A Management Plan for

Salt Lake

Wildlife Management Area

2016 - 2026

Brevard County, Florida

Florida Fish and Wildlife Conservation Commission
620 South Meridian Street
Tallahassee, Florida 32399-1600

Florida Department of Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Jonathan P. Steverson
Secretary

August 23, 2016

Mr. Gary Cochran
Florida Fish and Wildlife Conservation Commission
620 South Meridian Street
Tallahassee, FL 32399-1600

RE: Salt Lake Wildlife Management Area - Lease #4344 and #4316

Dear Mr. Cochran:

On **August 19, 2016**, the Acquisition and Restoration Council recommended approval of the **Salt Lake Wildlife Management Area** management plan. Therefore, the Division of State Lands, Office of Environmental Services, acting as agent for the Board of Trustees of the Internal Improvement Trust Fund, hereby approves the **Salt Lake Wildlife Management Area** management plan. The next management plan update is due August 19, 2026.

Approval of this land management plan does not waive the authority or jurisdiction of any governmental entity that may have an interest in this project. Implementation of any upland activities proposed by this management plan may require a permit or other authorization from federal and state agencies having regulatory jurisdiction over those particular activities. Pursuant to the conditions of your lease, please forward copies of all permits to this office upon issuance.

Sincerely,

Joseph Wilson
Office of Environmental Services
Division of State Lands

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A Management Plan
for
Salt Lake Wildlife Management Area

Brevard County, Florida

Owned by the Board of Trustees of the Internal Improvement Trust Fund

Managed by the Florida Fish and Wildlife Conservation Commission

July 2016

Approved

Thomas H. Eason, Ph.D.

Director, Division of Habitat and Species Conservation

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: 5667 acres
Acreage Breakdown:

Land Cover Classification	Acres	Percent of Total Area
Basin Marsh	2045.3	40.57%
Basin Swamp	22.69	0.45%
Baygall	17.79	0.35%
Depression Marsh	356.84	7.08%
Hydric Hammock	49.43	0.98%
Marsh Lake	791.01	15.69%
Mesic Flatwoods	803.01	15.93%
Mesic Hammock	245.23	4.86%
Scrub	44.27	0.88%
Scrubby Flatwoods	53.63	1.06%
Wet Flatwoods	567.55	11.26%
Xeric Hammock	2.47	0.05%
Anthropogenic Communities	42.09	0.84%

*GIS-calculated acreage for land cover classification varies slightly from actual total acreage.
Lease/Management Agreement No.: 4344 (Salt Lake WMA), 4316 (BCSEFFP Parcels) (Appendix 13.1)
Use: Single _____ Multiple X
Management Responsibilities: Agency FWC — Responsibilities: LEAD, SUBLESSEE (Wildlife Management Area, resource protection, law enforcement)
Designated Land Use: Wildlife Management Area
Sublease (s): None
Encumbrances: Apiary and electrical transmission line (4344), natural gas pipeline (4316)
Type Acquisition: CARL, P-2000, SOR and Florida Forever Programs
Unique Features: Natural: Basin Marsh, Mesic Flatwoods, Wet Flatwoods, Scrub, Salt Lake, Loughman Lake, and South Lake
Archaeological/Historical: BR01875, BR01878, BR01874, BR01877, BR01876, BR00007, BR01879, BR01715.
Management Needs: Habitat restoration and improvement; public access and recreational opportunities; hydrological preservation and restoration; exotic and invasive species maintenance and control; imperiled species habitat maintenance, enhancement, and restoration, additional staff and resources.
Acquisition Needs/Acreage: 21,656 acres remaining in the Brevard Coastal Scrub Ecosystem Florida Forever Project (Figure 9).
Surplus Lands/Acreage: None
Public Involvement: Management Advisory Group consensus building meeting and Public Hearing (Appendix 13.2)

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

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	5
3	Degree of title interest held by the Board, including reservations and encumbrances such as leases.	18-2.021	14
4	The legal description and acreage of the property.	18-2.018 & 18-2.021	1-2, 5-6, Appendix 13.1
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	7-13, 96
6	An **assessment** as to whether the property, or any portion, should be declared surplus. *Provide Information regarding **assessment and analysis** in the plan, and provide **corresponding map**.*	18-2.021	72
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. *Please clearly indicate parcels on a map.*	18-2.021	95-100
8	Identification of adjacent land uses that conflict with the planned use of the property, if any.	18-2.021	16
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)	5-6
10	Proximity of property to other significant State, local or federal land or water resources.	18-2.021	14-15, 17

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	70-71
12	A description of past and existing uses, including any unauthorized uses of the property.	18-2.018 & 18-2.021	68-69
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	70-72
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	6, 101
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	61, 94, 101, 114

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	95-101
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)	71
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	140
19	Letter of compliance from the local government stating that the LMP is in compliance with the Local Government Comprehensive Plan.	BOT requirement	Appendix 13.14
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	19-27, 60-61, 69-72, 81-88, 93-107
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	69-72
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	Appendix 13.4
23	A statement regarding incompatible use in reference to Ch. 253.034(10).	253.034(10)	72

*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	19, Appendix 13.2
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)	Appendix 13.2
26	LMPs and LMP updates for parcels over 160 acres shall be developed with input from an advisory group who must conduct at least one public hearing within the county in which the parcel or project is located. *Include the advisory group members and their affiliations, as well as the date and location of the advisory group meeting.*	259.032(10)	19, Appendix 13.2
27	Summary of comments and concerns expressed by the advisory group for parcels over 160 acres	18-2.021	Appendix 13.2
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. *Include a copy of each County's advertisements and announcements (meeting minutes will suffice to indicate an announcement) in the management plan.*	253.034(5) & 259.032(10)	Appendix 13.2
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. *Include manager's replies to the team's findings and recommendations.*	259.036	79, Appendix 13.7
30	Summary of comments and concerns expressed by the management review team, if required by Section 259.036, F.S.	18-2.021	Appendix 13.7
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 13.7

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. *Use brief descriptions and include USDA maps when available.*	18-2.021	20-26, Appendix 13.3
33	Insert FNAI based natural community maps when available.	ARC consensus	47
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	39-47

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	39-47, 60-68
36	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding beaches and dunes.	18-2.021	61
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	61
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	48-60
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	55, 59-60, 62-64
40	The identification or resources on the property that are listed in the Natural Areas Inventory. *Include letter from FNAI or consultant where appropriate.*	18-2.021	60, 62-64
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)	79-139
42	Habitat Restoration and Improvement	259.032(10) & 253.034(5)	
42-A.	Describe management needs, problems and a desired outcome and the key management activities necessary to achieve the enhancement, protection and preservation of restored habitats and enhance the natural, historical and archeological resources and their values for which the lands were acquired.	↓	79-139
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.		107-132
42-C.	The associated measurable objectives to achieve the goals.		107-132
42-D.	The related activities that are to be performed to meet the land management objectives and their associated measures. *Include fire management plans - they can be in plan body or an appendix.*		79-139, Appendix 13.8
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.		136-138, Appendix 13.12
43	***Quantitative data description of the land regarding an inventory of forest and other natural resources and associated acreage. *See footnote.*	253.034(5)	27-48
44	Sustainable Forest Management, including implementation of prescribed fire management	18-2.021, 253.034(5) & 259.032(10) ↓	
44-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		79-139

44-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		107-132
44-C.	Measurable objectives (see requirement for #42-C).		107-132
44-D.	Related activities (see requirement for #42-D).		79-139, Appendix 13.8
44-E.	Budgets (see requirement for #42-E).		136-138, Appendix 13.12
45	Imperiled species, habitat maintenance, enhancement, restoration or population restoration	259.032(10) & 253.034(5)	
45-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	79-139
45-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		107-132
45-C.	Measurable objectives (see requirement for #42-C).		107-132
45-D.	Related activities (see requirement for #42-D).		79-139
45-E.	Budgets (see requirement for #42-E).		136-138, Appendix 13.12
46	***Quantitative data description of the land regarding an inventory of exotic and invasive plants and associated acreage. *See footnote.*	253.034(5)	88-90
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 13.13
48	Exotic and invasive species maintenance and control	259.032(10) & 253.034(5)	
48-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	77-139
48-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		107-132
48-C.	Measurable objectives (see requirement for #42-C).		107-132
48-D.	Related activities (see requirement for #42-D).		79-139
48-E.	Budgets (see requirement for #42-E).		136-138

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. *If yes, provide a list of the appropriate managing agencies that have been notified of the proposed plan.*	18-2.018 & 18-2.021	60-61

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	60-61
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	60-61
52	***Quantitative description of the land regarding an inventory of hydrological features and associated acreage. *See footnote.*	253.034(5)	60-61, 93
53	Hydrological Preservation and Restoration	259.032(10) & 253.034(5)	
53-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	79-139
53-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		107-132
53-C.	Measurable objectives (see requirement for #42-C).		107-132
53-D.	Related activities (see requirement for #42-D).		79-139
53-E.	Budgets (see requirement for #42-E).		136-138, Appendix 13.12

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. *Include maps of all cultural resources except Native American sites, unless such sites are major points of interest that are open to public visitation.*	18-2.018, 18-2.021 & per DHR's request	61
55	***Quantitative data description of the land regarding an inventory of significant land, cultural or historical features and associated acreage.	253.034(5)	61, 94
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	94, Appendix 13.11
57	Cultural and Historical Resources	259.032(10) & 253.034(5)	
57-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	79-139
57-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		107-132
57-C.	Measurable objectives (see requirement for #42-C).		107-132
57-D.	Related activities (see requirement for #42-D).		79-139
57-E.	Budgets (see requirement for #42-E).		136-138, Appendix 13.12

**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 footnote.*	253.034(5)	90-93, 94-96
59	Capital Facilities and Infrastructure	259.032(10) & 253.034(5)	
59-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	79-139
59-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		107-132
59-C.	Measurable objectives (see requirement for #42-C).		107-132
59-D.	Related activities (see requirement for #42-D).		79-139
59-E.	Budgets (see requirement for #42-E).		136-138, Appendix 13.12
60	*** Quantitative data description of the land regarding an inventory of recreational facilities and associated acreage.	253.034(5)	90-93, 94-96
61	Public Access and Recreational Opportunities	259.032(10) & 253.034(5)	
61-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	79-139
61-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		107-132
61-C.	Measurable objectives (see requirement for #42-C).		107-132
61-D.	Related activities (see requirement for #42-D).		79-139
61-E.	Budgets (see requirement for #42-E).		136-138, Appendix 13.12

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-x
63	Place the Executive Summary at the front of the LMP. Include a physical description of the land.	ARC and 253.034(5)	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	73-78
65	Key management activities necessary to achieve the desired outcomes regarding other appropriate resource management.	259.032(10)	79-139

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)	136-138, Appendix 13.12
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)	136-138, Appendix 13.12
68	A statement of gross income generated, net income and expenses.	18-2.018	136-138, Appendix 13.12

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

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Management Plan Acronym Key

ADA	Americans with Disabilities Act
ARC	Acquisition and Restoration Council
BCSEFFP	Brevard Coastal Scrub Ecosystem Florida Forever Project
CAS	Conservation Action Strategy
DACS	Department of Agriculture and Consumer Services
DEO	Department of Economic Opportunity
DEP	Department of Environmental Protection
DOD	Department of Defense
DSL	Division of State Lands
FAC	Florida Administrative Code
FFS	Florida Forest Service
FLEPPC	Florida Exotic Pest Plant Council
FNAI	Florida Natural Areas Inventory
FS	Florida Statute(s)
FWC	Florida Fish and Wildlife Conservation Commission
FWRI	Fish and Wildlife Research Institute
GIS	Geographic Information Systems
GPS	Geographic Positioning System
IMPP	Internal Management Policies and Procedures
IPCC	Intergovernmental Panel on Climate Change
IWHRS	Integrated Wildlife Habitat Ranking System
LAP	Landowner Assistance Program
LMR	Land Management Review
MAG	Management Advisory Group
MOA	Memo of Agreement
NPS	National Park Service
NRCS	Natural Resources Conservation Service
OBVM	Objective-Based Vegetation Management
OCPB	Optimal Conservation Planning Boundary
OFW	Outstanding Florida Waters
ORB	Optimal Resource Boundary
ORV	Off-Road Vehicle
SJRWMD	St. Johns River Water Management District
SLWMA	Salt Lake Wildlife Management Area
SOR	Save Our Rivers
TNC	The Nature Conservancy
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
WCPR	Wildlife Conservation Prioritization and Recovery
WMA	Wildlife Management Area

1 Introduction and General Information

Buffering Florida's Atlantic Coastal Ridge in northwestern Brevard County, the Salt Lake Wildlife Management Area (SLWMA) is an important segment of a landscape of conservation lands anchored along the St. Johns River just inland of Florida's Atlantic Coastline. Protecting the vital watershed and water quality of the St. Johns River and the Indian River Lagoon system, this essential landscape of conservation lands also aids in the conservation of natural tracts of native coastal scrub communities once paralleling the entire Indian River.

Located just inland of Brevard County's eastern coastline, SLWMA conserves important elements of this vestige coastal landscape. The area's assemblage of natural habitats provides important wildlife habitat for migrating waterfowl and an array of imperiled wildlife (wildlife species listed as endangered, threatened or species of special concern) along with other wildlife.

South Lake

Encompassing approximately 8,000 acres of intact, diverse habitats that are interconnected to a corridor of adjacent public and private conservation lands, the SLWMA's scrub, marshes, lakes, forests, and swamps conserves habitat for a rich diversity of imperiled, rare, and more common wildlife species that include the Florida scrub jay, wood stork, and sandhill crane, along with a variety of other wading birds, gopher tortoise and eastern indigo snake. Rare plants such as the beautiful pawpaw, giant airplant, celestial lily, hooded pitcherplant, pine lily, and Simpson's stopper are also found on the area. Other more common wildlife that are abundant on the area include white-tailed deer, bobcats, alligators, and otters. The observant visitor may catch a glimpse of the Florida scrub-jay or bald eagle.

The variety of SLWMA's rich habitat diversity also provides stopover and foraging habitat for a wide variety of migrating bird species during the annual spring and fall migrations that occur along the Atlantic flyway. Verdant native vegetation includes an assortment of ferns that carpet the hammocks, oaks, and cabbage palm forests, along with a bountiful collection of wildflowers, such as the spring blooming irises that provide a beautiful palate of ground cover while fulfilling their important role in maintaining the area's biodiversity.

The SLWMA is named for one of the three lakes that border the area – Salt Lake, Loughman Lake, and South Lake. The salinity of Salt Lake is about one-third that of the

Atlantic Ocean, enabling some marine organisms to live in these waters. Additionally, the salinity of the soil is high in some places of SLWMA, which influences the vegetation that grows there.

SLWMA is managed by the Florida Fish and Wildlife Conservation Commission (FWC) for the conservation of imperiled and more common wildlife and for fish and wildlife based public outdoor recreation. The area is managed to conserve the important natural communities on site that provide habitat for a wide range of imperiled and more common wildlife species.

The FWC has lead management authority for all of the resources within the 5,045 acre main tract of the SLWMA. The SLWMA is managed to conserve and restore natural wildlife habitat, and to provide high-quality opportunities for hunting, fishing, wildlife viewing, and other fish and wildlife-based public outdoor recreation opportunities including horseback-riding, boating, and hiking. Additionally, the established boundary of the SLWMA contains 2,760 acres of land titled to the St. John's River Water Management District (SJRWMD). The FWC manages hunting opportunities on this tract.

FWC also has management authority over all of the resources that are within the respective Grissom Parkway Unit, Micco Expansion Unit, and Ten Mile Unit lands leased to FWC (Figure 1). These additional units are referred to by their designated Brevard Coastal Scrub Ecosystem Florida Forever Project (BCSEFFP) unit names for ease of reference. Though not formally established within the boundary of SLWMA, they are leased to FWC for management as FWC is the designated lead managing agency for these respective units of the BCSEFFP. For these reasons, the Grissom Parkway Unit, Micco Expansion Unit and Ten Mile Unit lands leased to FWC are also covered under the SLWMA/BCSEFFP Management Plan.

Although FWC provides general protection and oversight for the respective BCSEFFP units listed above, the current checkerboard pattern of state and private ownership with isolated, scattered lots and the lack of practical access do not currently provide sufficient contiguous blocks of public conservation land to establish functional operational and resource management units. Consequently, FWC cannot implement its normal suite of resource and operational activities and provide traditional public access to these areas at this time.

1.1 Management Plan Purpose

This Management Plan serves as the basic statement of policy and direction for the management of SLWMA. It provides information including the past usage, conservation acquisition history, and descriptions of the natural and historical resources found on SLWMA. Furthermore, it identifies FWC's future management intent, goals and associated short and long-term objectives, as well as identifying challenges and solutions. This Management Plan has been developed to guide each aspect of SLWMA's management for the next ten years.

This Management Plan is submitted for review to the Acquisition and Restoration Council (ARC) acting on behalf of the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees) of the State of Florida through the Florida Department of Environmental Protection's Division of State Lands (DSL), in compliance with paragraph seven of Lease Numbers 4316 and 4344 (Appendix 13.1) and pursuant to Chapters 253 and 259, Florida Statutes (FS), and Chapters 18-2 and 18-4, Florida Administrative Code (FAC). Format and content were drafted in accordance with ARC requirements for management plans and the model plan outline provided by the staff of DSL. Terms used in this Management Plan describing management activities and associated measurable goals and objectives conform to those developed for the Land Management Uniform Accounting Council Biennial Land Management Operational Report (Appendix 13.12).

1.1.1 FWC Planning Philosophy

The FWC's planning philosophy includes emphasizing management recommendation consensus-building among stakeholders and input from user groups and the general public at the beginning of the planning process. The FWC engages stakeholders by convening a Management Advisory Group and solicits additional input from user groups and the general public at a public hearing (Appendix 13.2). The FWC also engages area, district, and regional agency staff, as well as other FWC staff expertise, in developing this Management Plan, thereby facilitating area biologist and manager "ownership" of the Management Plan, and thus the development of meaningful management intent language, goals with associated measurable objectives, timelines for completion, and the identification of challenges and solution strategies for inclusion in the SLWMA Management Plan (Sections 5 – 8).

Further management planning input is received through Land Management Reviews (LMR) conducted every five years, which includes a review of the previous Management Plan, as well as a field review of SLWMA. The LMR report (Section 5.1, Appendix 13.7) provides FWC staff with important information and guidance provided by a diverse team of land management auditors, and communicates the recommendations of the LMR team to FWC so they may be adequately addressed in this Management Plan, and thus guide the implementation of the LMR team recommendations on SLWMA.

Furthermore, FWC maintains transparency and accountability throughout the development and implementation of this Management Plan. A "living document" concept, linking this updated Management Plan to the previous one, is accomplished by reporting on the objectives, management activities, and projects accomplished over the last planning timeframe (previous ten years; see Section 4), thereby ensuring agency accountability through time. Also, in an effort to remain adaptive for the duration of this Management Plan, continuous input and feedback will be collected from FWC staff, stakeholders, user groups, and other interested parties and individuals. As needed, amendments to this Management Plan will be presented to DSL and ARC for review and consideration.

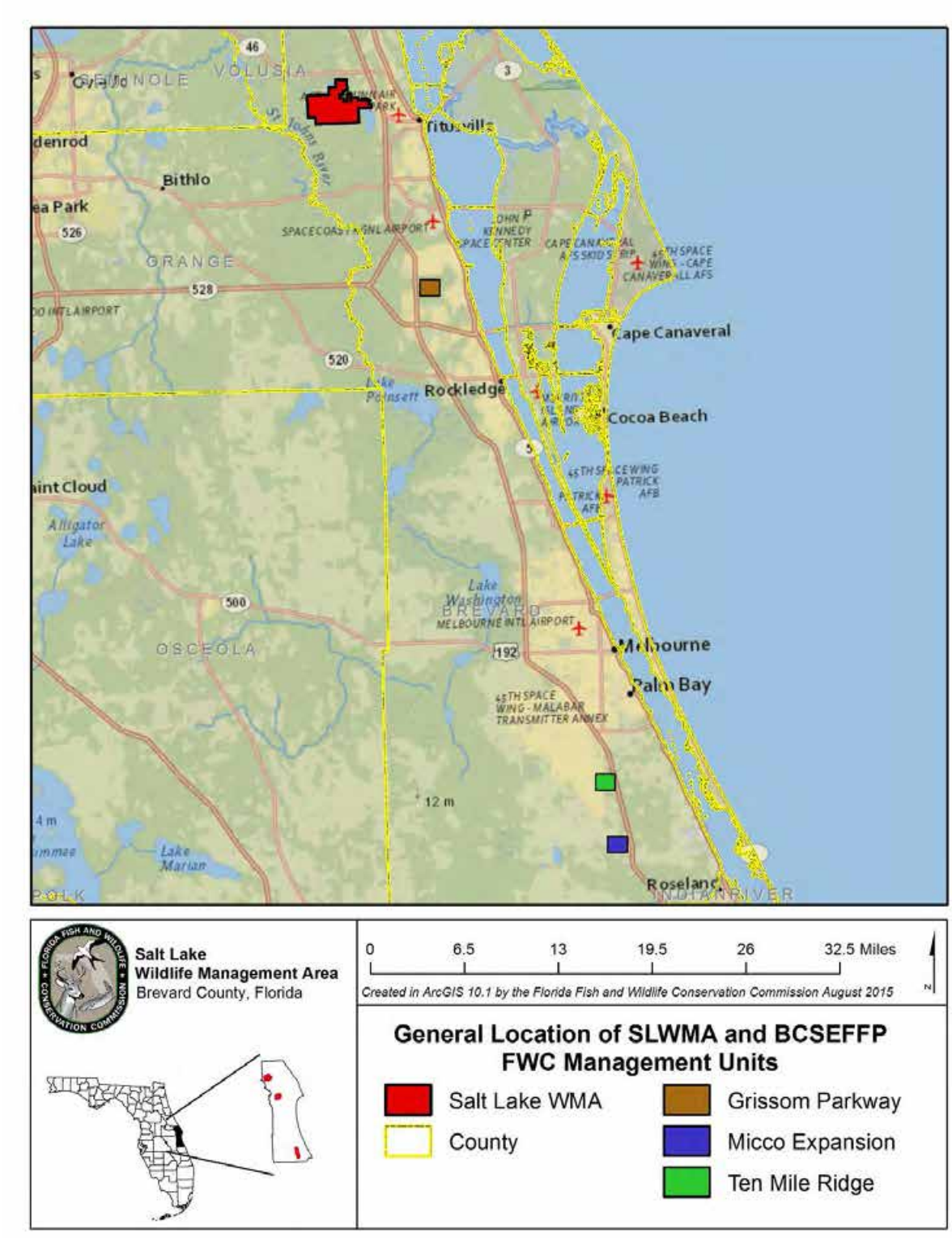


Figure 1: General Location of SLWMA

1.2 Location

SLWMA is situated immediately west of Titusville in Brevard County and about 30 miles east-northeast of downtown Orlando. The SLWMA is located in all or portions of Sections 22, 23, 25, 26, 27, 28, 29, 32, 33, 34, and 35, Township 21 South, Range 34 East (Figures 2 & 3). There are two designated entrances to the SLWMA. One is located on Arch Road, which can be accessed from State Road 46, via Turpentine Road and Panther Lane, and the other is located on Dairy Road.

As described in detail above, other lands included and covered within the SLWMA Management Plan are lands managed by FWC that are referred to by FWC respectively as the Grissom Parkway Unit, Micco Expansion Unit and the Ten Mile Ridge Unit (Figures 4-6). The unit names correspond to the various units of the BCSEFFP, which encompasses most of the SLWMA, for which FWC is the designated lead managing agency as well as the project units listed above. These BCSEFFP Units are situated as follows: the Grissom Parkway Unit is located in Sections 24, 23, 25, 34 and 35, Township 23 South, Range 35 East (Figure 7); the Micco Expansion Unit is located in Section 22, Township 29 South, Range 34 East (Figure 8); and the Ten Mile Ridge Unit is located in Sections 34 and 35, Township 29 South, Range 34 East (Figure 8).

1.3 Acquisition

1.3.1 Purpose for Acquisition of the Property

The original acquisition of what is now SLWMA was acquired by the SJRWMD under their Save Our Rivers (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. Later, much of what is now the BCSEFFP originally began as the Scrub-Jay Refuge Preservation 2000 Program Project. In 1997, the Scrub-Jay Refuge project was combined with the BCSEFFP.

The purposes of the BCSEFFP, which includes much of the SLWMA, except for the original SJRWMD SOR Program described above, are to: preserve the remaining swaths of coastal scrub habitat and other associated habitats to conserve lands for the endangered Florida scrub jay 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; preserve the watershed of the St. Johns River and Indian River Lagoon systems; and to provide natural resource based public outdoor recreation and education.

1.3.2 Acquisition History

The SJRWMD acquired the original lands within what is now the SLWMA beginning in February 1982 under the SOR Program. Also, as noted above, much of what is now the BCSEFFP originally began as the Scrub-Jay Refuge Preservation 2000 Project, which was combined with the BCSEFFP in 1997. Beginning in September 1999, other significant

parcels of the BCSEFFP were acquired jointly by the Board of Trustees and the SJRWMD under the Preservation 2000 Program. The State of Florida shares title on these tracts with the SJRWMD, and both entities lease the 5,045-acre SLWMA to FWC for management. The FWC received the initial lease for the SLWMA from the Trustees and the SJRWMD in April 2002.

The lands within the BCSEFFP outside of the SLWMA established boundary in which FWC is the designated lead managing agency and are also covered by the SLWMA Management Plan consists of three main acquisition sites. These include Grissom Parkway Unit, Ten Mile Ridge Unit, and the Micco Expansion Unit. Beginning in 1996, these lands have been acquired under the P-2000 and Florida Forever Acquisition Programs. Generally, most of these lands were acquired through multiple acquisitions of individual, small lots.

To date, the interspersed parcels leased to FWC within the Grissom Parkway Unit, Micco Expansion Unit, and Ten Mile Ridge Unit of the BCSEFFP total approximately 1,715 acres. The FWC received the initial lease for these parcels in June 2001. As detailed above, most of the SLWMA is within the original boundary of the BCSEFFP, while the additional lands managed under this management plan corresponding to the BCSEFFP Unit names are all located within the BCSEFFP.

1.4 Management Authority

The FWC is the designated lead managing agency for SLWMA under the authority granted by Lease Number 4344 from the Board of Trustees agent, DSL and the SJRWMD. Lease Number 4316 designates FWC as the lead managing agency for the BCSEFFP parcels. 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, 870, and 597 and of the Florida Statutes. These constitutional provisions and laws provide FWC the authority to protect, conserve, and manage the State's fish and wildlife resources.

1.5 Management Directives

The 50-year Board of Trustees' Lease Agreement Numbers 4344 and 4316 with FWC directs 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), FS..." The lease agreement further directs FWC to "implement applicable Best Management Practices for all activities under this lease in compliance with paragraph 18-2.018(2)(h), FAC, which have been selected, developed, or approved by lessor, lessee, or other land managing agencies for the protection and enhancement of the leased premises."

