



A Management Plan for the Three Lakes Wildlife Management Area 2020 - 2030

Osceola County, Florida



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



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and Wildlife
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MEMORANDUM

TO: James Parker
Office of Environmental Services
Division of State Lands
Florida Department of Environmental Protection

FROM: Thomas Houston
Land Conservation and Planning
Division of Habitat and Species Conservation
Florida Fish and Wildlife Conservation Commission

SUBJECT: Three Lakes Wildlife Management Area
Ten Year Management Plan Update
Acquisition and Restoration Council (ARC) Public Hearing

DATE:

Enclosed is the Three Lakes Wildlife Management Area Management Plan and the Land Management Plan Compliance Checklist. This Plan is being submitted for the Division of State Lands compliance review and for review for the next available ARC meeting Agenda. Please contact Dylan Haase at Dylan.Haase@MyFWC.com if there are any questions related to this plan. Thank you for your assistance.

TH/DH

Enclosures

cc: Keith Singleton
Shauna Allen
Deborah Burr

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PENDING DEP APPROVAL LETTER**

**A Management Plan
for the
Three Lakes Wildlife Management Area**

Osceola County, Florida

Owned by the Board of Trustees of the Internal Improvement Trust Fund and the
Florida Fish and Wildlife Conservation Commission
Managed by the Florida Fish and Wildlife Conservation Commission



June 2020

Approved 
Kipp Frohlich, 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: Three Lakes Wildlife Management Area

Location: Osceola County, Florida

Acreage Total: 65,333 acres

Acreage Breakdown:

<u>Land Cover Classification</u>	<u>Acres</u>	<u>Percent of Total Area</u>
Basin marsh	2,968.78	4.6%
Basin swamp	4.5	<0.1%
Baygall	808.75	1.2%
Blackwater stream	43.4	0.07%
Depression marsh	2,321.85	3.6%
Dome swamp	7,878.94	12.2%
Dry prairie	15,538.93	24%
Floodplain marsh	457.41	0.7%
Hydric hammock	128.35	0.2%
Mesic flatwoods	15,671.64	24.2%
Mesic hammock	3,065.07	4.7%
Pasture - improved	2,057.97	3.2%
Pasture - semi-improved	364.53	0.6%
Pine plantation	360.74	0.6%
Prairie/flatwoods lake	1,093.82	1.7%
Restoration dry prairie	516.21	0.8%
Restoration mesic flatwoods	535.46	0.8%
Restoration wet prairie	11.47	0.02%
Ruderal	1,820.72	2.8%
Sandhill	202.15	0.3%
Scrub	751.32	1.2%
Scrubby flatwoods	1,230.88	1.9%
Successional hardwood forest	34.62	0.05%
Wet flatwoods	214.49	0.3%
Wet prairie	6,676.76	10.3%
Xeric hammock	89.46	0.1%

*GIS-calculated acreage for land cover classification varies slightly from actual total acreage.

Lease/Management Agreement No.: 2785 (Appendix 12.1)

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: List: Cattle lease agreement (Appendix 12.2), apiary contract (Appendix 12.10), communication tower access and operation (Appendix 12.1), Well Monitoring License Agreement (Appendix 12.3) and automated weather station tower (Appendix 12.1).

Type Acquisition: Fish and Wildlife Habitat Program

Unique Features: Natural: Natural communities including wetlands and pine and hardwood uplands

Archaeological/Historical: 22 historical sites and 3 structures documented within Three Lakes WMA.

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.

Acquisition Needs/Acreage: 68,500 acres FWC Additions and Inholdings list; 41,872 acres remaining in the Big Bend Swamp/Holopaw Ranch Florida Forever Project; 27,500 acres remaining in the Osceola Pine Savannas Ranch Florida Forever Project; 12,515 acres remaining in the Ranch Reserve Florida Forever Project (Figure 16).

Surplus Lands/Acreage: None

Public Involvement: Management Advisory Group consensus building meeting and Public Hearing (Appendix 12.4 and 12.5)

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	ii-iii; 1
2	The land acquisition program, if any, under which the property was acquired.	18-2.018 & 18-2.021	3-4
3	Degree of title interest held by the Board, including reservations and encumbrances such as leases.	18-2.021	3-5
4	The legal description and acreage of the property.	18-2.018 & 18-2.021	ii-iii; Appendix 12.1
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	8-13; 126
6	An assessment as to whether the property, or any portion, should be declared surplus. <i>Provide Information regarding assessment and analysis in the plan, and provide corresponding map.</i>	18-2.021	77-78
7	Identification of other parcels of land within or immediately adjacent to the property that should be purchased because they are essential to management of the property. <i>Please clearly indicate parcels on a map.</i>	18-2.021	111-114; Appendix 12.21
8	Identification of adjacent land uses that conflict with the planned use of the property, if any.	18-2.021	14
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)	3-4
10	Proximity of property to other significant State, local or federal land or water resources.	18-2.021	6-7; 11; 69; 72

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	76-77
12	A description of past and existing uses, including any unauthorized uses of the property.	18-2.018 & 18-2.021	73-77
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	76-77
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	4-5; 115
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	73; 109; 121

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	94-118
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)	73-77
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	73-77
19	Letter of compliance from the local government stating that the LMP is in compliance with the Local Government Comprehensive Plan.	BOT requirement	Appendix 12.23
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	15-19; 68-69; 94-118
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	75-76
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	108-109; Appendix 12.14
23	A statement regarding incompatible use in reference to Ch. 253.034(10).	253.034(10)	77

*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	14-15; Appendix 12.4 and 12.5
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)	15; Appendix 12.4
26	LMPs and LMP updates for parcels over 160 acres shall be developed with input from an advisory group who must conduct at least one public hearing within the county in which the parcel or project is located. <i>Include the advisory group members and their affiliations, as well as the date and location of the advisory group meeting.</i>	259.032(10)	14-15; Appendix 12.4 and 12.5
27	Summary of comments and concerns expressed by the advisory group for parcels over 160 acres	18-2.021	Appendix 12.5
28	During plan development, at least one public hearing shall be held in each affected county. Notice of such public hearing shall be posted on the parcel or project designated for management, advertised in a paper of general circulation, and announced at a scheduled meeting of the local governing body before the actual public hearing. <i>Include a copy of each County's advertisements and announcements (meeting minutes will suffice to indicate an announcement) in the management plan.</i>	253.034(5) & 259.032(10)	Appendix 12.4
29	The manager shall consider the findings and recommendations of the land management review team in finalizing the required 10-year update of its management plan. <i>Include manager's replies to the team's findings and recommendations.</i>	259.036	94; Appendix 12.16
30	Summary of comments and concerns expressed by the management review team, if required by Section 259.036, F.S.	18-2.021	94; Appendix 12.16
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	94; Appendix 12.16

Section D: Natural Resources			
Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
32	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding soil types. <i>Use brief descriptions and include USDA maps when available.</i>	18-2.021	15-19; Appendix 12.7

33	Insert FNAI based natural community maps when available.	ARC consensus	21-22
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	15-72
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	15-57; 68; 71-73
36	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding beaches and dunes.	18-2.021	69
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	69
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	57-68; 71
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	57-68; 71
40	The identification or resources on the property that are listed in the Natural Areas Inventory. <i>Include letter from FNAI or consultant where appropriate.</i>	18-2.021	68; 71; Appendix 12.8
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)	94-118
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.	↓	94-126
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.		118-123
42-C.	The associated measurable objectives to achieve the goals.		118-123
42-D.	The related activities that are to be performed to meet the land management objectives and their associated measures. <i>Include fire management plans - they can be in plan body or an appendix.</i>		94-126; Appendix 12.12
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.		127-129; Appendix 12.20

43	***Quantitative data description of the land regarding an inventory of forest and other natural resources and associated acreage. <i>See footnote.</i>	253.034(5)	15-72
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).		94-126; Appendix 12.12 and 12.14
44-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		118-123
44-C.	Measurable objectives (see requirement for #42-C).		118-123
44-D.	Related activities (see requirement for #42-D).		94-126
44-E.	Budgets (see requirement for #42-E).		127-129; Appendix 12.20
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).	↓	94-126; Appendix 12.13
45-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		118-123
45-C.	Measurable objectives (see requirement for #42-C).		118-123
45-D.	Related activities (see requirement for #42-D).		94-126
45-E.	Budgets (see requirement for #42-E).		127-129; Appendix 12.20
46	***Quantitative data description of the land regarding an inventory of non-native and invasive plants and associated acreage. <i>See footnote.</i>	253.034(5)	37-38; 66; 103-104
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 12.22
48	Non-native 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).	↓	94-126
48-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		118-123
48-C.	Measurable objectives (see requirement for #42-C).		118-123
48-D.	Related activities (see requirement for #42-D).		94-126

48-E.	Budgets (see requirement for #42-E).		127-129; Appendix 12.20
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Section E: Water Resources

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
49	A statement as to whether the property is within and/or adjacent to an aquatic preserve or a designated area of critical state concern or an area under study for such designation. <i>If yes, provide a list of the appropriate managing agencies that have been notified of the proposed plan.</i>	18-2.018 & 18-2.021	14; 69
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	69; 72
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	20-22; 38-46; 69; 72
52	***Quantitative description of the land regarding an inventory of hydrological features and associated acreage. <i>See footnote.</i>	253.034(5)	20-22; 38-46; 69; 72
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).		107-108
53-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		118-123
53-C.	Measurable objectives (see requirement for #42-C).		118-123
53-D.	Related activities (see requirement for #42-D).		107-108
53-E.	Budgets (see requirement for #42-E).		127-129; Appendix 12.20

Section F: Historical, Archeological and Cultural Resources

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
54	**Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding archeological and historical resources. <i>Include maps of all cultural resources except Native American sites, unless such sites are major points of interest that are open to public visitation.</i>	18-2.018, 18-2.021 & per DHR's request	73; 109; Appendix 12.17
55	***Quantitative data description of the land regarding an inventory of significant land, cultural or historical features and associated acreage.	253.034(5)	73; 109; Appendix 12.17

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	109; Appendix 12.18
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).	↓	94-126
57-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		118-123
57-C.	Measurable objectives (see requirement for #42-C).		118-123
57-D.	Related activities (see requirement for #42-D).		94-126
57-E.	Budgets (see requirement for #42-E).		127-129; Appendix 12.20

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

Section G: Facilities (Infrastructure, Access, Recreation)			
Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
58	***Quantitative data description of the land regarding an inventory of infrastructure and associated acreage. <i>See footnote.</i>	253.034(5)	109-110; 126
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).	↓	94-126
59-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		118-123
59-C.	Measurable objectives (see requirement for #42-C).		118-123
59-D.	Related activities (see requirement for #42-D).		94-126
59-E.	Budgets (see requirement for #42-E).		127-129; Appendix 12.20
60	*** Quantitative data description of the land regarding an inventory of recreational facilities and associated acreage.	253.034(5)	104-107; 126
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).	↓	94-126
61-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		118-123
61-C.	Measurable objectives (see requirement for #42-C).		118-123

61-D.	Related activities (see requirement for #42-D).		94-126
61-E.	Budgets (see requirement for #42-E).		127-129; Appendix 12.20

Section H: Other/ Managing Agency Tools

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
62	Place this LMP Compliance Checklist at the front of the plan.	ARC and managing agency consensus	iv-xi
63	Place the Executive Summary at the front of the LMP. Include a physical description of the land.	ARC and 253.034(5)	ii-iii
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	78-93
65	Key management activities necessary to achieve the desired outcomes regarding other appropriate resource management.	259.032(10)	94-126
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)	127-129; Appendix 12.20
67	Cost estimate for conducting other management activities which would enhance the natural resource value or public recreation value for which the lands were acquired, include recommendations for cost-effective methods in accomplishing those activities.	259.032(10)	127-129; Appendix 12.20
68	A statement of gross income generated, net income and expenses.	18-2.018	75; 127-129; Appendix 12.20

*** = 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
Board of Trustees	Board of Trustees of the Internal Improvement Trust Fund
CAS	Conservation Action Strategy
DEP	Department of Environmental Protection
DHR	Department of State Division of Historical Resources
DSL	Department of Environmental Protection Division of State Lands
FAC	Florida Administrative Code
FFS	Florida Forest Service
FLEPPC	Florida Exotic Pest Plant Council
FNAI	Florida Natural Areas Inventory
FNST	Florida National Scenic Trail
FS	Florida Statute(s)
FTA	Florida Trail Association
FWC	Florida Fish and Wildlife Conservation Commission
GIS	Geographic Information Systems
GPS	Global Positioning System
IMPP	Internal Management Policies and Procedures
IPCC	Intergovernmental Panel on Climate Change
IWHS	Integrated Wildlife Habitat Ranking System
KRPUA	Kissimmee River Public Use Area
LAP	Landowner Assistance Program
LATF	Land Acquisition Trust Fund
LMR	Land Management Review
MAG	Management Advisory Group
MOU	Memorandum of Understanding
MSL	Mean Sea Level
NRCS	Natural Resources Conservation Service
OBVM	Objective-Based Vegetation Management
OCPB	Optimal Conservation Planning Boundary
OFW	Outstanding Florida Waters
ORB	Optimal Resource Boundary
SJRWMD	St. Johns River Water Management District
SFWMD	South Florida Water Management District
TLWMA	Three Lakes Wildlife Management Area
TNC	The Nature Conservancy
TPL	Trust for Public Lands
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
WCPR	Wildlife Conservation Prioritization and Recovery
WEA	Wildlife and Environmental Area
WMA	Wildlife Management Area

1 Introduction and General Information

The Kissimmee Prairie is one of the largest remaining expanses of dry prairie in the United States; a significant portion of it has been preserved within the Three Lakes Wildlife Management Area (TLWMA). In addition to dry prairie, the TLWMA is a mosaic of wetlands and pine and hardwood uplands, providing quality habitat for numerous wildlife species, including many rare and imperiled species. Named for the three lakes that border the area, Lake Kissimmee, Lake Jackson and Lake Marian, the TLWMA offers ample opportunities for hiking, birding, nature study, hunting, horseback riding, bicycling and fishing.

