more galvanized than others. The degree or amount of zinc coating that is around the core steel wire is measured in three classes. A class I galvanization means the wire has a thinner coating of zinc than a class II galvanization. Class III galvanized wire has the heaviest zinc coating and will last longer than the class I and class II wire (FitzGerald, 1984). In general, the cost of galvanized wire increases as the class or amount of galvanization increases.

Aluminum wire is typically more expensive than the galvanized wire. Some advantages of aluminum wire are: it will not rust, it conducts electricity four times better, and it weighs one-third less than steel wire.

**The Ground Rod.** The ground is an often overlooked, but critical part of an electric fence. Without a good ground, electricity will not flow through the wire. When an animal touches a charged wire, the body of the animal completes the electrical circuit and the animal feels the "shock". The current must travel from the charger through the wire to the animal and then back through the ground to the charger if the animal is to feel the shock. The soil acts as the return "wire" (ground) in the circuit. However, if a

bird was to land on a charged wire without touching the soil the bird would not complete the circuit and would be unaffected (FitzGerald, 1984). Some fence configurations use actual grounded wires within the fence to enhance the grounding system. The ground may be a commercial ground rod or a copper tube or pipe driven six to eight feet in moist soil. Copper is expensive, so a copper coated steel pipe or any other good conducting metal pipe will work also. Very dry soil can effect the ability to create a good ground and has sometimes been a problem during drought conditions. Pipe may be a better choice than a solid rod during drought conditions, because water may be poured down the ground pipe to improve the ground. Some fence configurations use wires as the grounding system, rather than relying solely on the soil as a ground.

### **Recommended Electric Fence to Deter Black Bears**

Conditions at fence sites will vary and will determine what the most effective fence configuration will be. Commission biologists welcome the opportunity to visit sites and provide custom tailored advice on constructing an effective electric fence. The following recommendation will cover most situations with low to moderate pressure from black bears. Use a five strand aluminum wire fence that is 40 inches high with wire spacing every eight inches apart using the previously mentioned wired grounding system (see Figure 1). The wire closest to the ground level (the lowest wire) should be a charged or "hot" wire. The second wire should be grounded. The third wire should be hot. The fourth wire should be grounded and the fifth wire should be hot. If using metal or wood posts, insulators must be used to keep the hot wires from grounding out. The cost of this type of electric fence utilizing fiberglass posts and a 110 volt fence charger is approximately \$200 for a 40' x 40' area (160 linear feet of fence).

#### **Materials:**

- 1 - 1, 312 foot roll (1/4 mile) 14 gauge aluminum electric fence wire
- 1 - 50 foot roll 12 gauge insulated wire
- 20 - 5 foot 5/8 inch dia fiberglass fence posts
- 5 - plastic gate handles
- 1 - 110 volt fence charger
- 1 - 10 foot ground pipe
- 4 - plastic electric fence signs

**Installation.** These instructions are for a square shape fence exclusion, but the process would be very similar for other applications. Drive 4 corner posts 1-foot deep into ground and stake with guy wires. Clip, rake, and keep clear any vegetation in a 15-inch wide strip under the fence and apply herbicide. Attach and stretch the aluminum wire at 8-inch increments starting 8 inches from ground level. A loop of wire should be left on each wire at the first corner post. Once the wire has been stretched around the outside of all the corner posts back to the first post a plastic gate handle should be attached to each wire and the gate handles should be attached to each