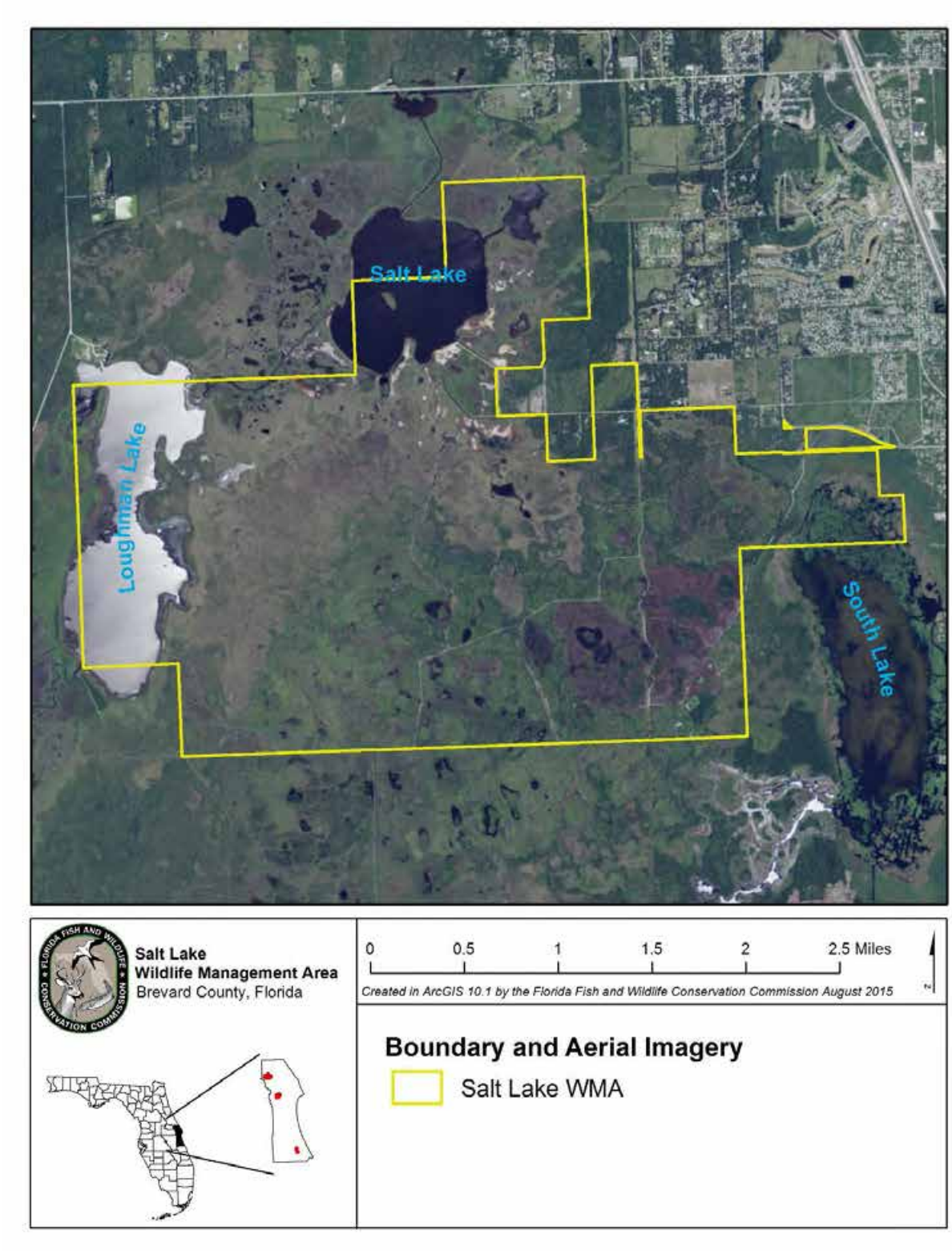


Figure 2: SLWMA Boundary

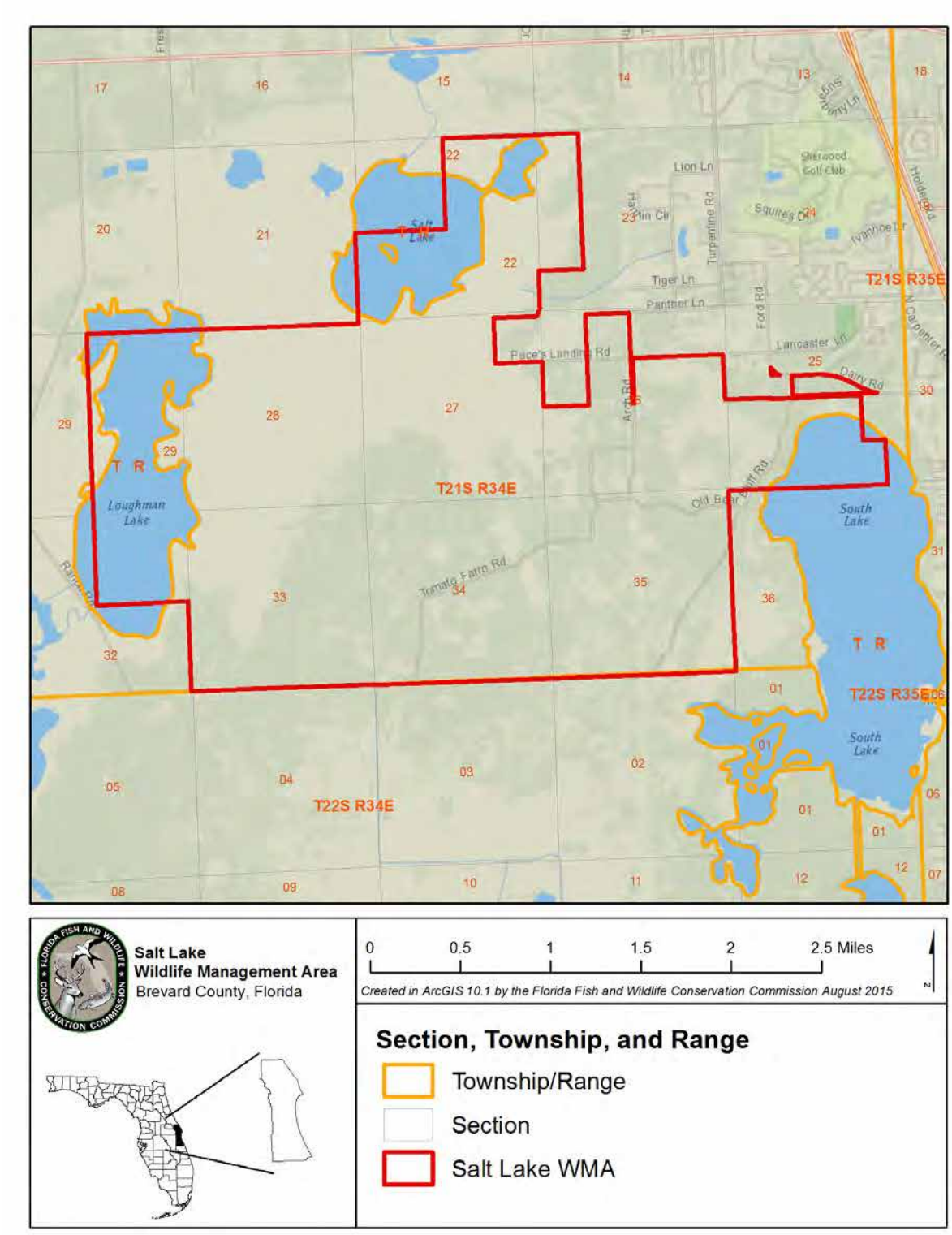


Figure 3: SLWMA Section, Township, and Range Location

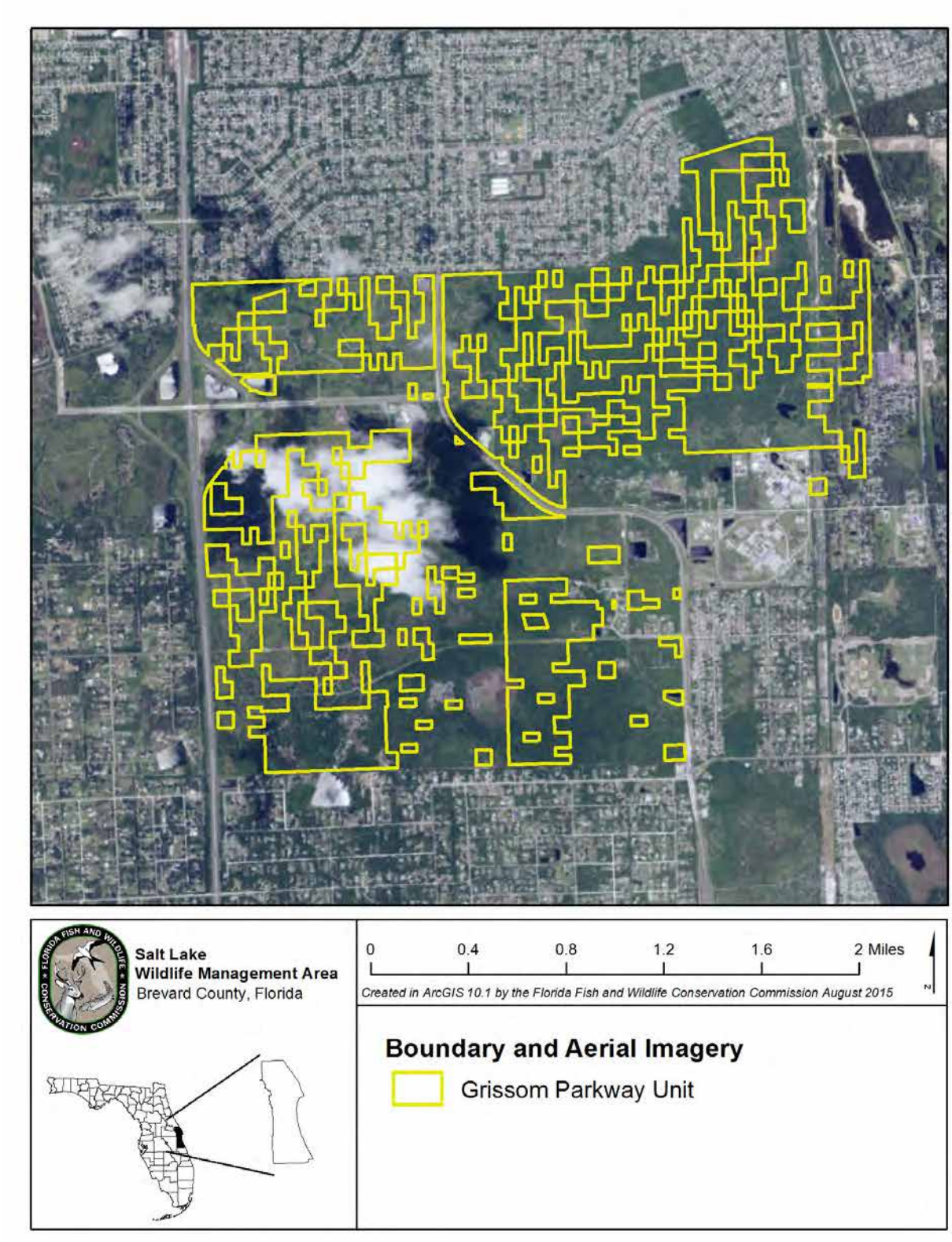


Figure 4: Boundary of the Grissom Parkway Unit

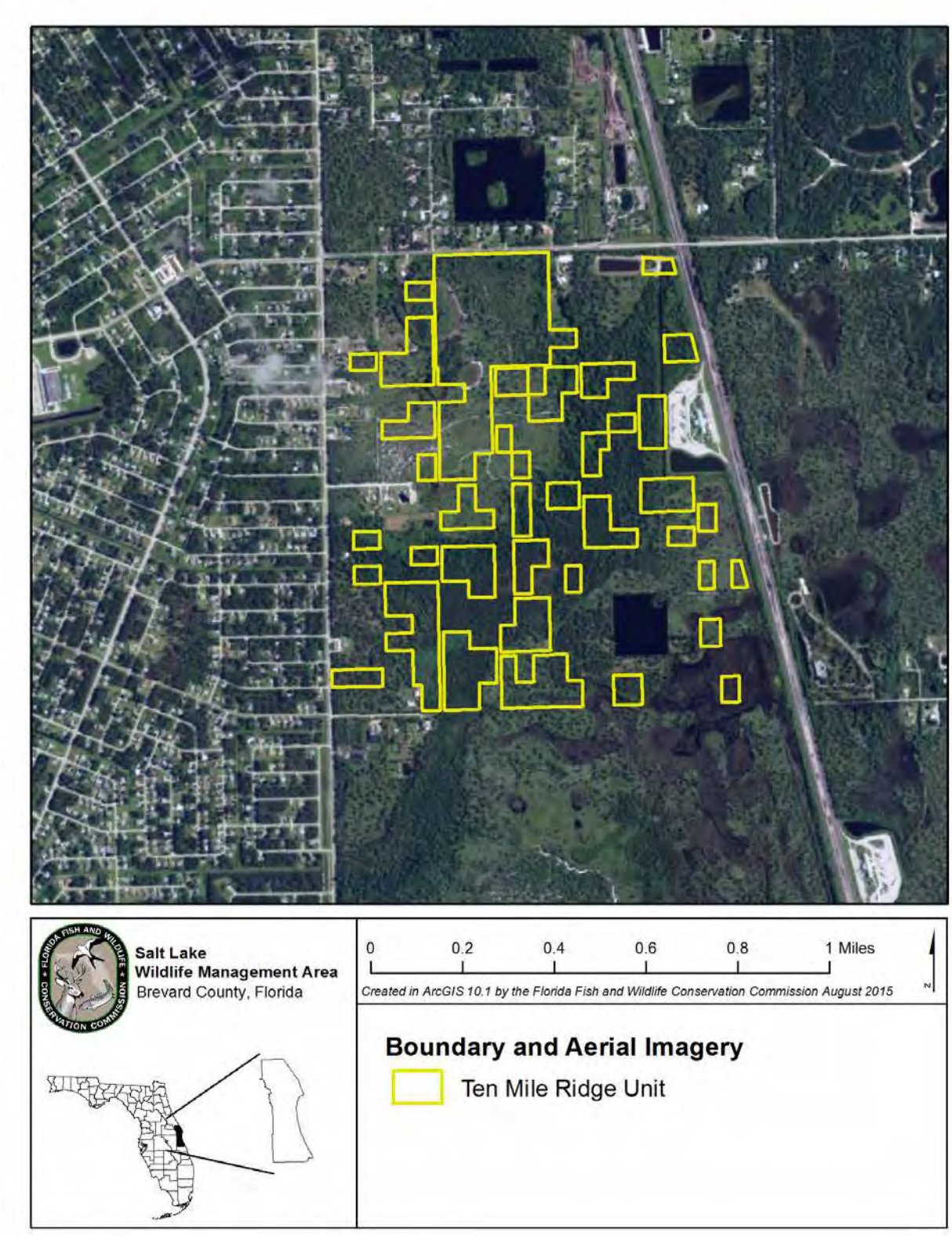


Figure 5: Boundary of the Ten Mile Ridge Unit

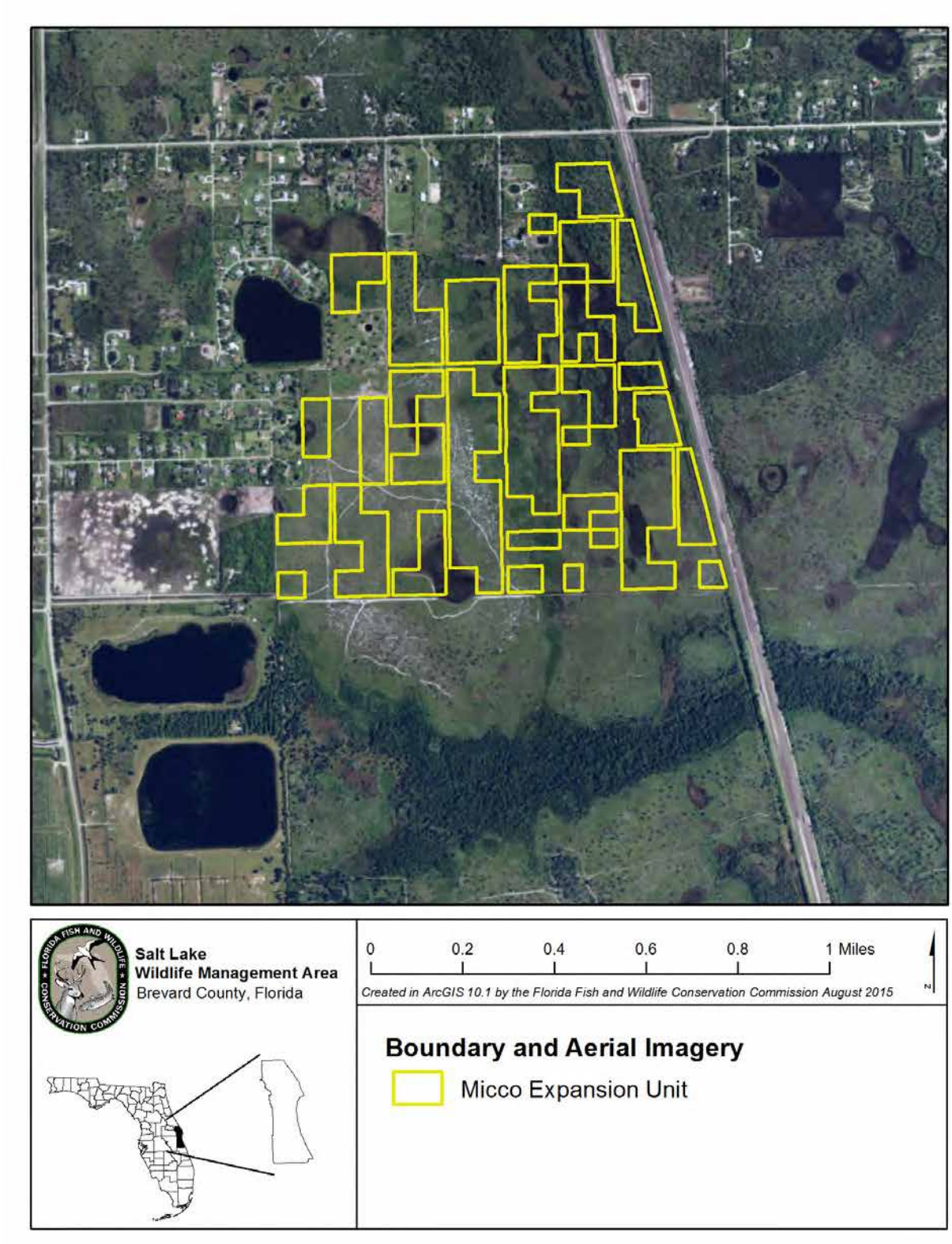


Figure 6: Boundary of the Micco Expansion Unit

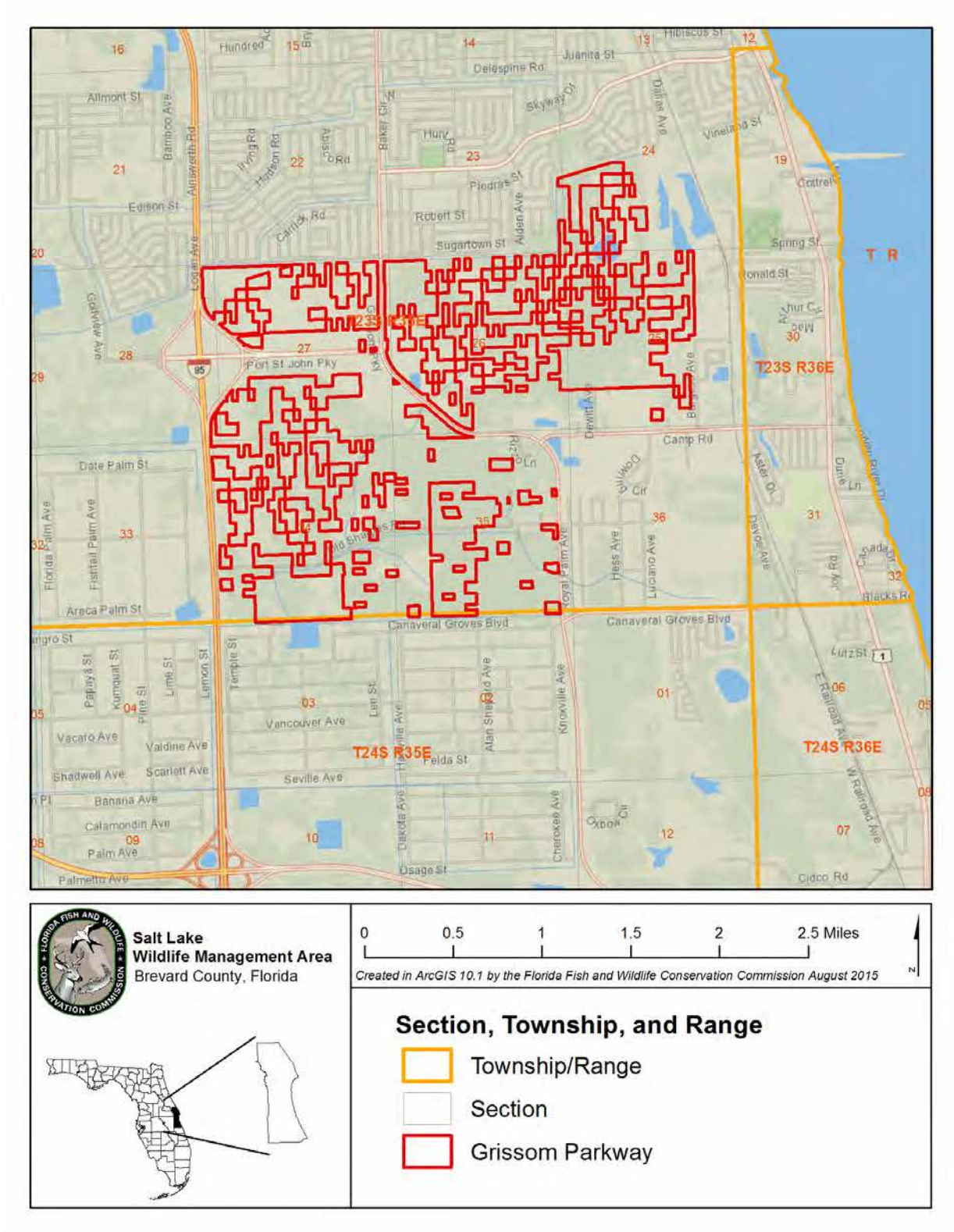


Figure 7: Grissom Parkway Unit Section, Township, and Range Location

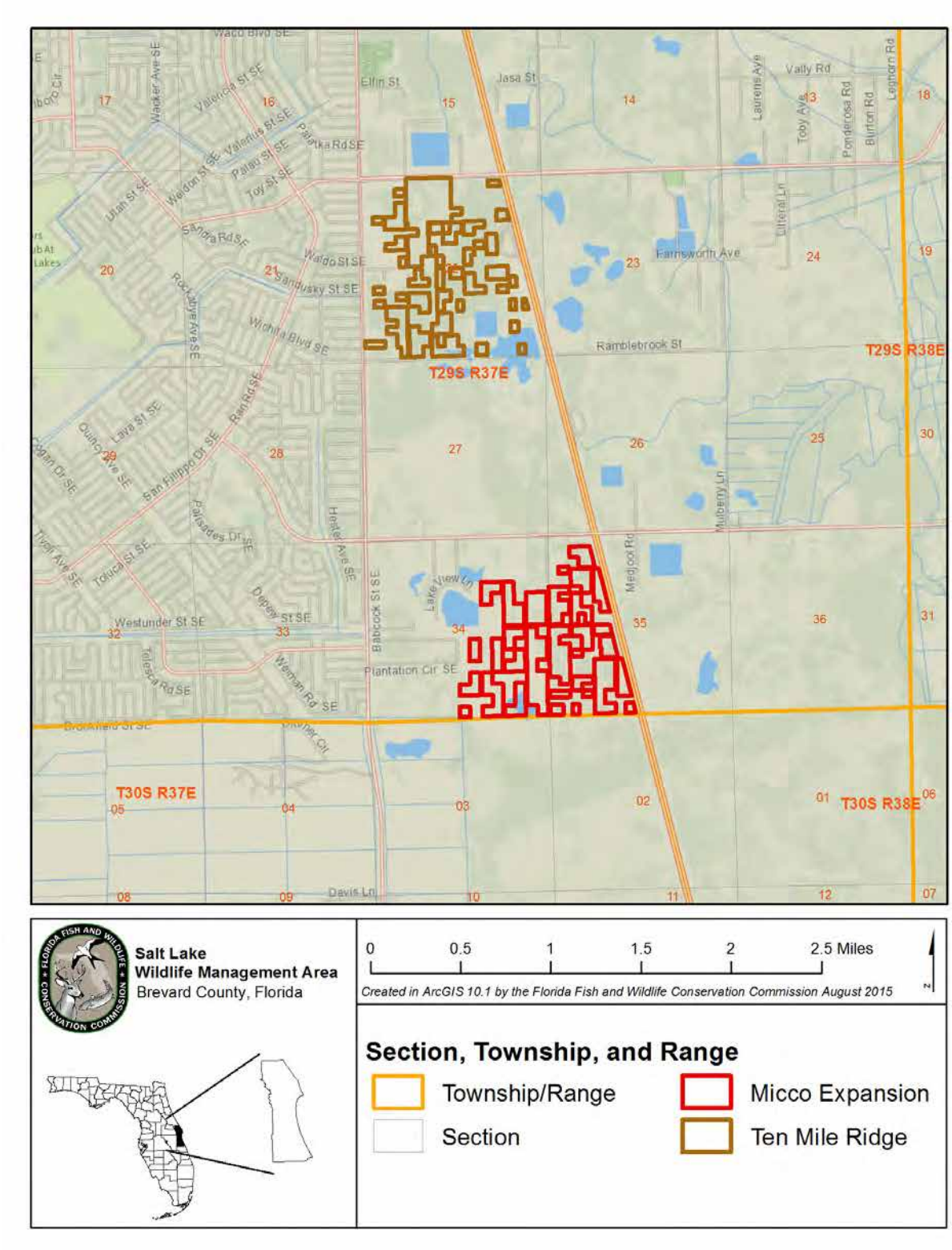


Figure 8: Ten Mile Ridge & Micco Expansion Units Section, Township & Range Location

1.6 Title Interest and Encumbrances

The Board of Trustees and the SJRWMD jointly hold fee title interest to all lands within the SLWMA (Lease Number 4344), and the Board of Trustees exclusively holds the fee title interest to the BCSEFFP parcels (Lease Number 4316). On April 5, 2002, the DSL, as staff to the Board of Trustees, and the SJRWMD, entered into Lease Agreement Number 4344, a 50 year lease agreement, granting FWC management authority for SLWMA. DSL entered into Lease Agreement 4316 on June 15, 2001 granting FWC management authority for the BCSEFFP parcels. There are two known encumbrances within the established boundary including an apiary and an electrical transmission line. A natural gas pipeline easement exists on the Grissom Parkway Unit.

1.7 Proximity to Other Public Conservation Lands

The extensive network of conservation lands adjacent to SLWMA, include lands managed by the SJRWMD, Florida Forest Service (FFS), the U.S. Forest Service (USFS), the U.S. Fish and Wildlife Service (USFWS), and Brevard County (Figure 9). Three Florida Forever projects, are also located in the vicinity of the area. Tables 1 and 2 list the conservation lands and Florida Forever projects within a ten-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 1 are owned in full-fee 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: Conservation Lands Within 10 Miles of SLWMA

Federal Government	**Managing Agency**
Merritt Island National Wildlife Refuge	USFWS
St. Johns National Wildlife Refuge	USFWS
Mills Creek Woodlands	USFS
State of Florida	**Managing Agency**
Charles H. Bronson State Forest	FFS
Little Big Econ State Forest	FFS
Tosohatchee Wildlife Management Area	FWC
Water Management District	**Managing Agency**
Bird Lake Marsh	SJRWMD
Buck Lake Conservation Area	SJRWMD
Canaveral Marshes Conservation Area	SJRWMD
Clonts Conservation Easement	SJRWMD
Eagan Parcels	SJRWMD

Table 1: Conservation Lands Within 10 Miles of SLWMA

Farmton-Brevard Conservation Easement	SJRWMD
LeFevre Conservation Easement	SJRWMD
Orange County - Hal Scott Preserve Conservation Easement	SJRWMD
River Lakes Conservation Area	SJRWMD
Seminole Ranch Conservation Area	SJRWMD
South Region Mitigation Archipelago	SJRWMD
Wadsworth-Greenbaum Conservation Easement	SJRWMD
Wal-Mart Parcels	SJRWMD

County/City	**Managing Agency**
Chain of Lakes Park	Brevard County
Dicerandra Scrub Sanctuary	Brevard County
Enchanted Forest Sanctuary	Brevard County
Fox Lake Sanctuary	Brevard County
Indian Mound Station Sanctuary	Brevard County
Indian River Sanctuary	Brevard County
Kabboord Sanctuary	Brevard County
Kings Park	Brevard County
Laney/Barnes Conservation Easement	Brevard County
North Buck Lake Scrub Sanctuary	Brevard County
Pine Island Conservation Area	Brevard County
Scottsmoor Flatwoods Sanctuary	Brevard County
South Lake Conservation Area	Brevard County
Sykes Creek Headwaters - Tract A	Brevard County
Ulumay Wildlife Sanctuary	Brevard County
Savage/Christmas Creek Preserve	Orange County
Chuluota Wilderness Area	Seminole County
Cape Atlantic Estates Parcels	Volusia County
East Central Regional Rail Trail	Volusia County
Cocoa Conservation Area	City of Cocoa
Orlando Wetlands Park	City of Orlando

Private/Public Conservation Organization	**Managing Agency**
Colbert-Cameron Mitigation Bank	Mitigation Resources, LLC

Table 2: Florida Forever Projects Within 10 Miles of SLWMA

Project Name	**GIS Acres**
Brevard Coastal Scrub Ecosystem	21,656.79
Indian River Lagoon Blueway	28,060.13
Maytown Flatwoods	7,282.63

1.8 Adjacent Land Uses

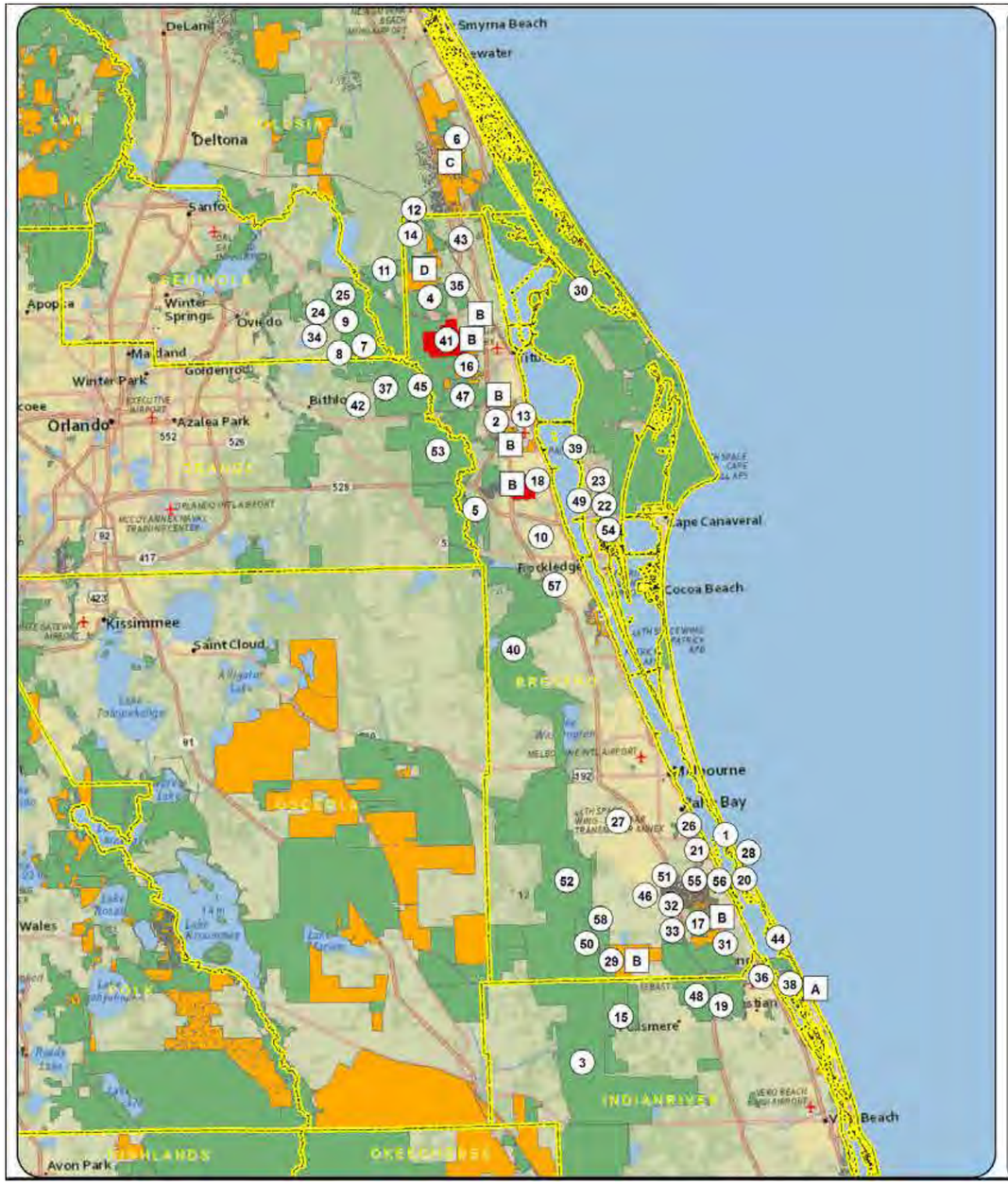
As previously discussed, the SLWMA is bordered on the south and west by other public and private conservation lands. SLWMA is about one mile west of Interstate 95, which separates the area from the City of Titusville. The land between the Interstate and the SLWMA is primarily developed with single-family residences and small-scale agricultural operations.

The U.S. Census Bureau estimated the population of Brevard County to be 550,823 in 2013. According to the Bureau of Economic and Business Research's medium-range population projections for the year 2025, Brevard County will have a population of 616,400. Population projections for the year 2025 for counties surrounding Brevard County are as follows: Indian River County – 66,600; Orange County – 1,525,100; Osceola County – 409,100; Seminole County – 488,100; Volusia County – 509,600.

The lands within the SLWMA are currently zoned GU, or General Use. According to the future land use map in Brevard County's comprehensive plan, the lands within the SLWMA and neighboring conservation areas will continue to be designated for conservation.

Most of the lands to the east and north of the SLWMA are zoned AU or RR. The AU zoning classification permits single family residences and small-scale agricultural activities that may include animal grazing and beekeeping, and the RR zoning classification is intended for rural, single-family residences. The future land use designations are similar to their current uses. Adjacent lands to the east and north of SLWMA are designated for small-scale agriculture and low-density residential uses. Some of the agricultural areas near the SLWMA are slated to be rezoned to residential areas, which may be a prelude to new commercial or industrial development in the vicinity.

The SLWMA and BCSEFFP Units are located in Central Florida where expansion and growth is occurring rapidly. With this growth comes the need for more housing and commercial developments and infrastructure expansion projects. The recent rezoning of some of the agricultural lands in the vicinity of SLWMA to residential, highlights the important role that the SLWMA and the BCSEFFP Units serve in protecting the watershed and water quality of the St. Johns River, Indian River Lagoon system and in conserving some of Florida's most unique natural lands and the imperiled and rare wildlife and plant species that rely on them.



Conservation Lands within 10 miles of SLWMA

Label	Area Name
1	Archie Carr National Wildlife Refuge
2	Bird Lake Marsh
3	Blue Cypress Conservation Area
4	Buck Lake Conservation Area
5	Canaveral Marshes Conservation Area
6	Cape Atlantic Estates Parcels
7	Charles H. Bronson State Forest
8	Chuluota Wilderness Area
9	Clonts Conservation Easement
10	Cocoa Conservation Area
11	Colbert-Cameron Mitigation Bank
12	East Central Regional Rail Trail
13	Enchanted Forest Sanctuary
14	Farmton-Brevard Conservation Easement
15	Fellsmere Water Management Area
16	Fox Lake Sanctuary
17	Grant Flatwoods Sanctuary
18	Grissom Parkway
19	Indian River County Public Shooting Range
20	Indian River Lagoon Preserve State Park
21	Jordan Scrub Sanctuary
22	Kabboord Sanctuary
23	Kings Park
24	LeFevre Conservation Easement
25	Little Big Econ State Forest
26	Malabar Scrub Sanctuary
27	Malabar Transmitter Annex
28	Maritime Hammock Sanctuary
29	Mary A Ranch Mitigation Bank
30	Merritt Island National Wildlife Refuge
31	Met Life and Wheeler Farms Parcels
32	Micco Expansion
33	Micco Scrub Sanctuary
34	Mills Creek Woodlands
35	North Buck Lake Scrub Sanctuary
36	North Sebastian Conservation Area
37	Orlando Wetlands Park
38	Pelican Island National Wildlife Refuge
39	Pine Island Conservation Area
40	River Lakes Conservation Area
41	Salt Lake Wildlife Management Area
42	Savage/Christmas Creek Preserve
43	Scottsmoor Flatwoods Sanctuary
44	Sebastian Inlet State Park
45	Seminole Ranch Conservation Area
46	South Babcock
47	St. Johns National Wildlife Refuge
48	St. Sebastian River Preserve State Park
49	Sykes Creek Headwaters - Tract A
50	T. M. Goodwin Waterfowl Management Area
51	Ten Mile Ridge
52	Three Forks Conservation Area
53	Tosohatchee Wildlife Management Area
54	Ulumay Wildlife Sanctuary
55	Valkaria Expansion
56	Valkaria Scrub Sanctuary
57	Wadsworth-Greenbaum Conservation Easement
58	Willowbrook Conservation Easement

Salt Lake Wildlife Management Area
Brevard County, Florida

Florida Forever Projects within 10 miles of SLWMA

Label	Project Name
A	Archie Carr Sea Turtle Refuge
B	Brevard Coastal Scrub Ecosystem
C	Indian River Lagoon Blueway
D	Maytown Flatwoods

Legend

- Salt Lake WMA and BCSEFFP FWC Parcels
- Conservation Lands
- Florida Forever Projects
- County

N W E S

0 5 10 20 Miles

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Figure 9: Nearby Conservation Lands and Florida Forever Projects

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1.9 Public Involvement

SLWMA Management Advisory Group

The FWC conducted a Management Advisory Group (MAG) meeting in Titusville, Florida on August 26, 2015, to obtain input from both public and private stakeholders regarding management of SLWMA. Results of this meeting were used by FWC to develop management goals and objectives and to identify opportunities and strategies for inclusion in this Management Plan. A summary of issues and opportunities raised by the MAG, as well as a listing of participants, is included as Appendix 13.2. Further, a public hearing, as required by Chapter 259.032(10), FS, was held in Viera, FL on October 22, 2015. The report of that hearing is also contained in Appendix 13.2. A website is also maintained for receipt of public input at http://myfwc.com/conservation/terrestrial/management-plans/develop-mps/ . Further testimony and input is received at a public hearing held by ARC when the SLWMA Management Plan is considered for approval. Input received from all public involvement efforts has been considered in the development of this Management Plan.

2 Natural and Historical Resources

2.1 Physiography

The SLWMA and BCSEFFP Grissom Parkway and Ten Mile Ridge units are located in Eastern Valley physiographic division of the Coastal Plain physiographic province. Stretching north to south along much of Florida's eastern coast, this division is approximately 293 miles long, and at SLWMA's location is approximately 10 miles wide. The Atlantic Coastal Ridge division lies to the east of SLWMA and Grissom Parkway unit. Most of the Micco Expansion unit is located in the Ten Mile Ridge physiographic division.

2.1.1 Climate

The climate of SLWMA is classified as subtropical. Annual mean high and low temperatures are 82 and 64 degrees Fahrenheit (F) respectively. July and August are typically the warmest months with a mean high temperature of 92 degrees F, while January is typically the coolest month with a mean high temperature of 71 degrees F. Mean annual rainfall is 53.2 inches.

2.1.2 Topography

The topography of 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 range between 10 feet and 25 feet above mean sea level (MSL), with small areas reaching up to approximately 70 feet above MSL near the western boundary. Lower elevations occur along the eastern boundary within the floodplain of the St. Johns River, while higher elevations occur in the interior regions and along the western boundaries.

2.1.3 Soils

The Brevard County soil survey prepared by the Natural Resources Conservation Service (NRCS) shows 21 series occurring on the SLWMA. Most are poorly-drained fine sands, medium sands, or sandy loams. The taxonomic and physical descriptions of the soil series found within the SLWMA are found in Appendix 13.3. Figures 10 through 12 depict the soil profile of the SLWMA and associated BCSEFFP units, while figures 13-15 show the soil depth to the water table.

2.1.4 Geologic Conditions

The geological condition of SLWMA is defined by two stratigraphic units that occur on the area. They include the Pliocene/Pleistocene and Holocene units.

Shelly sediments of Pliocene/Pleistocene age contain some of the most abundant and diverse fossil faunas in the world. Lithologically these sediments are complex, varying from unconsolidated, variably calcareous and fossiliferous quartz sands to well indurated, sandy, fossiliferous limestones (both marine and freshwater). Clayey sands and sandy clays are present. These sediments form part of the surficial aquifer system. The lithology consist of limestone, sand, clay or mud.

The Holocene sediments in Brevard County, Florida, occur near the present coastline at elevations generally less than 5 feet. The sediments include quartz sands, carbonate sands and muds, and organics. The lithology consist of beach sand, clay or mud, and biogenic sediment.