The TLWMA is owned by the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees). The TLWMA is managed by the Florida Fish and Wildlife Conservation Commission (FWC) for the conservation of imperiled and more common wildlife, for fish- and wildlife-based public outdoor recreation and to conserve the important natural communities on site that provide habitat for a wide range of species. The FWC has lead management authority for all resources within the established boundary.

1.1 Management Plan Purpose

This Management Plan serves as the basic statement of policy and direction for the management of the TLWMA. It provides information including the past usage, conservation acquisition history and descriptions of the natural and historical resources found on the TLWMA. Furthermore, it identifies the 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 the TLWMA's resource and operational 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 State of Florida through the Florida Department of Environmental Protection's - Division of State Lands (DEP-DSL), in compliance with paragraph seven of Lease No. 2785 (Appendix 12.1) and pursuant to Chapters 253 and 259, Florida Statutes (F.S.), 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 (Appendix 12.1) 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.

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 12.4 and 12.5). 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 TLWMA Management Plan (Sections 5 – 7).

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 the TLWMA. The LMR report (Section 5.1, Appendix 12.16) 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 the FWC so they may be adequately addressed in this Management Plan, and thus guide the implementation of the LMR team recommendations on the TLWMA.

Furthermore, the 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 the DSL and the ARC for review and consideration.

1.2 Location

The TLWMA consists of approximately 65,333 acres in Osceola County, Florida (Figure 1), including noncontiguous Board of Trustees parcels totaling approximately 1,846 acres within the Kissimmee River Public Use Area (KRPUA) (Figure 2), located two miles southwest of the TLMWA.

The TLWMA lies in the southern half of Osceola County, west of U.S. Highway 441 and north of State Road 60. Florida’s Turnpike bisects the TLWMA to the north and east of Lakes Kissimmee, Jackson and Marian. The TLWMA comprises multiple sections in Townships 28, 29 and 30 South, in Ranges 31, 32 and 33 East, and in Township 31 South, Range 32 East (Figure 3). The TLWMA is located approximately one-mile northwest of Kenansville, 8.5 miles south of Holopaw and 18 miles southeast of St. Cloud. Other cities near the TLWMA include Lake Wales (22 miles west) in Polk County, Kissimmee (25 miles northwest) in Osceola County, Melbourne (26 miles northeast) in Brevard County, Sebring

(27 miles southwest) in Highlands County and Orlando (39 miles northwest) in Orange County.

The TLWMA is bordered on the north by the newly established Natural Resources Conservation Service (NRCS) Wetlands Reserve Conservation Easement, and the Whaley Conservation Easement. The Whaley Conservation Easement is held by the State of Florida on approximately 3,710 acres of land, within the Big Bend Swamp/Holopaw Ranch Florida Forever Project, and is monitored by the DEP. The TLWMA is bordered on the west by Lake Kissimmee. Extending northward from this area, along the Lake Kissimmee shoreline, is the Kissimmee Chain of Lakes which is managed by the South Florida Water Management District (SFWMD), as well as fish management areas managed by the FWC. Areas to the northwest of the TLWMA boundary are primarily privately-owned ranchland. Other areas to the southwest of the TLWMA are primarily privately-owned agricultural land. To the southeast of the TLWMA lies Lake Marian and beyond that are privately owned ranchlands.

Approximately 2.5 miles southeast of the TLWMA lies the Escape Ranch Conservation Easement, which is held and monitored by the St. Johns River Water Management District (SJRWMD). Within four miles northeast of the TLWMA lies two FWC-managed areas; the Triple N Ranch WMA (TNRWMA) and the Herky Huffman/Bull Creek WMA (HHBCWMA).

1.3 Acquisition

1.3.1 Purpose for Acquisition of the Property

Three Lakes Ranch, Inc., the original tract acquired under this project, was purchased under the auspices of the Environmentally Endangered Lands (EEL) Program. Through the EEL program, the State acquired endangered or environmentally unique natural lands for use as natural resource preserves and/or recreation areas. Since the majority of the TLWMA was acquired under the EEL program, it is managed in accordance with the original EEL management objectives established for the Prairie Lakes EEL Project:

1. To protect and manage the wet prairies and marshes which absorb nutrients and filter pollutants, thereby improving water quality in Three Lakes and in the Kissimmee River system,
2. To protect and manage exceptional or endangered natural plant communities, especially the Kissimmee (dry) prairie and longleaf pine communities,
3. To protect and manage native animals associated with these communities, with emphasis on the bald eagle, osprey, sandhill crane, wood stork, burrowing owl, Florida panther, caracara and red-cockaded woodpecker,
4. To protect and manage the wildlife values and biological productivity of the property, especially the marshes, and
5. To provide a natural flood storage area.

The FWC's land management objectives for the TLWMA are consistent with the original EEL objectives and purpose. These objectives are also consistent with the acquisition purpose and management goals set forth under the Preservation 2000 Act and the Florida Forever Act, which established the purpose for lands the FWC has acquired within the TLWMA and continues to manage under the guidance of both programs.

1.3.2 Acquisition History

The acquisition history of the TLWMA began in 1974 with the acquisition of Three Lakes Ranch, Inc. The original purchase of approximately 51,485 acres was made under the EEL program by the DSL, with 43,282 acres allocated to the TLWMA. In November 1975, the FWC acquired an additional 40 acres. Between September 1980 and January 1985, the SFWMD leased a total of 359 acres to the FWC. The FWC acquired another 2,021 acres in December 1986.

In 1989, by mutual agreement among the FWC, the Department of Natural Resources (DNR), now DEP, and the Board of Trustees, leased 8,182-acres, of the original 51,485 acres acquisition known as the Prairie Lakes portion, to the FWC and became the Prairie Lakes Unit of the TLWMA. In 1992, the Board of Trustees acquired 677 acres using funds appropriated under the Preservation 2000 (P-2000) funding. In 1993, also utilizing P-2000 funds, the Board of Trustees acquired an additional 5,286-acre portion of the Lucky L. Ranch. Subsequently, in 1999, the Board of Trustees acquired 2,087 acres as an addition to TLWMA known as the U. S. Justice tract. Between 1993 and 2000, several smaller properties were acquired under the Conservation and Recreation Lands (CARL) and P-2000 acquisition programs. Most recently, an additional 1,650 acres within the Lucky L. Ranch were acquired in 2008 using Florida Forever funds.

In May 1998, several Board of Trustees owned parcels located within the KRPUA were amended to the TLWMA (Lease 2785 Amendment 5) subsequent to these lands having been released from a prior lease to the SFWMD. The non-contiguous KRPUA parcel is comprised of 1,785 acres along the Kissimmee River, purchased as part of the initial 51,485-acre TLWMA acquisition. The total acreage for TLWMA including the KRPUA amounts to 65,333.

1.4 Management Authority

The FWC is the designated lead managing agency for the TLWMA under the authority granted by Lease Number 2785 from the Board of Trustees agent, DSL. Further management authority derives from Article IV, Section 9 of the Florida Constitution as well as the guidance and directives of Chapters 253, 259, 327, 370, 373, 375, 378, 379, 403, 487, 597 and 870 of the F.S. These constitutional provisions and laws provide the FWC with the authority to protect, conserve and manage the State's fish and wildlife resources.

1.5 Management Directives

The 100-year Board of Trustees' Lease Agreement Number 2785 with the FWC directs the FWC to "manage the leased premises only for the conservation and protection of natural and historical resources and resource-based, public outdoor recreation which is compatible with the conservation and protection of these public lands, as set forth in subsection 253.023(11), F.S..." The lease agreement further directs the FWC to "implement applicable Best Management Practices for all activities under this lease in compliance with paragraph 18-2.018(2)(h), 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."

1.6 Title Interest and Encumbrances

As State-owned lands, title to the TLWMA is vested in the Board of Trustees (Governor and Cabinet) for 63,333 acres, while the FWC holds title to approximately 2,061 acres (Figure 5 and Appendix 12.1). In 1974, the DSL, as staff to the Board of Trustees, entered into Lease Agreement Number 2785, a 100-year lease agreement, granting the FWC management authority for the TLWMA.

Additionally, on the TLWMA, there are Housing Agreements, which may change throughout the year. The Housing Agreements are with FWC employees for the TLWMA residences and the contract term is indefinite. There is also an existing apiary contract (Appendix 12.10), a lease amendment allowing the Florida Forest Service (FFS) to access and operate a communication tower on the area (Appendix 12.1), a well monitoring license agreement with SFWMD (Appendix 12.3) and an automated weather station tower as part of the Florida automated weather network, which is monitored and maintained by the UF.

Cattle grazing is also utilized as a management tool on a portion of the TLWMA and there is currently one cattle grazing agreement that is active on the area. Approximately 25,179 acres of the TLWMA is under a cattle grazing agreement (Contract #18124) with lessee 4-L Land and Cattle, LLC. This cattle grazing agreement was first executed in 2008. Each contract is reviewed by the FWC every five years. The most recent five-year extension expired in March 2018, however, through a rebid and upon mutual agreement between the FWC and the 4-L Land and Cattle LLC, an additional lease renewal was granted. An option to renew this agreement for an additional five years will occur in 2023. In 2028 the FWC will evaluate the total acreage being grazed and will solicit competitive bids for the grazing on the TLWMA (Appendix 12.2). Cattle grazing agreements are utilized as management tools to facilitate the wildlife and habitat management of the TLWMA, and they are subject to cattle grazing plans that delineate best practices for grazing activity on the area.

There are no other known encumbrances, outstanding mineral rights or other interests on the property.

1.7 Proximity to Other Public Conservation Lands

While not located within an Aquatic Preserve or designated as an Area of Critical State Concern (Chapter 380.05, F.S.), the TLWMA is in the vicinity of a large number of conservation areas and Florida Forever projects (Figure 4, Table 1 and 2). These lands include areas managed by public and private entities to conserve cultural and natural resources within this region of central Florida. The configurations, locations and proximities among habitats within and among these lands are important to conservation of the many rare and imperiled species within this region of Florida.

Most of the public conservation lands in the vicinity of TLWMA are owned in full-fee by a public entity. However, some of these conservation lands are protected by less-than-fee conservation easements consisting primarily of privately owned and managed ranchlands with a public or private entity holding and monitoring the conservation easement. Conservation easements may be held by either public agencies or private entities, while the landowner who sells or otherwise grants the easement retains the remaining title interests.