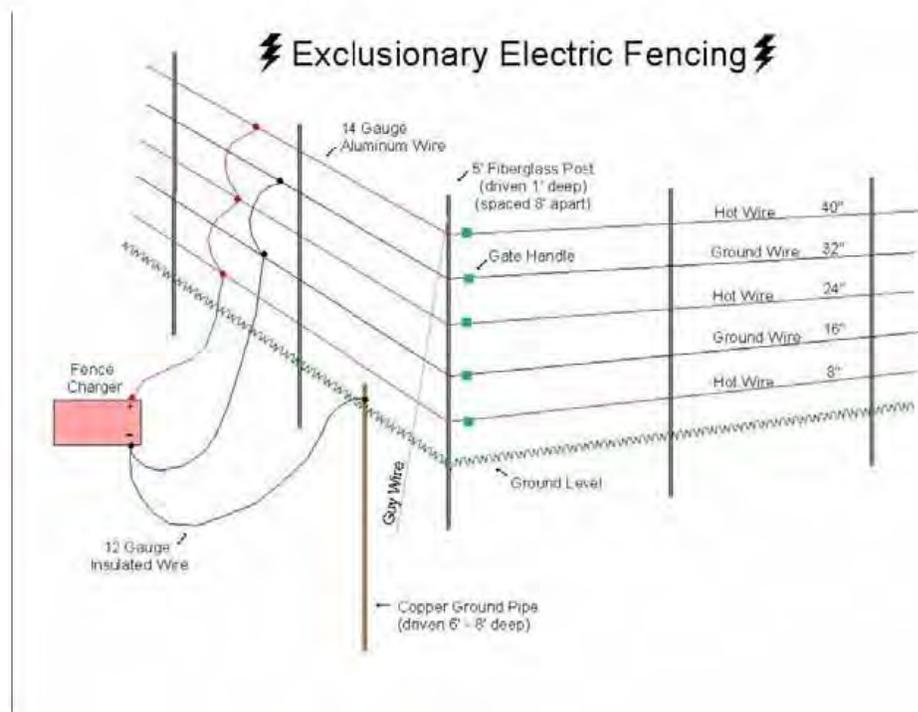
corresponding loop on the first corner post. Drive in the remaining 16 posts to the same depth at 8-foot intervals between corner posts. Secure each of the five wires to each of the posts with additional wire. Attach four plastic electric fence signs (one on each side) to the top wire of the fence. Attach a 12-gauge strand of insulated wire to the positive terminal of the fence charger and attach it to the first, third, and fifth wires of the fence. Attach another 12 gauge insulated wire to the negative terminal of the charger and attach this wire to the ground pipe which has been driven into the ground 6 to 8-feet deep. Attach another 12 gauge insulated wire from the negative terminal of the charger to the second and fourth wires on the fence. Plug the charger into a 110 volt power supply and the fence is in operation.

**Tips to improve the effectiveness of your electric fence to deter black bears:**

1. If using a 12-volt fence charger, ensure that the battery is charged; check every two weeks.
2. Make sure terminals on the charger and battery are free of corrosion.
3. Make sure hot wires are not being grounded out by tall weeds, fallen tree branches, broken insulators, etc.
4. If fence wires have been broken and repaired, make sure wires are corrosion free where they have been spliced together. Also, tighten the fence at each corner post as wires that have been spliced and are loose make poor connections.
5. Be sure to rake vegetation from under and around the outside of the fence as this may act as an insulator.
6. To improve the ground around the perimeter of the fence add a piece of 24 inch chicken wire laying on the ground around the outside of the fence. This should be connected to ground.
7. During periods of drought pour water down the ground pipe and around the ground pipe to improve the ground. Digging a 6 inch deep 6 inch diameter hole around the ground pipe and back filling with rock salt will also improve the ground. Additional ground pipes may also be added to portions of the fence farthest from the charger.
8. To ensure that the bear solidly contacts the charged portion of the fence, a bait like bacon strips, a can of sardines, or tin foil with peanut butter may be attached to one of the top hot wires. Make sure these do not contact the ground, thus shorting out the fence.
9. When protecting a specific structure (like a shed or rabbit hutch), the fence should be placed 3 to 5 feet away from the structure (rather than on it) so that the bear encounters the fence before reaching the attractant.
10. Protect the fence charger from the elements by covering it with a plastic bucket or a wooden box.
11. Place plastic electric fence signs around the perimeter of your fence to improve visibility and to warn other people.

**LITERATURE CITED**

FitzGerald, James (1984), *The Best Fences*. Storey Publishing Bulletin A-92, Pownal, Vermont. p. 14-16.



**AGREEMENT**  
**ATTACHMENT 2**

**Place Holder for Map**

**Of**

**Apiary Locations**

**At**

**WMA/WEA**

## **APIARY SITE APPLICATION FORM**

### **Florida Fish and Wildlife Conservation Commission**

**RETURN TO:** The Florida Fish and Wildlife Conservation Commission, 620 South Meridian Street, Tallahassee, FL 32399-1600. Please print or type all information. Attach additional sheets if necessary.