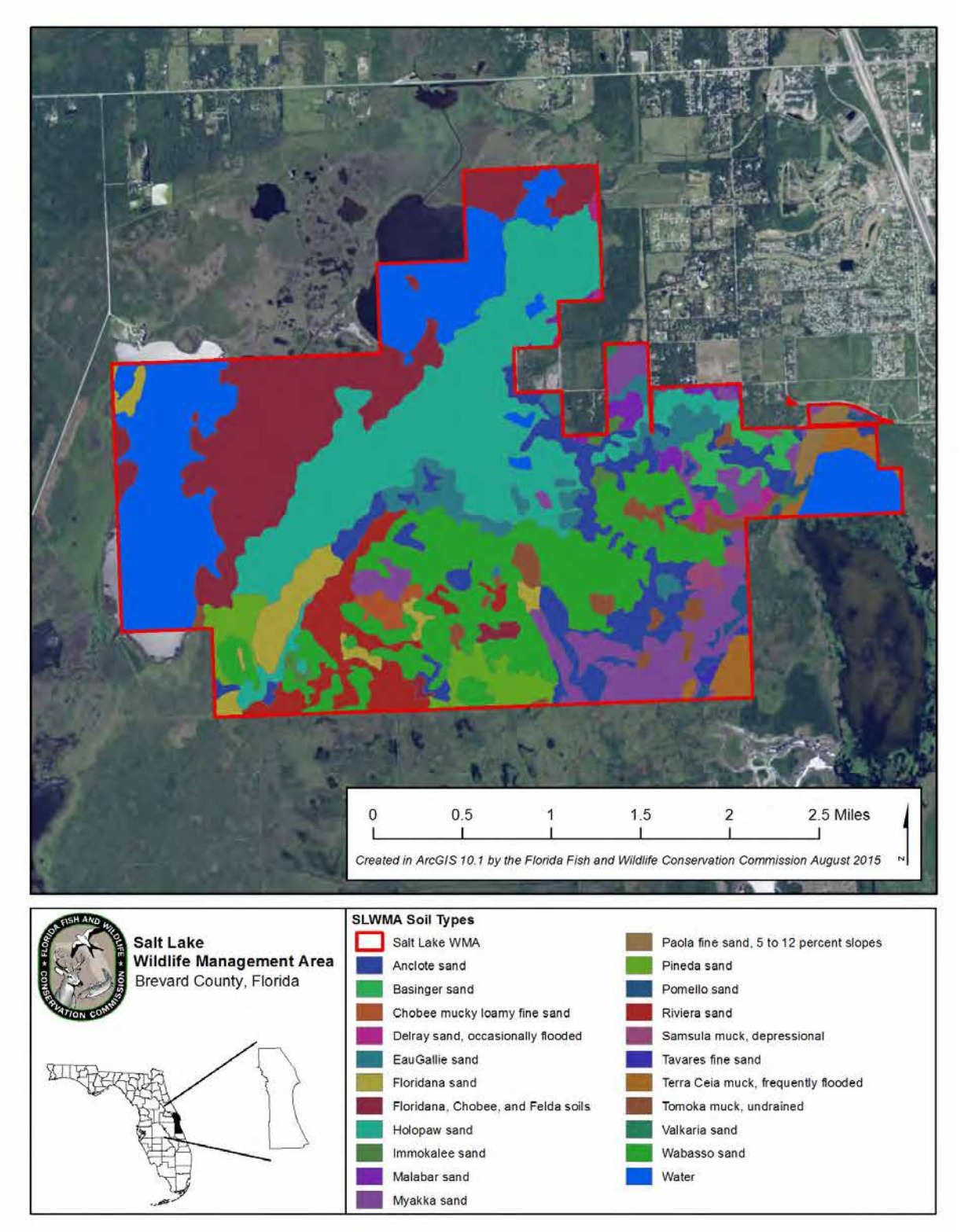


Figure 10: Soils of the SLWMA

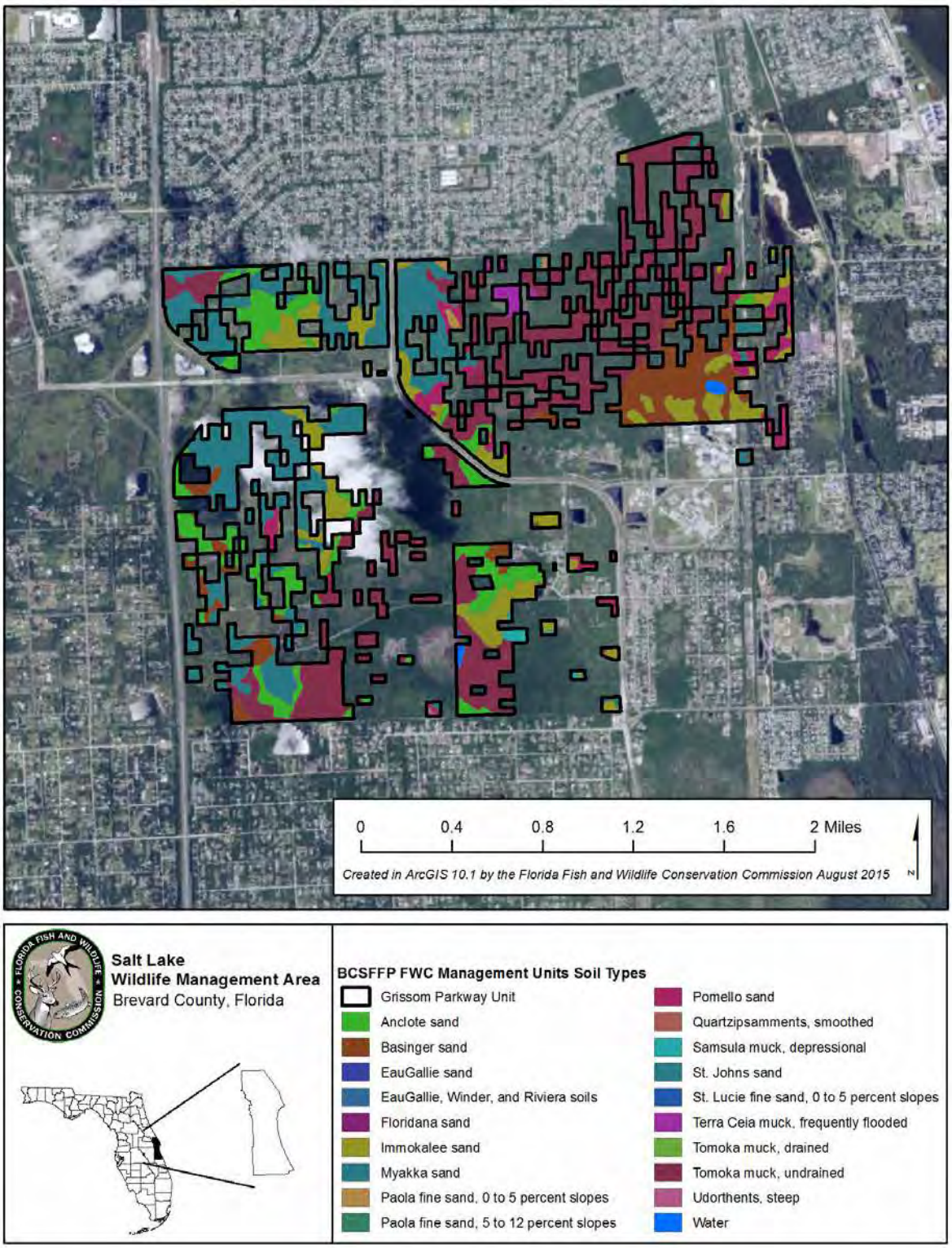


Figure 11: Soils of the Grissom Parkway Unit

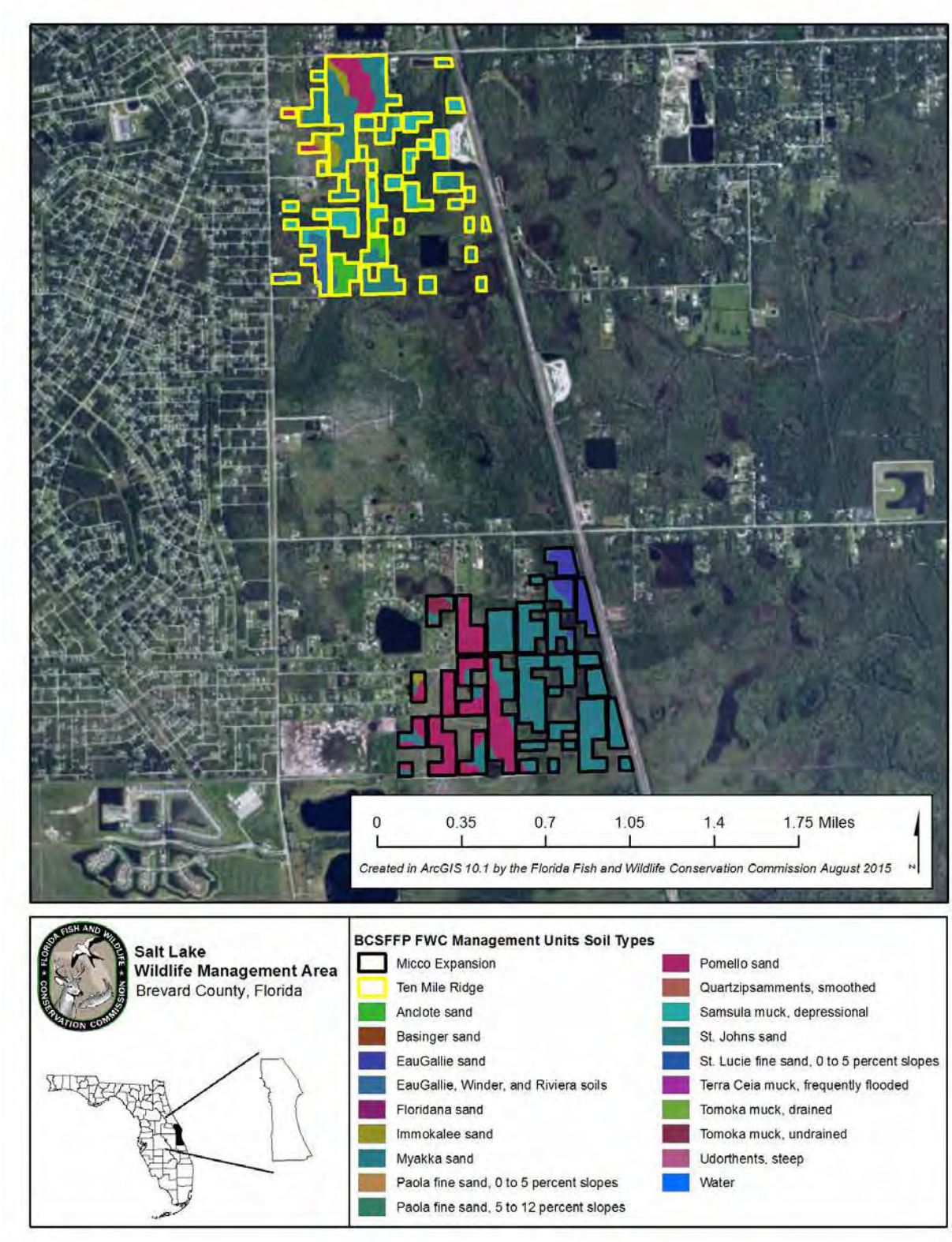


Figure 12: Soils of the Ten Mile Ridge and Micco Expansion Units

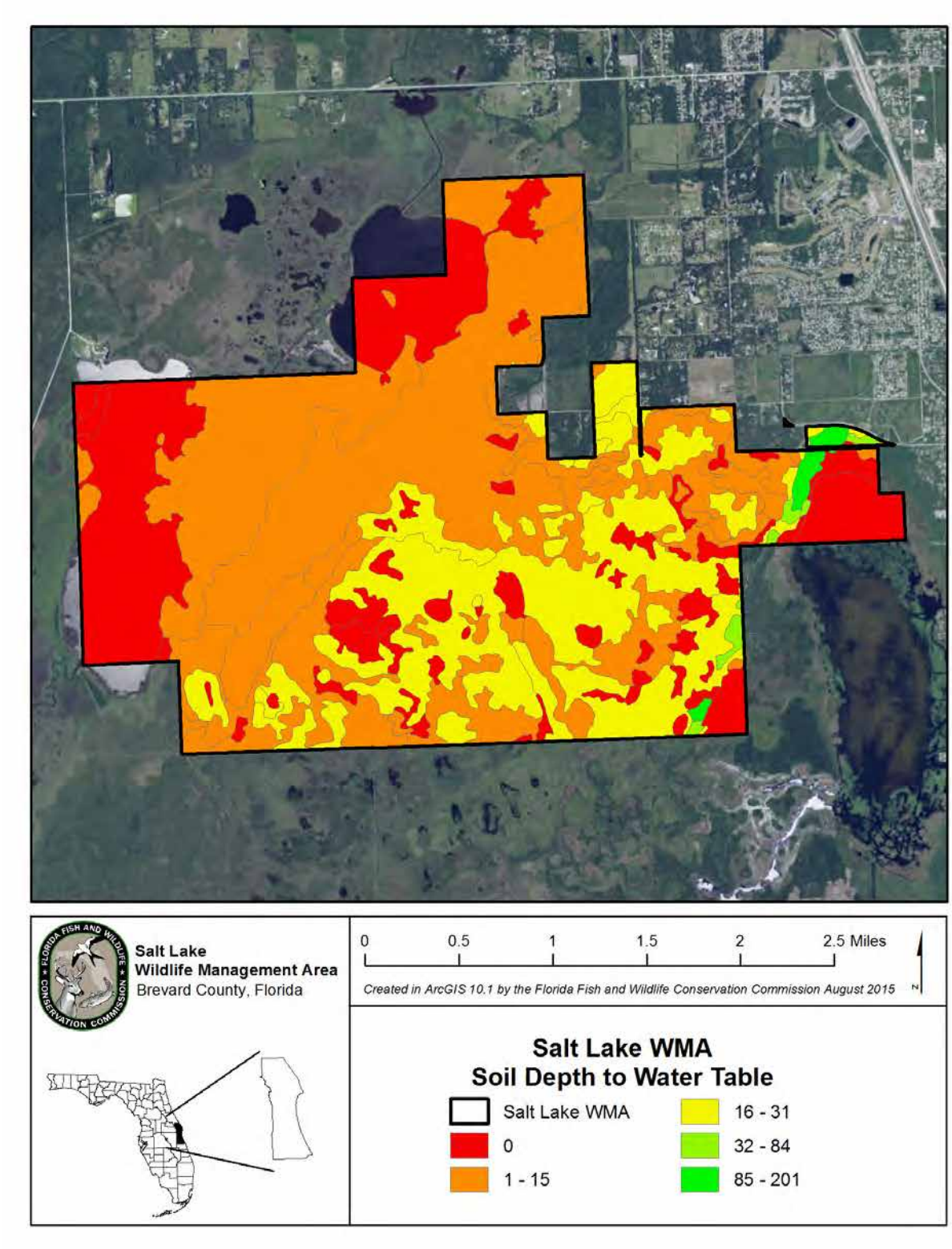


Figure 13: SLWMA Soil Depth to Water Table

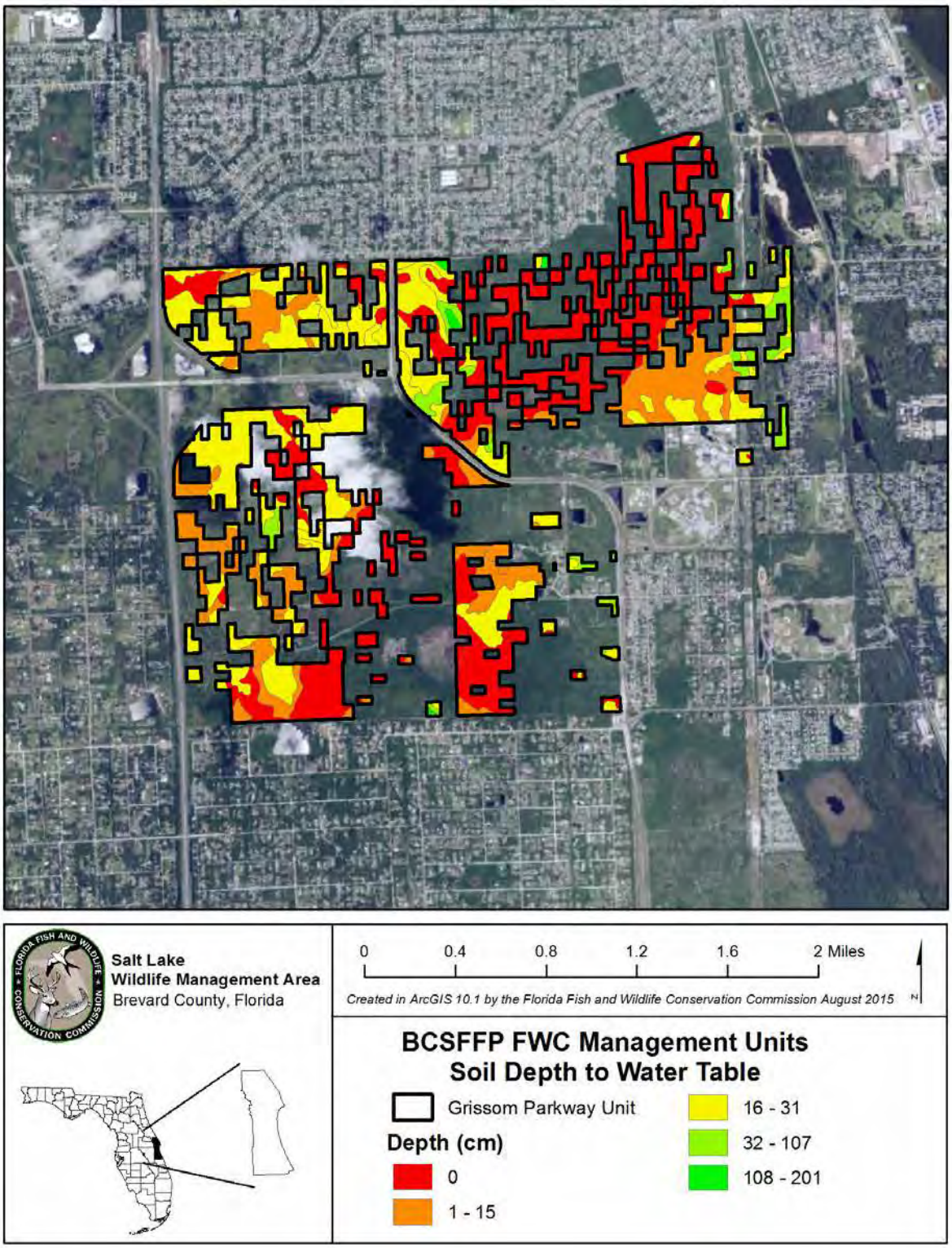


Figure 14: Grissom Parkway Soil Depth to Water Table

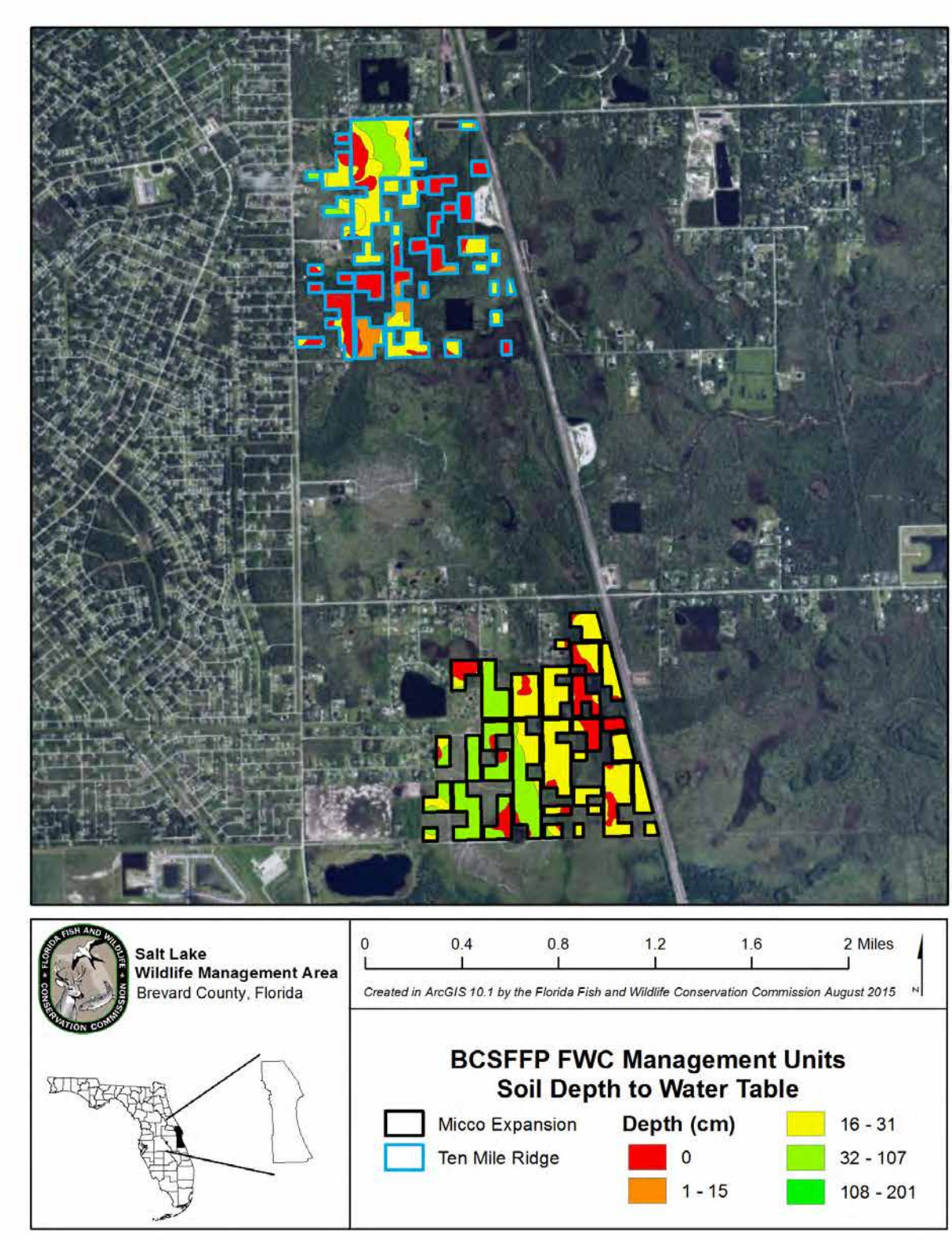


Figure 15: Ten Mile Ridge and Micco Expansion Soil Depth to Water Table

2.2 Vegetation

The SLWMA is situated between the St. Johns River and the Indian River Lagoon in a region that is characterized by upland scrub habitat along with extensive wetlands. The FWC has completed natural and anthropogenic community mapping of SLWMA through the work of the Florida Natural Areas Inventory (FNAI). Through this work, FNAI has identified and mapped a total of 12 natural plant communities, ten rare plants and 40 exotic invasive plants within the SLWMA.

Natural, rare and exotic invasive plant species known to occur on SLWMA are listed in Tables 3, 4, and 5, respectively. The plant communities located on SLWMA are listed in Table 6 and shown in Figure 16. These communities are described in Section 2.2.1.

A salt pan at SLWMA

The natural community maps, associated community descriptions and plant lists provided below have been developed for the lands within the established boundary of SLWMA for which FWC has lead management authority. Due to the current operational and resource management challenges presented by the complicated checkerboard boundaries associated with the Grissom Parkway Unit, Micco Expansion Unit, and Ten Mile Ridge Unit of the BCSEFFP, natural community mapping, associated community descriptions and plant species lists have not yet been completed for these additional units that are also covered by the SLWMA Management Plan. Upon establishment of cohesive management boundaries for these units, FWC will complete baseline natural community mapping, develop associated natural community descriptions and plant lists and incorporate them into the SLWMA Management Plan.

Table 3: Native Plants Found at SLWMA

Common Name	Scientific Name
Adam's needle	*Yucca filamentosa*
American beautyberry	*Callicarpa americana*
American bluehearts	*Buchnera americana*
American cupscale	*Sacciolepis striata*
American elm	*Ulmus americana*
American halfchaff sedge	*Lipocarpha maculata*

Table 3: Native Plants Found at SLWMA

Common Name	Scientific Name
American pokeweed	*Phytolacca americana*
American white waterlily	*Nymphaea odorata*
Angle pod	*Matelea gonocarpos*
Annual saltmarsh aster	*Symphyotrichum subulatum*
Atlantic St. John's wort	*Hypericum reductum*
Awned halfchaff sedge	*Lipocarpha aristulata*
Baldwin's eryngo	*Eryngium baldwinii*
Baldwin's flatsedge	*Cyperus croceus*
Baldwin's milkwort	*Polygala balduinii*
Baldwin's spikerush	*Eleocharis baldwinii*
Ballmoss	*Tillandsia recurvata*
Balsampear	*Momordica charantia*
Bandana-of-the-Everglades	*Canna flaccida*
Barnyardgrass	*Echinochloa crusgalli*
Bartram's air-plant	*Tillandsia bartramii*
Bartram's rosegentian	*Sabatia bartramii*
Bay lobelia	*Lobelia feayana*
Beaked panicum	*Panicum anceps*
Bermudagrass	*Cynodon dactylon*
Big carpetgrass	*Axonopus furcatus*
Bigflower pawpaw	*Asimina obovata*
Bighead rush	*Juncus megacephalus*
Blackroot	*Pterocaulon pycnostachyum*
Bladderpod	*Sesbania vesicaria*
Blue maidencane	*Amphicarpum muhlenbergianum*
Blue mistflower	*Conoclinium coelestinum*
Bog white violet	*Viola lanceolata*
Bottlebrush threeawn	*Aristida spiciformis*
Bracken fern	*Pteridium aquilinum*
Branched hedgehyssop	*Gratiola ramosa*
Bristly greenbrier	*Smilax tamnoides*
Broadleaf cattail	*Typha latifolia*
Broomsedge bluestem	*Andropogon virginicus*
Bulltongue arrowhead	*Sagittaria lancifolia*
Bunched beaksedge	*Rhynchospora microcephala*
Bushy bluestem	*Andropogon glomeratus*
Butterweed	*Packera glabella*
Button rattlesnakemaster	*Eryngium yuccifolium*
Cabbage palm	*Sabal palmetto*
Calloose grape	*Vitis shuttleworthii*
Canadian germander	*Teucrium canadense*

Table 3: Native Plants Found at SLWMA

Common Name	Scientific Name
Canadian horseweed	*Conyza canadensis*
Canadian toadflax	*Linaria canadensis*
Capillary hairsedge	*Bulbostylis ciliatifolia*
Carolina ash	*Fraxinus caroliniana*
Carolina cranesbill	*Geranium carolinianum*
Carolina laurelcherry	*Prunus caroliniana*
Carolina redroot	*Lachnanthes caroliana*
Carolina wild petunia	*Ruellia caroliniensis*
Celestial lily	*Nemastylis floridana*
Chapman's goldenrod	*Solidago odora* var. *chapmanii*
Chapman's oak	*Quercus chapmanii*
Christmasberry	*Lycium carolinianum*
Cinnamon fern	*Osmunda cinnamomea*
Climbing aster	*Symphyotrichum carolinianum*
Climbing hempvine	*Mikania scandens*
Clustered bushmint	*Hyptis alata*
Clustered mille graines	*Oldenlandia uniflora*
Coastal lovegrass	*Eragrostis virginica*
Coastalplain chaffhead	*Carphephorus corymbosus*
Coastalplain hawkweed	*Hieracium megacephalon*
Coastalplain milkwort	*Polygala setacea*
Coastalplain staggerbush	*Lyonia fruticosa*
Coastalplain willow	*Salix caroliniana*
Coastalplain yelloweyed-grass	*Xyris ambigua*
Colombian waxweed	*Cuphea carthagenensis*
Combleaf mermaidweed	*Proserpinaca pectinata*
Common arrowhead	*Sagittaria latifolia*
Common blue violet	*Viola sororia*
Common buttonbush	*Cephalanthus occidentalis*
Common carpetgrass	*Axonopus fissifolius*
Common chickweed	*Stellaria media*
Common ragweed	*Ambrosia artemisiifolia*
Common wild-pine	*Tillandsia fasciculata*
Common yellow woodsorrel	*Oxalis corniculata*
Coontie	*Zamia pumila*
Coralbean	*Erythrina herbacea*
Corkystem passion-flower	*Passiflora suberosa*
Creeping cucumber	*Melothria pendula*
Creeping primrosewillow	*Ludwigia repens*
Crowpoison	*Stenanthium densum*
Cuban jute	*Sida rhombifolia*

Table 3: Native Plants Found at SLWMA

Common Name	Scientific Name
Cypress witchgrass	*Dichanthelium ensifolium*
Dahoon	*Ilex cassine*
Danglepod	*Sesbania herbacea*
Darrow's blueberry	*Vaccinium darrowii*
Deerberry	*Vaccinium stamineum*
Diamond-leaved oak	*Quercus laurifolia*
Dogfennel	*Eupatorium capillifolium*
Dogtongue wild buckwheat	*Eriogonum tomentosum*
Dotted duckweed	*Landoltia punctata*
Dotted smartweed	*Polygonum punctatum*
Downy milkpea	*Galactia volubilis*
Durban crowfootgrass	*Dactyloctenium aegyptium*
Dwarf huckleberry	*Gaylussacia dumosa*
Dwarf live oak	*Quercus minima*
Dwarf palmetto	*Sabal minor*
Dwarf St. John's wort	*Hypericum mutilum*
Earleaf greenbrier	*Smilax auriculata*
Early paspalum	*Paspalum praecox*
Early whitetop fleabane	*Erigeron vernus*
Eastern poison ivy	*Toxicodendron radicans*
Eastern purple bladderwort	*Utricularia purpurea*
Elderberry	*Sambucus nigra* subsp. *canadensis*
Elliott's milkpea	*Galactia elliottii*
Epiphytic flatsedge	*Cyperus lanceolatus*
Fall panicgrass	*Panicum dichotomiflorum*
False daisy	*Eclipta prostrata*
False garlic	*Nothoscordum bivalve*
False indigobush	*Amorpha fruticosa*
Falsefennel	*Eupatorium leptophyllum*
Fascicled beaksedge	*Rhynchospora fascicularis*
Fernald's beaksedge	*Rhynchospora fernaldii*
Fernleaf yellow false foxglove	*Aureolaria pedicularia* var. *pectinata*
Fetterbush	*Lyonia lucida*
Fewflower milkweed	*Asclepias lanceolata*
Fireweed	*Erechtites hieraciifolius*
Flattened pipewort	*Eriocaulon compressum*
Flattop goldenrod	*Euthamia graminifolia* var. *hirtipes*
Flaxleaf false foxglove	*Agalinis linifolia*
Floating marshpennywort	*Hydrocotyle ranunculoides*
Florida bellflower	*Campanula floridana*
Florida bully	*Sideroxylon reclinatum*

Table 3: Native Plants Found at SLWMA

Common Name	Scientific Name
Florida Keys hempvine	*Mikania cordifolia*
Florida needlegrass	*Piptochaetium avenacioides*
Florida pellitory	*Parietaria floridana*
Florida reimargrass	*Reimarochloa oligostachya*
Florida sunflower	*Helianthus floridanus*
Florida tasselflower	*Emilia fosbergii*
Florida tickseed	*Coreopsis floridana*
Forked fimbry	*Fimbristylis dichotoma*
Fourangle flatsedge	*Cyperus tetragonus*
Fourleaf vetch	*Vicia acutifolia*
Fourpetal St. John's wort	*Hypericum tetrapetalum*
Fragrant flatsedge	*Cyperus odoratus*
Fringed meadowbeauty	*Rhexia petiolata*
Fringed nutrush	*Scleria ciliata*
Fringed yellow stargrass	*Hypoxis juncea*
Fringed yelloweyed-grass	*Xyris fimbriata*
Gallberry	*Ilex glabra*
Giant air-plant	*Tillandsia utriculata*
Giant bristlegrass	*Setaria magna*
Giant bulrush	*Scirpus californicus*
Giant ironweed	*Vernonia gigantea*
Giant leather fern	*Acrostichum danaeifolium*
Glade lobelia	*Lobelia glandulosa*
Golden polypody	*Phlebodium aureum*
Gopher apple	*Licania michauxii*
Graceful sandmat	*Chamaesyce hypericifolia*
Grassleaf roseling	*Callisia graminea*
Grassleaf rush	*Juncus marginatus*
Grassy arrowhead	*Sagittaria graminea*
Graybark grape	*Vitis cinerea*
Greenvein ladies'-tresses	*Spiranthes praecox*
Groundsel tree	*Baccharis halimifolia*
Guava	*Psidium guajava*
Guineagrass	*Panicum maximum*
Gulf Coast spikerush	*Eleocharis cellulosa*
Hackberry	*Celtis laevigata*
Hairawn muhly	*Muhlenbergia capillaris*
Hairy bedstraw	*Galium pilosum*
Hairy chaffhead	*Carphephorus paniculatus*
Hairypod cowpea	*Vigna luteola*
Hedge false bindweed	*Calystegia sepium* subsp. *limnophila*

Table 3: Native Plants Found at SLWMA

Common Name	Scientific Name
Helmet skullcap	*Scutellaria integrifolia*
Herb-of-grace	*Bacopa monnieri*
Hercules' club	*Zanthoxylum clava-herculis*
Highbush blueberry	*Vaccinium corymbosum*
Hog plum	*Ximenia americana*
Humped bladderwort	*Utricularia gibba*
Indian cupscale	*Sacciolepis indica*
Indianpipe	*Monotropa uniflora*
Jack-in-the-pulpit	*Arisaema triphyllum*
Japanese clover	*Kummerowia striata*
Lady lupine	*Lupinus villosus*
Lanceleaf greenbrier	*Smilax smallii*
Lanceleaf rattlebox	*Crotalaria lanceolata*
Large gallberry	*Ilex coriacea*
Largeflower rosegentian	*Sabatia grandiflora*
Laurel greenbrier	*Smilax laurifolia*
Leafless swallowwort	*Cynanchum scoparium*
Leafy bladderwort	*Utricularia foliosa*
Lemon bacopa	*Bacopa caroliniana*
Licoriceweed	*Scoparia dulcis*
Little bluestem	*Schizachyrium scoparium*
Live oak	*Quercus virginiana*
Loblolly bay	*Gordonia lasianthus*
Longhorn false rein orchid	*Habenaria quinqueseta*
Longleaf pine	*Pinus palustris*
Longleaf woodoats	*Chasmanthium laxum* var. *sessiliflorum*
Lyreleaf sage	*Salvia lyrata*
Maidencane	*Panicum hemitomon*
Malaysian false pimpernel	*Lindernia crustacea*
Manyhead rush	*Juncus polycephalos*
Manyspike flatssedge	*Cyperus polystachyos*
Marlberry	*Ardisia escallonioides*
Marsh fimbry	*Fimbristylis spadicea*
Marsh mermaidweed	*Proserpinaca palustris*
Marsh seedbox	*Ludwigia palustris*
Mexican primrosewillow	*Ludwigia octovalvis*
Mexican tea	*Chenopodium ambrosioides*
Michaux's cupgrass	*Eriochloa michauxii*
Millet beaksedge	*Rhynchospora miliacea*
Mock bishopsweed	*Ptilimnium capillaceum*
Mohr's thoroughwort	*Eupatorium mohrii*

Table 3: Native Plants Found at SLWMA

Common Name	Scientific Name
Moistbank pimpernel	*Lindernia dubia*
Muscadine	*Vitis rotundifolia*
Myrsine	*Rapanea punctata*
Myrtle oak	*Quercus myrtifolia*
Myrtleleaf St. John's wort	*Hypericum myrtifolium*
Nakedstem dewflower	*Murdannia nudiflora*
Narrowfruit horned beaksedge	*Rhynchospora inundata*
Narrowleaf blue-eyed grass	*Sisyrinchium angustifolium*
Narrowleaf primrosewillow	*Ludwigia linearis*
Narrowleaf silkgrass	*Pityopsis graminifolia*
Needle rush	*Juncus roemerianus*
Needlepod rush	*Juncus scirpoides*
Netted nutrush	*Scleria reticularis*
Netted pawpaw	*Asimina reticulata*
Nuttall's meadowbeauty	*Rhexia nuttallii*
Nuttall's thistle	*Cirsium nuttallii*
Oakleaf fleabane	*Erigeron quercifolius*
Ohio spiderwort	*Tradescantia ohiensis*
Oriental false hawksbeard	*Youngia japonica*
Pale meadowbeauty	*Rhexia mariana*
Panicled tick-trefoil	*Desmodium paniculatum*
Papaya	*Carica papaya*
Peppervine	*Ampelopsis arborea*
Perennial glasswort	*Sarcocornia perennis*
Pickerelweed	*Pontederia cordata*
Piedmont marshelder	*Iva microcephala*
Piedmont pinweed	*Lechea torreyi*
Pignut hickory	*Carya glabra*
Pine lily	*Lilium catesbaei*
Pinebarren flatsedge	*Cyperus retrorsus*
Pinebarren frostweed	*Helianthemum corymbosum*
Pinebarren goldenrod	*Solidago fistulosa*
Pineland pimpernel	*Samolus valerandi* subsp. *parviflorus*
Pineland rayless goldenrod	*Bigelowia nudata*
Pink sundew	*Drosera capillaris*
Pitted stripeseed	*Piriqueta cistoides subsp. caroliniana*
Plumed beaksedge	*Rhynchospora plumosa*
Privet wild sensitive plant	*Senna ligustrina*
Procession flower	*Polygala incarnata*
Purple lovegrass	*Eragrostis spectabilis*
Purple passion-flower	*Passiflora incarnata*

Table 3: Native Plants Found at SLWMA

Common Name	Scientific Name
Purple thistle	*Cirsium horridulum*
Rabbitbells	*Crotalaria rotundifolia*
Rattan vine	*Berchemia scandens*
Red bay	*Persea borbonia*
Red cedar	*Juniperus virginiana*
Red chokeberry	*Photinia pyrifolia*
Red maple	*Acer rubrum*
Red mulberry	*Morus rubra*
Redroot flatsedge	*Cyperus erythrorhizos*
Redtop panicum	*Panicum rigidulum*
Resurrection fern	*Pleopeltis polypodioides* var. *michauxiana*
Rose rush	*Lygodesmia aphylla*
Rosy camphorweed	*Pluchea rosea*
Rougeplant	*Rivina humilis*
Rough hedgehyssop	*Gratiola hispida*
Roundleaf thoroughwort	*Eupatorium rotundifolium*
Roundpod St. John's wort	*Hypericum cistifolium*
Royal fern	*Osmunda regalis* var. *spectabilis*
Running oak	*Quercus elliottii*
Rustweed	*Polypremum procumbens*
Rusty staggerbush	*Lyonia ferruginea*
Saltmarsh false foxglove	*Agalinis maritima*
Saltmarsh morning glory	*Ipomoea sagittata*
Saltmarsh umbrellasedge	*Fuirena breviseta*
Saltwater falsewillow	*Baccharis angustifolia*
Saltwort	*Batis maritima*
Sand cordgrass	*Spartina bakeri*
Sand holly	*Ilex ambigua*
Sand live oak	*Quercus geminata*
Sand pine	*Pinus clausa*
Sandyfield beaksedge	*Rhynchospora megalocarpa*
Sandyfield hairsedge	*Bulbostylis stenophylla*
Savannah milkweed	*Asclepias pedicellata*
Savannah yelloweyed-grass	*Xyris flabelliformis*
Saw greenbrier	*Smilax bona-nox*
Saw palmetto	*Serenoa repens*
Sawgrass	*Cladium jamaicense*
Sawtooth blackberry	*Rubus argutus*
Scrub hickory	*Carya floridana*
Scrub wild olive	*Osmanthus megacarpus*
Seashore dropseed	*Sporobolus virginicus*

Table 3: Native Plants Found at SLWMA

Common Name	Scientific Name
Seashore paspalum	*Paspalum vaginatum*
Seaside primrosewillow	*Ludwigia maritima*
Semaphore thoroughwort	*Eupatorium mikanioides*
Sensitive pea	*Chamaecrista nictitans*
Septicweed	*Senna occidentalis*
Shaggy hedgehyssop	*Gratiola pilosa*
Shiny blueberry	*Vaccinium myrsinites*
Shoestring fern	*Vittaria lineata*
Shoreline seapurslane	*Sesuvium portulacastrum*
Shortbristle horned beaksedge	*Rhynchospora corniculata*
Shortleaf gayfeather	*Liatris tenuifolia* var. *quadriflora*
Shortleaf rosegentian	*Sabatia brevifolia*
Shortleaf wild coffee	*Psychotria sulzneri*
Shortspike bluestem	*Andropogon brachystachyus*
Silk bay	*Persea borbonia* var. *humilis*
Silverling	*Baccharis glomeruliflora*
Simpson's stopper	*Myrcianthes fragrans*
Slash pine	*Pinus elliottii*
Slender fimbry	*Fimbristylis autumnalis*
Slender flattop goldenrod	*Euthamia caroliniana*
Slender gayfeather	*Liatris gracilis*
Slender threeseed mercury	*Acalypha gracilens*
Slim spikerush	*Eleocharis elongata*
Slimleaf pawpaw	*Asimina angustifolia*
Small butterwort	*Pinguicula pumila*
Smallflower mock buckthorn	*Sageretia minutiflora*
Smallflower pawpaw	*Asimina parviflora*
Smallfruit beggarticks	*Bidens mitis*
Small-leaf viburnum	*Viburnum obovatum*
Snow squarestem	*Melanthera nivea*
Snowy orchid	*Habenaria nivea*
Soda apple	*Solanum capsicoides*
Soft rush	*Juncus effusus* subsp. *solutus*
Sour paspalum	*Paspalum conjugatum*
Southeastern sunflower	*Helianthus agrestis*
Southern amaranth	*Amaranthus australis*
Southern beaksedge	*Rhynchospora microcarpa*
Southern beeblossom	*Gaura angustifolia*
Southern crabgrass	*Digitaria ciliaris*
Southern dewberry	*Rubus trivialis*
Southern magnolia	*Magnolia grandiflora*

Table 3: Native Plants Found at SLWMA

Common Name	Scientific Name
Southern needleleaf	*Tillandsia setacea*
Southern shield fern	*Thelypteris kunthii*
Southern umbrellasedge	*Fuirena scirpoidea*
Southern waternymph	*Najas guadalupensis*
Spadeleaf	*Centella asiatica*
Spanish bayonet	*Yucca aloifolia*
Spanish moss	*Tillandsia usneoides*
Splitbeard bluestem	*Andropogon ternarius*
Spotted water hemlock	*Cicuta maculata*
Spring ladies'-tresses	*Spiranthes vernalis*
St. Andrew's cross	*Hypericum hypericoides*
Starrush whitetop	*Rhynchospora colorata*
Sticky hedgehyssop	*Gratiola brevifolia*
Stinking camphorweed	*Pluchea foetida*
String lily	*Crinum americanum*
Sugarcane plumegrass	*Saccharum giganteum*
Swamp bay	*Persea palustris*
Swamp dogwood	*Cornus foemina*
Swamp rosemallow	*Hibiscus grandiflorus*
Swamp smartweed	*Polygonum hydropiperoides*
Swamp tupelo	*Nyssa sylvatica* var. *biflora*
Sweet everlasting	*Pseudognaphalium obtusifolium*
Sweet goldenrod	*Solidago odora*
Sweetbay	*Magnolia virginiana*
Sweetscent	*Pluchea odorata*
Switchgrass	*Panicum virgatum*
Tall elephantsfoot	*Elephantopus elatus*
Tall jointweed	*Polygonella gracilis*
Tall pinebarren milkwort	*Polygala cymosa*
Taperleaf waterhorehound	*Lycopus rubellus*
Tarflower	*Bejaria racemosa*
Tenangle pipewort	*Eriocaulon decangulare*
Thalia lovegrass	*Eragrostis atrovirens*
Thin paspalum	*Paspalum setaceum*
Threadleaf beaksedge	*Rhynchospora filifolia*
Toothed midsorus fern	*Blechnum serrulatum*
Toothpetal false rein orchid	*Habenaria floribunda*
Tough bully	*Sideroxylon tenax*
Tracy's beaksedge	*Rhynchospora tracyi*
Tropical Mexican clover	*Richardia brasiliensis*
Turkey tangle frogfruit	*Phyla nodiflora*

Table 3: Native Plants Found at SLWMA

Common Name	Scientific Name
Vanillaleaf	*Carphephorus odoratissimus*
Variable witchgrass	*Dichanthelium commutatum*
Virginia buttonweed	*Diodia virginiana*
Virginia chain fern	*Woodwardia virginica*
Virginia creeper	*Parthenocissus quinquefolia*
Virginia plantain	*Plantago virginica*
Virginia saltmarsh mallow	*Kosteletzkya virginica*
Wand goldenrod	*Solidago stricta*
Warty panicgrass	*Panicum verrucosum*
Water cowbane	*Oxypolis filiformis*
Water hickory	*Carya aquatica*
Watersprite	*Ceratopteris thalictroides*
Wax myrtle	*Myrica cerifera*
West Indian chickweed	*Drymaria cordata*
Whip nutrush	*Scleria triglomerata*
Whisk fern	*Psilotum nudum*
White crownbeard	*Verbesina virginica*
White screwstem	*Bartonia verna*
Whitemouth dayflower	*Commelina erecta*
Pinebarren aster	*Oclemena reticulata*
Dixie aster	*Sericocarpus tortifolius*
Whorled marshpennywort	*Hydrocotyle verticillata*
Wild coffee	*Psychotria nervosa*
Wild olive	*Osmanthus americanus*
Winged loosestrife	*Lythrum alatum*
Winged sumac	*Rhus copallinum*
Wiregrass	*Aristida stricta* var. *beyrichiana*
Woodsgrass	*Oplismenus hirtellus*
Wrinkled jointgrass	*Coelorachis rugosa*
Yaupon	*Ilex vomitoria*
Yellow colic-root	*Aletris lutea*
Yellow hatpins	*Syngonanthus flavidulus*
Yellow jessamine	*Gelsemium sempervirens*
Yellow milkwort	*Polygala rugelii*
Yellow nutgrass	*Cyperus esculentus*
Yellow passion-flower	*Passiflora lutea*
Yellow pondlily	*Nuphar advena*
Yellow spikerush	*Eleocharis flavescens*
Zarzabacoa comun	*Desmodium incanum*
Zigzag bladderwort	*Utricularia subulata*

Table 4: Rare Plant Species Observed on the SLWMA

Common Name	Scientific Name	Status
Angle pod	*Matelea gonocarpos*	ST
Blueflower butterwort	*Pinguicula caerulea*	ST
Celestial lily	*Nemastylis floridana*	SE
Common wild-pine	*Tillandsia fasculata*	SE
Giant air-plant	*Tillandsia utriculata*	SE
Ladies' tresses	*Spiranthes laciniata*	ST
Many-flowered grass-pink	*Calopogon multiflorus*	SE
Pine lily	*Lilium catesbaei*	ST
Snowy orchid	*Platanthera nivea*	ST
Yellowflower butterwort	*Pinguicula lutea*	ST

Acronym	Status
FE	Federal Endangered
SE	State Endangered
ST	State Threatened

Table 5: Exotic and Invasive Plant Species Observed on the SLWMA

Common Name	Scientific Name	FLEPPC Category
Air potato	*Dioscorea bulbifera*	I
Alligatorweed	*Alternanthera philoxeroides*	II
Arrowhead vine	*Syngonium podophyllum*	I
Brazilian pepper	*Schinus terebinthifolius*	I
Caesarweed	*Urena lobata*	I
Camphor tree	*Cinnamomum camphora*	I
Chinaberry	*Melia azedarach*	II
Chinese tallow	*Triadica sebifera*	I
Chinese wisteria	*Wisteria sinensis*	II
Citrus tree	*Citrus sp.*	
Cogongrass	*Imperata cylindrica*	I
Common reed	*Phragmites australis*	
Cuban bulrush	*Oxycoryum cubense*	
Earpod tree	*Enterolobium contortisiliquum*	
Guava	*Pisidium guajava*	I
Guinea grass	*Panicum maximum*	II
Japanese honeysuckle	*Lonicera japonica*	I
Kalanchoe	*Kalanchoe blossfeldiana*	
Lantana	*Lantana camara*	I
Melaleuca	*Melaleuca quinquenervia*	I
Mimosa	*Albizia julibrissin*	I

Table 5: Exotic and Invasive Plant Species Observed on the SLWMA

Common Name	Scientific Name	FLEPPC Category
Natal grass	*Melinis repens*	
Old World climbing fern	*Lygodium microphyllum*	I
Para grass	*Urochloa mutica*	I
Parrotfeather	*Myriophyllum aquaticum*	
Philodendron	*Philodendron cordatum*	
Primrose willow	*Ludwigia peruviana*	I
Queen palm	*Syagrus romanzoffiana*	II
Smutgrass	*Sporobolus indicus*	
Strawberry guava	*Psidium cattleianum*	I
Surinam cherry	*Eugenia uniflora*	I
Sword fern	*Nephrolepis cordifolia*	I
Torpedograss	*Panicum repens*	I
Tropical bushmint	*Hyptis mutabilis*	
Tropical soda apple	*Solanum viarum*	I
Vaseygrass	*Paspalum urvillei*	
Water-hyacinth	*Eichhornia crassipes*	I
Watersprite	*Ceratopteris thalictroides*	
Wax begonias	*Semperflorens begonias*	
Wedelia	*Sphagneticola trilobata*	II

Table 6: FNAI Mapped Natural Community Types on the SLWMA

Community Type	GIS Acres	Percentage
Basin Marsh	2045.30	40.57%
Basin Swamp	22.69	0.45%
Baygall	17.79	0.35%
Depression Marsh	356.84	7.08%
Hydric Hammock	49.43	0.98%
Marsh Lake	791.01	15.69%
Mesic Flatwoods	803.01	15.93%
Mesic Hammock	245.23	4.86%
Scrub	44.27	0.88%
Scrubby Flatwoods	53.63	1.06%
Wet Flatwoods	567.55	11.26%
Xeric Hammock	2.47	0.05%
Anthropogenic Communities	42.09	0.84%

2.2.1 FNAI Natural Community Descriptions

2.2.1.1 Basin Marsh (2,045 acres)

Basin marsh is a wetland herbaceous community occupying large, irregularly shaped depressions within mesic flatwoods, wet flatwoods or hydric hammocks. Basin marshes are regularly inundated freshwater herbaceous wetlands that may occur in a variety of situations, but in contrast to depression marshes, are not small or shallow inclusions within a fire-maintained natural community. Plant species composition is heterogeneous, both within and between marshes, but can generally be divided into submersed, floating-leaved, emergent, and grassy zones from deepest to shallowest portions; shrub patches may be present within any of these zones.

At SLWMA, extensive basin marshes are located around the periphery of Salt Lake, Loughman Lake, and South Lake. These marshes are dominated by sand cordgrass 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, needle rush, shoreline seapurslane, perennial glasswort, and saltwort. In some deeper areas especially around South Lake, coastalplain willow forms a dominant cover, and deeper basins of water support bulltongue arrowhead and giant bulrush. Ditching that occurred in the area has caused lower water levels of the lakes, which in turn increased the invasion of these large marshes with hammock species, specifically cabbage palm and wax myrtle. The salt marsh shrub Christmasberry is also occasional. These areas were delineated on the current map as basin marsh with included hydric hammock to denote the open cover of cabbage palms and shrubs that seems to indicate an early succession to hammock. The basin marsh community also contains a few small islands that would be classified as prairie hammocks or flatwoods communities.