Table 1. Florida Forever Projects within 10 Miles of the TLWMA

Project Name	GIS Acres
Adams Ranch	7,141.13
Big Bend Swamp/Holopaw Ranch	56,729.44
Bombing Range Ridge	46,300.80
Catfish Creek	19,479.56
Conlin Lake X	9,074.82
Lake Wales Ridge Ecosystem – Hesperides	3,594.63
Lake Wales Ridge – Lake Walk-in-the-Water	9,723.10
Osceola Pine Savannas	46,628.01
Pine Island Slough Ecosystem	48,973.29
Ranch Reserve	36,409.91

Table 2. Conservation Lands within 10 Miles of the TLWMA

Federal Government	Managing Agency
Adams Ranch Conservation Easement	USDOI-FWS
Avon Park Air Force Range	USDOD-AF
Camp Lonesome Conservation Easement	USDOI-FWS
Wetlands Reserve Conservation Easement	NRCS
State of Florida	Managing Agency
Adams Ranch Agricultural and Conservation Easement #1, 2 and 3	DACS-FFS
Bombing Range Ridge/TNC Conservation Easement	DEP-DSL
Brahma Island Conservation Easement	DEP-DSL

Broussard Conservation Easement	DEP-DSL
Camp Lonesome Agricultural and Conservation Easement #1 and 2	DACS-FFS
Camp Lonesome Conservation Easement (FDEP)	DEP-DSL
Herky Huffman/Bull Creek Wildlife Management Area	FWC
Holopaw State Forest	DACS-FFS
Kissimmee Prairie Preserve State Park	DEP-DRP
Lake Kissimmee State Park	DEP-DRP
Lake Wales Ridge State Forest	DACS-FFS
Tiger Lake Ranch Agricultural and Conservation Easement	DACS-FFS
Triple N Ranch Wildlife Management Area	FWC
Whaley Conservation Easement	DEP-DSL

Water Management District	Managing Agency
Escape Ranch Conservation Easement	SJRWMD
Far Reach Ranch Conservation Easement	SJRWMD
Jane Green Creek Less-than-fee Easement Additions	SJRWMD
Kaschai Conservation Easement	SJRWMD
Kempfer Property Conservation Easement	SJRWMD
Kissimmee Chain of Lakes	SFWMD
Kissimmee River	SFWMD
Mills Ranch Conservation Easement	SJRWMD
Wolf Creek Ranch Conservation Easement	SJRWMD

County/City	Managing Agency
Holopaw Conservation Area	Osceola County
Lonesome Camp Ranch Conservation Area	Osceola County
SUMICA	Polk County

Private/Public Conservation Organization	Managing Agency
Kissimmee Chain of Lakes TNC Parcel	The Nature Conservancy

Acronym Key	Agency Name
DACS-FFS	FL Department of Agricultural and Consumer Service-Florida Forest Service
DEP-DSL	FL Department of Environmental Protection-Division of State Lands
DEP-DRP	FL Department of Environmental Protection-Division of Recreation & Parks
FWC	FL Fish and Wildlife Conservation Commission
NRCS	Natural Resources Conservation Service
SJRWMD	St. John's River Water Management District
SFWMD	South Florida Water Management District
SUMICA	Societe Universelle Mining Industrie, Commerce et Agriculture
USDOD-AF	U.S. Department of Defense-Air Force
USDOF-FWS	U.S. Department of Interior-Fish and Wildlife Service