Name \_\_\_\_\_ Telephone Number \_\_\_\_\_

Mailing Address \_\_\_\_\_

City or Town \_\_\_\_\_ County \_\_\_\_\_ Zip Code \_\_\_\_\_

Physical Address (If Different from Mailing Address) \_\_\_\_\_

Company Name: \_\_\_\_\_

Email Address \_\_\_\_\_

Requested Wildlife Management or Wildlife and Environmental Area(s)(see attached list of WMA/WEAs with apiary sites):

WMA/WEA \_\_\_\_\_ County \_\_\_\_\_ # of Sites \_\_\_\_\_

WMA/WEA \_\_\_\_\_ County \_\_\_\_\_ # of Sites \_\_\_\_\_

WMA /WEA \_\_\_\_\_ County \_\_\_\_\_ # of Sites \_\_\_\_\_

WMA /WEA \_\_\_\_\_ County \_\_\_\_\_ # of Sites \_\_\_\_\_

Planned Number of Hives Per Site: \_\_\_\_\_ Permanent: \_\_\_\_ Seasonal: \_\_\_\_

Member of Beekeepers Association: Yes \_\_\_\_ No \_\_\_\_

Number of Years a Member \_\_\_\_\_

Name of Beekeepers Association: \_\_\_\_\_

Are you registered with Florida Department of Agriculture and Consumer Services/Division of Plant Industry (FDACS/DPI): \_\_\_\_ Yes \_\_\_\_ No \_\_\_\_ N/A If yes, please provide proof.

Are you current with any and all special inspection fees: \_\_\_\_ Yes \_\_\_\_ No \_\_\_\_ N/A. If yes, please provide proof.

Do you follow all recommended Best Management Practices from FDACS/DPI?: \_\_\_\_ Yes \_\_\_\_ No

If no, then please explain on a separate piece of paper.

Please provide below a chronological history of your beekeeping experience. If you need more space, please provide additional sheets:

**References:** If a new apiary contractor, please provide on a separate piece of paper at least 3 references who can verify your apiary experience. Provide each reference's name, address, phone number and email address (if applicable). Please attach reference sheet to this document and submit.

## **MISSION STATEMENT**

**Management  
Of  
Florida Fish and Wildlife Conservation Commission's  
Wildlife Management Areas  
And  
Wildlife and Environmental Areas**

The mission of the Florida Fish and Wildlife Conservation Commission (FWC) is to manage fish and wildlife resources for their long-term well-being and the benefit of the people. To aid in accomplishing this mission, one of FWC's management goals is to manage fire-adapted natural communities on our Wildlife Management and Environmental Areas (WMA/WEA) to support healthy populations of the plants and animal's characteristic of each natural community. In order to achieve this goal various habitat management techniques are used. These include prescribed burning, applications of herbicides and mechanical treatment of vegetation. These management efforts will take place at various times and locations on each of the FWC's WMA/WEAs. Staff on each WMA/WEA will work with and make users aware of these activities when necessary. Users must be aware and accept that these activities are necessary for the proper management of the area.

**Note:** This document is included as an attachment with each Application and executed Contract.

## **FDACS/DPI's BMP**

### **Florida Department of Agriculture & Consumer Services**

#### **BEST MANAGEMENT PRACTICES FOR**

#### **MAINTAINING EUROPEAN HONEY BEE COLONIES**

1. Beekeepers will maintain a valid registration with the Florida Department of Agriculture and Consumer Services/Division of Plant Industry (FDACS/DPI), and be current with any and all special inspection fees.
2. A Florida apiary may be deemed as European Honey Bee with a minimum 10% random survey of colonies using the FABIS (Fast African Bee Identification System) and/or the computer-assisted morphometric procedure (i.e., Universal system for the detection of Africanized Honey Bees (AHB) (USDA-ID) or other approved methods by FDACS on a yearly basis or as requested.
3. Honey bee colony divisions or splits should be queened with production queens or queen cells from EHB breeder queens following Florida's Best Management Practices.
4. Florida beekeepers are discouraged from collecting swarms that cannot be immediately re-queened from EHB queen producers.
5. Florida Beekeepers should practice good swarm-prevention techniques to prevent an abundance of virgin queens and their ready mating with available AHB drones that carry the defensive trait.
6. Maintain all EHB colonies in a strong, healthy, populous condition to discourage usurpation (take over) swarms of AHB.
7. Do not allow any weak or empty colonies to exist in an Apiary, as they may be attractive to AHB swarms.
8. Recommend re-queening with European stock every six months unless using marked or clipped queens and having in possession a bill of sale from an EHB Queen Producer.
9. Immediately re-queen with a European Queen if previously installed clipped or marked queen is found missing.
10. Maintain one European drone source colony (250 square inches of drone comb) for every 10 colonies in order to reduce supercedure queens mating with AHB drones.
11. To protect public safety and reduce beekeeping liability, do not site apiaries in proximity of tethered or confined animals, students, the elderly, general public, drivers on public roadways, or visitors where this may have a higher likelihood of occurring.
12. Treat all honey bees with respect.