Elsewhere on the SLWMA, basin marshes are smaller irregular depressions in either mesic or wet flatwoods, often with small mesic hammocks occurring on the edge. As with the large marshes, these are almost always dominated with sand cordgrass. Sawgrass and needle rush are also common dominants with other common herbs being golden leather fern, toothed midsorus fern, flattened pipewort, tenangle pipewort, creeping primrosewillow, pickerelweed, combleaf mermaidweed, bulltongue arrowhead, Virginia chain fern, and herb-of-grace. A few trees and shrubs may occasionally be found growing in the marsh, especially around the edges. Trees are generally stunted towards the center of the marsh and species include red maple, slash pine, and cabbage palm. Wax myrtle, saltwater falsewillow, groundsel tree, and coastalplain willow are commonly found in the sparse shrub layer.

2.2.1.2 Basin Swamps (23 acres)

Basin swamp is a forested wetland community that occurs in large irregularly-shaped depressions within hydric hammocks, mesic flatwoods, and wet flatwoods, vegetated with hydrophytic trees and shrubs that can withstand an extended hydroperiod. Basin swamps are highly variable in size, shape, and species composition. Mixed species tree canopies are common, often including both evergreen and deciduous tree species. This natural community typically occurs in any type of large landscape depression such as old lake beds, river basins, and ancient coastal swales and lagoons that existed during higher sea levels.

There are four small basin swamps mapped at SLWMA. These generally had a canopy of swamp tupelo and red maple with common buttonbush, fetterbush, wax myrtle, cabbage palm, dahoon, and swamp bay 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, pickerelweed, shortbristle horned beaksedge, and Virginia chain fern. Some Spanish moss may occasionally be found epiphytic on trees, and laurel greenbrier is a common vine.

2.2.1.3 Baygall (18 acres)

Baygall is characterized as dense stands of evergreen trees and shrubs in depressions or seepage areas where groundwater is at or near the surface for long periods of time. Although most baygalls are small in acreage, some form large, mature forests. Soils are generally composed of peat, with seepage from uplands, rainfall, and capillary action from adjacent wetlands maintaining a saturated substrate. Baygall typically develops at the bases of slopes, edges of floodplains, in depressions, and in stagnant drainages. Generally influenced by flowing water, baygall is often drained by small blackwater streams.

At SLWMA, baygalls are small and may develop adjacent to basin marshes or swamps. Generally, the canopy is dominated by loblolly bay and sweetbay, with an understory of dahoon, large gallberry, fetterbush, wax myrtle, and swamp bay. Herbs are sparse and may include toothed midsorus fern, longhorn false reinorchid, and Virginia chain fern. Laurel greenbrier is a common vine.

2.2.1.4 Depression Marsh and Marsh Lake (1148 acres)

Depression marsh is a wetland herbaceous community similar to basin marsh, but occupying smaller, typically circular or elliptic depressions in mesic flatwoods, wet flatwoods, and hydric hammocks found in low flatlands, forms the characteristic pockmarked landscape seen on aerial photographs of the flat landscapes of the Florida peninsula. Depression marsh is usually characterized as a shallow, rounded depression in sand substrate with herbaceous vegetation and shrubs, often in concentric bands. These marshes also frequently form an outer rim around swamp communities such as dome swamps. They form when the overlying sands slump into depressions dissolved in underlying limestone. Depending upon the depth and slope of the depression, an open

water zone with or without floating plants may occur at the center. The open water zone is considered to be a Marsh Lake. Depression marshes often burn with the surrounding landscape, and are seasonally inundated. Depression marshes typically occur in landscapes occupied by fire-maintained natural communities such as mesic flatwoods, dry prairie, or sandhill.

Depression marshes on SLWMA are usually dominated by sand cordgrass or, in the case of slightly deeper marshes, sawgrass. Other common herbs include giant leather fern, smallfruit beggarticks, toothed midsorus fern, flattened pipewort, soft rush, needle rush, creeping primrosewillow, swamp smartweed, pickerelweed, bulltongue arrowhead, broadleaf cattail, Virginia chain fern, and fringed yelloweyed grass. Trees may be scattered along the edge of the marsh, commonly red maple, swamp tupelo, and slash pine. Shrubs are usually sparse and include wax myrtle, sawtooth blackberry, and coastalplain willow.

2.2.1.5 Hydric Hammock (50 acres)

Densely forested wetlands known as hydric hammocks have a well-developed canopy and subcanopy of a mix of evergreen and deciduous trees, most often dominated by oaks and cabbage palms. Hydric hammock is an evergreen hardwood and/or palm forest with a variable understory typically dominated by palms and ferns occurring on moist soils, often with limestone very near the surface. While species composition varies, the community generally has a closed canopy of oaks and palms, an open understory, and a sparse to a moderate groundcover of grasses and ferns. Hydric hammock occurs on low, flat, wet sites where limestone may be near the surface, and soil moisture is kept high mainly by rainfall accumulation on poorly drained soils. Periodic flooding from rivers, seepage, and spring discharge may also contribute to hydric conditions.

Hydric hammocks on SLWMA are associated with basin marshes and are distinguished by having a canopy dominated by swamp laurel oak, cabbage palm, hackberry, and American elm, with a subcanopy of red cedar, and cabbage palm. Shrubs are occasional to common and include silverling, St.Andrew's cross, wax myrtle, and swamp bay. The herb layer may be dense to scattered with toothed midsorus fern, longleaf woodoats, snow squarestem, woodsgrass, and redtop panicum. Epiphytes such as golden polypody, ballmoss, and Spanish moss are abundant.

2.2.1.6 Mesic Flatwoods (803 acres)

Mesic flatwoods, the most widespread natural community in Florida, are open pinelands covering the flat sandy terraces left behind by former high sea levels. Mesic flatwoods are characterized by an open canopy of tall pines with a dense, low ground layer of varying mixtures of shrubs, grasses, and forbs. These open pinelands occur on low sandy soils. In areas that have been well burned, shrubs are low in stature, and grasses predominate; in less frequently burned areas, shrubs dominate. Longleaf pine is the principal canopy tree in northern and Central Florida, transitioning to predominately slash pine in south Florida.

Soils are acidic, nutrient-poor, fine sands with upper layers darkened by organic matter. Drainage in this flat terrain can be impeded by a loosely cemented organic layer (spodic horizon) formed within several feet of the soil surface. The soils may be alternately xeric during dry periods, and saturated or even inundated after heavy rain events.

Mesic Flatwoods on SLWMA

At SLWMA, saw palmetto cover is particularly dense, often forming impenetrable thickets, however, the flatwoods in the southeast corner of the area is quite open and resembles dry prairie with its short saw palmetto and dwarfed wax myrtle. 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, gallberry, rusty staggerbush, coastalplain staggerbush, wax myrtle, live oak, winged sumac, highbush blueberry, dwarf huckleberry, running oak, dwarf live oak, and shiny blueberry. The herbaceous layer is diverse and dominated by wiregrass in less disturbed areas. Other common herbs include broomsedge bluestem, bottlebrush threeawn, coastalplain chaffhead, vanillaleaf, slender flattop goldenrod, Elliott's milkpea, rough hedgehyssop, pinebarren frostweed, small butterwort, bracken fern, little bluestem, whitetop aster, sweet goldenrod, and yellow hatpins. Vines are occasional, including earleaf greenbrier, saw greenbrier, and muscadine.

2.2.1.7 Mesic Hammock (245 acres)

Mesic hammock is a well-developed evergreen hardwood and/or palm forest, typically with a closed canopy of live oak. Dominated by evergreen oak forests, mesic hammocks occur in naturally fire-protected areas. Mesic hammock may occur as “islands” on high ground within basin or floodplain wetlands, as patches of oak/palm forest in dry prairie or flatwoods communities, on river levees, or in ecotones between wetlands and upland communities. Historically, mesic hammocks were likely restricted to fire shadows, or other naturally fire-protected areas such as islands and peninsulas of lakes. Other landscape positions that can provide protection from the spread of fire are likely places for mesic hammock development, including edges of lakes, sinkholes, other depressional or basin wetlands, and river floodplains. Although mesic hammock is not generally considered a fire-adapted community, some small patches of hammock occurring as islands within marshes or prairies may experience occasional low-intensity ground fires. Mesic hammocks occur on well-drained sands mixed with organic matter and are rarely inundated. High

moisture is maintained by heavy shading of the ground layer and accumulation of litter. Where limestone is near the surface, rocky outcrops are common in mesic hammocks.

Mesic hammocks occur throughout 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 cabbage palm. The sub-canopy contains abundant cabbage palm, with dahoon, red cedar, southern magnolia, swamp bay, and Citrus sp. Shrubs are occasional and include gallberry, fetterbush, wax myrtle, swamp bay, saw palmetto, smallflower pawpaw, American beautyberry, St. Andrew's cross, yaupon, wild coffee, myrsine, and dwarf palmetto. The herbaceous layer is sparse with toothed midsorus fern, longleaf woodoats, witchgrass, woodsgrass, cinnamon fern, American pokeweed, bracken fern, whip nutrush, caesarweed, fireweed, Florida Keys hempvine, and common blue violet. Epiphytes are abundant with golden polypody, resurrection fern, ballmoss, giant airplant, Spanish moss, and shoestring fern common. Vines are occasional and include rattan vine, yellow jessamine, saw greenbrier, bristly greenbrier, eastern poison ivy, and muscadine.

Mesic hammock on SLWMA

2.2.1.8 Scrub (44 acres)

Scrub is a community composed of evergreen, xerophytic shrubs, with or without a canopy of pines, and is found on dry, infertile, sandy ridges. Scrub communities dominated by a canopy of sand pine are usually found on the highest sandy ridgelines. The pine canopy may range from widely scattered trees with a short, spreading growth form, to tall thin trees forming a dense canopy of uniform height. Scrub is located on dry, infertile, sandy ridges which often mark the location of former shorelines.

On SLWMA, the scrub occurs along a single ridge on the west side of South Lake and contains almost no sand pine, but scrubby oaks such as sand live oak, Chapman's oak, and myrtle oak 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. Herbs are rare, including sandyfield beaksedge, sweet

goldenrod, and fernleaf yellow false foxglove. Epiphytes such as ballmoss and Spanish moss may be common on oak branches and earleaf greenbrier is an occasional vine.

2.2.1.9 Scrubby Flatwoods (54 acres)

Scrubby flatwoods are similar to mesic flatwoods in structure and species composition, but with scrub species in the shrub and herb layer; occurs on drier, sandy soils, often as a transition zone between wetlands and scrub or sandhill vegetation.

Scrubby flatwoods have an open canopy of widely spaced pine trees and a low, shrubby understory dominated by scrub oaks and saw palmetto, often interspersed with areas of barren white sand. Principal canopy species are longleaf pine and slash pine in northern and Central Florida. The shrub layer consists of oak species and shrubs typical of mesic flatwoods, as well as grasses and dwarf varieties of other shrubs. Scrubby flatwoods occur on slight rises within mesic flatwoods and in transitional areas between scrub and mesic flatwoods. Soils of scrubby flatwoods are moderately well-drained sands with or without an organic layer (spodic horizon).

The clearest examples of scrubby flatwoods at 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, running oak, dwarf live oak, saw palmetto, shiny blueberry, and deerberry. Herbs are frequent and dominated by wiregrass with pinebarren frostweed, Piedmont pinweed, and sweet goldenrod are also common. Earleaf greenbrier is an occasional vine.

2.2.1.10 Wet Flatwoods (568 acres)

Wet flatwoods are low pinelands with a canopy of slash pine and an understory that varies widely in structure from shrub-dominated to open and grassy. Wet flatwoods occur in broad, low flatlands, often in a mosaic with these communities. They are found in the ecotones between mesic flatwoods, shrub bogs, wet prairies, dome swamps, or strand swamps. Wet flatwoods are pine forests with a sparse or absent midstory and a dense groundcover of hydrophytic grasses, herbs, and low shrubs. The relative density of shrubs and herbs varies greatly in wet flatwoods. Shrubs tend to dominate where fire has been absent for a long period or where cool season fires predominate; herbs are more abundant in locations that are frequently burned. Soils and hydrology also influence the relative density of shrubs and herbs. Soils of shrubby wet flatwoods are generally poorly to very poorly drained sands. These soils generally have a mucky texture in the uppermost horizon. Loamy sands are typical of soils in grassy wet flatwoods.

Wet flatwoods on SLWMA 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 at SLWMA are what is generally termed “cabbage palm flatwoods” or “sweet flatwoods” for the dominance of cabbage 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 cabbage palms. Other shrubs may be sparse to dense including large gallberry, dahoon, gallberry, roundpod St. John's wort, St. Andrew's cross, and wax myrtle. Herbs are generally sparse, but may typically overlap with marsh species. Dominants include blue maidencane, toothed midsorus fern, sawgrass, early whitetop fleabane, tenangle pipewort, dogfennel, Mohr's thoroughwort, slender flattop goldenrod, bracken fern, fascicled beaksedge, whip nutrush, sand cordgrass, Canadian germander, caesarweed, and bog white violet. Vines such as saw greenbrier, laurel greenbrier, lanceleaf greenbrier, and muscadine are occasional.

2.2.1.11 Xeric Hammock (2 acres)

Xeric hammock is an evergreen forest found on well-drained sandy soil. Xeric hammocks are oak-dominated forests on dry sandy soils, typically in former sandhill or scrub that has not burned for many years. It also occurs in transition areas from uplands to wetland communities where fire has not burned sufficiently hot to retard oak growth. The low canopy is typically closed and usually dominated by sand live oak. An emergent canopy of pine may be present. Xeric hammock typically develops where fire-exclusion allows for the establishment of the oak canopy. This may occur naturally when the area has significant barriers to fire, or more commonly, as the result of human intervention. In these areas, xeric hammock can form extensive stands or can occur as small patches within or near sandhill or scrub. Xeric hammock can also occur on high islands within flatwoods, or on a high, well-drained ridge within a floodplain. Xeric hammock also can occur on barrier islands and in other coastal environs as an advanced successional stage of scrub.

Xeric hammock only occurs on a few acres of SLWMA. Typically, there is a nearly closed canopy of sand live oak and/or live oak. Sand pine, sand laurel oak, and pignut hickory may also be present in the canopy. In historic scrub areas, Chapman's oak and myrtle oak are present in the tall shrub layer. Other shrubs include saw palmetto, yaupon, coontie, coastalplain staggerbush, sparkleberry, and beautyberry. Herb cover is suppressed by abundant leaf litter, but includes nutrushes, beaksedges, and witchgrass.

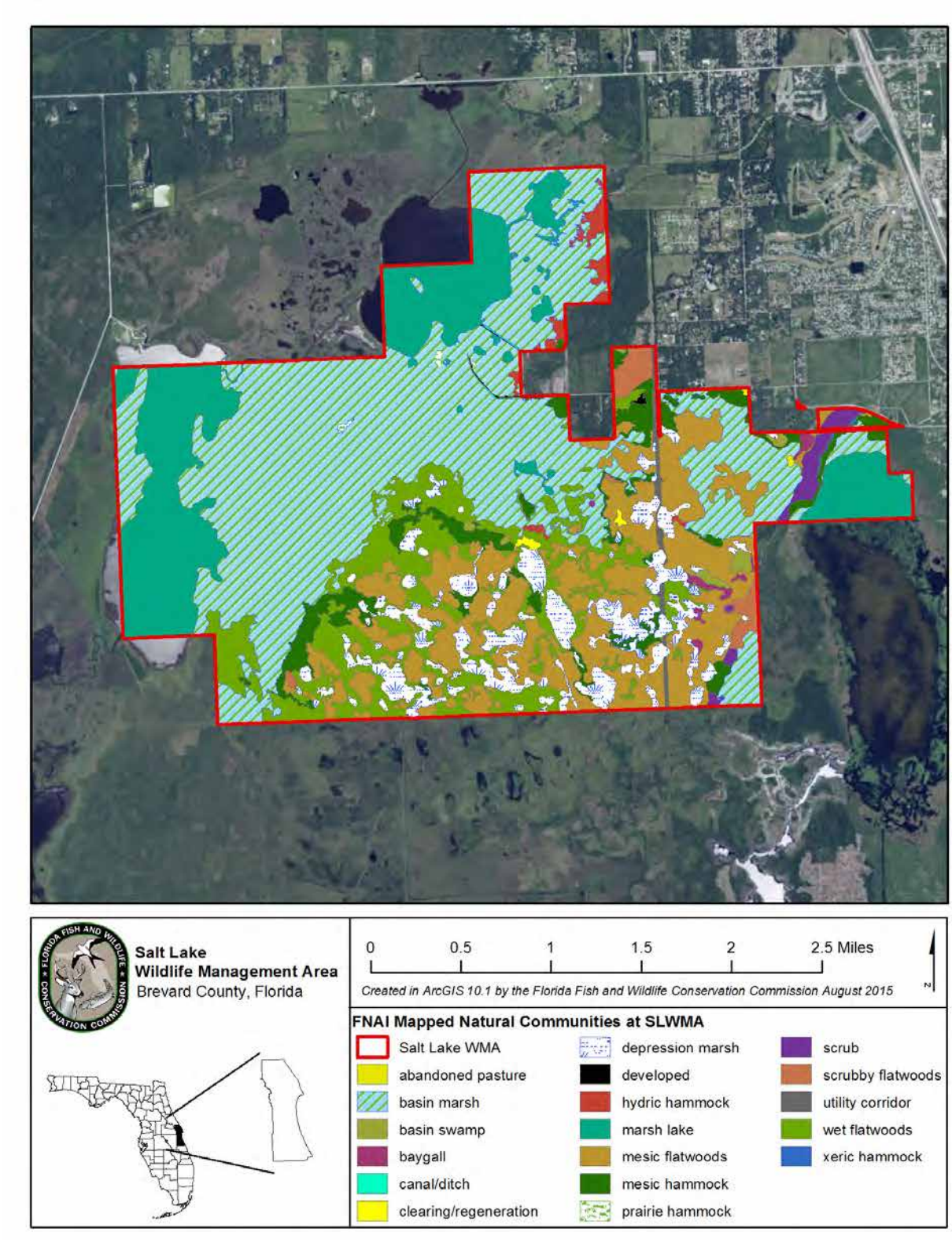


Figure 16: SLWMA Natural Communities

2.2.2 Forest Resources

As described in detail above, the SLWMA has a variety of forest community types, including a large expanse of hydric hammock; mesic hammock; and wet flatwoods. Most of the forested areas on the SLWMA have seen some degree of timber harvesting in the past. Currently, the FWC is working to restore these natural communities with thinning, planting, burning and other forest maintenance management actions.

The FFS completed a FWC Timber Assessment of the SLWMA in 2007 (Appendix 13.4). An updated timber assessment will be completed and incorporated into this Management Plan upon its completion. The FWC will continue to cooperate with the FFS on all actions that involve the timber resources of the SLWMA.

2.3 Fish and Wildlife Resources

The variety of natural communities found at SLWMA support a diverse list of wildlife species. Active wildlife management practices and a diversity of natural communities make the SLWMA an excellent place to view a wide array of plant and animal species. These species include mammals (Table 7), birds (Table 8), reptiles and amphibians (Table 9), fish (Table10), and invertebrates (Table 11). Additionally, ten exotic animal species have been observed at SLWMA (Table 12).

Table 7: Mammal Species Found On SLWMA

Common Name	Scientific Name
Bobcat	*Felis rufus*
Cotton mouse	*Peromyscus gossypinus*
Coyote	*Canis latrans*
Eastern cottontail	*Sylvilagus floridanus*
Eastern mole	*Scalopus aquaticus*
Golden mouse	*Ochrotomys nuttalli*
Grey fox	*Urocyon cinereoargenteus*
Grey squirrel	*Sciurus carolinensis*
Hispid cotton rat	*Sigmodon hispidus*
Least shrew	*Cryptotis parva*
Marsh rabbit	*Sylvilagus palustris*
Nine-banded armadillo	*Dasypus novemcinctus*
Opossum	*Didelphis virginiana*
Raccoon	*Procyon lotor*
River otter	*Lontra canadensis*
Round-tailed muskrats	*Neofiber alleni*
White-tailed deer	*Odocoileus virginianus*

Table 8: Birds Observed at SLWMA

Common Name	Scientific Name
American bittern	*Botaurus lentiginosus*
American coot	*Fulica americana*
American crow	*Corvus brachyrhynchos*
American goldfinch	*Spinus tristis*
American robin	*Turdus migratorius*
American white pelican	*Pelecanus erythrorhynchos*
Anhinga	*Anhinga anhinga*
Bachman's sparrow	*Peucaea aestivalis*
Barn swallow	*Hirundo rustica*
Barred owl	*Strix varia*
Belted king fisher	*Megaceryle alcyon*
Black rail	*Laterallus jamaicensis*
Black skimmer	*Rynchops niger*
Black vulture	*Coragyps atratus*
Black-bellied plover	*Pluvialis squatarola*
Black-crowned night heron	*Nycticorax nycticorax*
Black-necked stilt	*Himantopus mexicanus*
Blue grosbeak	*Guiraca caerulea*
Blue jay	*Cyanocitta cristata*
Blue-gray gnatcatcher	*Polioptila caerulea*
Blue-headed vireo	*Vireo solitarius*
Blue-winged teal	*Anas discors*
Boat-tailed grackle	*Quiscalus major*
Bobolink	*Dolichonyx oryzivorus*
Brown pelican	*Pelecanus occidentalis*
Brown thrasher	*Toxostoma rufum*
Brown-headed cowbird	*Molothrus ater*
Carolina chickadee	*Parus carolinensis*
Carolina wren	*Thryothorus ludovicianus*
Cedar waxwing	*Bombycilla cedrorum*
Chimney swift	*Chaetura pelagica*
Chipping sparrow	*Spizella passerina*
Chuckwill's widow	*Antrostomus carolinensis*
Clapper rail	*Rallus longirostris*
Common grackle	*Quiscalus quiscula*
Common ground-dove	*Columbina passerina*
Common moorhen	*Gallinula chloropus*
Common nighthawk	*Chordeiles minor*
Common snipe	*Gallinago gallinago*

Table 8: Birds Observed at SLWMA

Common Name	Scientific Name
Common yellowthroat	*Geothlypis trichas*
Cooper's hawk	*Accipiter cooperii*
Crested caracara	*Caracara cheriway*
Double-crested cormorant	*Phalacrocorax auritus*
Downy woodpecker	*Picoides pubescens*
Dunlin	*Calidris alpina*
Eastern bluebird	*Sialia sialis*
Eastern kingbird	*Tyrannus tyrannus*
Eastern meadowlark	*Sturnella magna*
Eastern phoebe	*Sayornis phoebe*
Eastern screech-owl	*Megascops asio*
Eastern towhee	*Pipilo erythrophthalmus*
Fish crow	*Corvus ossifragus*
Florida mottled duck	*Anas fulvigula*
Florida sandhill crane	*Grus Canadensis pratensis*
Florida scrub-jay	*Aphelocoma coerulescens*
Forester's tern	*Sterna forsteri*
Glossy ibis	*Plegadis falcinellus*
Great blue heron	*Ardea herodias*
Great crested flycatcher	*Myiarchus crinitus*
Great egret	*Ardea alba*
Great horned owl	*Bubo virginianus*
Greater yellowlegs	*Tringa melanoleuca*
Green heron	*Butorides virescens*
Grey catbird	*Dumetella carolinensis*
Hairy woodpecker	*Picoides villosus*
Hermit thrush	*Catharus guttatus*
House wren	*Troglodytes aedon*
Indigo bunting	*Passerina cyanea*
Killdeer	*Charadrius vociferus*
King rail	*Rallus elegans*
Laughing gull	*Larus atricilla*
Least sandpiper	*Calidris minutilla*
Least tern	*Sterna antillarum*
Lesser yellowlegs	*Tringa flavipes*
Limpkin	*Aramus guarauna*
Little blue heron	*Egretta caerulea*
Loggerheaded shrike	*Lanius ludovicianus*
Magnolia warbler	*Setophaga magnolia*

Table 8: Birds Observed at SLWMA

Common Name	Scientific Name
Mourning dove	*Zenaida macroura*
Northern bobwhite	*Colinus virginianus*
Northern cardinal	*Cardinalis cardinalis*
Northern flicker	*Colaptes auratus*
Northern harrier	*Circus cyaneus*
Northern mockingbird	*Mimus polyglottos*
Northern parula	*Parula americana*
Northern pintail	*Anas acuta*
Northern rough-winged swallow	*Stelgidopteryx serripennis*
Orange crowned warbler	*Oreothlypis celata*
Osprey	*Pandion haliaetus*
Painted bunting	*Passerina ciris*
Palm warbler	*Setophaga palmarum*
Pied-billed grebe	*Podilymbus podiceps*
Pileated woodpecker	*Dryocopus pileatus*
Pine warbler	*Setophaga pinus*
Prairie warbler	*Setophaga discolor*
Prothonotary warbler	*Protonotaria citrea*
Purple gallinule	*Porphyrio martinicus*
Purple martin	*Progne subis*
Red-shouldered hawk	*Buteo lineatus*
Red-bellied woodpecker	*Melanerpes carolinus*
Red-eyed vireo	*Vireo olivaceus*
Red-tailed hawk	*Buteo jamaicensis*
Red-winged blackbird	*Agelaius phoeniceus*
Ring-billed gull	*Larus delawarensis*
Roseate spoonbill	*Platalea ajaja*
Royal tern	*Thalasseus maximus*
Ruby-crowned kinglet	*Regulus calendula*
Ruby-throated humming bird	*Archilochus colubris*
Sedge wren	*Cistothorus platensis*
Sharp-shinned hawk	*Accipiter striatus*
Snowy egret	*Egretta thula*
Southeastern American kestrel	*Falco sparverius paulus*
Southern Bald eagle	*Haliaeetus leucocephalus*
Summer tanager	*Piranga rubra*
Swallow-tailed kite	*Elanoides forficatus*
Swamp sparrow	*Melospiza georgiana*
Tree swallow	*Tachycineta bicolor*

Table 8: Birds Observed at SLWMA

Common Name	Scientific Name
Tricolor heron	*Egretta tricolor*
Tufted titmouse	*Parus bicolor*
Turkey vulture	*Cathartes aura*
Western sandpiper	*Calidris mauri*
White ibis	*Eudocimus albus*
White-eyed vireo	*Vireo griseus*
Wild turkey	*Meleagris gallopavo*
Wood duck	*Aix sponsa*
Wood stork	*Mycteria americana*
Yellow-throated warbler	*Setophaga dominica*
Yellow-billed cuckoo	*Coccyzus americanus*
Yellow-crowned night-heron	*Nyctanassa violacea*
Yellow-rumped warbler	*Setophaga coronata*

Table 9: Reptile and Amphibian Species Found at SLWMA

Common Name	Scientific Name
American alligator	*Alligator mississipiensis*
Bullfrog	*Lithobates catesbeianus*
Dusky pigmy rattlesnake	*Sistrurus miliarius barbouri*
Eastern coral snake	*Micrurus fulvius*
Eastern diamondback rattlesnake	*Crotalus adamanteus*
Eastern garter snake	*Thamnophis sirtalis sirtalis*
Eastern indigo snake	*Drymarchon couperi*
Eastern ratsnake	*Pantherophis alleghaniensis*
Florida box turtle	*Terrapene carolina bauri*
Florida cottonmouth	*Agkistrodon piscivorus conanti*
Florida cricket frog	*Acris gryllus dorsalis*
Florida redbelly turtle	*Pseudemys nelsoni*
Florida snapping turtle	*Chelydra serpentina osceola*
Florida softshell	*Apalone ferox*
Florida water snake	*Nerodia fasciata pictiventris*
Gopher tortoise	*Gopherus polyphemus*
Greater siren	*Siren lacertina*
Green anole	*Anolis carolinensis*
Green treefrog	*Hyla cinerea*
Ground skink	*Scincella lateralis*
Little grass frog	*Pseudacris ocularis*

Table 9: Reptile and Amphibian Species Found at SLWMA

Common Name	Scientific Name
Oak toad	*Anaxyrus quercicus*
Peninsula ribbon snake	*Thamnophis sauritus sackenii*
Pig frog	*Lithobates grylio*
Pine woods treefrog	*Hyla femoralis*
Southeastern five-lined skink	*Plestiodon inexpectatus*
Southern black racer	*Coluber constrictor priapus*
Southern chorus frog	*Pseudacris nigrita*
Southern leopard frog	*Lithobates sphenocephalus*
Southern toad	*Anaxyrus terrestris*
Squirrel treefrog	*Hyla squirella*
Striped crayfish snake	*Regina alleni*
Striped mud turtle	*Kinosternon baurii*
Swamp snake	*Seminatrix pygaea*

Table 10: Fish Species Observed at SLWMA

Common Name	Scientific Name
Banded topminnow	*Fundulus cingulatus*
Black crappie	*Pomoxis nigromaculatus*
Bluegill sunfish	*Lepomis macrochirus*
Dollar sunfish	*Lepomis marginatus*
Florida flag fish	*Jordanella floridae*
Florida gar	*Lepisosteus platyrhincus*
Florida largemouth bass	*Micropterus salmoides floridanus*
Golden shiner	*Notemigonus crysoleucas*
Golden topminnow	*Fundulus chrysotus*
Least killifish	*Heterandria formosa*
Mosquito fish	*Gambusia affinis*
Redfin pickerel	*Esox americanus*
Sail-fin molly	*Poecilia latipinna*
Seminole killifish	*Fundulus seminolis*
Warmouth	*Chaenobryttus gulosus*
Yellow bullhead catfish	*Ameiurus natalis*

Table 11: Butterflies Observed at SLWMA

Common Name	Scientific Name
Barred sulphur	*Eurema daira*
Black swallowtail	*Papilio polyxenes*
Carolina satyr	*Hermeuptychia sosybius*
Checkered white	*Pontia protodice*
Cloudless sulphur	*Phoebis sennae*
Common buckeye	*Junonia coenia*
Eastern pygmy-blue	*Brephidium isophthalma*
Eastern tiger swallowtail	*Papilio glaucus*
Fiery skipper	*Hylephila phyleus*
Giant swallowtail	*Papilio cresphontes*
Gray hairstreak	*Strymon melinus*
Great southern white	*Ascia monuste*
Gulf fritillary	*Agraulis vanillae*
Long-tailed skipper	*Urbanus proteus*
Monarch	*Danaus plexippus*
Palamedes swallowtail	*Papilio palamedes*
Queen	*Danaus gilippus*
Red-banded hairstreak	*Calycopis cecrops*
Southern skipperling	*Copaeodes minimus*
Spicebush swallowtail	*Papilio troilus*
Viceroy admiral	*Limenitis archippus*
Whirlabout	*Polites vibex*
White-M hairstreak	*Parrhasius m-album*
White peacock	*Anartia jatrophae*
Zebra longwing	*Heliconius charitonia*
Zebra swallowtail	*Eurytides marcellus*

Table 12: Exotic Animal Species Found at SLWMA

Common Name	Scientific Name
Mammals	
Feral hog	*Sus scrofa*
Birds	
Cattle egret	*Bubulcus ibis*
Eurasian collared-dove	*Streptopelia decaocto*
European starling	*Sturnus vulgaris*

Table 12: Exotic Animal Species Found at SLWMA

Common Name	Scientific Name
Rock pigeon	*Columba livia*
Amphibians & Reptiles	
Brown anole	*Anolis sagrei*
Cuban treefrog	*Osteopilus septentrionalis*
Fish	
Armored catfish	*Pterygoplichthys multiradiatus*
Tilapia	*Tilapia aurea*
Walking catfish	*Clarias batrachus*

2.3.1 Integrated Wildlife Habitat Ranking System

The FWC has developed the Integrated Wildlife Habitat Ranking System (IWHRS) as a Geographic Information Systems (GIS)-based assessment tool that incorporates a wide variety of land cover and wildlife species data. The IWHRS evaluates the Florida landscape based upon the habitat needs of wildlife as a way to identify ecologically significant lands in the state, and to assess the potential impacts of management and land-use changes. The IWHRS was developed to provide technical assistance to various local, regional, state, and federal agencies, and entities interested in wildlife needs and conservation in order 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 IWHRS (2009) indicates that SLWMA has a very high mean wildlife value of 7.3 (Figures 17 through 19).

2.3.2 Imperiled Species

Twelve imperiled animal species have been documented at the SLWMA (Table 13). All abbreviations and status determinations were derived from Florida's Endangered and Threatened Species List published by FWC in May 2011. The FWC maintains the state list of animals designated as Federally-designated endangered or threatened, State-designated threatened, or State-designated species of special concern, in accordance with Rules 68A-27.003, and 68A-27.005, respectively, Florida Administrative Code (F.A.C.), https://www.flrules.org/Default.asp.

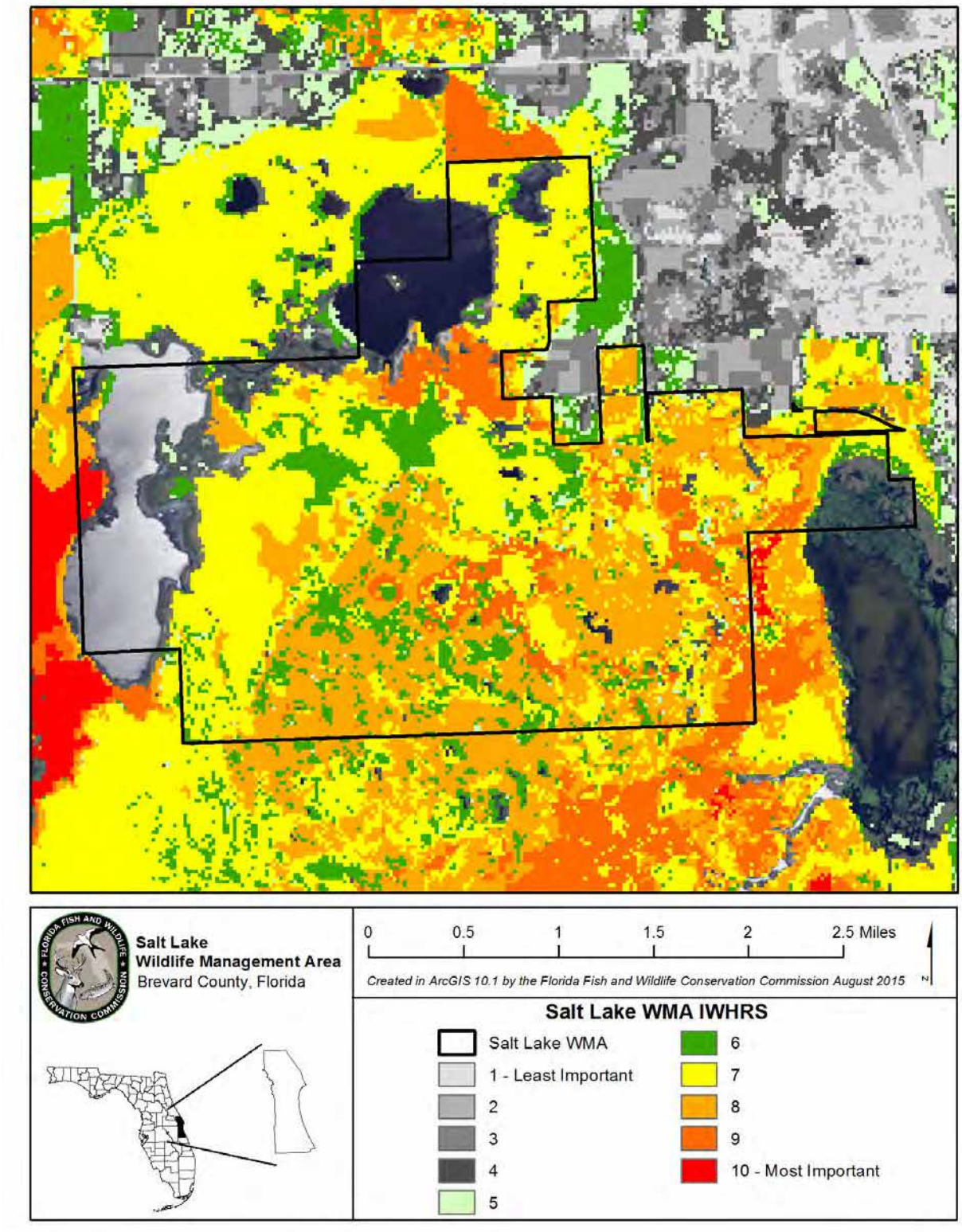


Figure 17: SLWMA IWHRS

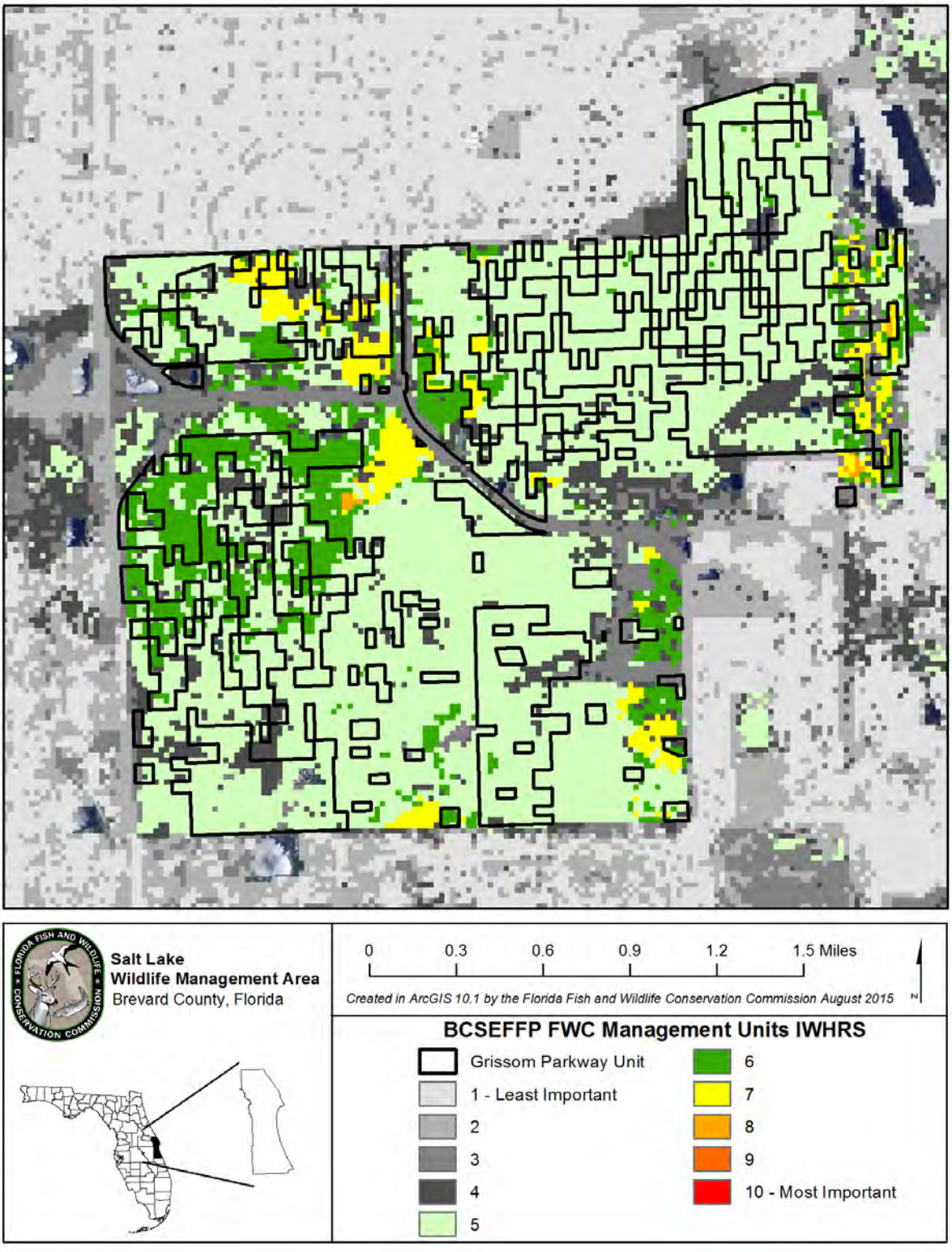


Figure 18: Grissom Parkway Unit IWRHS

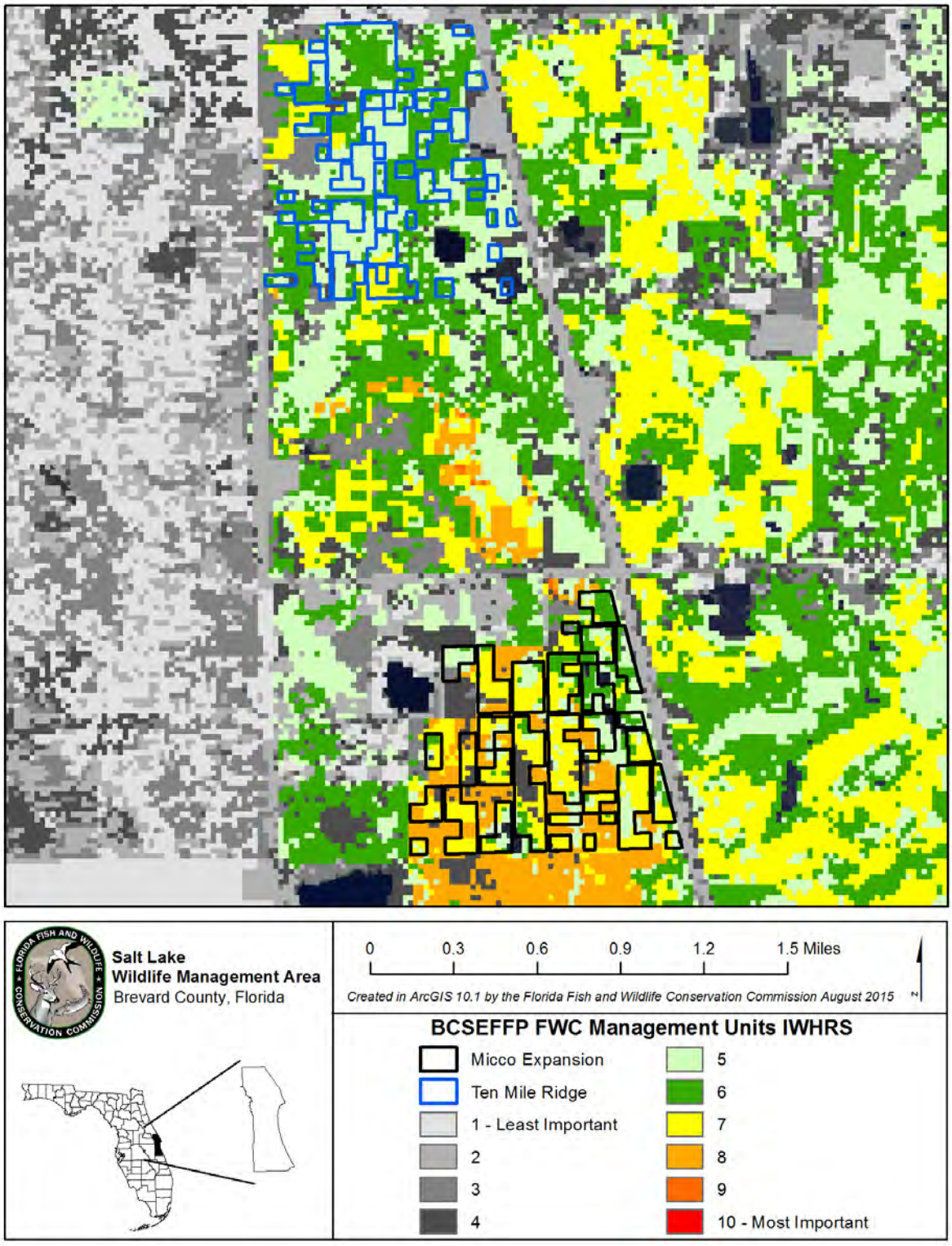


Figure 19: Ten Mile Ridge and Micco Expansion Units IWHRS

Table 13: Rare and Imperiled Wildlife Species Occurring On the SLWMA

Common Name	Scientific Name	Status
American alligator	Alligator mississipiensis	FT(SA)
American oystercatcher	*Haematopus palliatus*	SSC
Black skimmer	*Rynchops niger*	SSC
Crested caracara	*Caracara cheriway*	FT
Eastern indigo snake	Drymarchon couperi	FT
Florida sandhill crane	*Grus canadensis pratensis*	ST
Florida scrub-jay	*Aphelocoma coerulescens*	FT
Gopher tortoise	*Gopherus polyphemus*	ST
Least tern	*Sternula antillarum*	ST
Limpkin	*Aramus guarauna*	SSC
Little blue heron	*Egretta caerulea*	SSC
Reddish egret	*Egretta rufescens*	SSC
Roseate spoonbill	*Platalea ajaja*	SSC
Snowy egret	*Egretta thula*	SSC
Tricolored heron	*Egretta tricolor*	SSC
White ibis	*Eudocimus albus*	SSC
Wood stork	*Mycteria americana*	FT

For the purposes of this Management Plan, the term "Imperiled Species" refers to plant and animal species that are designated as Endangered, Threatened, or a Species of Special Concern by FWC, or that are designated as Endangered or Threatened by the U.S. Fish and Wildlife Service. This designation is also commonly known as "listed species."