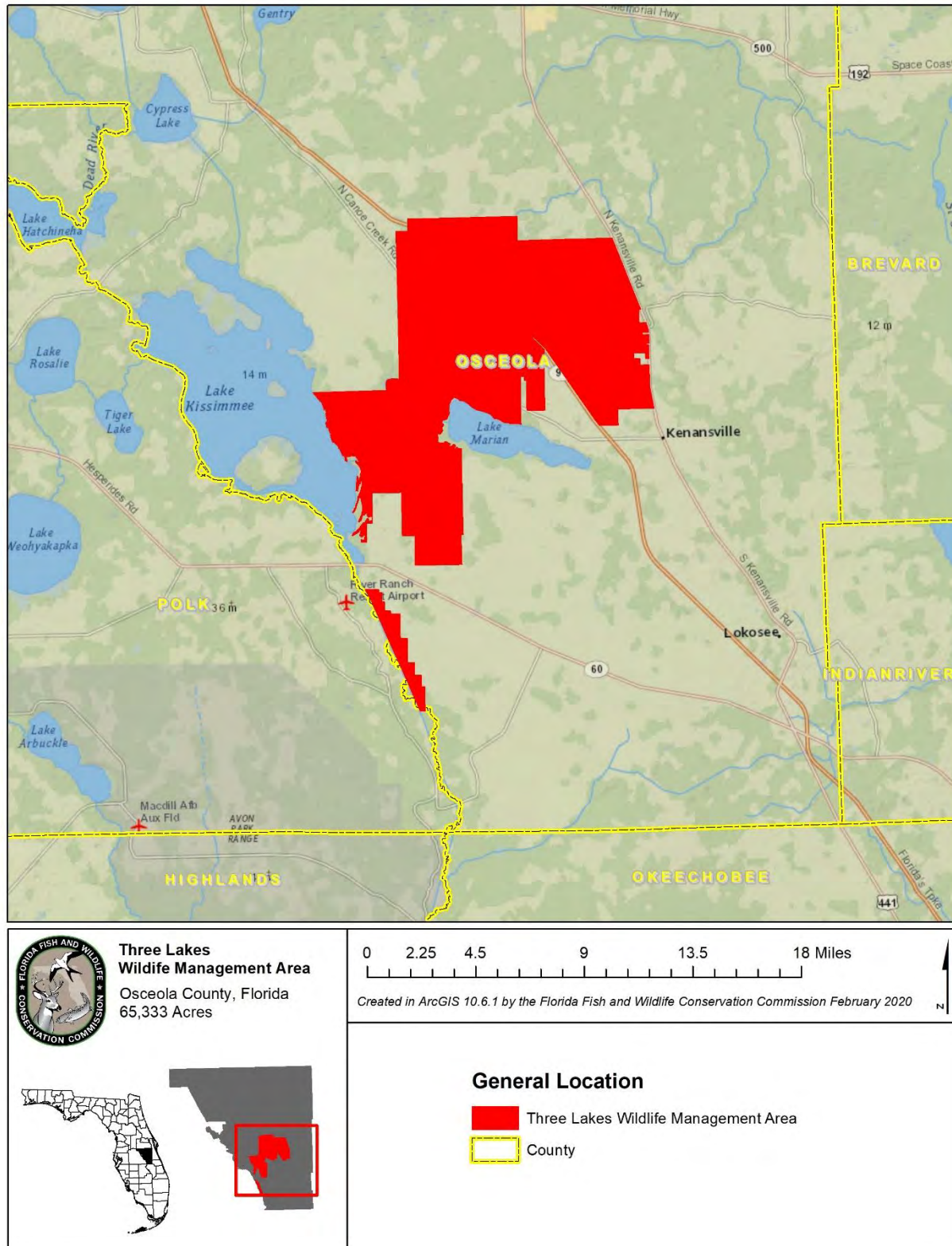


Figure 1. TLWMA - General Location

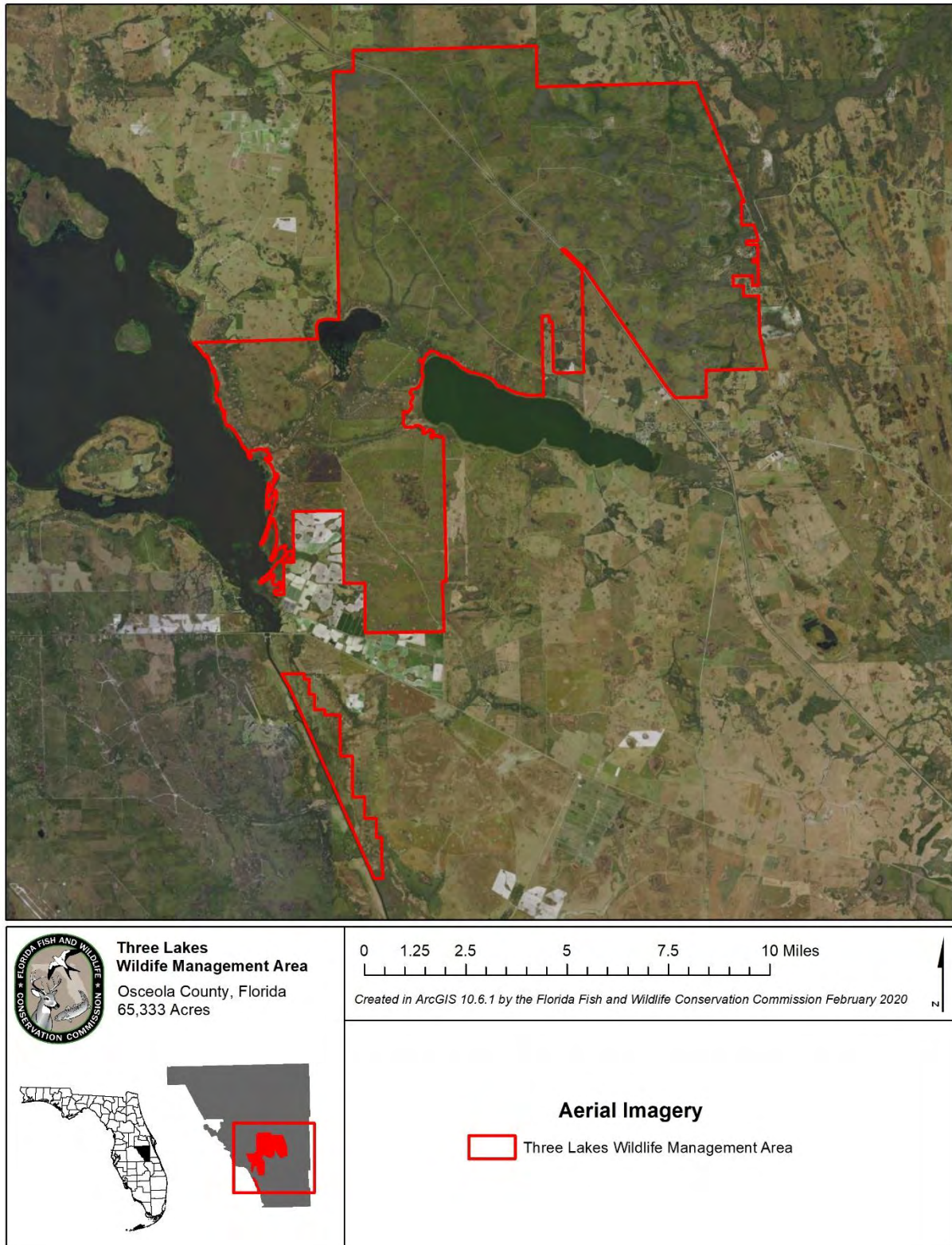


Figure 2. TLWMA - Aerial Imagery

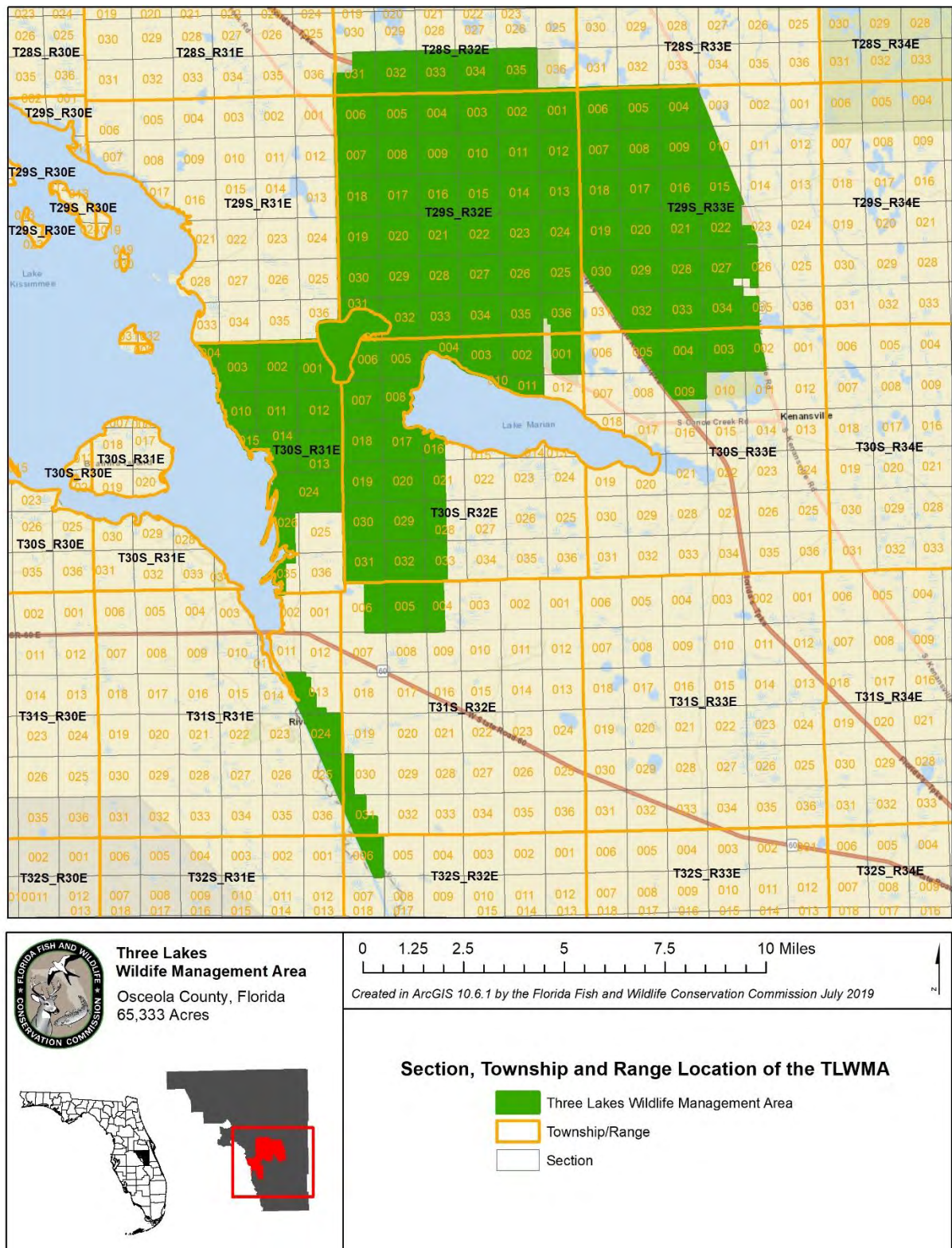


Figure 3. TLWMA- Section, Township and Range

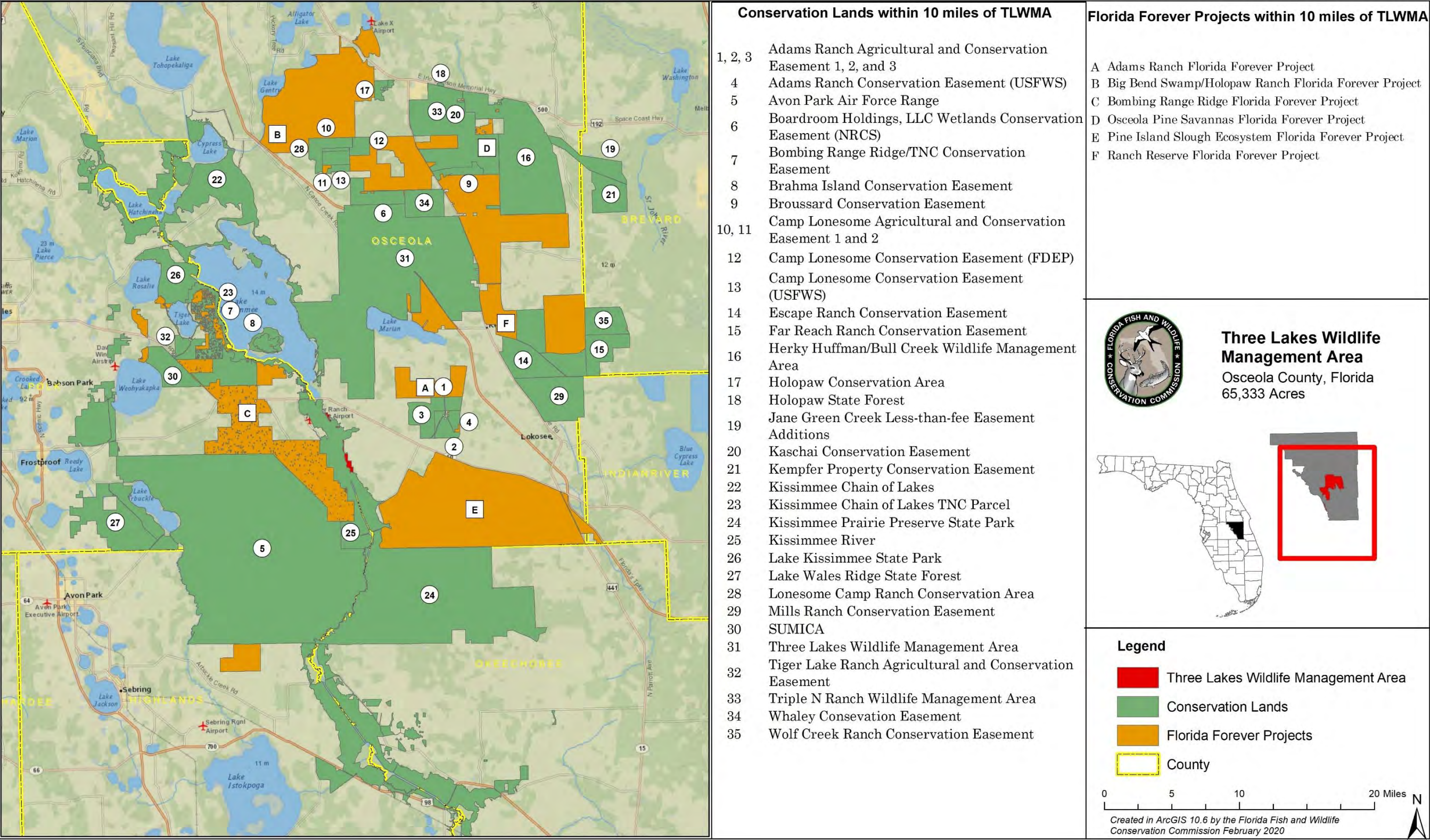


Figure 4. Conservation Lands and Florida Forever Projects near the TLWMA

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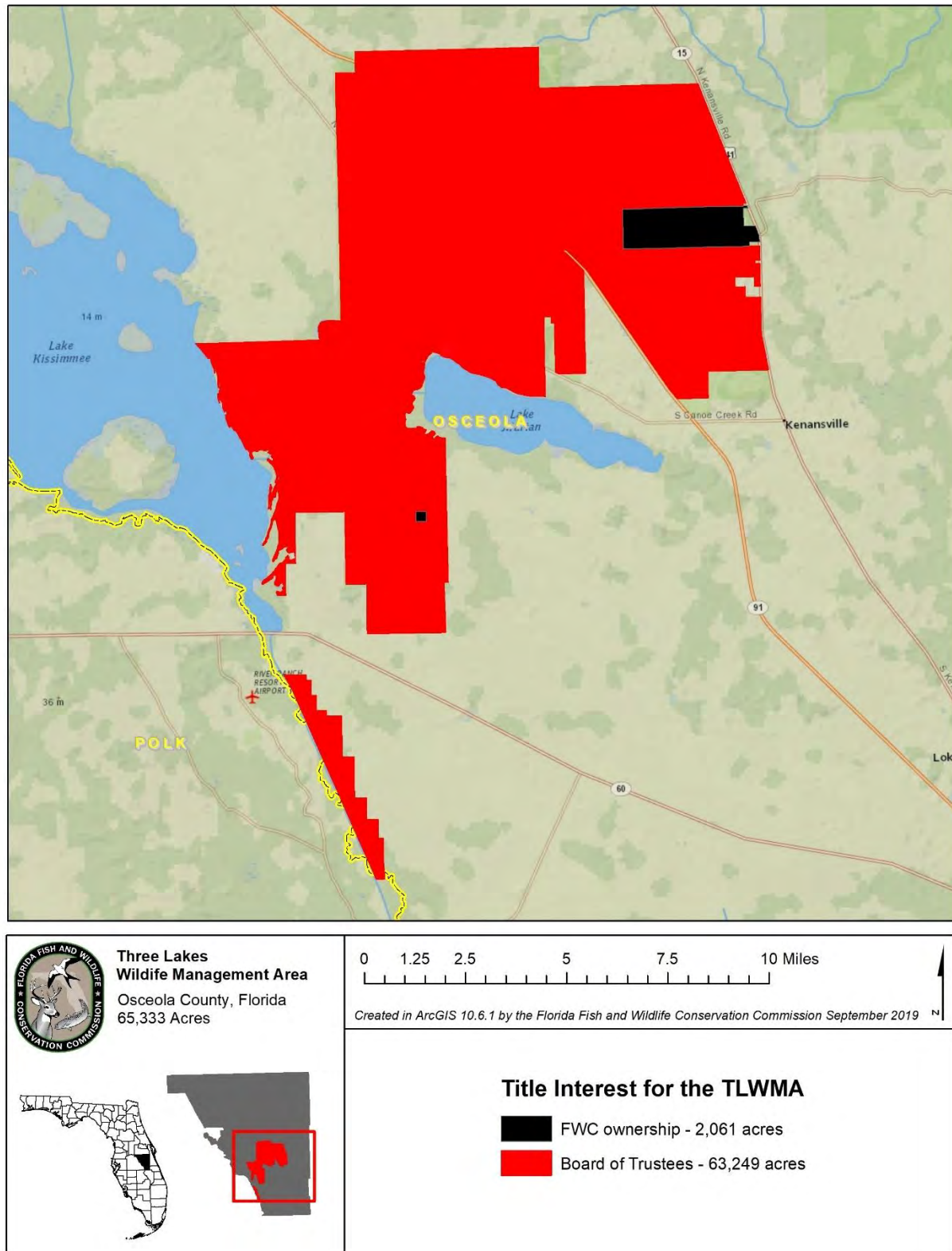


Figure 5. Title Interest for the TLWMA

1.8 Adjacent Land Uses

Much of the private rural lands in the regional landscape of the TLWMA are composed of working agricultural operations, with cattle ranching, citrus and sod farming being the more common commercial agricultural practices in the area at present. Others may include timber harvesting and cypress mulching operations. Large private land holdings comprise most of the property on the east, west, south and north boundaries of the TLWMA. Only sparse residential development has occurred in the immediate vicinity of the TLWMA. However, increased residential development has occurred within the region surrounding the TLWMA, including the cities of Kissimmee, St. Cloud, Lake Wales and Melbourne.

The TLWMA is located in Osceola County, south of the City of St. Cloud. The 2019 U.S. Census estimates that there are 370,552 people living in Osceola County. The Department of Economic Affairs, Bureau of Economic and Business Research's (BEBR) medium-range population projection indicates that in the year 2030, there will be 510,200 people living in Osceola County. The BEBR population projections for the counties surrounding Osceola County for the year 2030 are as follows: Brevard— 665,000; Indian River – 180,200; Okeechobee – 44,400; Orange— 1,696,800; and Polk – 817,000.

The TLWMA is currently zoned for Agriculture. This designation allows for agriculture and silviculture uses and related industries, natural resource conservation/preservation and low-density residential housing. Residential uses are allowed with a maximum density of one dwelling unit per five acres. The land in the area surrounding the TLWMA also has a zoning designation of Agricultural Development and Conservation.

Currently, the majority of the TLWMA has a future land use designation of Conservation. The remainder of the TLWMA and the majority of the surrounding area have a future land use designation of Rural/Agricultural. The area in and around the community of Kenansville has a future land use designation of Rural Settlement. This designation is intended to preserve existing rural communities while allowing a maximum residential density of two dwelling units per acre.

The TLWMA is not within an area of critical state concern or presently under study for such a designation.

1.9 Public Involvement

The FWC conducted a Management Advisory Group (MAG) meeting in Kissimmee, Florida on September 18, 2019, to obtain input from both public and private stakeholders regarding management of the TLWMA. 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 12.5.1. Further, a public hearing, as required by Chapter 259.032(10), F.S., was held in Kissimmee, Florida on November 5,

2019, to solicit input and comment from the general public regarding this Management Plan. The management prospectus was made available to the public 30-days before the scheduled public hearing. The report of that hearing is also contained in Appendix 12.5.2. A website is also maintained for receipt of public input at <https://myfwc.com/conservation/management-plans/terrestrial/>. Further testimony and input is received at a public hearing held by the ARC. 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

2.1.1 Climate

The climate of Central Florida is humid subtropical. Between October and May, cold fronts regularly sweep through the state which keeps conditions dry, particularly over the peninsula. In winters when an El Niño climate cycle exists, rainfall increases while temperatures are cooler statewide. Additionally, when the La Niña climate cycle occurs Central Florida can experience a variety of severe weather patterns. Beginning in the spring, towards the end of the dry season, lightning originated wildfires become more common. There is a defined rainy season from June through October, which are also the months most at risk of tropical cyclones making landfall in the region. Easterly winds off the warm waters of the Gulf Stream running through the Florida Straits keep temperatures moderate across the central peninsula year-round.