**RANDOM**  
**SELECTION PROCESS**  
**FOR VACANT APIARY SITE**

When an apiary site becomes available the following procedure is used to randomly select the next apiarist (beekeeper) for an available apiary site on a WMA or WEA. Only those who have been evaluated and deemed qualified to be an apiarist on a WMA/WEA through the Apiary Application process will be eligible for this selection process. The steps below will be followed by the THCR Contract Manager when a site becomes available to be filled by a qualified apiarist:

1. The THCR Contract Manager will maintain an "Apiary Wait List Folder" on the THCR SharePoint for each WMA/WEA with apiary sites.
2. A wait list is either created or updated when an Apiary Application(s) is received by the THCR Contract Manager from a qualified apiarist.
3. Upon receipt of an apiary site application, the THCR Contract Manager will review the WMA/WEA folder to see if there is an "Apiary Wait List".
4. If a list exists then the qualified applicant will be added to the list.
5. When an apiary site becomes available if there are more than one qualified apiarist then these apiarists will be contacted by certified letter to determine their interest.
6. The letter will request a response within 10 working days to make them eligible for the random drawing.
7. If there is no response or is negative then that apiarist will not be included in the random drawing and the name will be removed from the waiting list\*.
8. If only one apiarist responds positively to the certified letter then the available site will be awarded to that interested apiarist.
9. If there are no apiarists on a wait list or all responses are negative then apiarists who currently have site(s) under Agreement and where not on the waiting list will be contacted to see if any have interest in the available site. If more than one responds then the random drawing process will be used to determine who will be awarded the site.

10. Steps to be performed by the THCR Contract Manager to execute the random selection for an available apiary site are listed below:

- a. The names of each interested apiarist will be noted on a 1" X 2" piece of paper and folded in half.
- b. The pieces of paper will be inserted into a "black film canister" which has a snap top and placed into a container and stirred up prior to the selection.
- c. A non-biased person will be selected to reach into the bowl (which will be held above the selection person's eyesight) and randomly select one of the canisters.
- d. The canister will be opened by the person performing the selection and the name is read aloud for those in attendance. Everyone in attendance will sign a witness sheet.
- e. The apiarist whose name is selected will be awarded the available site.
- f. A new Agreement will be developed by the THCR Contract Manager.

\*A new apiary application must be submitted once requestor's name is removed from a waiting list.

**11.19 Land Management Uniform Accounting Council**

## **Land Management Uniform Cost Accounting Council and FWC Activity Code Groupings**

### **Resource Management**

#### **Invasive and Nuisance Species Control**

- 210 Invasive and nuisance species control
- 211 Invasive and nuisance plant control (mechanical)
- 212 Invasive and nuisance plant control (chemical)

#### **Prescribed Burning**

- 205 Prescribed burning
- 206 Prescribed burning C growing season (April 1 to September 30)
- 207 Prescribed burning C dormant season (October 1 to March 31)
- 208 Firebreaks

#### **Cultural Resource Management**

- 201 Cultural resource management

#### **Timber Management**

- 202 Timber management

#### **Hydrological Management**

- 194 Lake restoration
- 215 Hydrology management
- 216 Dams, dikes, levees
- 217 Canals
- 218 Water level management

#### **Other**

- 185 GIS
- 200 RESOURCE MANAGEMENT
- 203 Tree and shrub planting
- 213 Wildlife management
- 214 Listed Species management
- 219 Upland restoration
- 221 Animal surveys
- 228 Inland aerial surveys
- 235 Vegetation and plant surveys
- 250 MONITORING AND ASSESSMENTS
- 252 Biomedical monitoring
- 253 Ecological monitoring
- 256 Habitat monitoring analysis
- 263 Nest box monitoring
- 264 Population demographics
- 275 Permits and authorizations
- 276 Commission rule development and review
- 281 Technical assistance
- 282 Herbaceous seeding
- 283 Clearings
- 284 Feeding/watering
- 285 Nest structures
- 286 Population control
- 287 Stocking enhancements/population augmentation
- 288 Nuisance animal complaints
- 289 Native vegetation management (mechanical)
- 290 Native vegetation management (chemical)
- 293 Mortality investigations
- 294 Program coordination and implementation C inter- and intra-agency coordination and program implementation at the section, bureau, or division level
- 295 Biological data collection, analysis, and reporting
- 296 Habitat protection technical assistance