On November 8, 2010, new threatened species rules approved by the FWC were implemented. All federally listed species that occur in Florida will now be included on Florida's list as federally-designated Endangered or federally-designated Threatened species. In addition, the state has implemented a listing process to identify species that are not federally listed, but that may be at risk of extinction. These species will be called state-designated Threatened. All previous state-designated imperiled species were grandfathered on the list and are currently undergoing status reviews. The FWC will continue to maintain a separate Species of Special Concern category until all the former imperiled species have been reviewed and those species are either determined to be state-designated Threatened or removed from the list.

More detailed descriptions and management prescriptions are available on the FWC website: http://www.myfwc.com/wildlifehabitats/profiles/.

2.3.3 FWC Wildlife Observations and FNAI Element Occurrences

FNAI assigns a rank to each "element" occurrence, which is an exemplary or rare component of the natural environment. As defined by FNAI, 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 is a single extant habitat which sustains or otherwise contributes to the survival of a population or a distinct, self-sustaining example of a particular element. This ranking system was developed by The Nature Conservancy and the Natural Heritage Program Network based on the element's global rank (element's worldwide status) or state rank (status of element in Florida). The FNAI ranking system and definitions are located on the following website: www.fnai.org/ranks.cfm.

Known locations of FWC wildlife occurrences and FNAI element occurrences from the most recent GIS databases of the respective agencies are displayed in Figures 20 through 22. Appendix 13.5 contains a letter from FNAI authorizing the FWC to utilize their database for the purpose of displaying known plant and animal resources.

2.4 Native Landscapes

As previously discussed, the SLWMA contains a substantial variety of native landscapes including scrub and scrubby flatwoods on the eastern uplands portion of the area, Salt Lake, Loughman Lake, South Lake as well as extensive areas of basin marshes which drain to the St. Johns River. The rest of SLWMA is comprised of wet flatwoods, mesic flatwoods, mesic flatwoods, and other communities. All of the natural plant community types found in this diverse landscape are described in greater detail in section 2.2 of this management plan.

2.5 Water Resources

Salt Lake, the namesake of SLWMA, is unique due to its relatively high salinity. This has an impact on the plant and animal life 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, 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 (Figure 23). Despite their close proximity to the Atlantic Ocean, both outlets drain west into the St. John's River.

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 24). 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 25).

All surface waters of the State are classified by DEP according to designated uses as described in Chapter 62-302.44 FAC. The surface waters of SLWMA are designated as Class III, and classified for fish consumption; recreation, as well as propagation and maintenance of a healthy, well-balanced population of fish and wildlife. Additionally, it is the policy of DEP to afford the highest protection to Outstanding Florida Waters (OFW) and Outstanding National Resource Waters (Chapter 62-302.700 FAC). At this time, however, no portions of SLWMA are designated as OFW. SLWMA is not adjacent to any acquatic preserve.

2.6 Beaches and Dunes

There are no beach or dune resources on the SLWMA. However, parts of the SLWMA and BCSEFFP Management Units 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 Historical Resources

There are a total of seven sites recorded in the Florida Department of State's Division of Historical Resources (DHR) Master Site File within the boundary of the SLWMA, and one site on the Grissom Parkway Unit. The DHR observations and recorded site files are divided into five categories: archaeological sites, resource groups, historic structures, historic bridges, and historic cemeteries. All seven sites presently recorded by the DHR on the SLWMA are categorized as archaeological sites, as is the Grissom Parkway site. Three field surveys have been conducted to document historical resources on areas encompassing portions of the SLWMA.

The seven archaeological sites on the SLWMA include five prehistoric middens (BR01875, BR01878, BR01874, BR01877, and BR01876), one prehistoric mound (BR00007), and a cattle dipping vat (BR01879). The archaeological site on the Grissom Parkway Unit is a canal (BR01715). The FWC will coordinate with the DHR if any additional sites are discovered on the SLWMA or BCSEFFP parcels. All Master Site recordings, assessments, and preservation strategies will be coordinated with the DHR.

2.9 Scenic Resources

The SLWMA offers stunning scenery across its many natural landscapes. All three lakes on the area can be viewed from various locations. Visitors can also explore the scenic upland portions of SLWMA as well as the lakes along trails and from wildlife viewing platforms. The natural communities found at SLWMA are described in section 2.2 of this management plan.

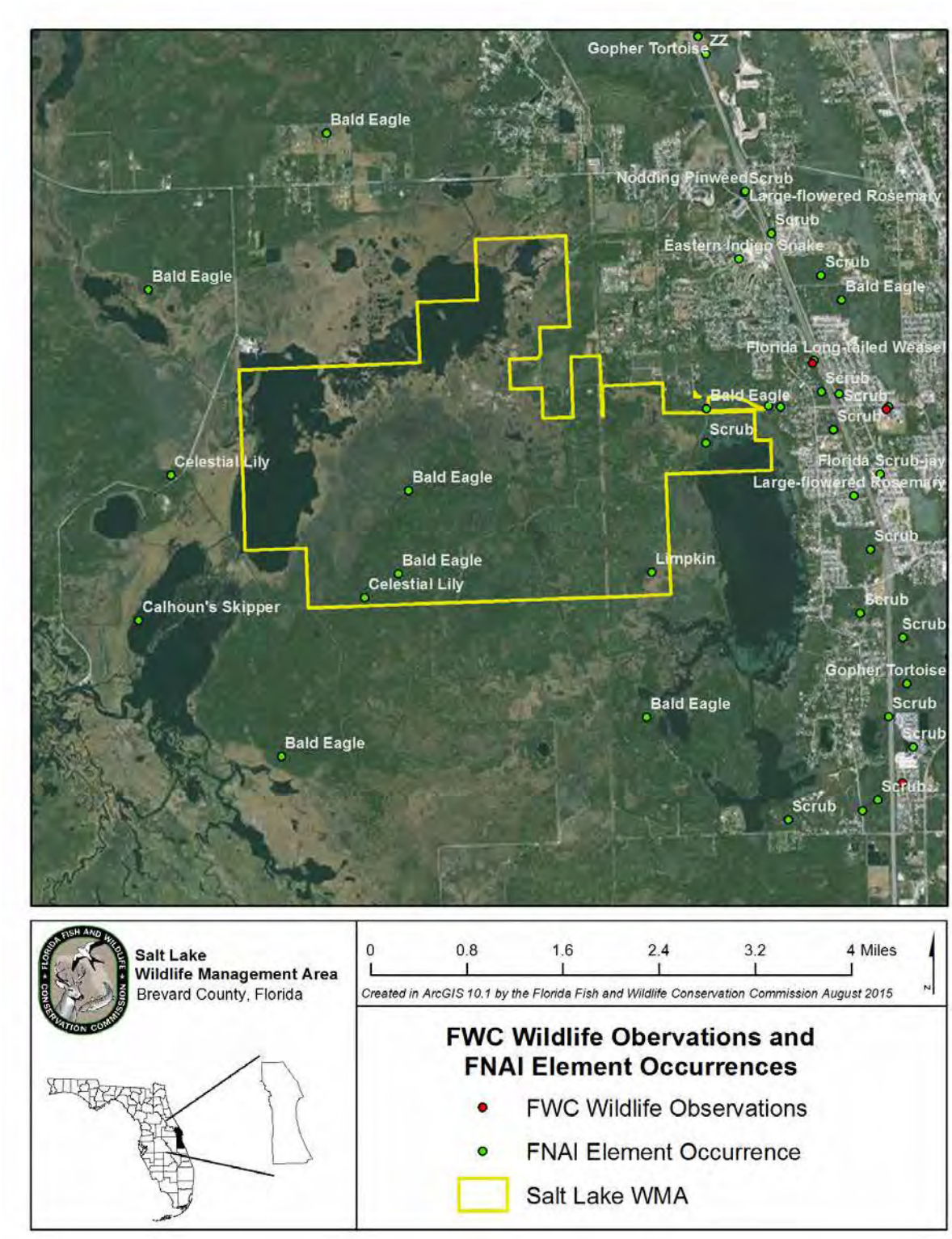


Figure 20: SLWMA Element Occurrences and Wildlife Observations

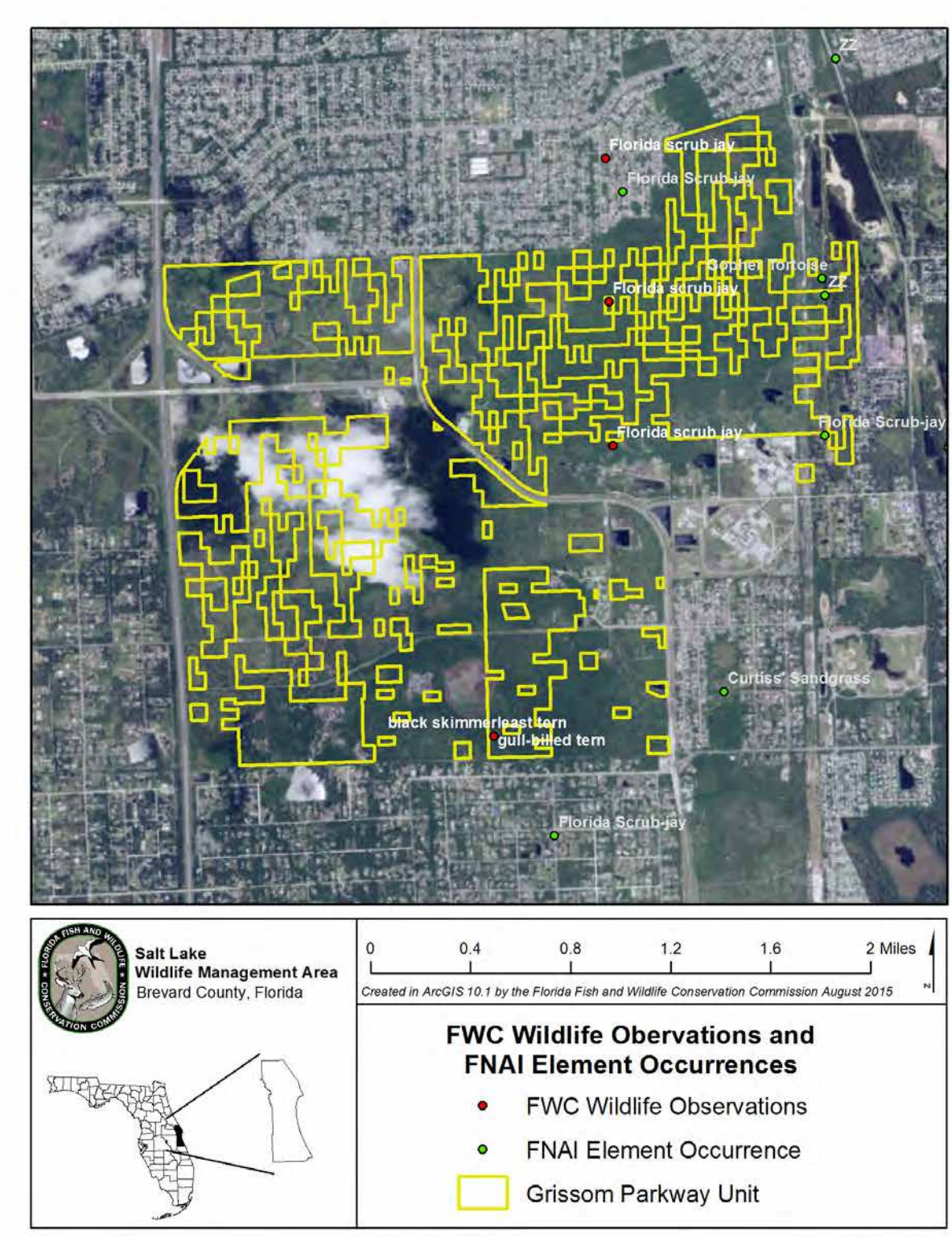


Figure 21: Grissom Parkway Element Occurrences and Wildlife Observations

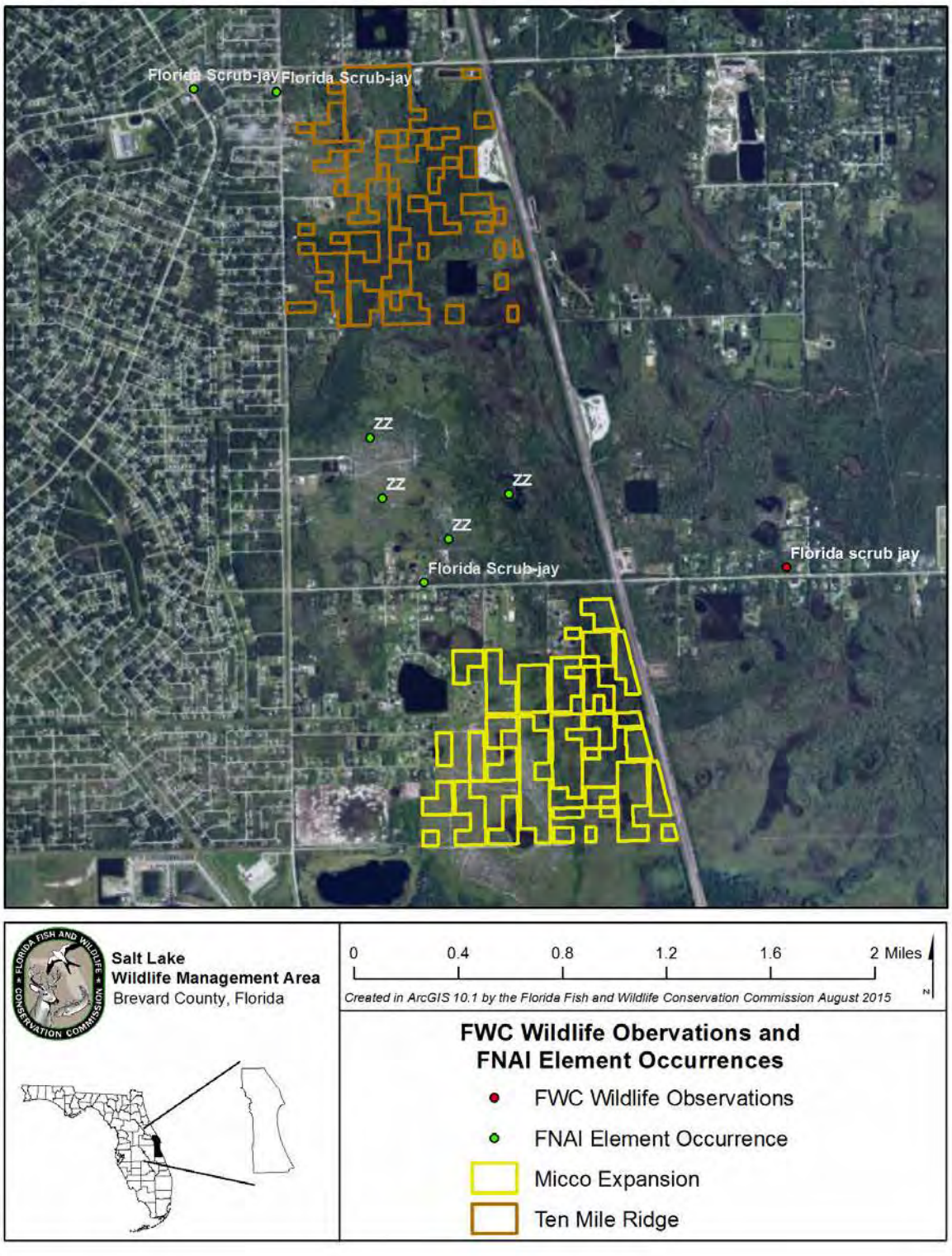


Figure 22: Ten Mile Ridge and Micco Expansion Element Occurrences and Wildlife Observations

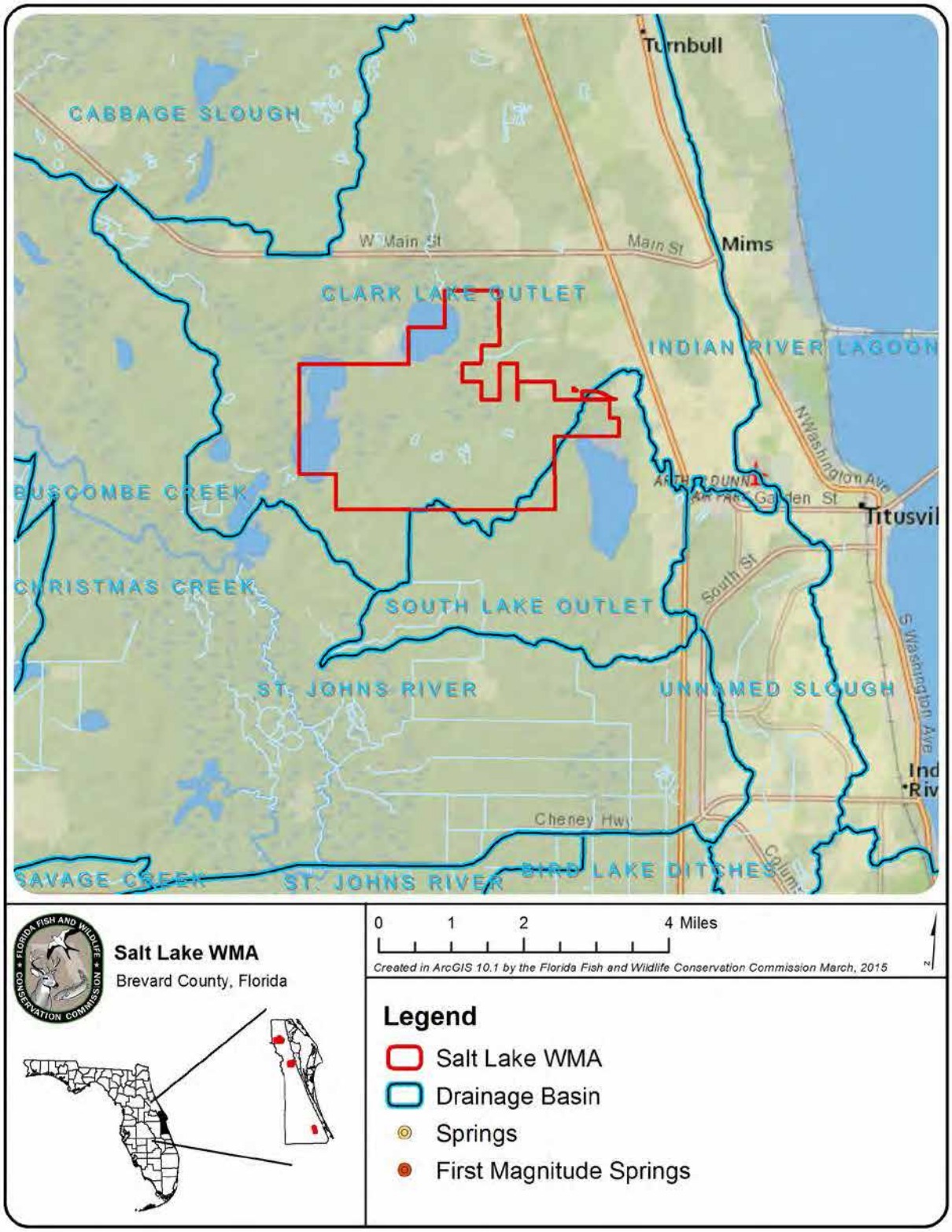


Figure 23: SLWMA Water Resources

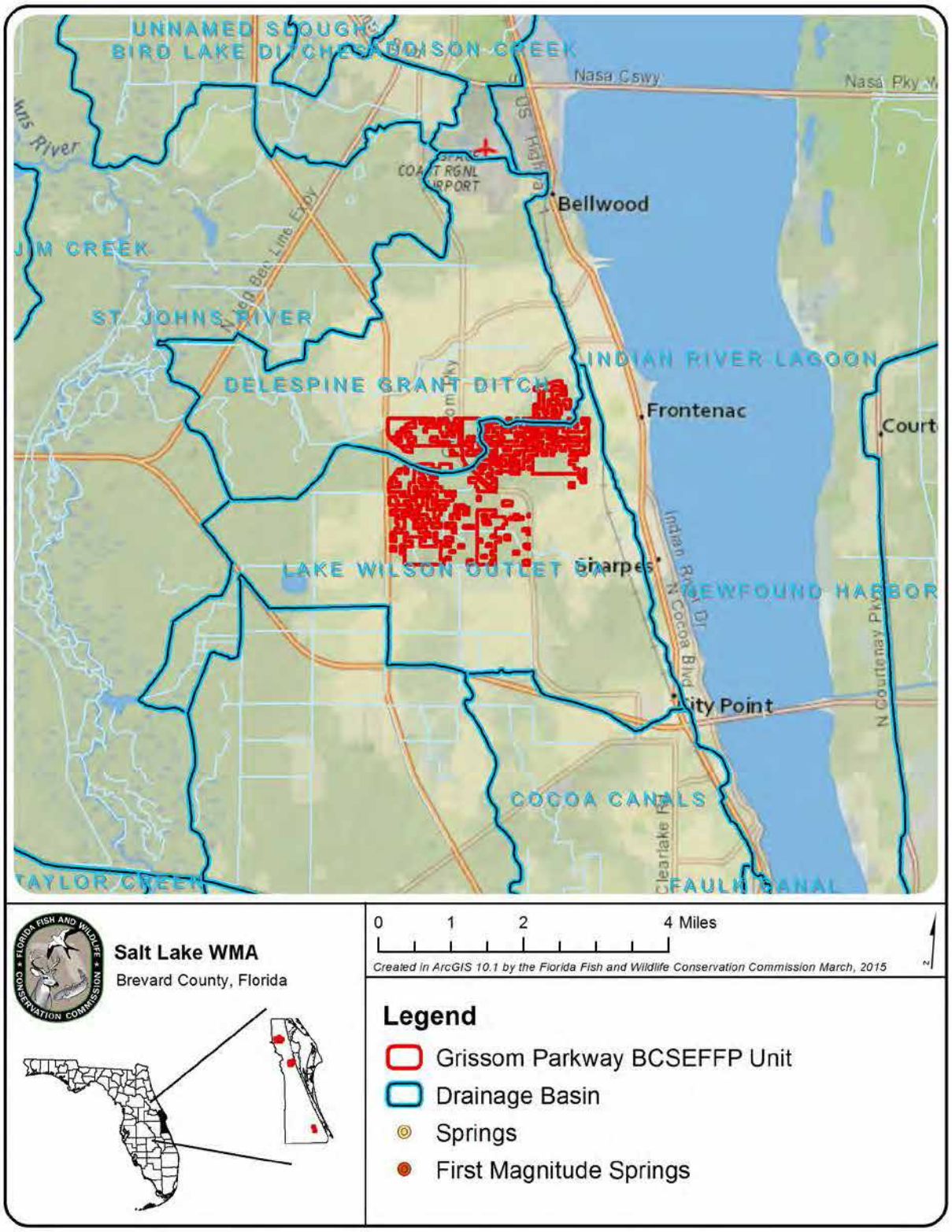


Figure 24: Grissom Parkway Water Resources

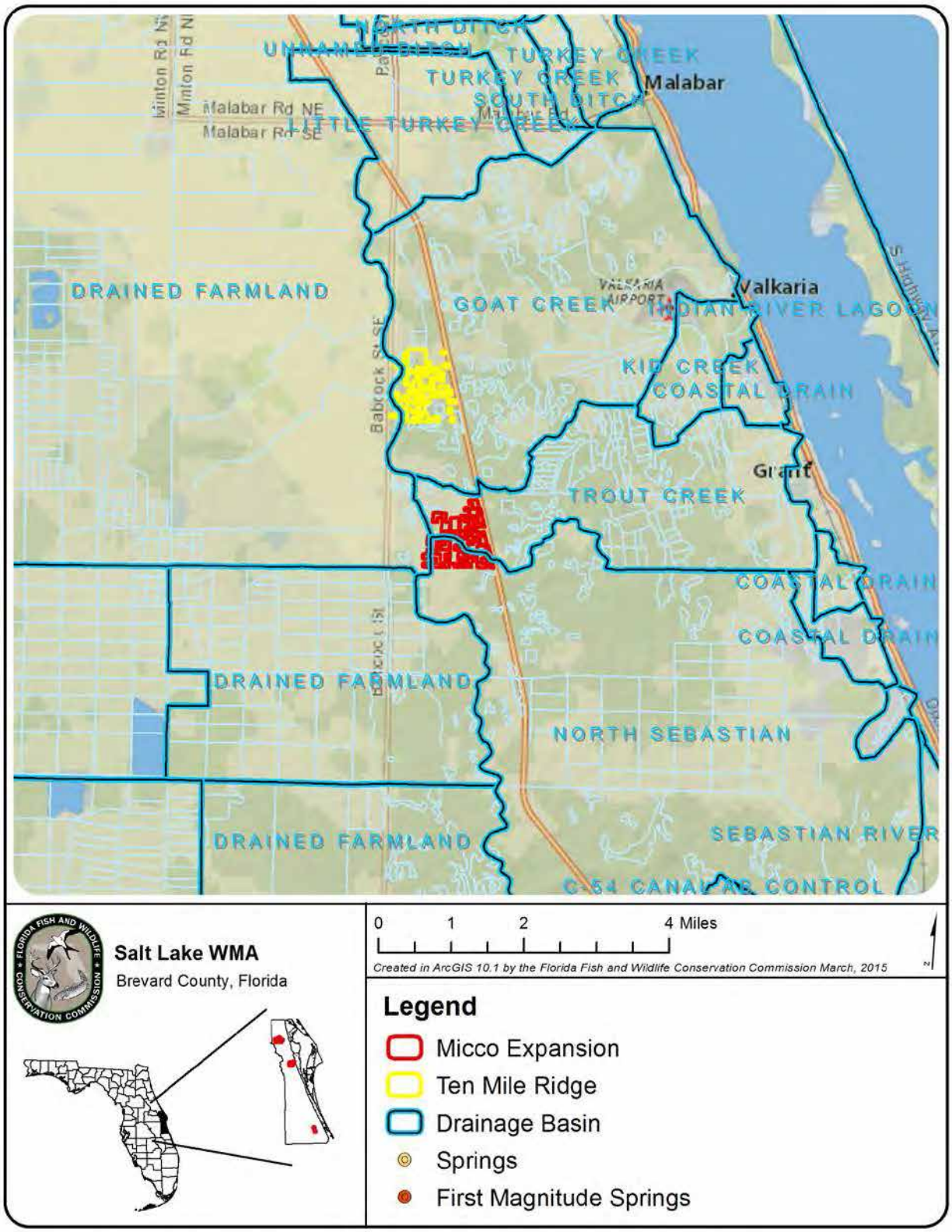


Figure 25: Ten Mile Ridge and Micco Expansion Water Resources

3 Uses of the Property

3.1 Previous Use and Development

Prior to European settlement, the landscape of Florida, including this area along the St. Johns River, was settled and used by the Ais people, whose culture relied mainly on hunting, fishing, and foraging. Several mounds and middens that are scattered throughout the area attest to the presence of Native Americans living on the area thousands of years before European settlement of Florida.

The Ais, or Ays were a tribe of Native Americans who inhabited the Atlantic Coast of Florida from 2000 B.C. to the 18th century. They ranged from present day Cape Canaveral to the St. Lucie Inlet, in the present day counties of Brevard, Indian River, St. Lucie and northernmost Martin. They lived in villages and towns along the shores of the great lagoon called Rio de Ais by the Spanish, and now called the Indian River. The name Ais is derived from a great Indian Cacique (Chief).

Observations on the appearance, diet and customs of the Ais at the end of the 17th Century are found in Jonathan Dickinson's Journal. Dickinson and his party were shipwrecked, and spent several weeks among the Ais in 1696. By Dickinson's account, the Ais had established coastal towns and villages from Brevard County in the north to Jupiter Inlet in the south.

The Ais had considerable contact with Europeans by this time before Dickinson was shipwrecked. The Spanish interacted with the Ais in middle of the 16th century. In 1566 Pedro Menéndez de Avilés, founder of St. Augustine, Florida, established a fort and mission at an Ais town, which the Spanish called Santa Lucía. After the Ais attacked the fort, killing 23 of the Spanish soldiers, the fort and mission were abandoned. Spain had eventually established some control over the coast, with the Ais regarding the Spanish as friends and non-Spanish Europeans as enemies.

The Ais did not survive long after Dickinson's stay with them. Shortly after 1700, settlers in the Province of Carolina and their Indian allies started raiding the Ais, killing them and carrying captives to Charles Town to be sold as slaves. The Ais were all enslaved, killed or died from European diseases and were gone from the area by 1760.

Though some land alteration occurred, only minor alteration of the landscape is thought to have taken place until the advent of European settlement beginning with the Spanish occupation of Florida in the sixteenth century.

Along with more advanced agricultural practices, the Spanish and other settlers brought livestock, primarily cattle and hogs, as well as horses to Florida. This began an era of broad use of the landscape for agriculture. Rangeland cattle grazing and other agricultural

practices began to be utilized in a more systematic way and occurred throughout much of the central Florida peninsula through most of the European settlement era from the 16th through the 20th centuries. Use of these agricultural practices began an era of increased alteration of the natural landscape.

However, it wasn't until the 19th and 20th centuries that major settlement and more extensive alteration of the landscape in the area began with the widespread use of agriculture and associated development. Prior to being purchased by the State of Florida and the SJRWMD, the SLWMA was managed as part of a cattle ranch operation. Additionally, timber and cabbage palm harvesting also took place on these areas prior to being acquired by the SJRWMD and the State for conservation.

3.2 Current Use of the Property

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

Current and anticipated resource uses of the property are diverse. Hunting continues to be a popular recreational activity on SLWMA. The area also offers excellent opportunities for bird watching, especially for Florida scrub-jay and wading birds. The diversity of vegetation not only harbors a variety of bird species but also provides good opportunities for mammalian wildlife viewing. Other uses include hiking, photography, biking, sightseeing, 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. Annual use of SLWMA is estimated to be 120 user-days for all activities combined. The FWC administers hunts in the fall and spring for various game species including small game, deer, turkey, and feral hogs, which account for a little more than half of the user-days.

3.2.1 Visitation and Economic Benefits

Visitation and public use of the area for fish and wildlife based public outdoor recreational opportunities is the primary source of economic benefits from SLWMA, and contribute to the overall economy for this region of Florida. In Fiscal Year 2013-14, an estimated 10,299 people visited the SLWMA. Primarily, as a result of this visitation and use of the area, FWC economic analysis estimates indicate that the SLWMA generated an estimated annual economic impact of $2,012,321 for the State and the Northeast Florida region. This

estimated annual economic impact has aided in the support or creation of an estimated 20 jobs.

The 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 to 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 results impacts 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.

A section of road crossing the SLWMA

Further revenue generating potential of the SLWMA will depend upon future uses described in this Management Plan. Additional revenue from environmental lands such as the SLWMA might include sales of various permits and recreational user fees and ecotourism activities, if such projects could be feasibly developed. 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 considered to be significant to local and regional land and water resources, as well as human health.

3.3 Single- or Multiple-use Management

SLWMA will be managed under the multiple-use concept as a Wildlife Management Area. SLWMA will provide fish and wildlife resource based public outdoor recreation and educational opportunities, while protecting the natural and historical resources found on the area. Any natural and historical resources of SLWMA will be managed under the guidance of ARC, the Conceptual State Lands Management Plan, and as outlined in the original purposes for acquisition.

3.3.1 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 SLWMA. Uses classified as "Approved" are considered to be in accordance with the purposes for acquisition, as well as with the Conceptual State Lands Management Plan, and with the FWC agency mission, goals and objectives as expressed in the Agency Strategic Plan (Appendix 13.6). 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 and 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:

	Approved	**Conditional**	**Rejected**
Apiaries		✓	
Astronomy		✓	
Bicycling	✓		
Cattle grazing			✓
Citrus or other agriculture			✓
Ecosystem services and maintenance	✓		
Ecotourism		✓	
Environmental Education	✓		
First-responder training		✓	
Fishing		✓	
Geocaching		✓	
Hiking	✓		
Horseback riding	✓		
Hunting		✓	
Linear facilities			✓
Military training		✓	
Preservation of historical resources	✓		
Primitive camping		✓	
Protection of imperiled species	✓		
Off-road vehicle use			✓
Shooting sports park	✓		
Soil and water conservation	✓		
Timber harvest		✓	
Wildlife observation	✓		

3.3.2 Incompatible Uses and Linear Facilities

Consideration of incompatible uses and linear facilities on SLWMA are made in accordance with the requirements of Section 253.034(10) FS, and other applicable Florida constitution, statute, rule, and policy requirements, as well as other provisions governing applications for proposed incompatible uses or linear facilities on state-owned conservation lands. Upon approval and implementation of this 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, the SJRWMD, the ARC and the Board of Trustees prior to any incompatible use or linear facility being authorized on the SLWMA.

3.3.3 Assessment of Impact of Planned Uses of the Property

To communicate FWC's planned uses and activities, specific management intentions, long- and short-term goals and with associated objectives, identified challenges, and solution strategies have been developed for SLWMA (Sections 5 -8). A detailed assessment of the benefits and potential impacts of planned uses and activities on natural and historical resources was an integral part of the development of the management activities and intent, goals, objectives, challenges, and strategies sections of this Management Plan.

3.4 Acreage Recommended for Potential Surplus Review

On conservation lands where FWC is the lead manager, FWC evaluates and identifies recommended areas for a potential surplus designation by 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, 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 SLWMA by 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 resource based public outdoor recreational opportunities. Therefore, no portion of the SLWMA is recommended for potential surplus review.

4 Accomplished Objectives from the SLWMA Management Plan 2006 – 2016

This section is dedicated to reporting the extent to which the Objectives described in the Salt Lake Management Plan 2006 – 2016 (pages 33 - 36), were successfully completed. Accomplishments for SLWMA during the previous planning timeframe are further discussed in more comprehensive detail throughout **Section 5 Management Activities and Intent** of this Management Plan.

The following **Resource Management Goals and Objectives** from the 2006 – 2016 SLWMA Management Plan describe the planned activities for SLWMA during this period. The degree to which FWC was able to accomplish the planned activities during this period is reflected as **Percent Accomplished** for each associated Objective.