Osceola County's January temperatures range between 72° Fahrenheit (F) for the average high and 48° F for the average low. July temperatures range between 92° F for the average high and 72° F for the average low. Annually, Osceola County experiences an average of 116 days of rain, and an average total rainfall of 53 inches.

2.1.2 Topography

The TLWMA is situated within the Osceola Plain, which is the largest physiographic region in Osceola County.² The topographic features within the boundaries of the TLWMA range along a relatively shallow gradient between 50 feet above mean sea level (MSL) and 82 feet above MSL.

2.1.3 Soils

The U.S. Department of Agriculture, NRCS data were used to identify the TLWMA soil series and soil depth to water table (Figures 6-8). The map units described in the soil survey of the TLWMA are distributed as shown in Figure 6 and 7. Analyses of depth to water table for map units occurring within the TLWMA are also provided in Figure 8. The NRCS defines a soil map unit as: "a collection of soil areas or non-soil areas (miscellaneous areas) delineated in a soil survey." Soil map units may contain multiple soil components, which are given names that are unique identifiers.

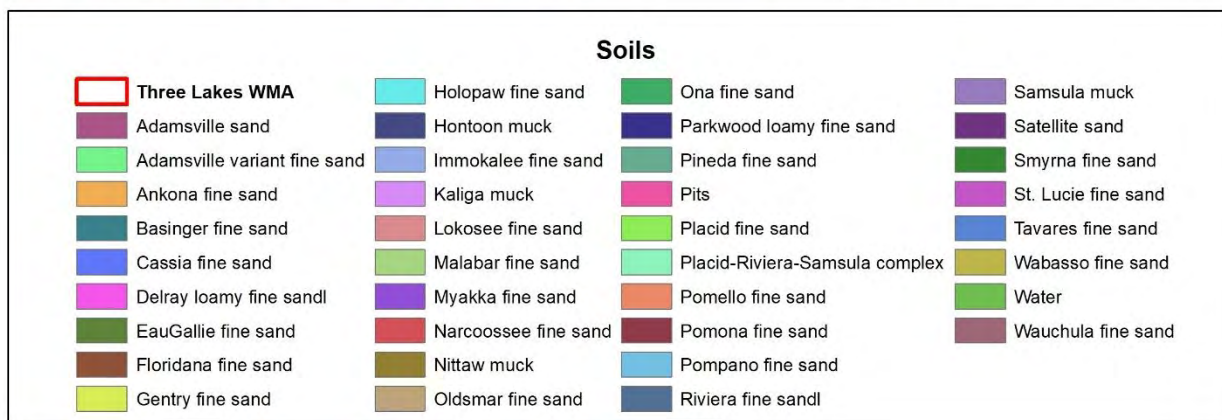
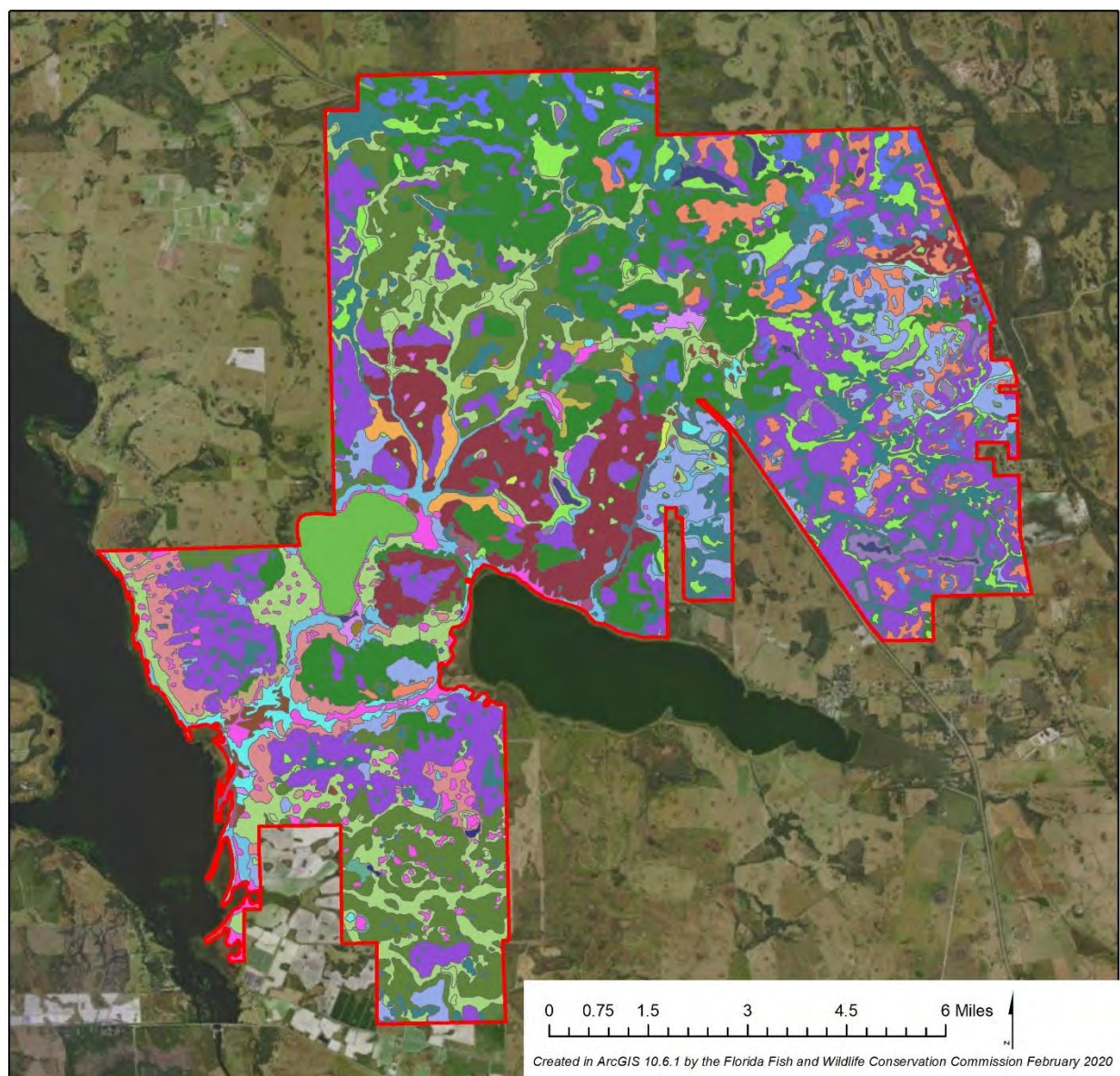