- 750 URTD assessment
- 789 Site Preparation – GCR
- 790 Irrigation – GCR
- 791 Seed Collection – Hand
- 792 Seed Collection – Mechanical
- 793 Herbicide Maintenance Treatment

**Administration**

Central Office/Headquarters

- 100 ADMINISTRATION C administrative tasks, including preparation of forms, word processing, photocopying, filing, and other clerical/secretarial duties
- 104 Budget/purchasing/accounting

Districts/Regions

See Location code

Units/Projects

See Location code

**Support**

Land Management Planning

- 103 Meetings C includes workshops, conferences, staff, and other meetings.
- 204 Resource Planning

Land Management Reviews

- 101 Project inspection C field inspections of projects.
- 209 Land Management Reviews

Training/Staff Development

- 150 PERSONNEL MANAGEMENT C recruitment, hiring, training, counseling, and supervising

Vehicle Purchase

- 128 New Vehicle and Equipment Purchase

Vehicle Operation and Maintenance

- 923 FEM C vehicles/equipment

Other

- 140 REPORT WRITING/EDITING/MANUSCRIPT PREPARATION
- 141 Grant applications
- 180 SYSTEMS ADMINISTRATION AND MANAGEMENT
- 182 Data management
- 184 Metadata development and management
- 187 IT
- 188 Web development
- 226 Human dimensions surveys
- 721 Geospatial analysis techniques

**Capitol Improvements**

New Facility Construction

- 910 New facility construction C buildings/structures
- 912 New construction C roads/bridges
- 913 New construction C trails
- 914 New construction C fences

Facility Maintenance

- 920 Facility and equipment maintenance (FEM) C buildings/structures
- 921 FEM C utilities
- 922 FEM C custodial functions
- 925 FEM C boating access
- 926 FEM C roads/bridges

- 927 FEM C trails
- 928 FEM C fences

**Visitor Services/Recreation**

**Information/Education Programs**

- 145 Technical bulletin

**Operations**

- 311 Boundary signs
- 312 Informational signs
- 320 Outreach and education C attending or developing educational or informational materials or events for the public
- 341 Public use administration (hunting)
- 342 Public use administration (non-hunting)
- 350 Customer service support C disseminating written or verbal information or assistance to the public
- 700 STUDIES
- 740 EVALUATIONS AND ASSESSMENTS