Objectives Accomplished from the 2006 Salt Lake WMA Management Plan	
Goals and Objectives	**Percent Accomplished**
Goal 1. Protect, restore, and maintain native communities.	
Objective 1: Continue to post boundaries and place signs along currently established SLWMA boundaries (ongoing). *Comment: The boundaries of SLWMA have been posted with signs. To date, the BCSEFFP management units are not sufficient to establish functional operational and resource management boundaries. FWC staff will continue to post boundaries as feasible and will work with DEP and the county on acquisition of remaining parcels in the BCSEFFP.*	100%
Objective 2: Post boundaries of newly acquired FWC-leased parcels in the BCSEFFP as these parcels are established as manageable units (ongoing). *Comment: To date, the BCSEFFP management units are not sufficient to establish functional operational and resource management boundaries. FWC staff will continue to post boundaries as feasible and will work with DEP and the county on acquisition of remaining parcels in the BCSEFFP.*	0%
Objective 3: Continue to secure property against inappropriate uses that threaten the resources, including illegal dumping and Off-highway Vehicle (OHV) use (ongoing). *Comment: The FWC has cleaned up dump sites on the area, and FWC Law Enforcement conducts patrols on the area.*	100%

Objective 4: Continue to use chemical and/or mechanical means to control or eradicate invasive exotic plant species including Brazilian pepper, air potato, camphor tree, earpod tree, Chinese tallow, and Chinaberry tree (ongoing). *Comment: The FWC continues its invasive/exotic plant control efforts.*	100%
Objective 5: Continue to use prescribed fire as the primary natural community management tool for SLWMA (as detailed in the Salt Lake Prescribed Fire Plan; Appendix K), along with mechanical and chemical treatments as necessary (ongoing). *Comment: The FWC has implemented a prescribed fire plan for SLWMA and continues to use prescribed fire as in important management tool on the area.*	100%
Objective 6: As new properties are acquired and established as manageable units, update and implement the prescribed fire plan to include these parcels, and also use mechanical and chemical treatments as necessary to manage and maintain natural communities (ongoing). *Comment: To date, the BCSEFFP management units are not sufficient to establish functional operational and resource management boundaries. FWC staff will continue to post boundaries and implement management activities such as prescribed fire as feasible and will work with DEP and the county on acquisition of remaining parcels in the BCSEFFP.*	0%
Objective 7: As new parcels are acquired and leased to FWC, continue to work with SJRWMD to identify, assess, and implement hydrological restoration (ongoing). *Comment: To date, the BCSEFFP management units are not sufficient to establish functional operational and resource management boundaries. FWC staff will continue to post boundaries and implement hydrological restoration actions as feasible and will work with DEP and the county on acquisition of remaining parcels in the BCSEFFP.*	0%
Objective 8: By 2006, develop a contract with FNAI to identify and map the vegetative community types pursuant to objective-based vegetation management. *Comment: FNAI has conducted natural community mapping on SLWMA. However, to date, the BCSEFFP management units are not sufficient to establish functional operational and resource management boundaries. Therefore, natural community mapping has not occurred on these units. FWC staff will continue to post boundaries and implement management activities such as prescribed fire as feasible and will work with DEP and the county on acquisition of remaining parcels in the BCSEFFP. FWC will also work with FNAI to conduct natural community mapping on these units.*	100%

Objective 9: Using FNAI's vegetative community data delineate management units and develop quantifiable vegetation management objectives for desired future conditions. *Comment: FWC has developed quantifiable vegetation management objectives for SLWMA, and is working towards achieving those objectives.*	100%
Objective 10: With assistance from FNAI and others, complete an initial inventory of common, listed, and rare species of plants and animals within SLWMA by 2007; continue to monitor these species, and update the inventory (ongoing). *Comment: The FWC maintains an updated inventory of plant and animal species found on the SLWMA. The SLWMA WCPR Strategy provides recommendations for monitoring several animal species found on the area.*	100%
Goal 2: Ensure the long-term viability of listed species.	
Objective 1: Continue to encourage and participate in the acquisition of scrub and other natural plant communities critical to the viability of listed plant and animal species (ongoing).	100%
Objective 2: With assistance from FNAI and others, complete an initial inventory of rare and listed species of plants and animals within SLWMA by 2007; continue to monitor these species, and update the inventory (ongoing). *Comment: The FWC maintains an updated inventory of plant and animal species found on the SLWMA. The SLWMA WCPR Strategy provides recommendations for monitoring several animal species found on the area.*	100%
Objective 3: Develop and implement management strategies for known rare and listed species on SLWMA by 2007. *Comment: The SLWMA WCPR Strategy provides recommendations for monitoring several animal species found on the area. Additionally, FWC has created statewide Species Action Plans for a wide variety of imperiled species.*	100%
Objective 4: Consistent with the draft Scrub-jay Recovery Plan, develop and implement a Florida scrub-jay and scrub habitat management strategy for SLWMA by 2007. *Comment: The FWC has developed a Florida scrub-jay and scrub habitat management strategy for SLWMA. However, there is currently insufficient scrub habitat at SLWMA to support a viable Florida scrub-jay population.*	100%

Goal 3: Provide selected wildlife-oriented recreation opportunities on SLWMA.	
Objective 1: Provide diverse hunting opportunities including small game, spring turkey, archery, muzzleloading gun, general gun, and feral hog seasons (ongoing). *Comment: The FWC provides several hunting seasons for hunters of all interests.*	100%
Objective 2: Provide wildlife viewing opportunities on SLWMA by establishing 25 acres of wildlife openings and plantings on appropriate and previously disturbed sites by 2007. *Comment: Wildlife openings have been provided throughout the area, and are maintained to provide wildlife viewing opportunities.*	100%
Objective 3: Utilizing the resources of the FWC Office of Recreational Services (FWC-ORS), design and implement public use and access strategies by 2009. These strategies will address the issue of maintaining public recreational uses at levels compatible with resource protection and wildlife management objectives. *Comment: The FWC has established a recreational carrying capacity for SLWMA which can be found in Section 5.6.3 of this plan.*	100%
Objective 4: In consultation with various trail-use and development entities, including the Brevard County Metropolitan Planning Organization, and FWC-ORS, design and implement a system of trails and trailheads on SLWMA and FWC-leased BCSE parcels by 2010. *Comment: To date, the BCSEFFP management units are not sufficient to establish functional operational and resource management boundaries or trail systems. FWC staff will continue to post boundaries and establish trail systems as feasible and will work with DEP and the county on acquisition of remaining parcels in the BCSEFFP.*	50%
Goal 4: Develop programs, facilities, and infrastructure to adequately support management resource protection and recreational use.	
Objective 1: Continue to coordinate with the appropriate government agencies, including Brevard County, to resolve the public road issues within SLWMA (ongoing). *Comment: FWC continues to coordinate with Brevard County and the SJRWMD to resolve the public road issues within SLWMA as feasible.*	100%

Objective 2: To delineate area boundaries and ensure resource protection, construct or improve four miles of boundary fencing by 2006, and continue to maintain fencing as necessary (ongoing). *Comment: Most of the boundaries of SLWMA have been fenced. To date, the BCSEFFP management units are not sufficient to establish functional operational and resource management boundaries. FWC staff will continue to post boundaries as feasible and will work with DEP and the county on acquisition of remaining parcels in the BCSEFFP.*	100%
Objective 3: Construct an equipment storage pole barn on SLWMA by 2006. Contact FNAI and DHR for assistance in selecting an appropriate site. *Comment: The equipment storage and office compound has been constructed near the Arch Road entrance to the SLWMA.*	100%
Objective 4: Utilizing the resources of the FWC-ORS, develop up to five informational and interpretive kiosks and other informational materials on SLWMA by 2009. Develop additional kiosks on newly acquired parcels as appropriate (ongoing). *Comment: FWC has developed kiosks at the Arch Road entrance and the Dairy Road entrance. To date, the BCSEFFP management units are not sufficient to establish functional operational and resource management boundaries. FWC staff will continue to post boundaries as feasible and will work with DEP and the county on acquisition of remaining parcels in the BCSEFFP. FWC will explore the feasibility of developing kiosks for these units as more parcels are acquired.*	100%
Objective 5: As additional parcels are acquired, equipment and maintenance needs will increase. To adequately protect and maintain this equipment, construct an equipment maintenance and storage building on SLWMA at the same location as the pole barn by 2014. *Comment: To date, FWC has not needed to construct such a facility; however, the need for such facilities will be addressed in the update to the Management Plan.*	0%
Goal 5: Identify, manage, and protect cultural resources.	
Objective 1: With the aid of DHR, continue to locate, identify, and protect cultural resources (ongoing). *Comment: All known historic sites have been recorded in the Master Site File. FWC continues to monitor and protect these resources, and should any additional historic sites be discovered FWC will report them to DHR.*	100%

Objective 2: By 2010, or after a substantial portion of the BCSEFFP lands are established within the FWC-managed areas system, develop a contract with DHR for a comprehensive cultural resource survey. *Comment: To date, the BCSEFFP management units are not sufficient to establish functional operational and resource management boundaries. FWC staff will continue to post boundaries and contract with DHR and will work with DEP and the county on acquisition of remaining parcels in the BCSEFFP.*	0%
Goal 6: Assure an optimum boundary for SLWMA and the BCSEFFP by continuing to identify and pursue acquisition needs.	
Objective 1: Maintain a GIS shapefile, acreage, and other necessary data to facilitate nominations for an Optimum Planning Boundary (OPB) and purchases for the FWC Inholdings and Additions Program (ongoing). *Comment: An OCPB has been developed for the SLWMA, and is included in Section 5.11 of this Management Plan.*	100%
Objective 2: By 2006, work with local government acquisition personnel, The Nature Conservancy and DSL acquisition agents to determine a role for FWC in completing the SLWMA, and a BCSEFFP final Optimal Planning Boundary configuration. *Comment: An OCPB has been developed for the SLWMA, and is included in Section 5.11 of this Management Plan.*	100%
Objective 3: By 2007, coordinate with Brevard County, DEP's Modernization Project, and DEP-DSL's Survey and Mapping to determine the accurate location of FWC-leased parcels. *Comment: To date, the BCSEFFP management units are not sufficient to establish functional operational and resource management boundaries. FWC staff will continue to post boundaries and will work with DEP and the county on acquisition and mapping of remaining parcels in the BCSEFFP.*	0%

5 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 nonrenewable historical resources. In general, the FWC management intent for 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 FWC's intent to provide quality fish and wildlife resource based public outdoor recreational opportunities on 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 earlier, the management activities described in this section are in compliance with those of the Conceptual State Lands Management Plan.

5.1 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. 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 land management plan adopted pursuant to s. 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."

A land management review of the SLWMA was conducted in July of 2015 and the results of that review and FWC responses to recommendations are included as Appendix 13.7. It was determined that the SLWMA is being managed in accordance with the purposes for acquisition and that management practices, including public access, are in compliance with the management plan.

5.2 Adaptive Management

Adaptive management is "learning by doing";[1] 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.[1, 2] 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.[2, 3] 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.[2, 3]

Proposed adaptive management, monitoring and performance measures are developed through literature reviews and FWC staff meetings. Overall, a results-based approach is incorporated into this 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 historical resources of SLWMA.

5.2.1 Monitoring

A well-developed monitoring protocol is also one of the principal, required criteria for the management of 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 essential feedback, the data needed to understand the costs, benefits, and effectiveness of planned conservation actions and the management projects undertaken to address them.[2]

For natural communities, monitoring protocols are established through FWC's Objective-Based Vegetation Management (OBVM, Section 5.3.1) program, which monitors how specific vegetative attributes are responding to FWC management. For imperiled and focal fish and wildlife species, monitoring protocols are established through FWC's Wildlife Conservation Prioritization and Recovery (WCPR, Section 5.4.2) program. FWC staff may monitor additional fish and wildlife species when deemed appropriate. Exotic and invasive plant and animal species (Section 5.5) are also monitored as needed and appropriate. Recreational uses are monitored through FWC's Public Access and Wildlife Viewing program, and work in conjunction with the establishment and adjustment of public access carrying capacities (Section 5.6.3). Historical resources (Section 5.9) are monitored with guidance from the Florida Department of State's Division of Historical Resources (DHR).

5.2.2 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.

5.2.3 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 and Wildlife Viewing, Recreation Master Plans, etc.) underway to accomplish needed conservation actions that are planned to manage the natural resources of 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.

5.3 Habitat Restoration and Improvement

On SLWMA, FWC will focus on managing for native habitat diversity, emphasizing maintenance of high-quality natural communities, and restoration of disturbed areas. Restoration may be achieved on disturbed areas by the re-introduction of fire, restoring historic hydrological conditions and/or the use of mechanical or chemical forest management techniques as appropriate. Retention of the native old growth component of forests, while also providing for natural regeneration, remains an important consideration. SLWMA has high-quality native communities including basin marsh, mesic flatwoods, wet flatwoods, mesic hammock and scrub that FWC will continue to manage and protect. On disturbed upland sites, FWC intends to initiate ground cover and natural community restoration.

The FNAI has conducted surveys and mapped the current vegetative communities and historic vegetation communities on SLWMA. This information will be used to guide and prioritize management and restoration efforts on the area.

5.3.1 Objective-Based Vegetation Management

The FWC uses a comprehensive resource management approach to managing 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 attributes are responding to FWC 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 Natural Community Classification. The FWC contracts with FNAI to provide these mapping services, and plans

to have natural community maps recertified on most areas on a five-year basis. A natural community, as defined by FNAI, is a distinct and recurring assemblage of populations of plants, animals, fungi and microorganisms naturally associated with each other and their physical environment.

After natural communities have been mapped, management units are delineated. Delineating management units takes into account the distribution and extent of the current and/or historic mapped natural communities, existing and proposed infrastructure, and other management considerations. The FWC land managers then identify the predominant current or historic natural community within each management unit that guides the type and frequency of management activities that should be applied. Through OBVM monitoring, FWC collects data on a number of specific vegetation attributes that provide insight about the condition of the natural community. Because FWC is interested in the overall effect of management on the natural communities, OBVM data is analyzed at the natural community level.

Measurable habitat management objectives referred to as 'desired future conditions' are established for each actively managed natural community. Desired future conditions are the acceptable range of values for quantifiable vegetation attributes, such as basal area, shrub height and cover, and ground cover. The FWC collaborated with the FNAI to identify 'reference sites' for each actively managed natural community and applied the OBVM monitoring methodology at these reference sites to determine what attribute values occur in a high-quality community (http://www.fnai.org/reference-natural-communities.cfm). FWC staff considers the reference site attribute values when setting area-specific desired future conditions for natural communities.

Vegetation monitoring samples the selected attributes, with the results being compared to the established desired future conditions. All monitoring performed under OBVM is completed using the program's Standard Operating Procedures.

Consistent, long-term monitoring of managed natural communities will quantify changes in habitat conditions, provide information on the cumulative effects of management activities, and measure progress towards meeting management objectives for desired habitat conditions. Measured changes in vegetation condition are intended to be used to inform future land management actions.

Initial mapping and vegetation sampling provides FWC staff with baseline data indicating natural community structure, distribution, and condition on the area. Comparing the subsequent monitoring results to desired future conditions, provides important operational information on a natural community's vegetation structural status at a given point in time and trend over time. Using this information, managers can evaluate, adjust and modify

their management practices to meet the stated objectives. By comparing natural community mapping products through the years, managers can track progress in moving altered communities to functioning natural communities.

5.3.2 Prescribed Fire and Fire Management

Periodic spring and summer fires occurred in fire-adapted communities under natural conditions. Plant species composition reflects the frequency and intensity of these fires. In the absence of fire, fallow fields on former longleaf sites follow a successional pattern through mixed pine-hardwood forests to an exclusively hardwood community rather than to the original plant community. The plant species composition may differ slightly on poorer soils of the slash pine flatwoods, but the dominant role of fire in controlling hardwoods is equally important in either ecosystem.

Timber removal, site preparation, drainage, and lack of fire have all combined to alter the plant species composition of the area resulting in a loss of fuel and inhibiting the return to a more "natural" fire management regime. Site-specific combinations of prescribed fire, mechanical and chemical vegetation control, reforestation, and restoration of natural water regimes are likely necessary actions needed to restore the area to historic natural communities.

A prescribed burn at SLWMA

The FWC employs a fire management regime to increase both species and habitat diversity and will continue a prescribed burning program on the SLWMA in accordance with vegetative management objectives. As fire moves across a landscape, some areas carry fire better than others. Areas with higher vegetative fuel loads typically burn more evenly and with greater intensity. Areas with lower vegetative fuel loads or wetland areas inundated with water typically will not carry fire as evenly, and usually burn at a lower intensity. Employing a burning program with different burning frequencies, intensities, and seasonality (dormant season vs. growing season) of prescribed burns create habitat diversity and a mosaic of vegetation patterns. This mosaic is designed to have both frequently burned and infrequently burned aspects.

On some areas, prescribed burning is limited by the buildup of mid-story brush and a lack of pyrogenic groundcover fuels. This condition creates unsuitable habitat for many wildlife

species. Mechanical control of brush on upland sites by roller chopping, logging, shredding, or incidentally by equipment during commercial thinning operations, can reduce shading and encourage the grasses and forbs that are necessary to sustain prescribed fire.

Single drum (with standard, not offset blades), one-pass roller chopping can be a valuable management tool, enabling the use of prescribed fires in areas heavily invaded by dense woody vegetation. However, roller chopping may damage the herbaceous ground cover, especially wiregrass. Therefore, its application will be limited to situations where burning can only be accomplished by first reducing woody vegetation by mechanical means.

Whenever possible, existing firebreaks such as roads and trails, as well as natural breaks such as creeks and wetlands, will be used to define burning compartments. Disk harrows, mowing, and foam lines will be used as necessary to minimize disturbance and damage created by fire plows.

The transitional areas between two adjacent but different vegetative cover types, such as forests and wetlands, are known as ecotones. With the possible exception of wildfire suppression, mechanical soil disturbance in ecotones will be avoided in order to protect habitats for important rare species that often occur between flatwoods and riparian drainages. Silvicultural site preparation and creation of firebreaks are avoided when possible in these zones. Additionally, fires are allowed to burn into the edges of marshes, swamps and other wetlands in order to maintain these habitats. Once fuel loads have been reduced and a more open appearance has returned, vegetative management objectives will likely dictate a fire return interval that averages 2-7 years, depending on the community type, preferably during the spring and early summer months. Currently, approximately 50% of the fire-adapted communities on the area are being burned and maintained within their established fire return intervals due to the current water levels of some of the area's habitats, which will preclude implementing prescribed burning until they have been readied for reintroduction of prescribed fire.

Roller chopping is used to manage understory growth

In addition to the general prescribed fire management guidelines described above, an area-specific Prescribed Fire Plan has been developed and implemented for SLWMA (Appendix 13.8). This plan includes, but is not limited to, delineation of burn management units, detailed descriptions of prescribed fire methodology, safety, and smoke management guidelines.

5.3.3 Habitat Restoration

Mechanical treatments have been important for the restoration of natural communities on SLWMA. Roller chopping has been used to manage understory growth and reduce fuel loads on 500 acres of mesic flatwoods and oak canopy has been reduced on 107 acres of scrub and scrubby flatwoods. The use of prescribed fire is critical to the maintenance and restoration of natural communities on SLWMA. The first complete fire rotation occurred in 2007 with 38% of burns occurring during the dormant season and 62% during the growing season.

5.4 Fish and Wildlife Management, Imperiled and Focal Species Habitat Maintenance, Enhancement, Restoration, or Population Restoration

5.4.1 Fish and Wildlife

Due to the variety of natural communities, a diversity of associated wildlife, including rare, imperiled, common game, and non-game species, can be found on SLWMA. In managing for wildlife species, an emphasis will be placed on conservation, protection and management of natural communities. As noted above, natural communities important to wildlife include basin marsh, mesic flatwoods, wet flatwoods, mesic hammock and scrub. Additional natural communities that are found on SLWMA include basin swamp, baygall, and hydric hammock.

The size and natural community diversity of SLWMA creates a habitat mosaic for a wide variety of wildlife species. Resident wildlife will be managed for optimum richness, diversity and abundance. In addition to resident wildlife, SLWMA provides resources critical to many migratory birds including waterfowl, passerines, raptors, and others. Habitats important to migratory species will be protected, maintained or enhanced.

A white-tailed deer on SLWMA

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 wildlife populations will be managed to provide continued recreational sport hunting and wildlife viewing opportunities. However, due to the limited size of the area, 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.

Wildlife management emphasis is placed on documenting the occurrence and abundance of rare and imperiled species on the property. The FWC will continue to update inventories for certain species, with emphasis on rare and imperiled fish and wildlife species. Monitoring of wildlife species will continue as an ongoing effort for the area.

Concurrent with ongoing species inventory and monitoring activities, management practices are designed to restore, enhance or maintain rare and imperiled species, and their habitats. 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 address rare and imperiled species requirements and habitat needs. Section 5.4.2 below provides further information on FWC's comprehensive species management strategy for rare and imperiled wildlife and their respective habitats.

A gopher tortoise on SLWMA

5.4.2 Imperiled and Focal 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 managing 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 FWC management, and uses the WCPR program to ensure management is having the desired effect on wildlife.

The goal of WCPR is to provide assessment, recovery, and planning support for the FWC-managed areas to enhance management of focal species and the recovery of imperiled species. WCPR program objectives include prioritizing what FWC does for imperiled and focal species on FWC-managed areas; ensuring the actions taken on these areas are part of statewide conservation programs and priorities; and informing others about the work accomplished on lands FWC manages.

The WCPR program helps FWC take a proactive, science-based approach to species management on FWC-managed lands. This approach assesses information from statewide potential habitat models and Population Viability Analysis, and in conjunction with input from species experts and people with knowledge of the area, creates site-specific wildlife assessments for imperiled wildlife species and a select suite of focal species. Staff combines these assessments with area-specific management considerations to develop a wildlife management strategy for the area. Each strategy contains area-specific measurable objectives for managing priority species and their habitat, prescribes management actions to achieve these objectives, and establishes monitoring protocols to verify progress towards meeting the objectives. 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 endangered and threatened wildlife species, as well as select focal species found on the area.

In summary, for FWC-managed areas, the WCPR program helps assess imperiled and focal wildlife species needs and opportunities, prioritize what FWC does for imperiled and focal species, prescribe management actions to aid in species recovery, prescribe monitoring protocols to allow evaluation of the species' response to management, and ensure the information is shared with others. Through the actions of this program, FWC will facilitate fulfilling the needs of focal and imperiled wildlife species on SLWMA. In the long-term, by implementing these strategies on FWC-managed lands and continuing to assess wildlife species' needs, FWC will continue to play an integral role in aiding the recovery of imperiled species and preventing the future imperilment of declining wildlife species.

5.4.3 Focal Species Selection and Management

An FWC WCPR Species Management Strategy (WCPR Strategy) was completed for the SLWMA in March 2009 (Appendix 13.9). Using statewide landcover-based habitat models, the SLWMA WCPR Strategy identified 21 focal species and one group of species (wading birds) as having potential habitat on the SLWMA (Table 14). Of the focal species identified as having potential habitat on the area, the SLWMA WCPR Species Management Strategy provided measurable objectives and recommended some level of monitoring for gopher frog, gopher tortoise, Florida scrub-jay, painted bunting, northern bobwhite, Bachman's sparrow, brown-headed nuthatch, Florida mouse, and other species opportunistically. Since implementing the WCPR Strategy, the FWC has completed its monitoring effort for painted bunting and Florida mouse, and has determined that no future monitoring was required.

Table 14: Focal Species Occurring On the SLWMA

Common Name	Scientific Name
Bachman's sparrow	*Peucaea aestivalis*
Brown-headed nuthatch	*Sitta pusilla*
Cooper's hawk	*Accipiter cooperii*
Crested caracara	*Caracara cheriway*
Eastern indigo snake	*Drymarchon couperi*
Florida black bear	*Ursus americanus floridanus*
Florida mottled duck	*Anas fulvigula*
Florida mouse	*Podomys floridanus*
Florida pine snake	*Pituophis melanoleucus mugitus*
Florida sandhill crane	*Grus canadensis pratensis*
Florida scrub-jay	*Aphelocoma coerulescens*
Gopher frog	*Lithobates capito*
Gopher tortoise	*Gopherus polyphemus*
Limpkin	*Aramus guarauna*
Northern bobwhite	*Colinus virginianus*
Painted bunting	*Passerina ciris*
Round-tailed muskrat	*Neofiber alleni*
Sherman's fox squirrel	*Sciurus niger shermani*
Short tailed hawk	*Buteo brachyurus*
Southern bald eagle	*Haliaeetus leucocephalus*
Swallow-tailed kite	*Elanoides forficatus*
Wading birds	Multiple species

5.5 Exotic and Invasive Species Maintenance and Control

The FWC will continue efforts to control the establishment and spread of Florida Exotic Pest Plant Council (FLEPPC) Category I or II plants on SLWMA. Control technologies may include mechanical, chemical, biological, and other appropriate treatments. Treatments utilizing herbicides will comply with instructions found on the herbicide label and employ the Best Management Practices for their application.

Exotic and invasive plant species known to occur on the SLWMA and treated annually by FWC include air potato, Brazilian pepper, Chinese tallow, Japanese honeysuckle, Old World climbing fern, torpedo grass, tropical soda apple, and wedelia. Exotic and invasive plant species have been identified as occurring at varying densities on approximately 50 acres of the SLWMA. However, the FWC's methodology for determining the number of acres "infested" with invasive exotic plants only represents a cumulative acreage, and does not reflect the degree of the invasive exotic occurrence. The degree of infestation among areas identified with invasive exotic plant occurrences often varies substantially by species,

level of disturbance, environmental conditions, and the status of ongoing eradication and control efforts. The FWC will continue to focus treatments on areas identified as having invasive exotic plant occurrences, as well as treating any new occurrences as they are identified through continued monitoring.

Herbicides are used to control invasive species like Chinese tallow, Brazilian pepper, guava, camphor, earpod tree, cogongrass, tropical soda apple, air potato, paragrass, caesarweed, and Johnsongrass. Exotic species are treated in mesic hammocks, depressional wetlands, and other natural communities on the area. Historically, SLWMA was used as an illegal dump site and massive amounts of solid waste, including numerous tires, have been removed from the area. Additionally, several miles of interior fencing have been removed from SLWMA.

A Chinese tallow tree on SLWMA before and after chemical treatment

Additionally, the FWC will continue efforts to control the introduction of exotic and invasive species, as well as pests and pathogens, on the SLWMA by inspecting any vehicles and equipment brought onto the area by contractors and requiring that they be free of vegetation and dirt. If vehicles or equipment used by contractors are found to be contaminated, they will be referred to an appropriate location to clean the equipment prior to being allowed on the area. This requirement is included in every contract for contractors who are conducting any operational or resource management work on the area. In this way, FWC implements a proactive approach to controlling the introduction of exotic pests and pathogens to the area.

An exotic animal species of concern on the SLWMA is the feral hog. These animals have high reproductive rates, and when populations reach high densities, feral 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 feral hog control measures as necessary. Hog populations are controlled by hunts during the wild hog-dog hunt season, archery, small game, general gun, muzzleloading gun, and archery/muzzleloading gun seasons. Trapping is another measure that may be implemented to augment ongoing feral hog control efforts and to further reduce the natural community damage and degradation caused by this species.

5.6 Public Access and Recreational Opportunities

5.6.1 Americans with Disabilities Act

When public facilities are developed on areas managed by FWC, every effort is made to comply with the Americans with Disabilities Act (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[4] 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.

5.6.2 Recreation Master Plan

The FWC has adopted a comprehensive approach to the planning and administration of fish and wildlife resource based public outdoor recreational opportunities for SLWMA. To accomplish this, FWC will continue to work with recreational stakeholders and the general public to develop a Recreation Master Plan for SLWMA that will be used to further design and develop appropriate infrastructure that will support the recreational use of the area by the general public. This Recreation Master Plan includes planning for parking, trail design, and area resource interpretation.

5.6.3 Public Access Carrying Capacity

Baseline carrying capacities for users on 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 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 and develop public access, wildlife viewing, and fish and wildlife resource based 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, FWC has determined that SLWMA can currently support 170 visitors per day. However, objectives have been proposed in Section 6.5 of this Management Plan to increase to the public access carrying capacity to 213 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 in order to protect the natural and historical resources on SLWMA and to ensure that visitors will have a high-quality visitor experience. The public access carrying capacity will be periodically reevaluated, and additional capacity may be contemplated as part of the Recreation Master Plan development and implementation process.

5.6.4 Wildlife Viewing

Wildlife viewing opportunities abound at SLWMA. Viewing platforms and interpretive facilities have been developed at strategic locations to encourage wildlife viewing activities. The SLWMA serves as a stop along the Great Florida Birding Trail, and the observant visitor may view Bachman's sparrow, bald eagle, Florida scrub-jay, and wood stork, among others.

5.6.5 Hunting

As noted earlier, hunting is a popular use on the area. Hunters have the opportunity to harvest deer, feral hog, turkey and small game at SLWMA. Archery and general gun seasons are very popular.

5.6.6 Fishing

Salt Lake, South Lake and Loughman Lake are all open to fishing. These lakes support several species of game fish including catfish, largemouth bass, and sunfish.

5.6.7 Boating

There are no boat ramps located on the SLWMA. However, South Lake can be accessed through nearby boat ramps outside of the WMA or through Fox Lake, located in nearby Fox Lake Park. Salt Lake may be accessed from a boat ramp on SR 46 or at the terminus of Paces Landing Road. Shad Creek connects Salt Lake and Loughman Lake, although Shad Creek may be very shallow or completely dry at various times of the year.

5.6.8 Hiking

A 3.5 mile white-blazed loop trail starts at the main entrance, loops east of the power lines, and winds back to the entrance. The trail passes through mesic flatwoods, scrubby flatwoods and oak scrub. Depending on current weather conditions, the trails could be seasonally flooded in the mesic flatwoods and/or soft and sandy in the scrubby sections during dry conditions. Additionally, a hiking trail extends from the Diary Road Parking Area to the South Lake Viewing Platform, traversing scrub and hammock.

5.6.9 Bicycling

Bicycling is permitted on all named and numbered roads. Bear Bluff Road provides the best bicycling opportunity on the area.

5.6.10 Equestrian

Equestrians are permitted to explore all named and numbered roads and trails on the area. Horse trailer parking is located at the main entrance off Arch Road. No water is available except for natural ponds. Horses are prohibited during hunting seasons, except small game season.

5.6.11 Camping

Camping is not permitted on the SLWMA. However, other nearby public and private areas offer camping opportunities.

5.6.12 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 following FWC website: http://myfwc.com/media/1074886/FWC_Geocache_Guidelines.pdf .

5.6.13 Environmental Education

5.6.13.1 Interpretation

The SLWMA offers interpretive kiosks to educate visitors about the natural resources found on the area. A SLWMA bird list has been created for bird watching enthusiasts. Also, an area website is maintained to provide educational information, as well as information about recreational opportunities.

5.6.13.2 Programs

No regularly occurring educational or recreational programs are currently taking place at SLWMA, but area staff conduct various programs on occasion upon request as feasible.

5.7 Hydrological Preservation and Restoration

The SLWMA has a ridge feature near its eastern boundary that causes a majority of the area to drain to the west. Only a small portion of the area drains to South Lake. A more detailed discussion of water resources can be found in Section 2.5. Only minor hydrologic alterations have occurred on the area. Bear Bluff Road, which predates the SLWMA, is an impediment to the natural flow of water across the area. The FWC has installed new culverts and low water crossings along this road to improve the hydrology at SLWMA.

Installing a low water crossing at SLWMA

5.8 Forest Resource Management

A Timber Assessment of the timber resources of SLWMA will be conducted by the Florida Forest Service, or a contracted professional forester. The management of timber resources will be considered in the context of the Timber Assessment and the overall land management goals and activities.

Timber resources include some pine plantations in need of thinning for habitat improvement. Thinning of the forest over-story, hydrological restoration and reintroduction of prescribed burning are the most important factors in re-establishment of natural communities and the enhancement of wildlife habitats in these areas. Upland pine forest planted with off-site pines will be reforested with longleaf pine or other on-site species as appropriate. Degraded or disturbed bottomland hardwood sites will be encouraged to reforest naturally with native wetland oaks, hardwoods, and other appropriate native plant species.

Pursuant to FWC's overall management philosophys, 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 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 will be protected to benefit cavity-nesting species.

5.9 Historical Resources

Procedures outlined by DHR will be followed to preserve the historical sites of SLWMA. The FWC will consult with DHR in an attempt to locate any additional historical features on the area. In addition, FWC will ensure management staff has DHR Archaeological Resources Monitoring training. The FWC will refer to and follow DHR's Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties (Appendix 13.11) for management of these resources, and prior to any facility development or other ground disturbing activities. Furthermore, as appropriate and necessary, FWC will contact professionals from DHR for assistance prior to any ground-disturbing activity on SLWMA.

To date, the DHR Master Site File indicates seven known historic sites on SLWMA and one site on the Grissom Parkway Unit of the BCSEFFP FWC parcels. The FWC will submit subsequently located historic sites on SLWMA to DHR for inclusion in their Master Site File. In cooperation with DHR, all of the known historic sites on SLWMA will continue to be monitored on a regular basis.

5.10 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 resource based 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.

The SLWMA office, shop, and storage facility

Current capital facilities on SLWMA include an office, shop, and storage compound, the South Lake use area, the Arch Road

entrance facility, and the Dairy Road entrance facility (Figure 26). Additionally, the SLWMA contains 6.8 miles of roads and 29 miles of trails.

As described in Section 2.4.1 of this Management Plan, for any public facilities that are developed on areas managed by FWC, every effort is made to comply with the Americans with Disabilities Act (Public Law 101-336).

5.11 Land Conservation and Stewardship Partnerships

The FWC utilizes a three-tiered approach to identifying, acquiring or otherwise protecting important conservation lands adjacent to or in proximity to existing FWC-managed areas. This involves development of an Optimal Resource Boundary (ORB), Optimal Conservation Planning Boundary (OCPB) and associated Conservation Action Strategy (CAS). Increasingly, cooperative land steward partnership efforts with private landowners plays an integral role in this effort as does ongoing land conservation, either through fee-simple or less-than-fee conservation easements. In combination, this tiered model helps FWC to further the regional conservation of important fish and wildlife habitats through a proactive, comprehensive, and cooperative approach towards conservation.

5.11.1 Optimal Resource Boundary

This three tiered model begins with the development of an ORB, which is a resource-based analysis on a regional scale that integrates important FWC conservation research and analysis into practical planning, acquisition, and management efforts through GIS analysis. The ORB focuses on critical and important wildlife species or habitat considerations such as rare and imperiled species habitat within a particular region or ecosystem-like area on a landscape scale within which an FWC managed area is contained while eliminating urban areas or lands that have already been conserved or protected.

5.11.2 Optimal Conservation Planning Boundary

The second tier is known as the OCPB. The OCPB combines the regional natural resources identified in the ORB, as well as regional and local area conservation planning, including habitat conservation and restoration, habitat linkages, management challenges, land use and zoning issues, infrastructure including roads and developments, improving access, eliminating inholdings, providing prescribed burn buffers, resolving boundary irregularities, water resource protection, and conserving other important natural and historical resources.

The OCPB provides the basis for development of a broader CAS for SLWMA. Although the OCPB provides the basis for potential future voluntary, willing-seller conservation acquisitions, it is designed to function primarily as a conservation planning boundary. The OCPB identifies surrounding lands and natural resources that may be important to the continued viability of fish and wildlife populations in the region (Figures 27 through 29). As they are currently managed, these lands appear to contribute to regional conservation and may support conservation landscape linkages.

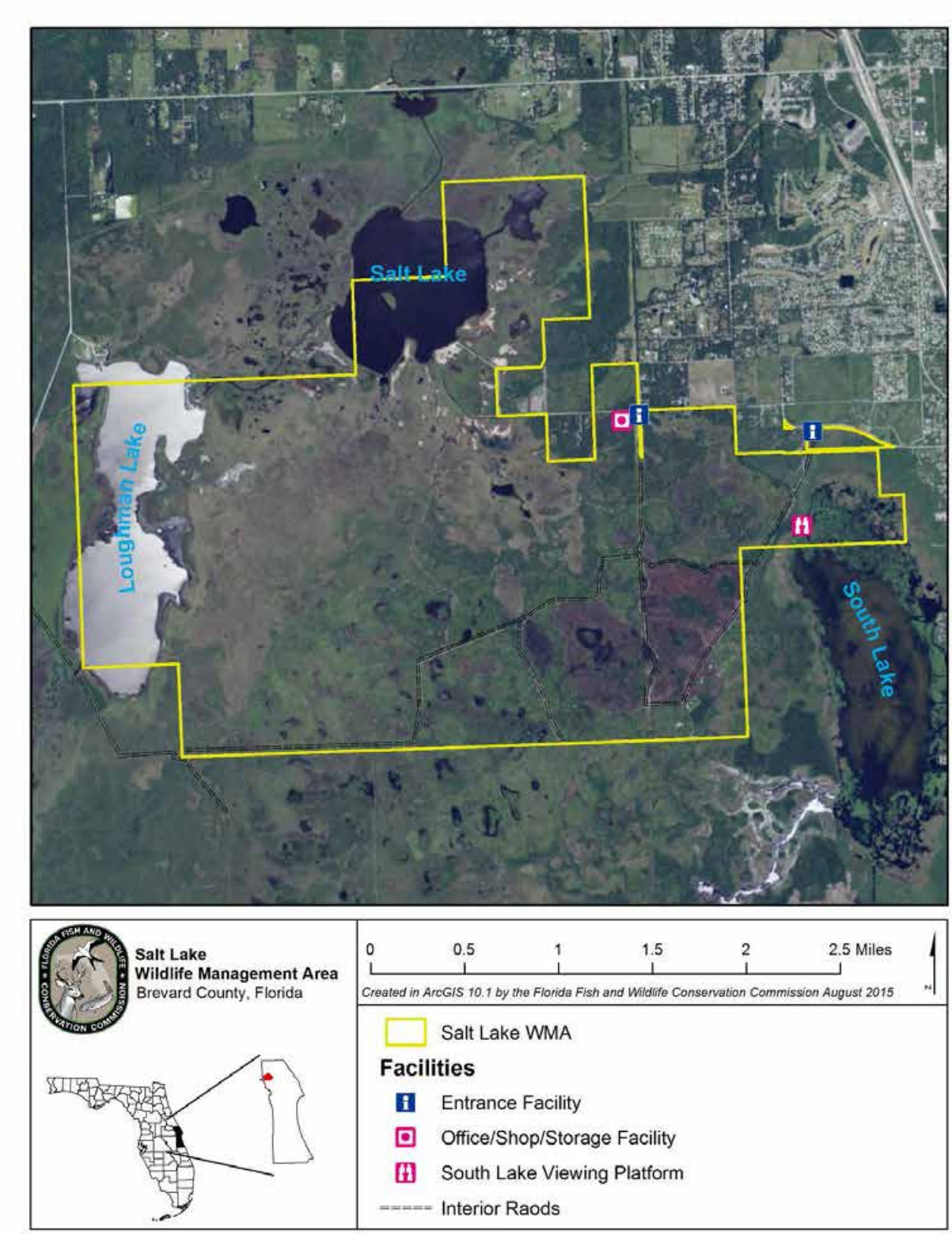


Figure 26: SLWMA Facilities

5.11.3 Conservation Action Strategy

The CAS is the third tier, and implements the results of the ORB and OCPB tiers. This element of the process incorporates the conservation planning recommendations into an action strategy that prioritizes conservation needs. The CAS is integral to the development of conservation stewardship partnerships and also implements the current approved process for establishing the FWC Florida Forever Inholdings and Additions acquisition list.

Primary components of the CAS may include:

- FWC Landowner Assistance Program
- FWC conservation planning
- FWC Additions and Inholdings Program Land Conservation Work Plan
- Forest Stewardship Program proposals
- Florida Forever project proposals and boundary modifications
- Conservation easements
- Federal or State grant conservation proposals
- Regional or local conservation proposals
- Local, state, and federal planning proposals
- Non-governmental organization conservation proposals

Continued conservation of these lands may be aided by available voluntary landowner stewardship programs, conservation easements, and in some cases, potential voluntary conservation acquisitions. Participation in any FWC conservation effort is entirely voluntary and at the sole choice of willing landowners.

Private landowners seeking assistance with habitat management will likely find it offered within FWC's Landowner Assistance Program (LAP). The FWC employs biologists who are available to provide wildlife-related assistance with land-use planning and habitat management. There are many forms of assistance that include technical, financial, educational, and various forms of recognition that seek to award landowners who manage their wildlife habitat responsibly. More information on FWC's LAP program and online habitat management tools are available online at: http://myfwc.com/conservation/special-initiatives/lap/ .

5.11.4 FWC Florida Forever Additions and Inholdings Acquisition List

Currently, FWC has not identified any privately owned potential additions or inholdings for the SLWMA. However, acquiring the remaining lands within the BCSEFFP is considered essential to protecting the unique scrub habitat, Florida scrub-jay, and other imperiled and rare species and their associated habitats. Also, acquiring these lands will enhance the operational and resource management feasibility of existing conservation lands as well as provide additional public access opportunities. Upon completion of the CAS, additions to the FWC Florida Forever Additions and Inholdings acquisition list may be recommended.