Figure 6. Soils – TLWMA

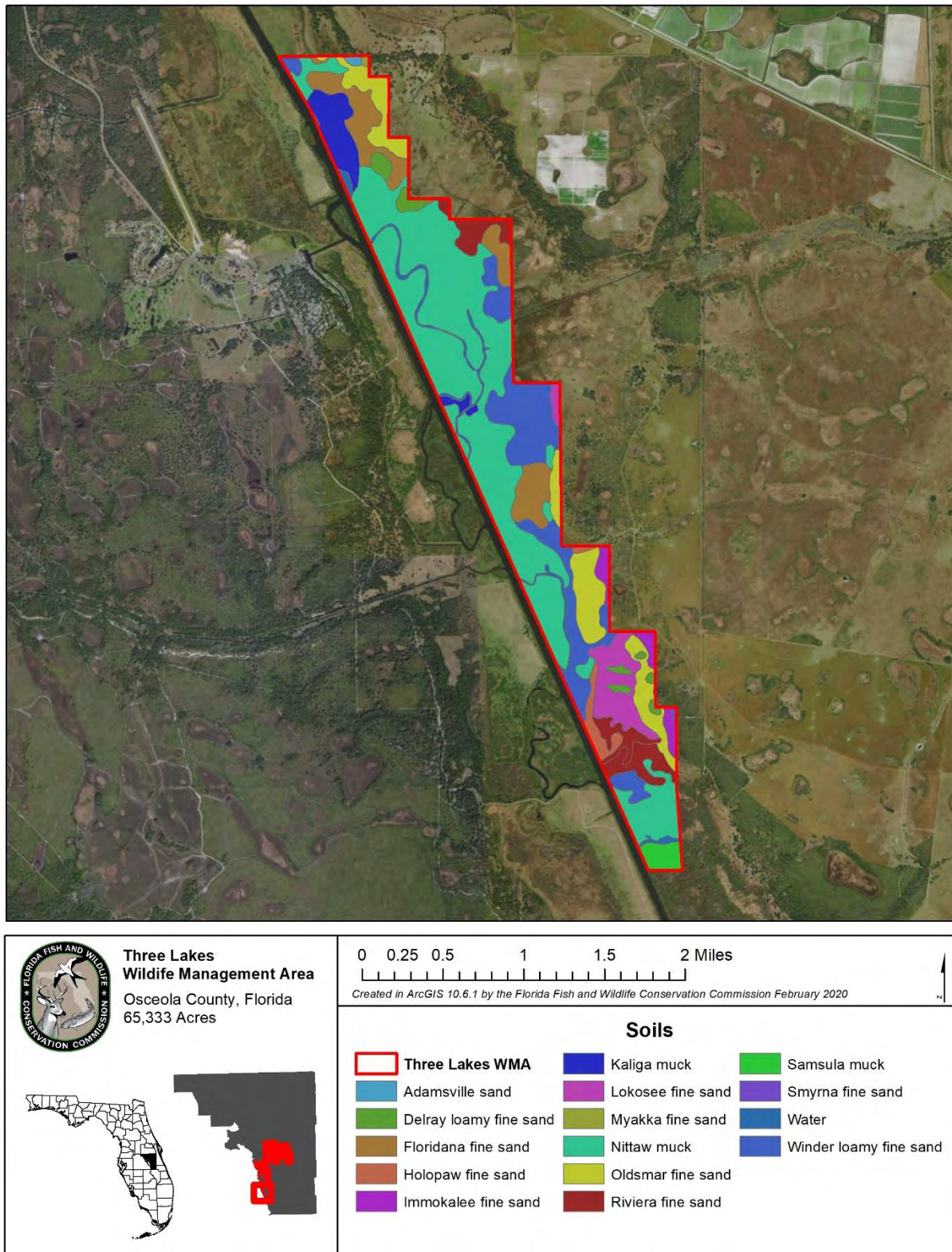


Figure 7. Soils- KRPUA portion of the TLWMA

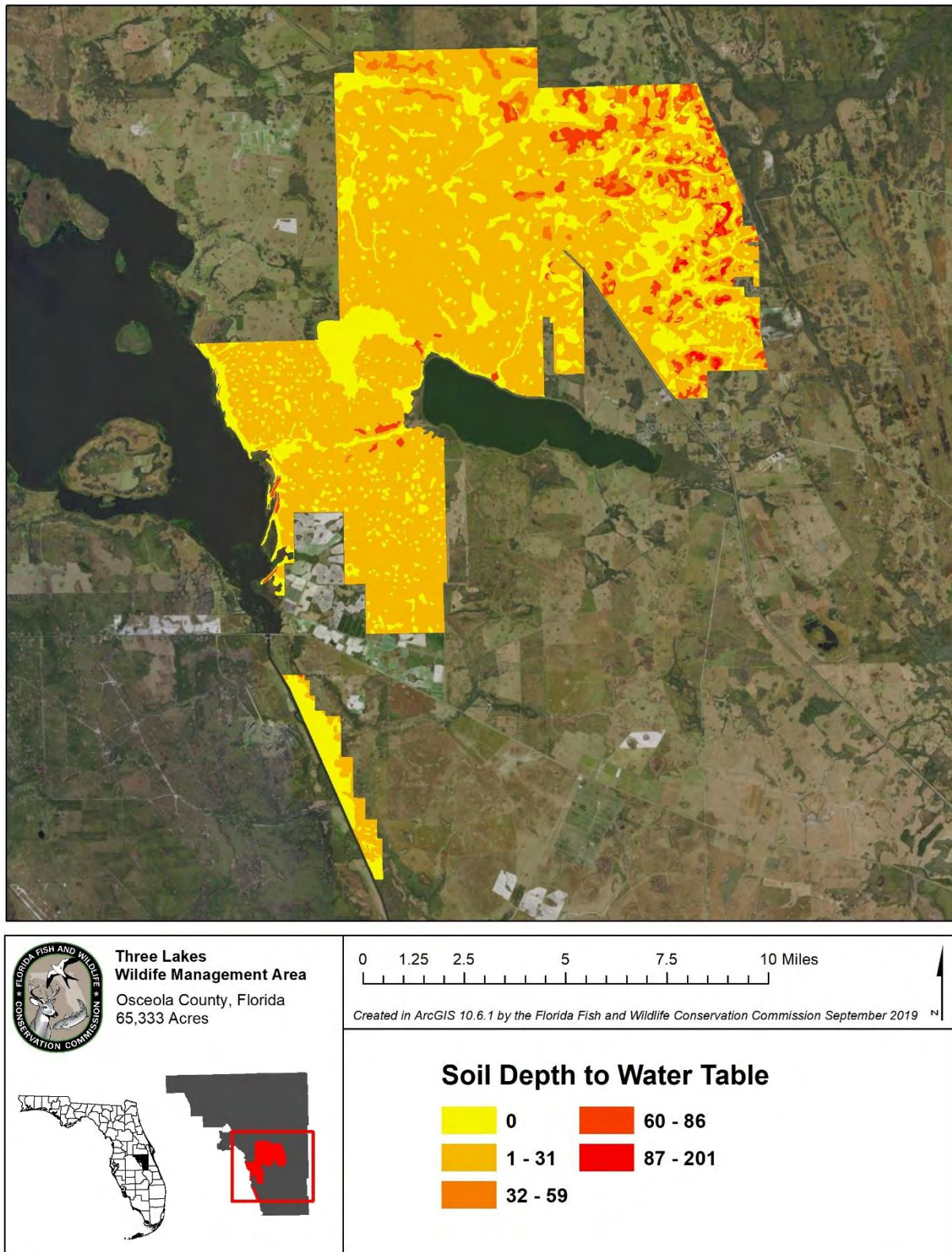


Figure 8. Soil Depth to Water Table (cm) - TLWMA

Appendix 12.7 lists the names and official map unit descriptions of areas delineated on the detailed soil maps in a soil survey or by miscellaneous areas in the survey area as determined by the NRCS. Analysis of depth to water table for map units occurring within the TLWMA are also provided in Appendix 12.7.

Soils found within the TLWMA are generally those associated with the area's mix of natural communities and are therefore moderately well drained to very poorly drained sandy or organic soils, such as muck. Myakka fine sand makes up approximately 17.4% of the area, with 15% Smyrna fine sand, 11% Basinger fine sand, 10% Malabar fine sand, 9% EauGallie fine sand, 9% Pompano fine sand and 5% Immokalee fine sand. Various other less prominent sands span the area including Placid fine sand, Pomello fine sand, Delray loamy fine sand and many others. The TLWMA does not contain beaches or dunes.

2.1.4 Geologic Conditions

The Central Highlands Region of peninsular Florida consists of a series of rather localized high grounds, comprising near subparallel north-south ridges that are remnants of beach and sand-dune systems associated with Early Pleistocene shorelines. The region consists of xeric residual sandhills, beach ridges and dune fields, the whole of which is interspersed with numerous sinkholes, lakes and basins caused by erosion of the underlying limestone bedrock. The main axis of the Central Highlands is the Central Ridge, extending from south-eastern Lake County in the north to southern Highlands County in the south. Undifferentiated Quaternary Sediments geological unit is what makes up the TLWMA.

Undifferentiated Quaternary Sediments (Pleistocene/Holocene) – Much of Florida's surface is covered by a varying thickness of undifferentiated sediments consisting of siliciclastics, organics and freshwater carbonates. Where these sediments exceed 20 feet (6.1 meters) thick, they were mapped as discrete units. In an effort to subdivide the undifferentiated sediments, those sediments occurring in flood plains were mapped as alluvial and flood plain deposits. Sediments showing surficial expression of beach ridges and dunes were mapped separately as were the sediments composing Trail Ridge. Terrace sands were not mapped. The subdivisions of the Undifferentiated Quaternary Sediments are not lithostratigraphic units but are utilized in order to facilitate a better understanding of the State's geology. The siliciclastics are light gray, tan, brown to black, unconsolidated to poorly consolidated, clean to clayey, silty, unfossiliferous, variably organic-bearing sands to blue green to olive green, poorly to moderately consolidated, sandy and silty clays. Gravel is occasionally present in the panhandle. Organics occur as plant debris, roots, disseminated organic matrices and beds of peat. Freshwater carbonates, often referred to as marls in the literature, are scattered over much of the State. These sediments are buff colored to tan, unconsolidated to poorly consolidated, fossiliferous carbonate muds. Sand, silt and clay may be present in limited quantities. These carbonates often contain organics. The dominant fossils in the freshwater carbonates are mollusks.

2.2 Vegetation

Through the services of the Florida Natural Areas Inventory (FNAI), the FWC has mapped the current natural and anthropogenic communities on the TLWMA. The TLWMA is composed of a mosaic of uplands and wetlands, including 21 natural community and five anthropogenic community types (Table 3, Figures 9 and 10). Plant species found at the TLWMA have been recorded (Table 4). Additionally, there are 38 exotic and invasive plant species (Table 5) and 30 rare plant species (Table 6) within the TLWMA.

Table 3. Natural and Altered Community Types on the TLWMA

Community Type	GIS Acres	Percentage
Basin marsh	2,968.78	4.6%
Basin swamp	4.5	<0.1%
Baygall	808.75	1.2%
Blackwater stream	43.4	0.07%
Depression marsh	2,321.85	3.6%
Dome swamp	7,878.94	12.2%
Dry prairie	15,538.93	24%
Floodplain marsh	457.41	0.7%
Hydric hammock	128.35	0.2%
Mesic flatwoods	15,671.64	24.2%
Mesic hammock	3,065.07	4.7%
Pasture - improved	2,057.97	3.2%
Pasture - semi-improved	364.53	0.6%
Pine plantation	360.74	0.6%
Prairie/flatwoods lake	1,093.82	1.7%
Restoration dry prairie	516.21	0.8%
Restoration mesic flatwoods	535.46	0.8%
Restoration wet prairie	11.47	0.02%
Ruderal	1,820.72	2.8%
Sandhill	202.15	0.3%
Scrub	751.32	1.2%
Scrubby flatwoods	1,230.88	1.9%
Successional hardwood forest	34.62	0.05%
Wet flatwoods	214.49	0.3%
Wet prairie	6,676.76	10.3%
Xeric hammock	89.46	0.1%

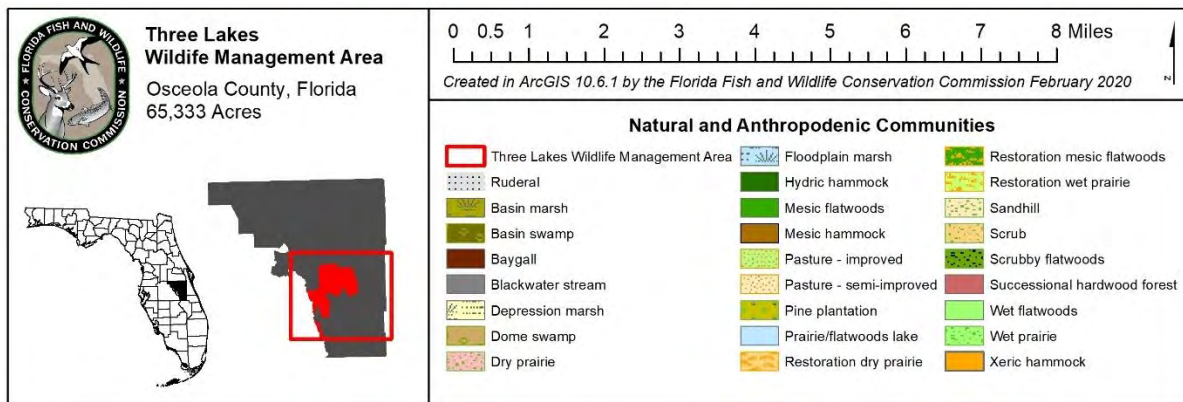
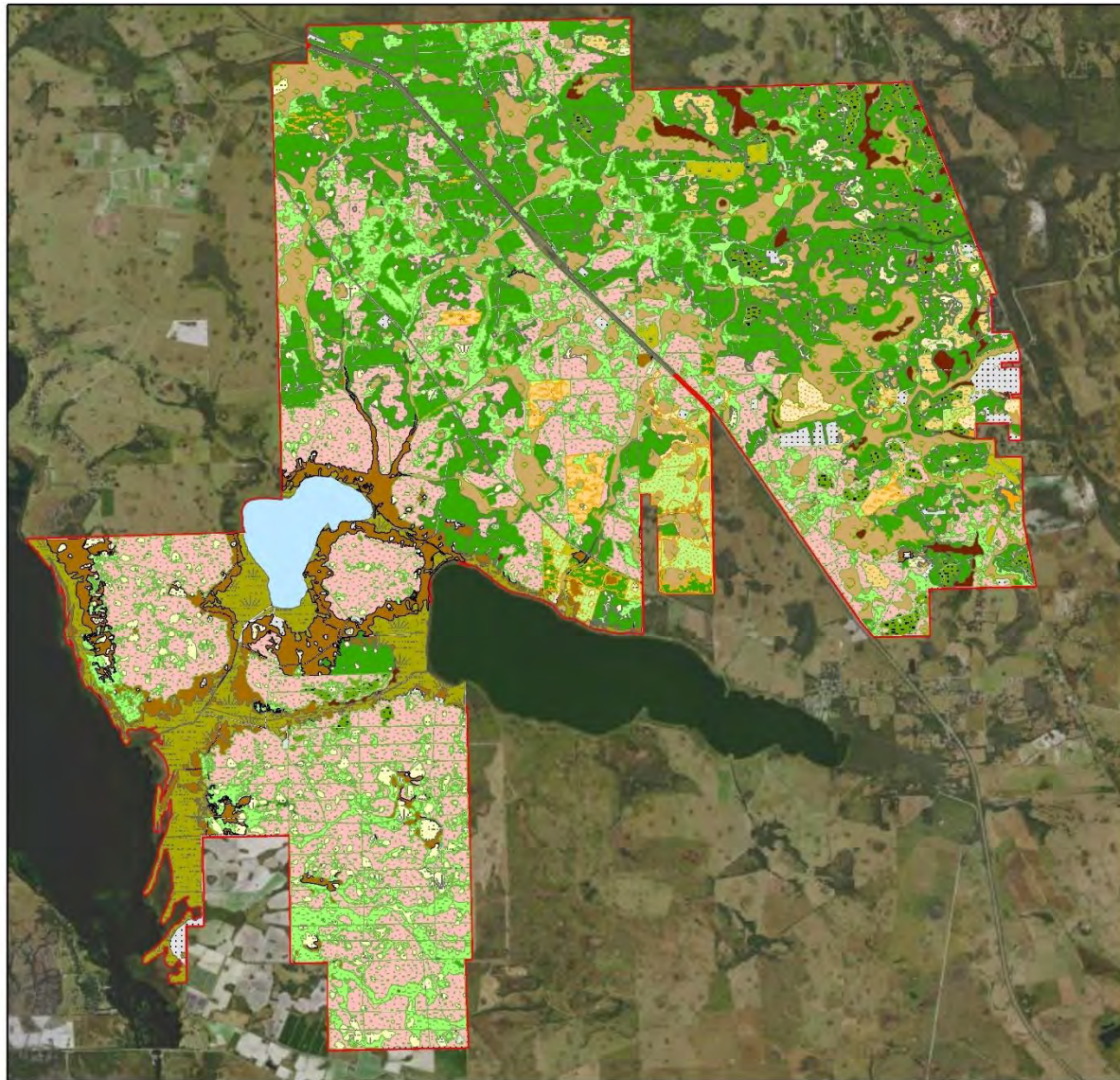