## 11.20 Operational Plan Fiscal Year 2025-2026

Activity	Description	Man Days	Salary	Fuel Cost	Other	Total
101	Project inspection	2	\$479.36	\$39.68	\$0.00	\$519.04
103	Meetings	10	\$2,396.80	\$198.40	\$2,000.00	\$4,595.20
104	Budget/purchasing/accounting	15	\$3,595.20	\$297.60	\$0.00	\$3,892.80
128	New Vehicle and Equipment Purcha	0	\$0.00	\$0.00	\$48,000.00	\$48,000.00
140	Report writing/editing/manuscript f	2	\$479.36	\$39.68	\$0.00	\$519.04
150	Personnel management	18	\$4,314.24	\$357.12	\$1,500.00	\$6,171.36
185	GIS	10	\$2,396.80	\$198.40	\$0.00	\$2,595.20
200	Resource Management	2	\$479.36	\$39.68	\$2,000.00	\$2,519.04
201	Cultural resource management	2	\$479.36	\$39.68	\$25,000.00	\$25,519.04
204	Resource planning	100	\$23,968.00	\$1,984.00	\$5,000.00	\$30,952.00
206	Prescribed burning - growing season	30	\$7,190.40	\$595.20	\$6,000.00	\$13,785.60
207	Prescribed burning - dormant season	20	\$4,793.60	\$396.80	\$3,000.00	\$8,190.40
208	Firebreaks	10	\$2,396.80	\$198.40	\$0.00	\$2,595.20
212	Exotic plant control (chemical)	28	\$6,711.04	\$555.52	\$4,000.00	\$11,266.56
221	Animal surveys	20	\$4,793.60	\$396.80	\$1,000.00	\$6,190.40
289	Native vegetation management (me	60	\$14,380.80	\$1,190.40	\$1,000.00	\$16,571.20
290	Native vegetation management (che	8	\$1,917.44	\$158.72	\$3,000.00	\$5,076.16
294	Program coordination and impleme	3	\$719.04	\$59.52	\$0.00	\$778.56
295	Biological data collection, analysis, a	5	\$1,198.40	\$99.20	\$500.00	\$1,797.60
311	Boundary signs	3	\$719.04	\$59.52	\$250.00	\$1,028.56
312	Informational signs	3	\$719.04	\$59.52	\$250.00	\$1,028.56
320	Outreach and education	4	\$958.72	\$79.36	\$0.00	\$1,038.08
341	Public use administration (hunting)	10	\$2,396.80	\$198.40	\$500.00	\$3,095.20
920	FEM -- buildings/structures	15	\$3,595.20	\$297.60	\$10,000.00	\$13,892.80
922	FEM -- custodial functions	10	\$2,396.80	\$198.40	\$2,000.00	\$4,595.20
923	FEM -- vehicles/equipment	115	\$27,563.20	\$2,281.60	\$20,000.00	\$49,844.80
926	FEM -- roads/bridges	15	\$3,595.20	\$297.60	\$0.00	\$3,892.80
928	FEM -- fences	5	\$1,198.40	\$99.20	\$3,000.00	\$4,297.60
<b>Total:</b>		<b>525</b>	<b>\$125,832.00</b>	<b>\$10,416.00</b>	<b>\$138,000.00</b>	<b>\$274,248.00</b>

## **11.21 Brevard County Arthropod Control Plan**



Florida Department of Agriculture and Consumer Services  
Division of Agricultural Environmental Services

**ARTHROPOD MANAGEMENT PLAN - PUBLIC LANDS**

WILTON SIMPSON  
COMMISSIONER

Section 388.4111, F.S.  
Telephone: (850) 617-7995

**Return to:**  
Mosquito Control Program  
3125 Conner Blvd., Bldg. 6,  
Tallahassee, FL 32399-1650

For use in documenting an Arthropod Control Plan for lands designated by the State of Florida or any political subdivision thereof as being environmentally sensitive and biologically highly productive therein. Fill this form out if control work is necessary or planned.

Name of Designated Land: Salt Lake Wildlife Management Area

Also known as SLWMA

Is Control Work Necessary:  Yes  No

Location: 1615 Arch Rd, Mims, FL 32754

Land Management Agency: Florida Fish and Wildlife Conservation Commission

Are Arthropod Surveillance Activities Necessary?  Yes  No

If "Yes", please explain:

According to the Florida Administrative Code 5E-13, surveillance shall be conducted to determine the species and numbers of both pestiferous mosquitoes and disease bearing arthropods.

Which Surveillance Techniques Are Proposed?  
Please Check All That Apply:

- Landing Rate Counts
- Light Traps
- Sentinel Chickens
- Citizen Complaints
- Larval Dips
- Other

If "Other", please explain: Other traps may be used besides light traps, such as CO2 and gravid traps if approved by the FWC. When recommended, the County will request access to install traps in the SLWMA.

Arthropod Species for Which Control is Proposed: Over 40 mosquito species have been documented in Brevard County, Florida, many of which have long flight ranges and may pose a public health risk well away from breeding habitats. Control is proposed for all mosquito species.

Proposed Larval Control: \_\_\_\_\_

Proposed larval monitoring procedure: Inspector observations and dip counts (larvae present in 10%).

Are post treatment counts being obtained:  Yes  No

Biological Control of Larvae: \_\_\_\_\_

Might predacious fish be stocked:  Yes  No

Other biological controls that might be used: \_\_\_\_\_  
Only Gambusia holbrooki obtained from the Brevard Mosquito Control's hatchery or Gambusia holbrooki from the Beecher Unit National Fish Hatchery near Crescent City, FL, will be used.

Material to be Used for Larvaciding Applications:

(Please Check All That Apply.)

Bti

Bs

Methoprene

Non-Petroleum Surface Film

Other, please specify: \_\_\_\_\_

Please specify the following for each larvicide:

Chemical or Common name: Bacillus thuringiensis israelensis, Bacillus sphaericus, and Methoprene

Ground

Aerial

Rate of application: In accordance with each product's label rates for the site specific conditions.