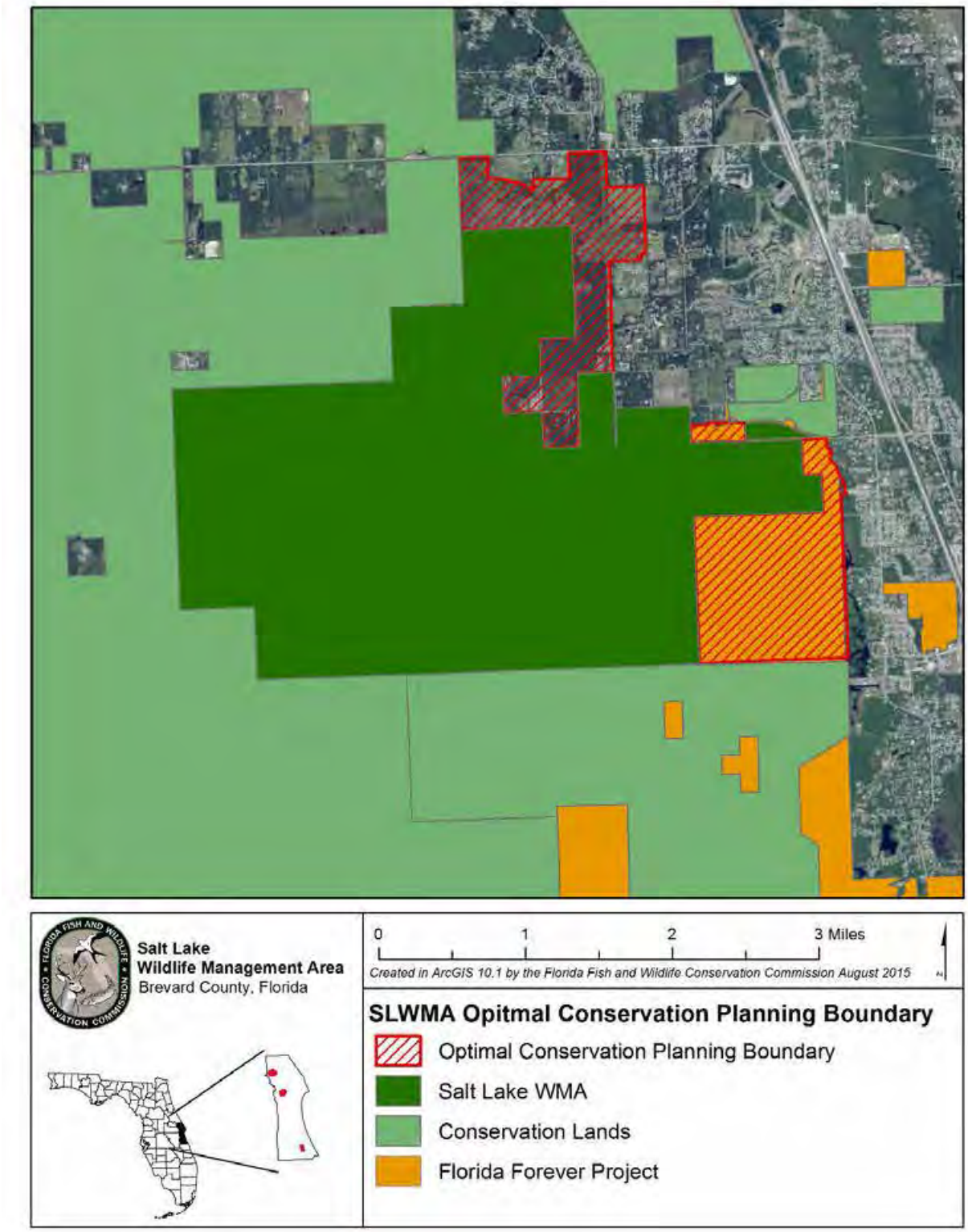


Figure 27: Optimal Conservation Planning Boundary

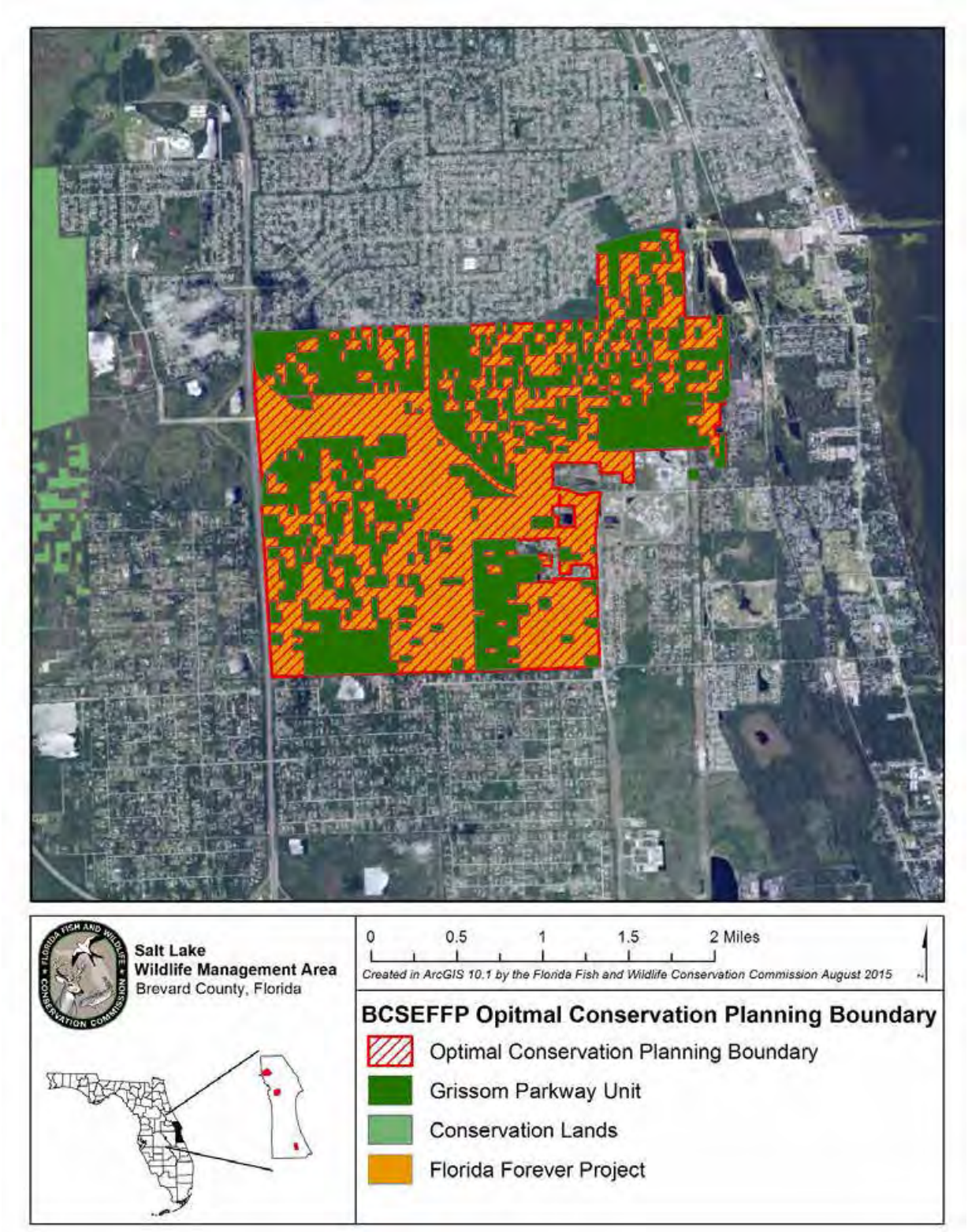


Figure 28: Optimal Conservation Planning Boundary

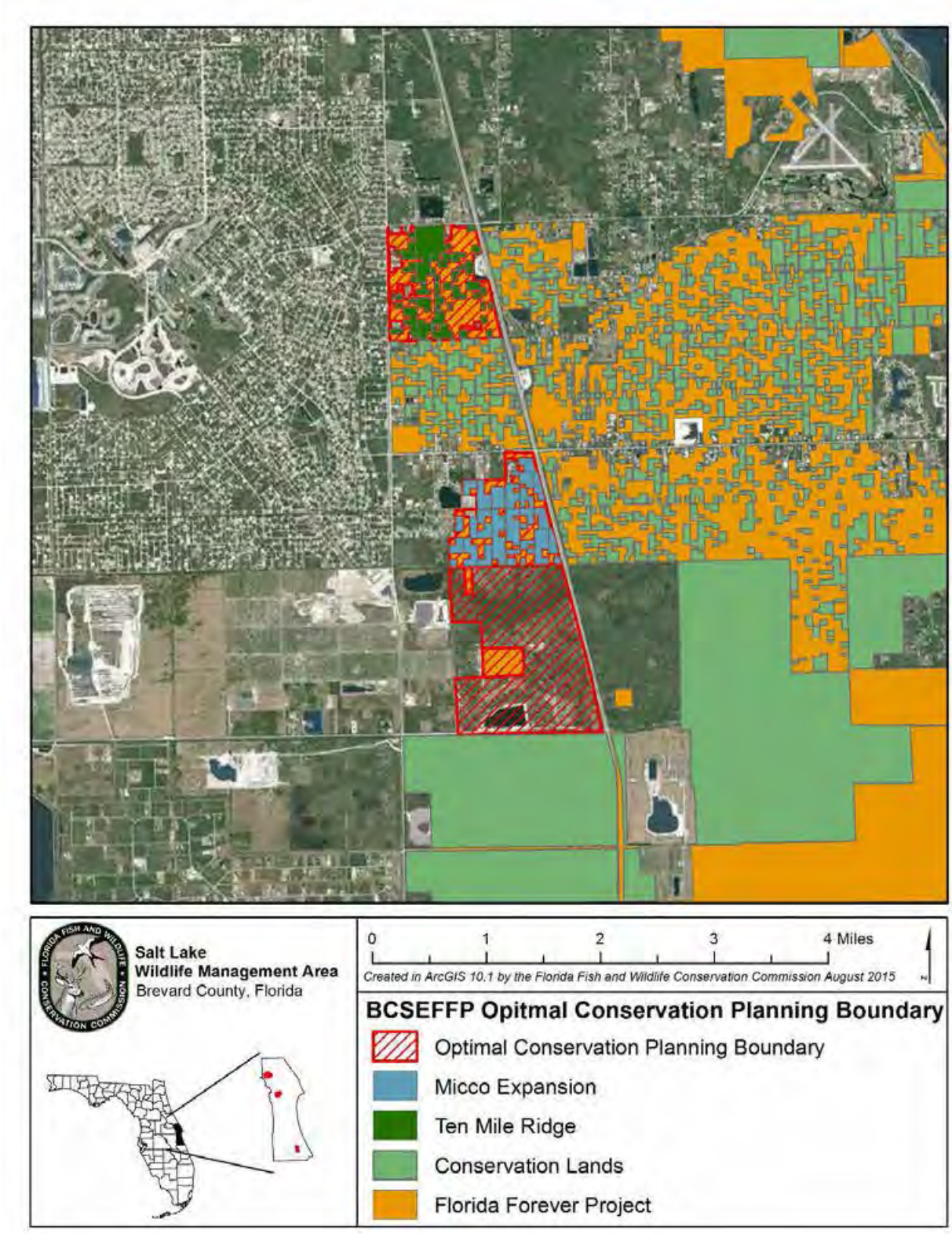


Figure 29: Optimal Conservation Planning Boundary

5.12 Research Opportunities

The FWC intends to cooperate with researchers, universities, and others as feasible and appropriate. For SLWMA, the FWC will continue to assess and identify research needs, and pursue research and environmental education partnership opportunities as appropriate. Research proposals involving the use of the area are evaluated on an individual basis. All research activities on SLWMA must have prior approval by FWC.

5.13 Cooperative Management and Special Uses

5.13.1 Cooperative Management

The FWC is responsible for the overall management and operation of SLWMA as set forth in the lease agreements with the Board of Trustees and the SJRWMD. In keeping with the lease agreements, and in order to conduct 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 DHR to ensure the requirements of the Management Procedures Guidelines - Management of Archaeological and Historical Resources document (13.10) are followed with regard to any ground-disturbing activities. In addition, the FFS assists FWC by providing technical assistance on forest resource management. Also, 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 SLWMA.

5.13.2 First Responder and Military Training

First-responder (public governmental police department or agency, fire and emergency medical service personnel) training and military training are conditionally allowed on 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 SLWMA, and causes no measurable long-term impact to the natural resources of the area. Additionally, FWC staff must be notified and approve the training through issuance of a permit prior to any such training taking place on SLWMA. Any first-responder or military training that is not low-impact, intermittent and occasional would require an amendment to this management plan, and therefore will be submitted by FWC to DSL and ARC for approval consideration prior to authorization.

5.13.3 Apiaries

Currently, there is an apiary operating on SLWMA. Use of apiaries is conditionally approved for SLWMA, and is deemed to be consistent with purposes for acquisition, is in compliance with the Conceptual State Lands Management Plan, and is consistent with the FWC agency mission, goals, and objectives as expressed in the agency Strategic Plan and priorities document (Appendix 13.6). Location, management, and administration of apiaries on SLWMA is guided by the FWC Apiary Policy.

The FWC Apiary Policy (Appendix 13.10) will be followed with regards to site location, management, and administration of apiaries.

5.14 Climate Change

Because of Florida's unique ecology and topography, any potential impacts as a result of climate change may be particularly acute and affect multiple economic, agricultural, environmental, and health sectors across the state. The impact of climate change on wildlife and habitat may already be occurring, from eroding shorelines and coral bleaching to increases in forest fires and saltwater intrusion into inland freshwater wetlands.

The Intergovernmental Panel on Climate Change (IPCC), a multi-national scientific body, reports that climate change is likely proceeding at a rate where there will be unavoidable impacts to humans, wildlife, and habitat. Given current levels of heat-trapping greenhouse gas emissions, shifts in local, regional, and national climate patterns including changes in precipitation, temperature, increased frequency and intensity of extreme weather events, rising sea levels, tidal fluctuations, and ocean acidification are projected . The current trend of global temperature increase has appeared to accelerate in recent decades, and continued greenhouse gas emissions may result in projected global average increases of 2 – 11.5° F by the end of the century.[5]

This apparent change in global climate has the potential to disrupt natural processes; in some areas, climate change may cause significant degradation of ecosystems that provide services such as clean and abundant water, sustainable natural resources, protection from flooding, as well as hunting, fishing and other recreational opportunities. Consequently, climate change is a challenge not only because of its likely direct effects, but also because of its potential to amplify the stress on ecosystems, habitats, and species from existing threats such as exponential increases in surface and ground water use, habitat loss due to increased urbanization, introduction of invasive species, and fire suppression.

Potential impacts that may be occurring as a result of climate change include: change in the timing of biological processes, such as flowering, breeding, hibernation, and migration;[6, 7, 8] more frequent invasions and outbreaks of exotic invasive species;[9] and loss of habitat in coastal areas due to sea level rise.[10] Some species are projected to adjust to these conditions through ecological or evolutionary adaptation, whereas others are projected to exhibit range shifts as their distributions track changing climatic conditions. Those species that are unable to respond to changing climatic conditions are projected to go extinct. Some estimates suggest that as many as 20% - 30% of the species currently assessed by the IPCC are at risk of extinction within this century if global mean temperatures exceed increases of 2.7 – 4.5° F.[11] A number of ecosystems are projected to be affected at temperature increases well below these levels.

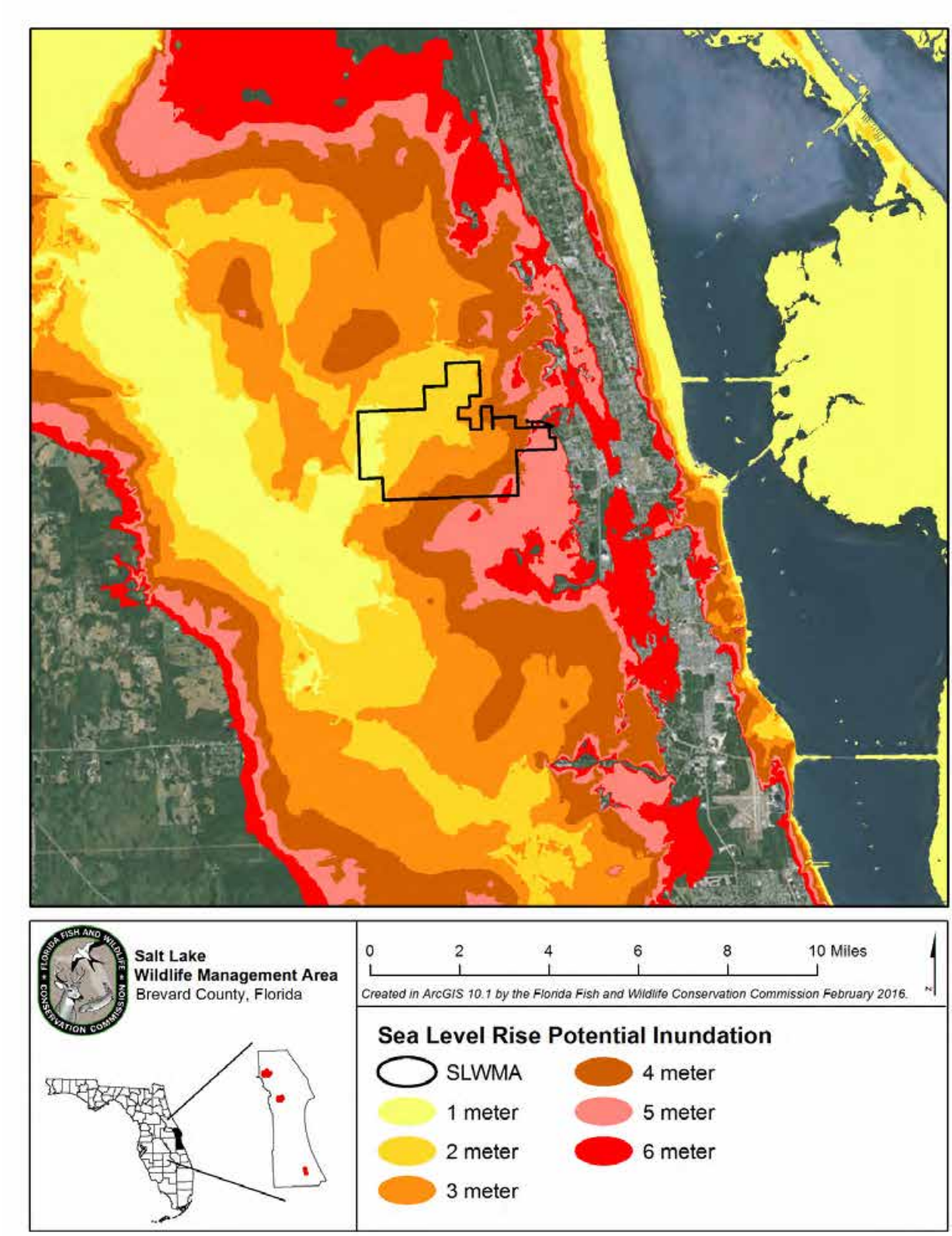


Figure 30: Potential Inundation of SLWMA

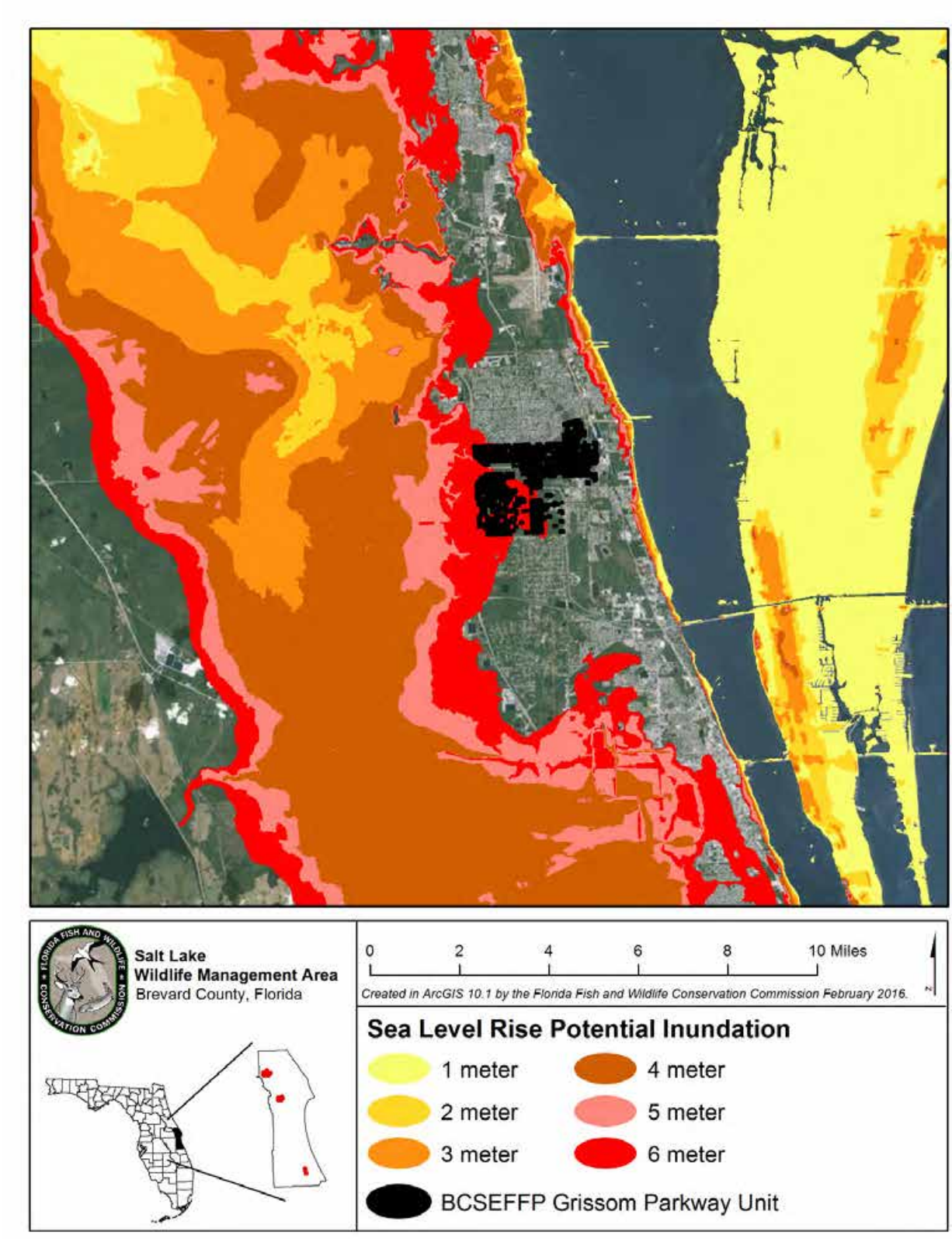


Figure 31: Potential Inundation of the Grissom Parkway Unit

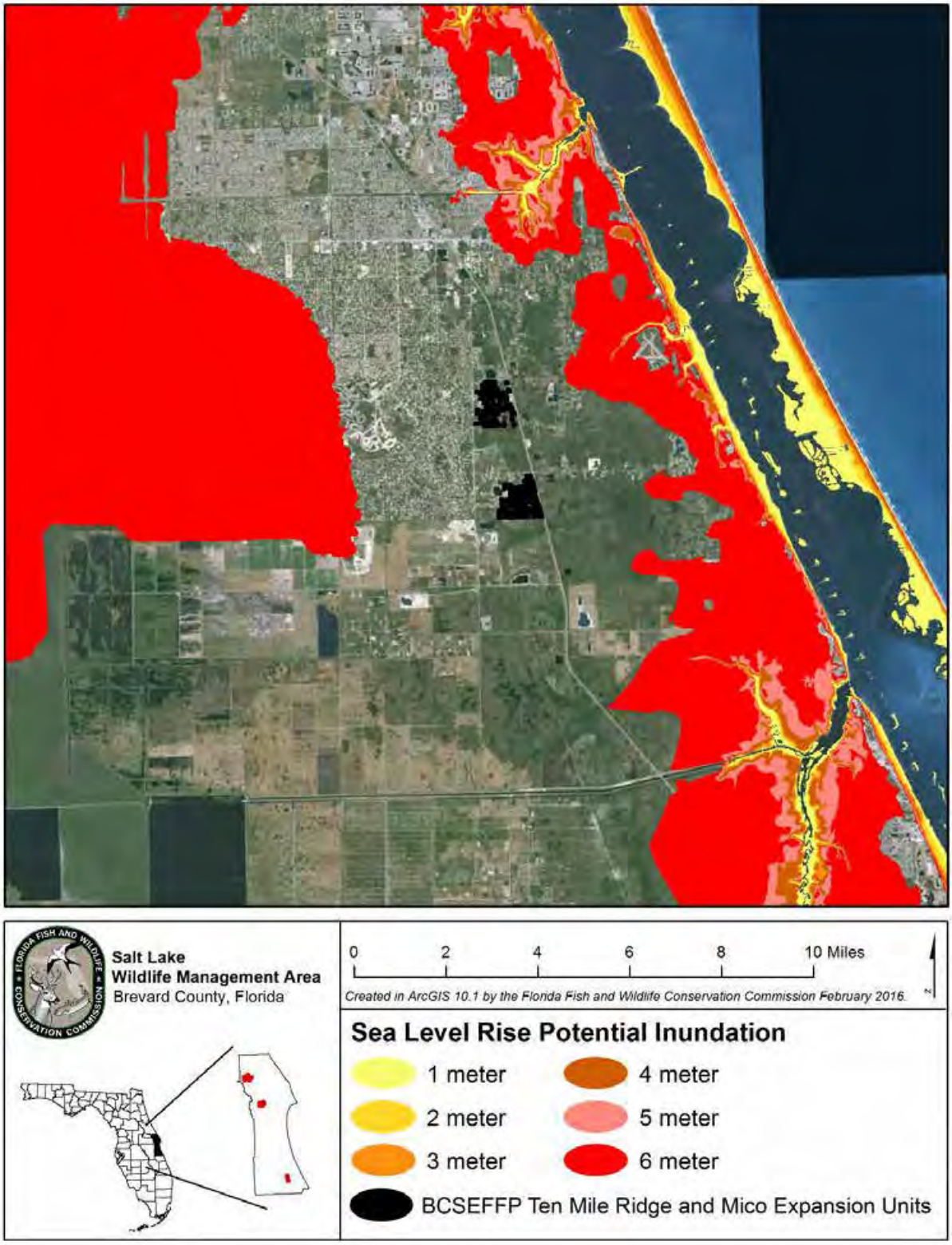


Figure 32: Potential Inundation of the Ten Mile Ridge and Micco Expansion Units

At this time, the potential effects of climate change on Florida's conservation lands are just beginning to be studied and are not yet well understood. For example, FWC has begun a process for currently developing climate change adaptation strategies for monitoring, evaluating, and determining what specific actions, if any, may be recommended to ameliorate the projected impacts of climate change on fish and wildlife resources, native vegetation, and the possible spread of exotic and invasive species. Currently, FWC is continuing its work on the development of these potential adaptation strategies. However, as noted above, the effects of climate change may become more frequent and severe within the time period covered by this Management Plan.

For these reasons, there is a continuing need for increased information and research to enable adaptive management to cope with potential long-term climate change impacts. The most immediate actions that FWC can take are to work with partners to gather the best scientific data possible for understanding natural processes in their current state, model possible impacts and subsequent changes from climate change, develop adaptive management strategies to enhance the resiliency of natural communities to adapt to climate change, and formulate criteria and monitoring for potential impacts when direct intervention may be necessary to protect a species. To this end, when appropriate, FWC will participate in organizations such as the Peninsular Florida Land Conservation Cooperative or similar organizations so that FWC continues to gain understanding and share knowledge of key issues related to potential climate change. In addition, FWC will consider the need for conducting vulnerability assessments to model the potential effects of climate change, especially sea level rise and storm events, on imperiled species and their habitats on FWC managed land.

Elements of climate change that may potentially affect SLWMA include inundation and saltwater intrusion from sea level rise (Figure 30), more frequent and more potent storm events, alteration of vegetation reproductive cycles, and changes in the fire regime. The results of a Sea Level Affecting Marsh Model for the SLWMA shows habitats that may potentially be impacted. The low-lying coastal habitats, such as salt marsh and hardwood swamp natural communities are projected to face the most direct and dramatic impacts of climate change, particularly from a projected rising sea level and from the projected increased frequency and intensity of coastal storms.[12, 13, 14, 15] The effects of sea level rise in the recent past have been observed on the nearby Merritt Island National Wildlife Refuge; cabbage palms have been dying on coastal islands due to salinity increases. The potential loss of habitat may result in the loss of species using that habitat, including migrating and nesting birds. Storm events also cause considerable physical damage to native vegetation along vulnerable shorelines, impacting nesting habitat for sea life and shorebirds. The projected rise in sea levels may decrease the availability and abundance of prey for wading birds that forage in shallow waters on the expansive tidal flats of the Atlantic Coast. Climate change may amplify and hasten these effects, potentially at rates that exceed the

normal resiliency of plant communities to recover, shift or adapt accordingly.[16, 17] Projected salt water intrusion into the subsurface freshwater lens from potential sea level rise and saltwater inundation of surface freshwaters from storm surges may alter coastal ecosystems and freshwater marshes, possibly resulting in more salt-tolerant aquatic plant communities.

To address the potential impacts of climate change on the SLWMA, Goals and Objectives have been developed as a component of this Management Plan (Section 6.12). Depending on the recommendations of the adaptive management strategies described above, additional specific goals and objectives to mitigate potential climate change impacts may be developed for the SLWMA Management Plan in the future.

5.15 Soil and Water 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.

6 Resource Management Goals and Objectives

The management goals described in this section are considered broad, enduring statements designed to guide the general direction of management actions to be conducted in order to achieve an overall desired future outcome for 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. Many of the objectives listed have specific end-of-the-calendar-year target dates for completion and all of them are classified as having either short-term (less than two years) or long-term (up to ten years) timelines for completion.

6.1 Habitat Restoration and Improvement

Goal: Improve extant habitat and restore disturbed areas.

Short-term

6.1.1 Conduct prescribed burning on approximately 1,000 acres of fire-adapted natural communities per year (Figure 31).

6.1.2 Maintain approximately 1,700 acres (27% of fire adapted communities) of mesic flatwoods within 3 – 5 year fire return interval, wet flatwoods, and scrubby flatwoods within a 5 – 7 year target fire return interval (Figure 31), and floodplain marsh within a 2 – 4 year fire return interval.

6.1.3 Maintain 70 acres of scrub natural community (100%) within 10 – 20 year target fire return interval (Figure 31).

6.1.4 Update the prescribed burn plan.

6.1.5 Conduct habitat/natural community improvement on 110 acres by continuing mechanical treatments throughout the area where needed.

6.1.6 Continue to implement OBVM.

Long-term

6.1.7 Continue to burn 1000 acres of fire-adapted natural communities per year.

6.1.8 Maintain approximately 3,575 acres (49% of fire adapted communities) of mesic flatwoods within a 3 – 5 year fire return interval, wet flatwoods, and scrubby flatwoods within a 5 – 7 year target fire return interval, and floodplain marsh within a 2 – 4 year fire return interval.

6.1.9 Continue to implement OBVM.

6.1.10 Reevaluate natural communities every five years and revise the natural communities map as necessary.

6.1.11 Continue to conduct habitat/natural community improvement on 110 acres per year by continuing mechanical treatments.

6.1.12 Contract for mapping of historic and current natural communities for the Grissom Parkway, Micco Expansion, and Ten Mile Ridge units of BCSEFFP.

6.2 Imperiled and Focal Species Habitat Maintenance, Enhancement, Restoration, or Population Restoration

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

Short-term

6.2.1 Continue to implement the WCPR Strategy.

6.2.2 Monitor gopher frog as described in the WCPR Strategy.

6.2.3 Monitor Bachman's sparrow as described in the WCPR Strategy.

6.2.4 Monitor brown-headed nuthatch as described in the WCPR Strategy.

6.2.5 Monitor for Florida scrub-jay as described in the WCPR Strategy.

6.2.6 Monitor for northern bobwhite as described in the WCPR Strategy.

6.2.7 Continue to collect opportunistic wildlife species occurrence data.

6.2.8 Monitor Southeastern American kestrel.

6.2.9 Conduct periodic aerial surveys for bald eagle nesting activity.

6.2.10 Continue to periodically survey and monitor for imperiled plant species.

A bald eagle nest on SLWMA

Long-term

6.2.11 Continue to implement the WCPR Strategy.

6.2.12 Continue to monitor gopher frog as described in the WCPR Strategy.

6.2.13 Continue to monitor gopher tortoise as described in the WCPR Strategy

6.2.14 Continue to monitor Bachman's sparrow as described in the WCPR Strategy.

6.2.15 Continue to monitor brown-headed nuthatch as described in the WCPR Strategy.

6.2.16 Continue to monitor for Florida scrub-jay as described in the WCPR Strategy.

6.2.17 Continue to monitor for northern bobwhite as described in the WCPR Strategy.

6.2.18 Continue to collect opportunistic wildlife species occurrence data.

6.2.19 Continue to monitor Southeastern American kestrel.

6.2.20 Continue periodic aerial surveys for bald eagle nesting activity.

6.2.21 Continue to periodically survey and monitor for imperiled plant species.

6.2.22 Continue to conduct a gopher tortoise survey every five years.

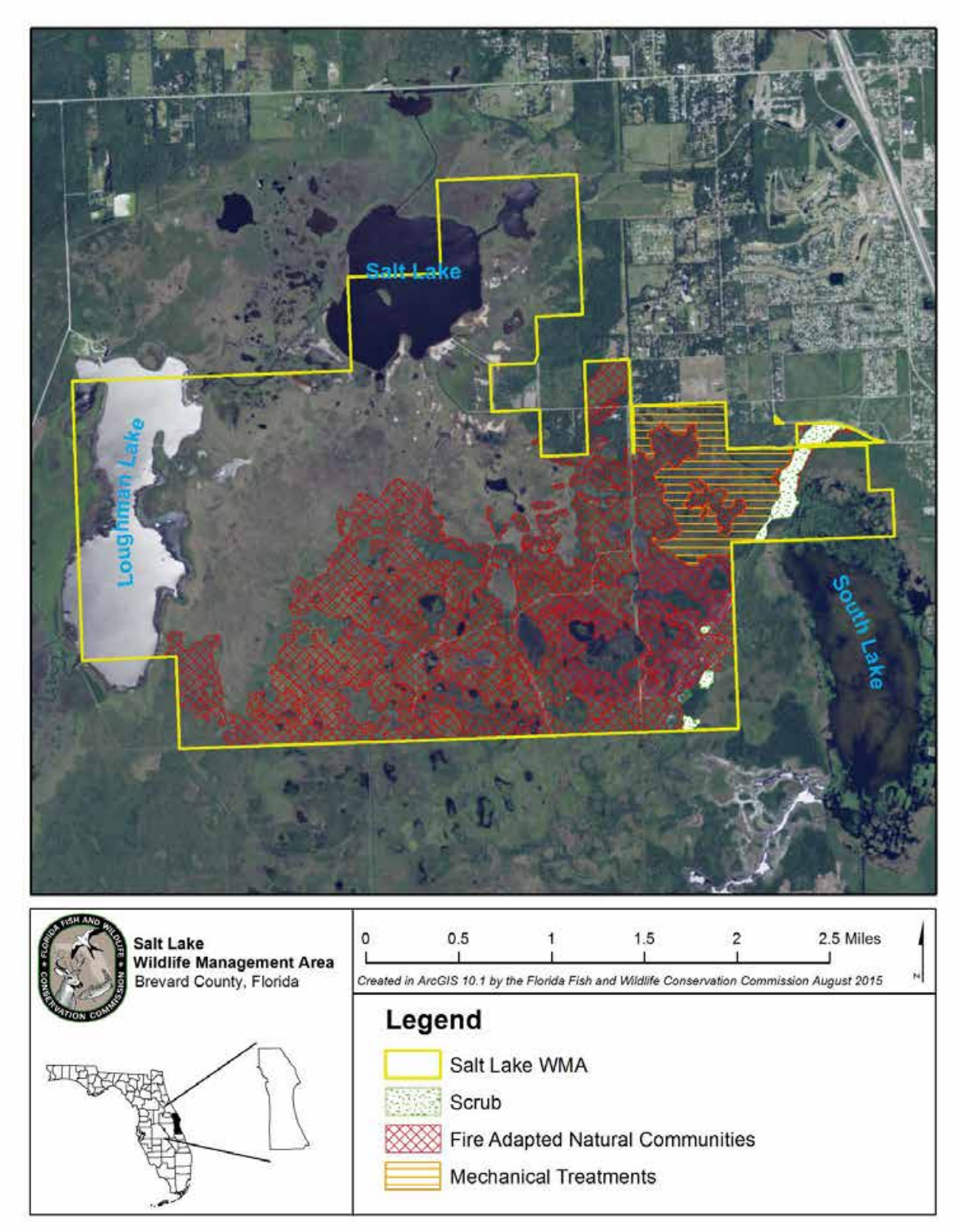


Figure 33: Location of SLWMA Management Objectives

6.3 Other Wildlife (Game and Nongame) Habitat Maintenance, Enhancement, Restoration, or Population Restoration

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

Short-term

6.3.1 Continue to conduct annual spotlight monitoring surveys for white tailed deer.

6.3.2 Continue to collect biological harvest data at check station.

6.3.3 Continue to collect opportunistic wildlife occurrence data.

6.3.4 Continue to maintain 80 acres of wildlife openings.

6.3.5 Continue to conduct annual mourning dove banding.

6.3.6 Continue to maintain four bat boxes.

6.3.7 Continue to maintain 42 bluebird nest boxes.

6.3.8 Continue to maintain one purple martin nest box.

6.3.9 Continue to maintain ten wood duck nest boxes.

6.3.10 Continue to maintain four kestrel nest boxes.

Long-term

6.3.11 Continue to conduct annual spotlight monitoring surveys for white-tailed deer.

6.3.12 Continue to collect biological harvest data at check station.

6.3.13 Continue to collect opportunistic wildlife occurrence data.

6.3.14 Continue to maintain 80 acres of wildlife openings.

6.3.15 Continue to conduct annual mourning dove banding.

6.3.16 Continue to maintain four bat boxes.

6.3.17 Continue to maintain 42 bluebird nest boxes.

6.3.18 Continue to maintain one purple martin nest box.

6.3.19 Continue to maintain ten wood duck nest boxes.

6.3.20 Continue to maintain four kestrel nest boxes.

6.4 Exotic and Invasive Species Maintenance and Control

Goal: Remove exotic and invasive plants and animals and conduct needed maintenance and control.

Short-term

6.4.1 Annually treat at least 130 acres of EPPC Category I and Category II invasive exotic plant species including air potato, Chinese tallow, cogon grass, Brazilian pepper, strawberry guava, camphor trees, guinea grass, old-world climbing fern, giant reed, paragrass, Caesar weed, melaleuca, sword fern, parrot's feather, earpod tree, and torpedo grass.

6.4.2 Monitor for exotic animal species and control as necessary including Cuban treefrog, peacock, green house frog, and rock pigeon.

6.4.3 As necessary, implement control measures including hunting and trapping for feral hogs.

Long-term

6.4.4 Continue to annually treat at least 130 acres of EPPC Category I and Category II invasive exotic plant species including air potato, Chinese tallow, cogon grass, Brazilian pepper, strawberry guava, camphor trees, guinea grass, old-world climbing fern, giant reed, paragrass, Caesar weed, melaleuca, sword fern, parrot's feather, earpod tree, and torpedo grass.

6.4.5 Monitor for exotic animal species and control as necessary including Cuban treefrog, peacock, green house frog, and rock pigeon.

6.4.6 As necessary, implement control measures including hunting and trapping for feral hogs.

6.5 Public Access and Recreational Opportunities

Goal: Provide public access and recreational opportunities.

Short-term

6.5.1 Continue to implement the Recreation Master Plan.

6.5.2 Maintain public access and recreational opportunities to allow for a recreational carrying capacity of 170 visitors per day.

6.5.3 Continue to provide the website, three kiosks, bird list, birding festival, and youth education programs for interpretation and education.

6.5.4 Maintain 29 miles of trails.

Long-term

6.5.5 Continue to implement the Recreation Master Plan.

6.5.6 Update the Recreation Master Plan.

6.5.7 Develop additional public access and recreational opportunities resulting in a carrying capacity of 213 visitors/day.