Figure 9. Natural and Anthropogenic Communities at the TLWMA

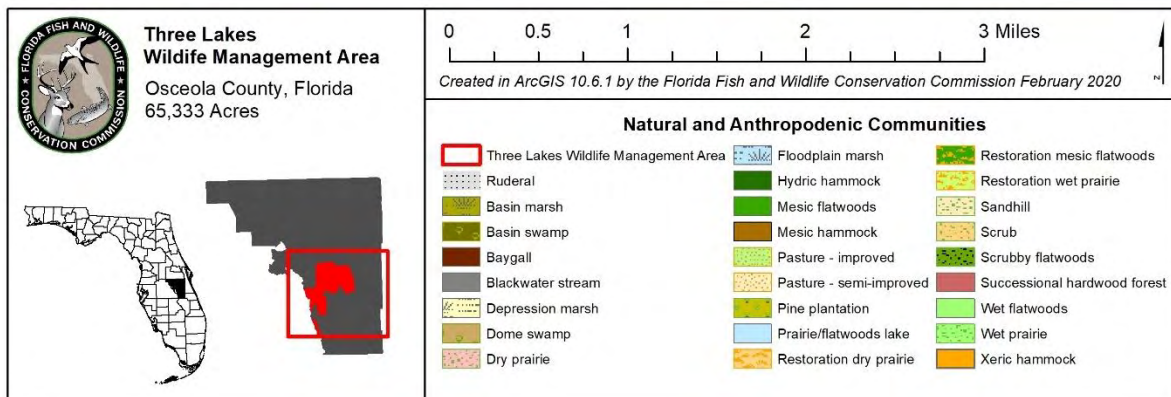
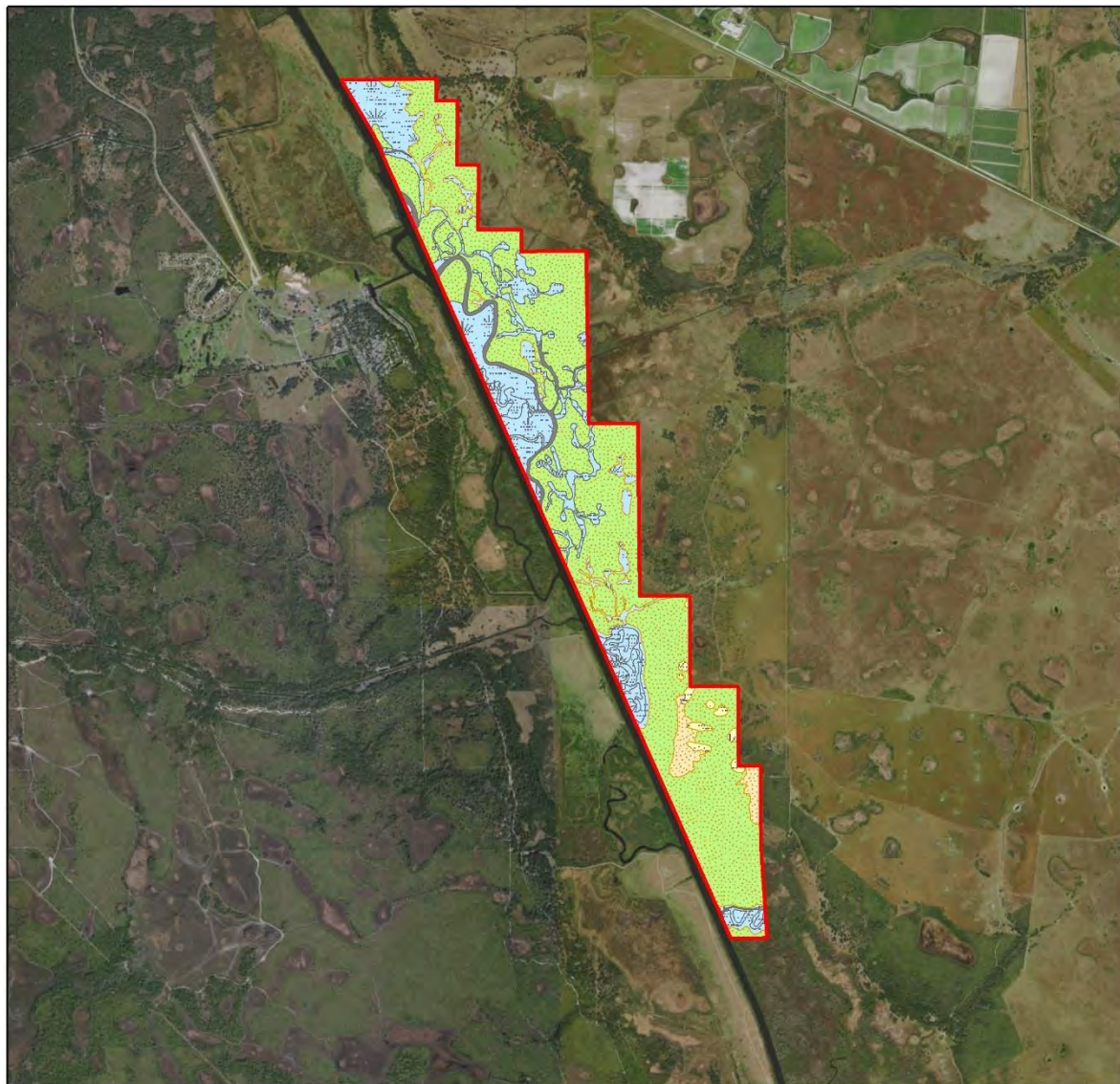


Figure 10. Natural and Anthropogenic Communities at the KRPWA portion of the TLWMA

Table 4. Native Plants Known to Occur on the TLWMA

Common Name	Scientific Name
Adam's needle	<i>Yucca filamentosa</i>
Airplant	<i>Tillandsia sp.</i>
Alligatorflag	<i>Thalia geniculata</i>
American beautyberry	<i>Callicarpa americana</i>
American bluehearts	<i>Buchnera americana</i>
American cupscale	<i>Sacciolepis striata</i>
American lotus	<i>Nelumbo lutea</i>
American waterhorehound	<i>Lycopus americanus</i>
Arrowfeather threeawn	<i>Aristida purpurascens</i>
Arrowhead	<i>Sagittaria sp.</i>
Aster	<i>Symphyotrichum sp.</i>
Atlantic St. John's wort	<i>Hypericum tenuifolium</i>
Axilflower	<i>Mecardonia acuminata</i>
Bald cypress	<i>Taxodium distichum</i>
Baldwin's beaksedge	<i>Rhynchospora baldwinii</i>
Baldwin's eryngo	<i>Eryngium baldwinii</i>
Baldwin's flatsedge	<i>Cyperus croceus</i>
Baldwin's nutrush	<i>Scleria baldwinii</i>
Baldwin's spikerush	<i>Eleocharis baldwinii</i>
Ballmoss	<i>Tillandsia recurvata</i>
Bay	<i>Persea sp.</i>
Beaked panicum	<i>Coleataenia anceps</i>
Beaksedge	<i>Rhynchospora sp.</i>
Bearded grass-pink	<i>Calopogon barbatus</i>
Bearded skeletongrass	<i>Gymnopogon ambiguous</i>
Bedstraw	<i>Galium sp.</i>
Beggarticks	<i>Bidens bipinnata</i>
Beggarticks	<i>Bidens alba</i>
Big carpetgrass	<i>Axonopus furcatus</i>
Big floatingheart	<i>Nymphoides aquatica</i>
Bigflower pawpaw	<i>Asimina obovata</i>
Bighead rush	<i>Juncus megacephalus</i>
Blackberry	<i>Rubus sp.</i>
Blackgum	<i>Nyssa sylvatica</i>
Blackroot	<i>Pterocaulon pycnostachyum</i>
Blacksenna	<i>Seymeria sp.</i>
Bladderpod	<i>Sesbania vesicaria</i>

Common Name	Scientific Name
Bladderwort	<i>Utricularia sp.</i>
Blazing star	<i>Liatris sp.</i>
Blue huckleberry	<i>Gaylussacia frondosa</i> var. <i>tomentosa</i>
Blue maidencane	<i>Amphicarpum muhlenbergianum</i>
Blue mistflower	<i>Conoclinium coelestinum</i>
Blue-eyed grass	<i>Sisyrinchium sp.</i>
Bluejack oak	<i>Quercus incana</i>
Bluejoint panicum	<i>Panicum tenerum</i>
Bluestem	<i>Andropogon sp.</i>
Bog white violet	<i>Viola lanceolata</i>
Bog yellow-eyed grass	<i>Xyris difformis</i>
Bogbutton	<i>Lachnocaulon sp.</i>
Bottlebrush threeawn	<i>Aristida spiciformis</i>
Bracken fern	<i>Pteridium aquilinum</i>
Braken fern	<i>Pteridium aquilinum</i>
Branched hedgehyssop	<i>Gratiola ramosa</i>
Brazilian satintail	<i>Imperata brasiliensis</i>
Bristlegass: foxtail	<i>Setaria sp.</i>
Broadleaf cattail	<i>Typha latifolia</i>
Broomsedge bluestem	<i>Andropogon virginicus</i> var. <i>decipiens</i>
Broomsedge bluestem	<i>Andropogon virginicus</i> var. <i>virginicus</i>
Bulltongue arrowhead	<i>Sagittaria lancifolia</i>
Bully	<i>Sideroxylon sp.</i>
Bunched beaksedge	<i>Rhynchospora cephalantha</i>
Bushy bluestem	<i>Andropogon glomeratus</i>
Bushy bluestem	<i>Andropogon glomeratus</i> var. <i>glomeratus</i>
Bushy bluestem	<i>Andropogon glomeratus</i> var. <i>hirsutior</i>
Butterwort	<i>Pinguicula sp.</i>
Button rattlesnakemaster	<i>Eryngium yuccifolium</i>
Cabbage palm	<i>Sabal palmetto</i>
Camphorweed	<i>Pluchea sp.</i>
Canada spikerush	<i>Eleocharis geniculata</i>
Canadian horseweed	<i>Conyza canadensis</i>
Candyroot	<i>Polygala nana</i>
Capillary hairsedge	<i>Bulbostylis ciliatifolia</i>
Caribbean purple everlasting	<i>Gamochaeta antillana</i>
Carolina fimbry	<i>Fimbristylis caroliniana</i>
Carolina redroot	<i>Lachnanthes caroliana</i>

Common Name	Scientific Name
Carolina yellow-eyed grass	<i>Xyris caroliniana</i>
Cassia	<i>Cassia sp.</i>
Chalky bluestem	<i>Andropogon virginicus</i> var. <i>glaucus</i>
Chapman's goldenrod	<i>Solidago odora</i> var. <i>chapmanii</i>
Chapman's oak	<i>Quercus chapmanii</i>
Chapman's skeletongrass	<i>Gymnopogon chapmanianus</i>
Ciliate redtop panicum	<i>Panicum longifolium</i>
Ciliate wild petunia	<i>Ruellia ciliosa</i>
Climbing hempvine	<i>Mikania scandens</i>
Clustered beaksedge	<i>Rhynchospora glomerata</i>
Clustered bushmint	<i>Hyptis alata</i>
Clustered mille graines	<i>Oldenlandia uniflora</i>
Coastal lovegrass	<i>Eragrostis virginica</i>
Coastalplain chaffhead	<i>Carphephorus corymbosus</i>
Coastalplain hawkweed	<i>Hieracium megacephalon</i>
Coastalplain honeycomb-head	<i>Balduina angustifolia</i>
Coastalplain milkwort	<i>Polygala setacea</i>
Coastalplain St. John's wort	<i>Hypericum brachyphyllum</i>
Coastalplain staggerbush	<i>Lyonia fruticosa</i>
Coastalplain willow	<i>Salix caroliniana</i>
Coastalplain yellow-eyed grass	<i>Xyris ambigua</i>
Combleaf mermaidweed	<i>Proserpinaca pectinata</i>
Common buttonbush	<i>Cephalanthus occidentalis</i>
Common carpetgrass	<i>Axonopus fissifolius</i>
Common persimmon	<i>Diospyros virginiana</i>
Common ragweed	<i>Ambrosia artemisiifolia</i>
Common yellow woodsorrel	<i>Oxalis corniculata</i>
Compressed plumegrass	<i>Saccharum coarctatum</i>
Coneflower	<i>Rudbeckia sp.</i>
Coral greenbrier	<i>Smilax walteri</i>
Cordgrass	<i>Spartina sp.</i>
Corkscrew threeawn	<i>Aristida gyrans</i>
Cowbane	<i>Oxypolis sp.</i>
Crabgrass	<i>Digitaria sp.</i>
Creeping cucumber	<i>Melothria pendula</i>
Creeping little bluestem	<i>Schizachyrium stoloniferum</i>
Creeping primrose willow	<i>Ludwigia repens</i>
Crimson bluestem	<i>Schizachyrium sanguineum</i>