Method of application: Liquid, dunks, and pouches will be by ground application. Granules will be by aerial or ground application. Surveillance will be completed to establish a baseline data set prior to any control work being done. Control work and access to the property will be in accordance with the FWC's approval.

Proposed Adult Mosquito Control:

Aerial adulticiding       Yes       No  
Ground adulticiding       Yes       No

Please specify the following for each adulticide:

Chemical or common name: Organophosphates, Pyrethroids/Pyrethrins

Rate of application: Not to exceed product label rate per acre per period of time.

Method of application: Ultra low volume by truck mounted spray systems on County maintained roads and upon the FWC's request, WMA parking areas and the FWC's maintenance facility.

Proposed Modifications for Public Health Emergency Control: Arthropod control agency may request special exception to this plan during a threat to public or animal health declared by State Health Officer or Commissioner of Agriculture.

Aerial ultra low volume application of adulticides during an official arbovirus emergency pursuant to Sec. 388.45, F.S. and the FWC will receive written notice prior to application.

Proposed Notification Procedure for Control Activities: Brevard Mosquito Control District will conduct control activities based on data from surveillance methods listed above, in accordance with the FWC's approval or request.

Records:

Are records being kept in accordance with Chapter 388, F.S.:

Yes       No

Records Location: Brevard Mosquito Control District, 800 Perimeter Rd., Titusville, FL 32780

How long are records maintained: 5 years

Vegetation Modification:

What trimming or altering of vegetation to conduct surveillance or treatment is proposed? None

\_\_\_\_\_  
\_\_\_\_\_

Proposed Land Modifications:

Is any land modification, i.e., rotary ditching, proposed: No

\_\_\_\_\_  
\_\_\_\_\_

Include proposed operational schedules for water fluctuations: None; however, Brevard Mosquito Control District recommends stocking with Gambusia holbrooki after fluctuations in water levels.

\_\_\_\_\_  
\_\_\_\_\_

List any periodic restrictions, as applicable, for example peak fish spawning times:

None

\_\_\_\_\_  
\_\_\_\_\_

Proposed Modification of Aquatic Vegetation: None

\_\_\_\_\_  
\_\_\_\_\_

Land Manager Comments: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Arthropod Control Agency Comments: Exemptions to this plan only authorized in accordance with F.S.

388.45, such as a Public Health emergency declared by the Health Department, and emergencies will be communicated to the FWC regional biologist or designee in writing.

\_\_\_\_\_  
\_\_\_\_\_

**James C. Conner** Digitally signed by James C. Conner III  
Date: 2026.02.02 12:55:36 -0500 2/2/2026  
Signature of Lands Manager or Representative      Date

**Faella, Joseph** Digitally signed by Faella, Joseph  
Date: 2026.02.02 11:21:04 -0500 02/02/2026  
Signature of Mosquito Control Director / Manager      Date

## 11.22 Brevard County Letter of Compliance with Local Government Comprehensive Plan



BOARD OF COUNTY COMMISSIONERS

### Planning & Development Department

2725 Judge Fran Jamieson Way

Suite A-114

Viera, FL 32940

Phone: (321)633-2070

January 30, 2026

Cedar Spirk, Land Conservation Planner  
Florida Fish and Wildlife Conservation Commission  
620 South Median Street  
Tallahassee, FL 32399

#### RE: Salt Lake Wildlife Management Area Management Plan Ten-Year Update

Greetings:

On behalf of the Brevard County Planning and Development Department, I am pleased to provide a review of the 10-year update of the Florida Fish and Wildlife Conservation Commission's Salt Lake Wildlife Management Area Management Plan. Planning and Zoning staff has reviewed the management plan and finds that the plan is compliant with the County's Comprehensive Plan. There are inconsistencies between the zoning code and the comprehensive plan where the GU (General Use) zoning designation is being used in areas designated by the comprehensive plan as Public Conservation lands that should be zoned EA (Environmental Areas).

If you have any questions regarding the County's comments, please contact Tim Craven, Senior Planner at 321-350-8266 or [tim.craven@brevardfl.gov](mailto:tim.craven@brevardfl.gov).

Thank you,

Tim Craven  
Senior Planner  
Brevard County Planning and Development