6.5.8 Develop four new interpretive/education kiosks at the South Lake observation platform, Grissom Parkway Unit, Micco Ridge Unit, and Ten Mile Ridge Unit.

6.5.9 Continue to provide the website, three kiosks, bird list, birding festival, and youth education programs for interpretation and education.

6.5.10 Monitor trails annually for visitor impacts.

6.5.11 Reassess recreational opportunities every three years.

6.5.12 Continue to provide hunting opportunities for deer, turkey, small game and feral hogs.

6.5.13 Continue to provide paddling opportunities on appropriate water bodies.

6.5.14 Continue to provide fishing opportunities on appropriate water bodies.

6.5.15 Cooperate with other agencies, County, stakeholders, and regional landowners to investigate regional recreational opportunities including linking hiking, paddling, and multi-use trail systems between adjacent public areas.

6.5.16 Continue to identify partnerships that could provide for environmental educational programs and outreach.

6.6 Hydrological Preservation and Restoration

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

Short-term

6.6.1 To maintain and enhance natural hydrological functions, install and maintain low-water crossings and culverts as appropriate.

6.6.2 Continue to cooperate with the St. Johns River Water Management District for the monitoring of surface and ground water quality and quantity.

Long-term

6.6.3 Conduct or obtain a hydrological assessment to identify potential hydrology restoration needs.

6.6.4 Implement hydrological restoration plan.

6.6.5 As recommended by the Hydrology Assessment and Conceptual Restoration Plan, install and maintain low-water crossings and culverts as appropriate to maintain and enhance natural hydrological functions.

6.7 Forest Resource Management

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

Short-term

6.7.1 Cooperate with the Florida Forest Service (FFS) to complete an updated Timber Assessment.

6.7.2 Consult with the FFS or a professional forestry consultant regarding forest management activities as appropriate.

Long-term

6.7.3 Continue to consult with the FFS or a professional forestry consultant regarding forest management activities as appropriate.

6.8 Historical Resources

Goal: Protect, preserve and maintain the historical resources of the SLWMA.

Short-term

6.8.1 Monitor the eight known recorded sites annually, at a minimum, and submit updates of additional sites to DHR for inclusion in their Master Site file.

6.8.2 Ensure management staff has DHR Archaeological Resources Monitoring training.

6.8.3 Follow DHR's Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties for the management of historical resources.

Long-term

6.8.4 Continue to monitor the eight known recorded sites annually, at a minimum, and submit updates of additional sites to DHR for inclusion in their Master Site file.

6.8.5 Continue to follow DHR's Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties for the management of historical resources.

6.8.6 Cooperate with DHR in designing site plans for development of infrastructure.

6.9 Capital Facilities and Infrastructure

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

Short-term

6.9.1 Maintain four facilities including Arch Road entrance facility, Dairy Road entrance facility, South Lake use area, and pole barn/equipment/office compound.

6.9.2 Maintain 6.8 miles of roads.

6.9.3 Maintain 29 miles of trails.

6.9.4 Improve two miles of roads.

Viewing platform at the South Lake use area

6.9.5 Monitor trails and infrastructure biannually for visitor impacts.

Long-term

6.9.6 Monitor trails and infrastructure biannually for visitor impacts.

6.9.7 Continue to maintain four facilities including Arch Road entrance facility, Dairy Road entrance facility, South Lake use area, and pole barn/equipment/office compound.

6.9.8 Continue to maintain 6.8 miles of roads.

6.9.9 Continue to maintain 29 miles of trails.

6.9.10 Construct four new entrance package facilities at Dairy Road, Grissom Parkway Unit, Micco Expansion Unit, and Ten Mile Ridge Unit, one new equipment storage facility, and up to two miles of trails.

6.9.11 Improve or repair four facilities including the Arch Road entrance facility, Dairy Road entrance facility, South Lake use area, and pole barn/equipment/office compound.

6.10 Land Conservation and Stewardship Partnerships

Goal: Enhance fish and wildlife conservation, resource, and operational management through development of an optimal boundary.

Short-term

6.10.1 Identify potential important wildlife habitat, landscape-scale linkages, wildlife corridors, and operational/resource management needs.

6.10.2 Identify and develop conservation stewardship partnerships.

6.10.3 Identify and pursue conservation acquisition needs.

6.10.4 Develop and maintain a GIS shapefile and other necessary data to facilitate nominations from the FWC OCPB and for FWC's LAP and Land Acquisition Programs.

6.10.5 Develop a Conservation Action Strategy.

6.10.6 Contact and inform adjoining landowners about the FWC LAP to pursue non-acquisition conservation stewardship partnerships.

6.10.7 Determine which parcels should be added to the FWC acquisition list.

6.10.8 Identify potential non-governmental organization partnerships and grant program opportunities.

6.10.9 Determine efficacy of conducting an adjacent landowner's assistance/conservation stewardship partnership workshop.

6.10.10 Identify potential conservation easements donations.

6.10.11 Evaluate and determine if any portions of SLWMA are no longer needed for conservation purposes, and therefore should be considered for potential surplus designation.

Long-term

6.10.12 To minimize fragmentation of the area, continue to identify strategic parcels to revise the completed OCPB for SLWMA as appropriate and necessary.

6.10.13 Continue to identify and develop conservation stewardship partnerships.

6.10.14 Continue to identify and pursue conservation acquisition needs.

6.10.15 Continue to maintain a GIS shapefile and other necessary data to facilitate nominations from the FWC OCPB and for the FWC LAP and Land Acquisition Program.

6.10.16 Continue to propose nominations of selected properties as additions to the FWC acquisition list.

6.10.17 Continue to pursue acquisition of parcels added to the FWC acquisition list as acquisition work plan priorities and funding allow.

6.10.18 As feasible, continue to periodically contact and meet with adjacent landowners for willingness to participate in the Conservation Action Strategy, and coordinate landowner assistance/conservation stewardship partnership workshops as deemed appropriate.

6.10.19 Coordinate and conduct landowner assistance/conservation stewardship partnership workshop(s) as necessary and appropriate.

6.10.20 Continue to identify potential conservation easements donations.

6.10.21 Continue to evaluate and determine if any portions of SLWMA are no longer needed for conservation purposes, and therefore should be considered for potential surplus designation.

6.10.22 Complete a boundary survey of the SLWMA.

6.11 Cooperative Management and Special Uses

Short-term

6.11.1 Continue to work cooperatively with the Brevard County Environmentally Endangered Lands (EEL) Program to coordinate scrub management activities on SLWMA, Grissom Parkway Unit, Ten Mile Ridge Unit, Micco Expansion Unit, and adjacent EEL Sanctuaries in order to benefit the scrub jay population which utilizes both areas.

6.11.2 Continue to cooperate with SJRWMD to coordinate cooperative land management activities on the SLWMA cooperative area, which includes part of SLWMA and Seminole Ranch Conservation area, and on the Buck Lake Conservation Area.

6.11.3 Continue to coordinate and cooperate with Department of Defense military branches and first responder agencies to allow for training opportunities for military personnel and other first responder training initiatives as appropriate and compatible with the conservation of SLWMA.

Long-term

6.11.4 Continue to work cooperatively with the Brevard County EEL Program to coordinate scrub management activities on SLWMA, Grissom Parkway Unit, Ten Mile Ridge Unit, Micco Expansion Unit, and adjacent EEL Sanctuaries in order to benefit the scrub jay population which utilizes both areas.

A scrub jay on the nearby Buck Lake Conservation Area

6.11.5 Continue to cooperate with SJRWMD to coordinate cooperative land management activities on the SLWMA cooperative area, which includes part of SLWMA and Seminole Ranch Conservation area, and on the Buck Lake Conservation Area.

6.11.6 Continue to coordinate and cooperate with Department of Defense military branches and first responder agencies to allow for training opportunities for military personnel and other first responder training initiatives as appropriate and compatible with the conservation of SLWMA.

6.12 Climate Change

Goal: Develop appropriate adaptation strategies in response to projected climate change effects and their potential impacts on natural resources, including fish and wildlife, and the operational management of the SLWMA.

Long-term

6.12.1 Coordinate with FWC-FWRI Climate Change Adaptation Initiative to identify potential impacts of projected climate change on fish and wildlife resources and operational management of the SLWMA.

6.12.2 Incorporate appropriate climate change monitoring protocols and management strategies into the OBVM program for the SLWMA.

6.12.3 Incorporate appropriate climate change adaptation strategies into the WCPR for SLWMA.

6.12.4 As appropriate, update the SLWMA Prescribed Fire Plan to incorporate new scientific information regarding projected climate change, such as increased frequency of drought, on the fire regime of SLWMA's fire-adapted habitats.

6.12.5 As science, technology, and climate policy evolve, educate natural resource management partners and the public about the agency's policies, programs and efforts to study, document and address potential climate change; assess the need to incorporate public education about climate change into FWC's public education curriculum.

6.13 Research Opportunities

Goal: Explore and pursue cooperative research opportunities.

Long-term

6.13.1 Explore and pursue cooperative research opportunities through universities, Fish and Wildlife Research Institute, etc.

6.13.2 Continue to cooperate with researchers, universities, and others as appropriate.

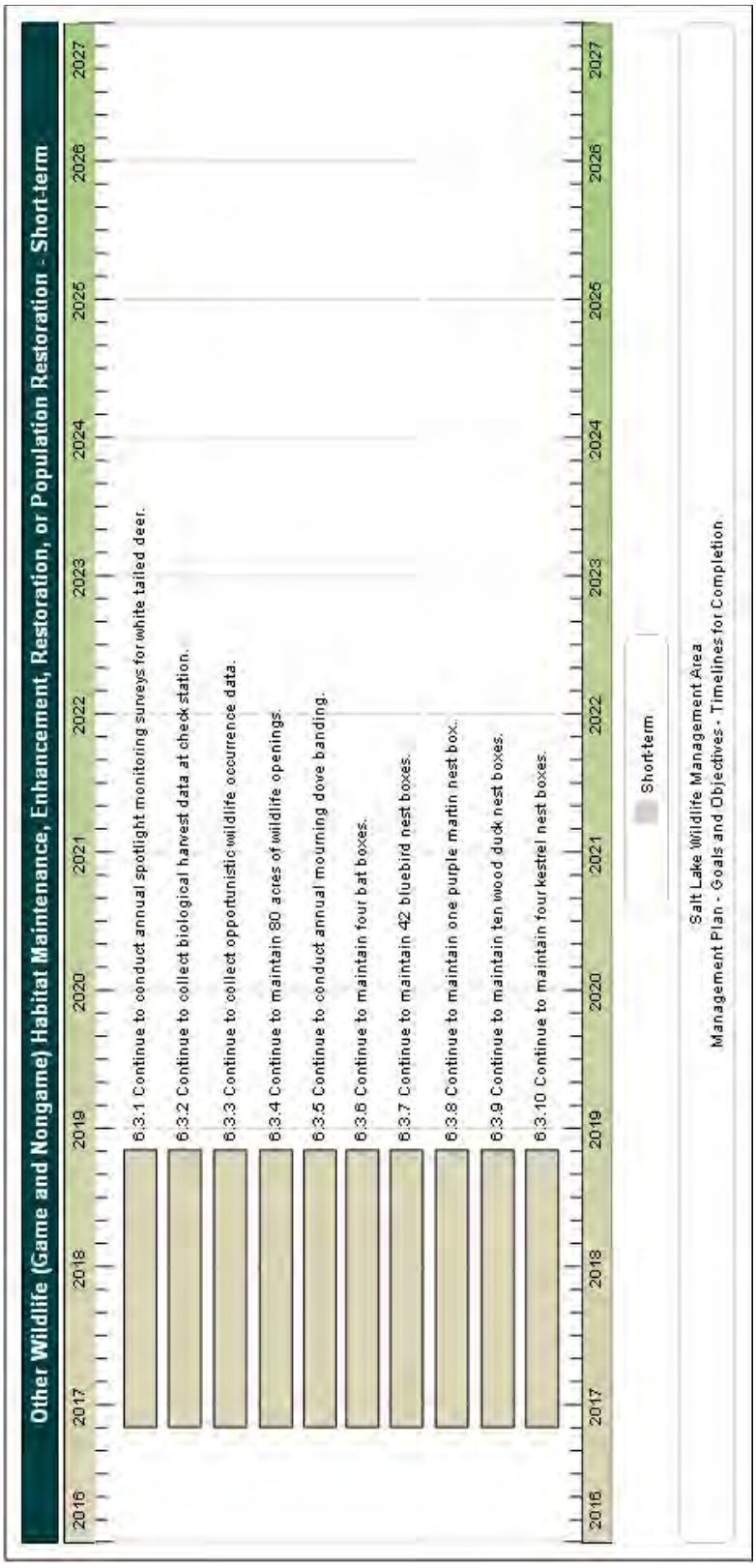
6.13.3 Continue to assess the need for and pursue research and environmental education partnership opportunities as appropriate.

7 Schedule: Timelines for Completion of Resource Management Goals and Objectives

The following section presents the short- and long-term goals and objectives for the management of SLWMA graphically in a timeline format. These timelines directly reflect the short- and long-term goals and objectives presented above in Section 6.

Habitat Restoration and Improvement
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
6.1.1 Conduct prescribed burning on approximately 1,000 acres of fire adapted natural communities per year (Figure 31).
6.1.2 Maintain approximately 1,700 acres (27% of fire adapted communities) of mesic flatwoods, wet flatwoods, and scrubby flatwoods within a 5 – 7 year target fire return interval (Figure 31), and floodplain marsh within a 2 – 4 year fire return interval.
6.1.3 Maintain 70 acres of scrub natural community (100%) within 10 – 20 year target fire return interval (Figure 31).
6.1.4 Update the prescribed burn plan.
6.1.6 Continue to implement OBVM.
6.1.5 Conduct habitat/natural community improvement on 220 acres by continuing mechanical treatments.
6.1.7 Continue to burn 1000 acres per year.
6.1.8 Maintain approximately 3,575 acres (49% of fire adapted communities) of mesic flatwoods, wet flatwoods, and scrubby flatwoods within a 5 – 7 year target fire return interval, and floodplain marsh within a 2 – 4 year fire return interval.
6.1.9 Continue to implement OBVM.
6.1.10 Reevaluate natural communities every five years and revise the natural communities map as necessary.
6.1.11 Continue to conduct habitat/natural community improvement on 110 acres per year by continuing mechanical treatments.
6.1.12 Contract for mapping of historic and current natural communities for the Grissom Parkway, Micco Expansion, and Ten Mile Ridge units of BCSEFFP.
Short-term
Long-term
Salt Lake Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion

Imperiled Species Habitat Maintenance, Enhancement, Restoration, or Population Restoration
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
6.2.1 Continue to implement the WCPR strategy.
6.2.2 As described in the WCPR strategy, monitor gopher frog, gopher tortoise, Bachman's sparrow, brown-headed nuthatch, Florida scrub jay, northern bobwhite, painted bunting, and Florida mouse.
6.2.3 Continue to collect opportunistic wildlife species occurrence data.
6.2.4 Continue periodic aerial surveys for bald eagle nesting activity.
6.2.5 Continue to periodically survey and monitor for imperiled plant species.
6.2.6 Continue to implement the WCPR strategy.
6.2.7 As described in the WCPR strategy, monitor gopher frog, Bachman's sparrow, brown-headed nuthatch, Florida scrub jay, northern bobwhite, painted bunting, and Florida mouse.
6.2.8 Continue to collect opportunistic wildlife species occurrence data.
6.2.9 Continue periodic aerial surveys for bald eagle nesting activity.
6.2.10 Continue to periodically survey and monitor for imperiled plant species.
6.2.11 Continue to conduct a gopher tortoise survey every five years.
Short-term
Long-term
Salt Lake Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion


Other Wildlife (Game and Nongame) Habitat Maintenance, Enhancement, Restoration, or Population Restoration - Short-term
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
6.3.1 Continue to conduct annual spotlight monitoring surveys for white tailed deer.
6.3.2 Continue to collect biological harvest data at check station.
6.3.3 Continue to collect opportunistic wildlife occurrence data.
6.3.4 Continue to maintain 80 acres of wildlife openings.
6.3.5 Continue to conduct annual mourning dove banding.
6.3.6 Continue to maintain four bat boxes.
6.3.7 Continue to maintain 42 bluebird nest boxes.
6.3.8 Continue to maintain one purple martin nest box.
6.3.9 Continue to maintain ten wood duck nest boxes.
6.3.10 Continue to maintain four kestrel nest boxes.
Short-term
Salt Lake Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion

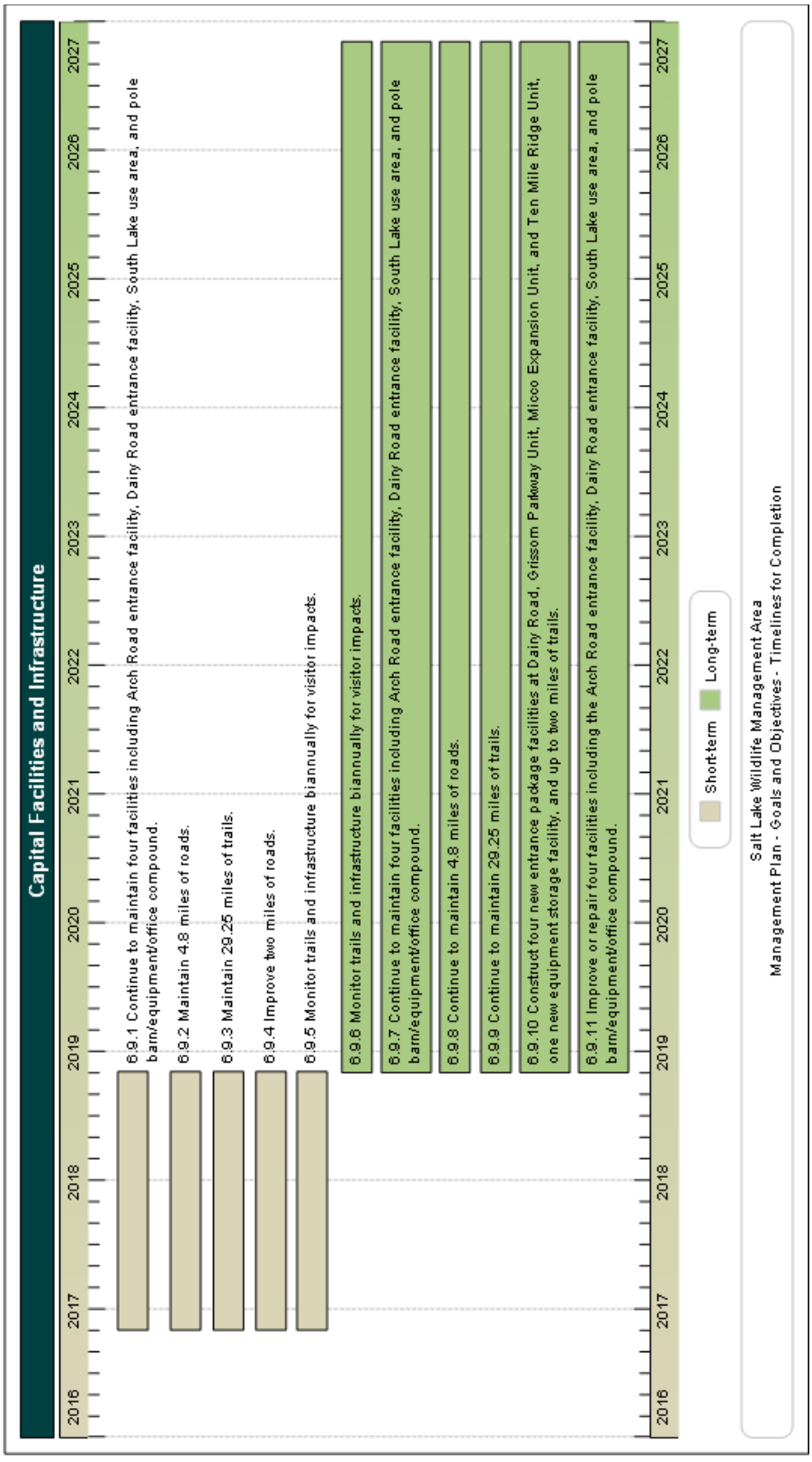
Other Wildlife (Game and Nongame) Habitat Maintenance, Enhancement, Restoration, or Population Restoration - Long-term
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
6.3.11 Continue to conduct annual spotlight monitoring surveys for white tailed deer.
6.3.12 Continue to collect biological harvest data at check station.
6.3.13 Continue to collect opportunistic wildlife occurrence data.
6.3.14 Continue to maintain 80 acres of wildlife openings.
6.3.15 Continue to conduct annual mourning dove banding.
6.3.16 Continue to maintain four bat boxes.
6.3.17 Continue to maintain 42 bluebird nest boxes.
6.3.18 Continue to maintain one purple martin nest box.
6.3.19 Continue to maintain ten wood duck nest boxes.
6.3.20 Continue to maintain four kestrel nest boxes.
Long-term
Salt Lake Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion

Exotic and Invasive Species Maintenance and Control
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
6.4.1 Annually treat at least 130 acres of EPPC Category I and Category II invasive exotic plant species.
6.4.2 Monitor for exotic animal species and control as necessary including Cuban treefrog, peacock, green house frog, and rock dove.
6.4.3 As necessary, implement control measures including hunting and trapping for feral hogs.
6.4.4 Continue to annually treat at least 130 acres of EPPC Category I and Category II invasive exotic plant species.
6.4.5 Monitor for exotic animal species and control as necessary including Cuban treefrog, peacock, green house frog, and rock dove.
6.4.6 As necessary, implement control measures including hunting and trapping for feral hogs.
Short-term
Long-term
Salt Lake Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion

Public Access and Recreational Opportunities
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
6.5.1 Continue to implement the Recreation Master Plan.
6.5.2 Maintain public access and recreational opportunities to allow for a recreational carrying capacity of 170 visitors per day.
6.5.3 Continue to provide the website, three kiosks, bird list, birding festival, and youth education programs for interpretation and education.
6.5.4 Maintain 29 miles of trails.
6.5.5 Continue to implement the Recreation Master Plan.
6.5.6 Update the Recreation Master Plan.
6.5.7 Develop additional public access and recreational opportunities to allow for a carrying capacity of 213 visitors/day.
6.5.8 Develop four new interpretive/education kiosks at the South Lake observation platform, Grissom Parkway Unit, Micco Ridge Unit, and Ten Mile Ridge Unit.
6.5.9 Continue to provide the website, three kiosks, bird list, birding festival, and youth education programs for interpretation and education.
6.5.10 Monitor trails annually for visitor impacts.
6.5.11 Reassess recreational opportunities every three years.
6.5.12 Continue to provide hunting opportunities for deer, turkey, small game and feral hogs.
6.5.13 Continue to provide paddling opportunities on appropriate water bodies.
6.5.14 Continue to provide fishing opportunities on appropriate water bodies.
6.5.15 Cooperate with other agencies, County, stakeholders, and regional landowners to investigate regional recreational opportunities including linking hiking, paddling, and multi-use trail systems between adjacent public areas.
6.5.16 Continue to identify partnerships that could provide for environmental educational programs and outreach.
Short-term
Long-term
Salt Lake Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion

Hydrological Preservation and Restoration
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
6.6.1 To maintain and enhance natural hydrological functions, install and maintain low-water crossings and culverts as appropriate.
6.6.2 Continue to cooperate with the St. Johns River Water Management District for the monitoring of surface and ground water quality and quantity.
6.6.3 Conduct or obtain a hydrological assessment to identify potential hydrology restoration needs.
6.6.4 Implement hydrological restoration plan.
6.6.5 As recommended by the Hydrology Assessment and Conceptual Restoration Plan, install and maintain low-water crossings and culverts as appropriate to maintain and enhance natural hydrological functions.
Short-term
Long-term
Salt Lake Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion
Forest Resource Management
6.7.1 Cooperate with the Florida Forest Service (FFS) to complete an updated Timber Assessment.
6.7.2 Consult with the FFS or a professional forestry consultant regarding forest management activities as appropriate.
6.7.3 Continue to consult with the FFS or a professional forestry consultant regarding forest management activities as appropriate.
Short-term
Long-term
Salt Lake Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion

Historical Resources
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
6.8.1 Monitor the eight known recorded sites and submit updates of additional sites to DHR for inclusion in their Master Site file.
6.8.2 Ensure management staff has DHR Archaeological Resources Monitoring training.
6.8.3 Follow DHR's Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties for the management of historical resources.
6.8.4 Continue to monitor the eight known recorded sites and submit updates of additional sites to DHR for inclusion in their Master Site file.
6.8.5 Continue to follow DHR's Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties for the management of historical resources.
6.8.6 Cooperate with DHR in designing site plans for development of infrastructure.
Short-term
Long-term
Salt Lake Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion


Capital Facilities and Infrastructure
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
6.9.1 Continue to maintain four facilities including Arch Road entrance facility, Dairy Road entrance facility, South Lake use area, and pole barn/equipment/office compound.
6.9.2 Maintain 4.8 miles of roads.
6.9.3 Maintain 29.25 miles of trails.
6.9.4 Improve two miles of roads.
6.9.5 Monitor trails and infrastructure biannually for visitor impacts.
6.9.6 Monitor trails and infrastructure biannually for visitor impacts.
6.9.7 Continue to maintain four facilities including Arch Road entrance facility, Dairy Road entrance facility, South Lake use area, and pole barn/equipment/office compound.
6.9.8 Continue to maintain 4.8 miles of roads.
6.9.9 Continue to maintain 29.25 miles of trails.
6.9.10 Construct four new entrance package facilities at Dairy Road, Grissom Parkway Unit, Micco Expansion Unit, and Ten Mile Ridge Unit, one new equipment storage facility, and up to two miles of trails.
6.9.11 Improve or repair four facilities including the Arch Road entrance facility, Dairy Road entrance facility, South Lake use area, and pole barn/equipment/office compound.
Short-term
Long-term
Salt Lake Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion

Land Conservation and Stewardship Partnerships - Short-term
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
6.10.1 Identify potential important wildlife habitat, landscape-scale linkages, wildlife corridors, and operational/resource management needs.
6.10.2 Identify and develop conservation stewardship partnerships.
6.10.3 Identify and pursue conservation acquisition needs.
6.10.4 Develop and maintain a GIS shapefile and other necessary data to facilitate nominations from the FWC OCPB and for FWC's LAP and Land Acquisition Programs.
6.10.5 Develop a Conservation Action Strategy.
6.10.6 Contact and inform adjoining landowners about the FWC LAP to pursue non-acquisition conservation stewardship partnerships.
6.10.7 Determine which parcels should be added to the FWC acquisition list.
6.10.8 Identify potential non-governmental organization partnerships and grant program opportunities.
6.10.9 Determine efficacy of conducting an adjacent landowner's assistance/conservation stewardship partnership workshop.
6.10.10 Identify potential conservation easements donations.
6.10.11 Evaluate and determine if any portions of SLWMA are no longer needed for conservation purposes, and therefore should be considered for potential surplus designation.
6.10.12 Coordinate and cooperate with Department of Defense military branches to allow for training opportunities for military personnel such as GRASI and other initiatives as appropriate and compatible with the conservation of SLWMA.
Short-term
Salt Lake Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion

Land Conservation and Stewardship Partnerships - Long-term
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
6.10.13 To minimize fragmentation of the area, continue to identify strategic parcels to revise the completed OCPB for SLWMA as appropriate and necessary.
6.10.14 Continue to identify and develop conservation stewardship partnerships.
6.10.15 Continue to identify and pursue conservation acquisition needs.
6.10.16 Continue to maintain a GIS shapefile and other necessary data to facilitate nominations from the FWC OCPB and for the FWC LAP and Land Acquisition Program.
6.10.17 Continue to propose nominations of selected properties as additions to the FWC acquisition list.
6.10.18 Continue to pursue acquisition of parcels added to the FWC acquisition list as acquisition work plan priorities and funding allow.
6.10.19 As feasible, continue to periodically contact and meet with adjacent landowners for willingness to participate in the Conservation Action Strategy, and coordinate landowner assistance/conservation stewardship partnership workshops as deemed appropriate.
6.10.20 Coordinate and conduct landowner assistance/conservation stewardship partnership workshop(s) as necessary and appropriate.
6.10.21 Continue to identify potential conservation easements donations.
6.10.22 Continue to evaluate and determine if any portions of SLWMA are no longer needed for conservation purposes, and therefore should be considered for potential surplus designation.
6.10.23 Continue to coordinate and cooperate with Department of Defense military branches to allow for training opportunities for military personnel such as GRASI and other initiatives as appropriate and compatible with the conservation of SLWMA.
Long-term
Salt Lake Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion

Cooperative Management and Special Uses
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
6.11.3 Continue to coordinate and cooperate with Department of Defense military branches and first responder agencies to allow for training opportunities for military personnel and other first responder training initiatives as appropriate and compatible with the conservation of SLWMA.
6.11.1 Continue to work cooperatively with the Brevard County Environmentally Endangered Lands (EEL) Program to coordinate scrub management activities on SLWMA, Grissom Parkway Unit, Ten Mile Ridge Unit, Micco Expansion Unit, and adjacent EEL Sanctuaries in order to benefit the scrub jay population which utilizes both areas.
6.11.2 Continue to cooperate with SJRWMD to coordinate cooperative land management activities on the SLWMA cooperative area, which includes part of SLWMA and Seminole Ranch Conservation area, and on the Buck Lake Conservation Area.
6.11.5 Continue to cooperate with SJRWMD to coordinate cooperative land management activities on the SLWMA cooperative area, which includes part of SLWMA and Seminole Ranch Conservation area, and on the Buck Lake Conservation Area.
6.11.4 Continue to work cooperatively with the Brevard County EEL Program to coordinate scrub management activities on SLWMA and adjacent EEL Sanctuaries in order to benefit the scrub jay population which utilizes both areas.
6.11.6 Continue to coordinate and cooperate with Department of Defense military branches and first responder agencies to allow for training opportunities for military personnel and other first responder training initiatives as appropriate and compatible with the conservation of SLWMA.
Short-term
Long-term
Salt Lake Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion

Climate Change
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
6.12.1 Coordinate with FWC-FWRI Climate Change Adaptation Initiative to identify potential impacts of projected climate change on fish and wildlife resources and operational management of the SLWMA.
6.12.2 Incorporate appropriate climate change monitoring protocols and management strategies into the OBVM program for the SLWMA.
6.12.3 Incorporate appropriate climate change adaptation strategies into the WCPR for SLWMA.
6.12.4 As appropriate, update the SLWMA Prescribed Fire Plan to incorporate new scientific information regarding projected climate change, such as increased frequency of drought, on the fire regime of SLWMA's fire-adapted habitats.
6.12.5 As science, technology, and climate policy evolve, educate natural resource management partners and the public about the agency's policies, programs and efforts to study, document and address potential climate change.
Long-term
Salt Lake Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion
Research Opportunities
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
6.13.1 Explore and pursue cooperative research opportunities through universities, Fish and Wildlife Research Institute, etc.
6.13.2 Continue to cooperate with researchers, universities, and others as appropriate.
6.13.3 Continue to assess the need for and pursue research and environmental education partnership opportunities as appropriate.
Long-term
Salt Lake Wildlife Management Area
Management Plan - Goals and Objectives - Timelines for Completion

8 Resource Management Challenges and Strategies

The following section identifies and describes further management needs and challenges associated with 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.

8.1 Challenge: Currently, the existing level of staffing and resources is inadequate to accomplish optimal management and address the management challenges across SLWMA and the Grissom Parkway, Micco Expansion, and Ten Mile Ridge Units.

8.1.1 Strategy: Continue to seek funding and resources to meet the needs of staffing and resources within the SLWMA Management Plan optimal management cost estimate (Section 9).

8.2 Challenge: Bear Bluff and Tomato Farm roads (located within the boundary of SLWMA) are designated as public roads resulting in potential management challenges relating to the control of public access, use, and overall management of the area.

8.2.1 Strategy: Coordinate with Brevard County, DEP, SJRWMD, and private landowners to resolve the public road issues within SLWMA.

8.3 Challenge: Theft and vandalism at the SLWMA equipment compound is reoccurring and persistent.

8.3.1 Strategy: Increase FWC law enforcement presence at SLWMA.

8.3.2 Strategy: Continue to maintain and repair area boundary fencing and gates to control access.

8.3.3 Strategy: Install and enhance security measures.

8.4 Challenge: SLWMA is part of a larger ecosystem over which the FWC has limited control but within which the activities of others can have potential adverse impacts on the habitats, wildlife, and operational and resource management of the SLWMA.

8.4.1 Strategy: Continue to maintain and establish rapport with public and private landowners adjacent to the WMA; provide technical assistance and advice in order to assure the welfare of ecosystem components; establish and maintain ongoing working relationships with private landowners and local representatives of SJRWMD, Brevard County, and DEP.

8.5 Challenge: Exotic invasive plants from adjacent lands are spreading to SLWMA such as air potato, guinea grass, cogon grass, and Brazilian pepper and can have potential adverse impacts on the habitats, wildlife, and operational and resource management of the SLWMA.

8.5.1 Strategy: Coordinate with FWC's Landowner Assistance Program to work with adjacent landowners to control and manage exotic invasive plants on adjacent properties.

8.5.2 Strategy: Coordinate with other governmental and private organizations to obtain resources to control and manage exotic invasive species on adjacent properties.

8.6 Challenge: Sensitive natural communities face degradation by inappropriate usage, primarily off-road vehicle use.

8.6.1 Strategy: Install gates and road barriers to prevent vehicles from leaving named and numbered roads to operate on closed roads and trams, firelines, or across country.

8.6.2 Strategy: Evaluate the potential of further restricting or prohibiting allowing the use of ATVs on those Units where they are routinely being used off-road illegally and causing damage to sensitive habitats.

8.6.3 Strategy: Improve compliance with designated road regulations through directed law enforcement patrols of problem areas.

8.6.4 Strategy: Work to educate the public about the negative effects of vehicle damage to sensitive habitats and the resultant negative effects on wildlife.

8.7 Challenge: The Grissom Parkway, Micco Expansion, and Ten Mile Ridge BCSEFFP Units are disjunct, not well connected internally and are far apart resulting in higher management costs. There are insufficient lands acquired within these units to establish functional operational and resource management units sufficient to provide effective operational and resource management and adequate public access.

8.7.1 Strategy: Recommend acquisition of parcels remaining within the BCSEFFP and also recommend adding parcels within the Grissom Parkway, Micco Expansion, and Ten Mile Ridge Units of the BSCEFFP to the FWC Florida Forever acquisition list to provide increased connectivity, manageability, and improved public access.

8.7.2 Strategy: Implement the OCPB and CAS; cooperate and coordinate with Brevard County, SJRWMD and other partners to resolve management challenges in these units.

8.7.3 Strategy: Cooperate with Brevard County and SJRWMD on cooperative land acquisition efforts to complete the remaining elements of BCSEFFP.

8.7.4 Strategy: Explore the feasibility of using grant program funds to assist in acquiring the remaining lands within BCSEFFP.

8.8 Challenge: As identified in the SLWMA WCPR Strategy, currently there is insufficient habitat to sustain viable populations of Florida scrub-jay on SLWMA without depending on populations on adjacent conservation lands.

8.8.1 Strategy: Pursue conservation efforts on lands surrounding or adjacent to SLWMA that have potential for expanding habitat for these imperiled and focal species.

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

8.9.1 Strategy: Improve public access points to increase visibility and accessibility.

8.9.2 Strategy: Work with local and Brevard County tourism boards to promote SLWMA.

8.9.3 Strategy: Cross-promote SLWMA with other regional public conservation lands.

8.10 Challenge: The soil around the cattle dipping vat may be contaminated; however, the cattle dipping vat is listed by DHR as a historical resource.

8.10.1 Strategy: Cooperate with DEP and DHR to test the soil at the cattle dipping vat and coordinate clean-up efforts if necessary.

8.11 Challenge 11: There is no direct canoe and kayak launching access to Salt Lake or South Lake.

8.11.1 Strategy: Promote the availability of the boat launch on State Road 46 and the boat launch on Fox Lake

8.11.2 Strategy: Promote the availability of the canal at the end of Paces Landing Road for launching kayaks and canoes in Salt Lake.

9 Cost Estimates and Funding Sources

The following represents the actual and unmet budgetary needs for managing the lands and resources of SLWMA. This cost estimate was developed using data developed by 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 mitigation, may be sought to supplement existing funding.

The cost estimate below, although exceeding what 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 SLWMA. Cost estimate categories are those currently recognized by FWC and the Land Management Uniform Accounting Council. More information on these categories, as well as the Fiscal Year 2014-2015 operational plan showing detailed cost estimates by activity and categories of expenditures, may be found in Appendix 13.12.

Salt Lake WMA Management Plan Cost Estimate

Maximum expected one year expenditure

Resource Management	Expenditure	Priority
Exotic Species Control	$17,005	(1)
Prescribed Burning	$26,631	(1)
Cultural Resource Management	$612	(1)
Timber Management	$0	(1)
Hydrological Management	$132,007	(1)
Other (Restoration, Enhancement, Surveys, Monitoring, etc.)	$61,374	(1)
Subtotal	**$237,630**	
Administration		
General administration	**$1,529**	(1)
Support		
Land Management Planning	$44,536	(1)
Land Management Reviews	$10,871	(3)
Training/Staff Development	$4,588	(1)
Vehicle Purchase	$759,827	(2)
Vehicle Operation and Maintenance	$64,332	(1)
Other (Technical Reports, Data Management, etc.)	$4,271	(1)
Subtotal	**$888,425**	
Capital Improvements		
New Facility Construction	$108,811	(2)
Facility Maintenance	$131,890	(1)
Subtotal	**$240,702**	
Visitor Services/Recreation		
Info./Education/Operations	**$12,858**	(1)
Law Enforcement		
Resource protection	**$7,129**	(1)
Total	**$1,388,272**	*

Priority schedule:
(1) Immediate (annual)
(2) Intermediate (3-4 years)
(3) Other (5+ years)

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

Salt Lake WMA Management Plan Cost Estimate

Ten-year projection

Resource Management	Expenditure	Priority
Exotic Species Control	$149,411	(1)
Prescribed Burning	$233,987	(1)
Cultural Resource Management	$5,375	(1)
Timber Management	$0	(1)
Hydrological Management	$1,159,826	(1)
Other (Restoration, Enhancement, Surveys, Monitoring, etc.)	$539,240	(1)
Subtotal	**$2,087,839**	
Administration		
General administration	**$13,438**	(1)
Support		
Land Management Planning	$391,294	(1)
Land Management Reviews	$31,120	(3)
Training/Staff Development	$40,314	(1)
Vehicle Purchase	$2,673,865	(2)
Vehicle Operation and Maintenance	$565,227	(1)
Other (Technical Reports, Data Management, etc.)	$37,524	(1)
Subtotal	**$3,739,344**	
Capital Improvements		
New Facility Construction	$314,301	(2)
Facility Maintenance	$1,158,803	(1)
Subtotal	**$1,473,104**	
Visitor Services/Recreation		
Info./Education/Operations	**$112,969**	(1)
Law Enforcement		
Resource protection	**$62,633**	(1)
Total	**$7,489,327**	*

Priority schedule:
(1) Immediate (annual)
(2) Intermediate (3-4 years)
(3) Other (5+ years)

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

10 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" below are those that 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 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**
• Dike and levee maintenance			✓
• Exotic species control			✓
• Mechanical vegetation treatment			✓
• Public contact and educational facilities development			✓
• Prescribed burning			✓
• Timber harvest activities	✓		
• Vegetation inventories			✓

11 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, training, as well as accounting, purchasing, and budgetary procedures.

When public facilities are developed on areas managed by FWC, every effort is made to comply with Public Law 101 - 336, the Americans with Disabilities 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 handicap access is structurally

impractical or where providing such access would change the fundamental character of the facility being provided).

Uses planned for 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 FWC as described in its Agency Strategic Plan (Appendix 13.6). 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, 379, 403, 870, 373, 375, 378, 487, and 597 FS.

The FWC has developed and utilizes an Arthropod Control Plan for SLWMA in compliance with Chapter 388.4111 F.S. (Appendix 13.13). The Arthropod Control Plan was developed in cooperation with the local Brevard County arthropod control agency. This Management Plan is also in conformance with the Local Government Comprehensive Plan as approved and adopted for Brevard County, Florida, (Appendix 13.14).

12 Endnotes

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