Common Name	Scientific Name
Croton	<i>Croton sp.</i>
Crowngrass	<i>Paspalum sp.</i>
Curtiss' nutrush	<i>Scleria ciliata</i>
Cypress witchgrass	<i>Dichanthelium ensifolium</i>
Cypress witchgrass	<i>Dichanthelium ensifolium</i> var. <i>unciphyllum</i>
Dahoon	<i>Ilex cassine</i>
Danglepod	<i>Sesbania herbacea</i>
Darrow's blueberry	<i>Vaccinium darrowii</i>
Deerberry	<i>Vaccinium stamineum</i>
Dense gayfeather	<i>Liatris spicata</i>
Denseflower knotweed	<i>Polygonum densiflorum</i>
Dixie aster	<i>Sericocarpus tortifolius</i>
Dogfennel	<i>Eupatorium capillifolium</i>
Dotted smartweed	<i>Polygonum punctatum</i>
Downy milkpea	<i>Galactia volubilis</i>
Dropseed	<i>Sporobolus sp.</i>
Drumheads	<i>Polygala cruciata</i>
Dwarf huckleberry	<i>Gaylussacia dumosa</i>
Dwarf live oak	<i>Quercus minima</i>
Dwarf pawpaw	<i>Asimina pygmaea</i>
Dwarf sundew	<i>Drosera brevifolia</i>
Earleaf greenbrier	<i>Smilax auriculata</i>
Early blue violet	<i>Viola palmata</i>
Early paspalum	<i>Paspalum praecox</i>
Early whitetop fleabane	<i>Erigeron vernus</i>
Eastern gamagrass	<i>Tripsacum dactyloides</i>
Eastern narrowleaf sedge	<i>Carex corrugata</i>
Eastern poison ivy	<i>Toxicodendron radicans</i>
Eastern purple bladderwort	<i>Utricularia purpurea</i>
Eastern silver aster	<i>Symphyotrichum concolor</i>
Elderberry	<i>Sambucus nigra</i> ssp. <i>canadensis</i>
Elephantsfoot	<i>Elephantopus sp.</i>
Elliott's blueberry	<i>Vaccinium corymbosum</i>
Elliott's bluestem	<i>Andropogon gyrans</i>
Elliott's bluestem	<i>Andropogon perangustatus</i>
Elliott's lovegrass	<i>Eragrostis elliottii</i>
Elliott's milkpea	<i>Galactia elliottii</i>
Elliott's rush	<i>Juncus elliottii</i>

Common Name	Scientific Name
Elliott's yellow-eyed grass	<i>Xyris elliotii</i>
Erectleaf witchgrass	<i>Dichanthelium erectifolium</i>
Eryngo	<i>Eryngium</i> sp.
Evans' reindeer lichen	<i>Cladina evansii</i>
False daisy	<i>Eclipta prostrata</i>
False dragon-head	<i>Physostegia</i> sp.
False foxglove	<i>Agalinis</i> sp.
False nettle	<i>Boehmeria cylindrica</i>
False rosemary	<i>Conradina canescens</i>
False vanillaleaf	<i>Carphephorus odoratissimus</i> var. <i>subtropicanus</i>
Fascicled beaksedge	<i>Rhynchospora fascicularis</i>
Featherbristle beaksedge	<i>Rhynchospora oligantha</i>
Fetterbush	<i>Lyonia lucida</i>
Fimbry	<i>Fimbristylis</i> sp.
Fingergrass	<i>Eustachys</i> sp.
Fireweed	<i>Erechtites hieraciifolius</i>
Flatsedge	<i>Cyperus</i> sp.
Flattened pipewort	<i>Eriocaulon compressum</i>
Flattop goldenrod	<i>Euthamia</i> sp.
Flattop goldenrod	<i>Euthamia graminifolia</i>
Flax	<i>Linum</i> sp.
Fleabane	<i>Erigeron</i> sp.
Floating bladderwort	<i>Utricularia inflata</i>
Floating marsh pennywort	<i>Hydrocotyle ranunculoides</i>
Florida air-plant	<i>Tillandsia simulata</i>
Florida Indian-plantain	<i>Arnoglossum floridanum</i>
Florida keys hempvine	<i>Mikania cordifolia</i>
Florida rosemary	<i>Ceratiola ericoides</i>
Florida threeawn grass	<i>Aristida rhizomophora</i>
Florida tickseed	<i>Coreopsis floridana</i>
Florida willow	<i>Salix floridana</i>
Fourpetal St. John's wort	<i>Hypericum tetrapetalum</i>
Fragrant eryngo	<i>Eryngium aromaticum</i>
Fringed beaksedge	<i>Rhynchospora ciliaris</i>
Fringed yellow stargrass	<i>Hypoxis juncea</i>
Fringed yellow-eyed grass	<i>Xyris fimbriata</i>
Frostweed	<i>Helianthemum</i> sp.
Gallberry	<i>Ilex glabra</i>

Common Name	Scientific Name
Giant White-top	<i>Rhynchospora latifolia</i>
Glade lobelia	<i>Lobelia glandulosa</i>
Golden polypody	<i>Phlebodium aureum</i>
Golden-aster	<i>Chrysopsis sp.</i>
Goldenrod	<i>Solidago sp.</i>
Gopher apple	<i>Geobalanus oblongifolius</i>
Grape	<i>Vitis sp.</i>
Grassleaf gayfeather	<i>Liatris elegantula</i>
Grassleaf rush	<i>Juncus marginatus</i>
Grass-pink	<i>Calopogon sp.</i>
Grassy arrowhead	<i>Sagittaria graminea</i>
Greenbrier	<i>Smilax sp.</i>
Greenvein ladies'-tresses	<i>Spiranthes praecox</i>
Groundcherry	<i>Physalis sp.</i>
Groundsel tree	<i>Baccharis halimifolia</i>
Gulf hairawn muhly	<i>Muhlenbergia capillaris</i> var. <i>filipes</i>
Gulfdune paspalum	<i>Paspalum monostachyum</i>
Hairawn muhly	<i>Muhlenbergia capillaris</i>
Hairsedge	<i>Bulbostylis sp.</i>
Hairy chaffhead	<i>Carphephorus paniculatus</i>
Hairy fimbry	<i>Fimbristylis puberula</i>
Hairy laurel	<i>Kalmia hirsuta</i>
Haspan flatsedge	<i>Cyperus haspan</i>
Hatpins	<i>Syngonanthus sp.</i>
Hedge false bindweed	<i>Calystegia sepium</i> subsp. <i>limnophilum</i>
Hedgehyssop	<i>Gratiola sp.</i>
Heliotrope	<i>Heliotropium sp.</i>
Hemlock witchgrass	<i>Dichanthelium portoricense</i>
Herb-of-grace	<i>Bacopa monnieri</i>
Highbush blueberry	<i>Vaccinium corymbosum</i>
Hoary-pea	<i>Tephrosia sp.</i>
Holly	<i>Ilex sp.</i>
Horned bladderwort	<i>Utricularia cornuta</i>
Hottentot fern	<i>Thelypteris interrupta</i>
Huckleberry	<i>Gaylussacia sp.</i>
Humped bladderwort	<i>Utricularia gibba</i>
Indiangrass	<i>Sorghastrum sp.</i>
Iris	<i>Iris sp.</i>

Common Name	Scientific Name
Jamaica swamp sawgrass	<i>Cladium jamaicense</i>
Jester lichen, Cup lichen	<i>Cladonia leporine</i>
Joyweed	<i>Alternanthera sp.</i>
Justiceweed	<i>Eupatorium leucolepis</i>
Knotweed	<i>Polygonum sp.</i>
Ladies'-tresses	<i>Spiranthes sp.</i>
Large gallberry	<i>Ilex coriacea</i>
Largeflower rose gentian	<i>Sabatia grandiflora</i>
Largeleaf marshpennywort	<i>Hydrocotyle bonariensis</i>
Laurel greenbrier	<i>Smilax laurifolia</i>
Laurel oak	<i>Quercus hemisphaerica</i>
Le Conte's flatsedge	<i>Cyperus lecontei</i>
Le Conte's thistle	<i>Cirsium lecontei</i>
Leavenworth's tickseed	<i>Coreopsis leavenworthii</i>
Lemon bacopa	<i>Bacopa caroliniana</i>
Lesser creeping rush	<i>Juncus repens</i>
Lichen	<i>Cladina sp.</i>
Licoriceweed	<i>Scoparia dulcis</i>
Limestone sandmat	<i>Euphorbia blodgettii</i>
Little bluestem	<i>Schizachyrium sp.</i>
Little bluestem	<i>Schizachyrium scoparium</i>
Live oak	<i>Quercus virginiana</i>
Lizard's tail	<i>Saururus cernuus</i>
Lobelia	<i>Lobelia sp.</i>
Loblolly bay	<i>Gordonia lasianthus</i>
Longleaf pine	<i>Pinus palustris</i>
Longleaf threeawn	<i>Aristida palustris</i>
Long's sedge	<i>Carex longii</i>
Loosehead beaksedge	<i>Rhynchospora chalarocephala</i>
Lopsided Indiangrass	<i>Sorghastrum secundum</i>
Lovegrass	<i>Eragrostis sp.</i>
Low pinebarren milkwort	<i>Polygala ramosa</i>
Lowland rotala	<i>Rotala ramosior</i>
Maidencane	<i>Panicum hemitomon</i>
Mallow	<i>Malva sp.</i>
Manyflower marsh pennywort	<i>Hydrocotyle umbellata</i>
Manyspike flatsedge	<i>Cyperus polystachyos</i>
Maple	<i>Acer sp.</i>

Common Name	Scientific Name
Marsh mermaidweed	<i>Prosperpinaca palustris</i>
Marshpennywort	<i>Hydrocotyle sp.</i>
Meadowbeauty	<i>Rhexia sp.</i>
Mermaidweed	<i>Proserpinaca sp.</i>
Mexican primrosewillow	<i>Ludwigia octovalvis</i>
Michaux's croton	<i>Croton michauxii</i>
Milkpea	<i>Galactia sp.</i>
Milkwort	<i>Polygala sp.</i>
Mille graines	<i>Oldenlandia sp.</i>
Millet beaksedge	<i>Rhynchospora miliacea</i>
Mohr's thoroughwort	<i>Eupatorium mohrii</i>
Morning glory	<i>Ipomoea sp.</i>
Mosquito fern	<i>Azolla sp.</i>
Muscadine	<i>Vitis rotundifolia</i>
Myrtle oak	<i>Quercus myrtifolia</i>
Myrtleleaf St. John's wort	<i>Hypericum myrtifolium</i>
Nailwort	<i>Paronychia sp.</i>
Narrowfruit horned beaksedge	<i>Rhynchospora inundata</i>
Narrowleaf blue-eyed grass	<i>Sisyrinchium angustifolium</i>
Narrowleaf silkgrass	<i>Pityopsis graminifolia</i>
Narrowleaf sunflower	<i>Helianthus angustifolius</i>
Nash's blue-eyed grass	<i>Sisyrinchium nashii</i>
Needle rush	<i>Juncus roemerianus</i>
Needleleaf witchgrass	<i>Dichantherium aciculare</i>
Needlepod rush	<i>Juncus scirpoides</i>
Netted chain fern	<i>Woodwardia areolata</i>
Netted nutrush	<i>Scleria reticularis</i>
Netted pawpaw	<i>Asimina reticulata</i>
Nimblewill muhly	<i>Muhlenbergia schreberi</i>
Noseburn	<i>Tragia sp.</i>
Nutrush	<i>Scleria sp.</i>
Nuttall's meadowbeauty	<i>Rhexia nuttallii</i>
Nuttall's thistle	<i>Cirsium nuttallii</i>
Oak	<i>Quercus sp.</i>
Oblongleaf twinflower	<i>Dyschoriste oblongifolia</i>
October flower	<i>Polygonum polygamum</i>
Orange milkwort	<i>Polygala lutea</i>
Orangegrass	<i>Hypericum gentianoides</i>

Common Name	Scientific Name
Pale meadowbeauty	<i>Rhexia mariana</i>
Panic grass	<i>Panicum sp.</i>
Partridge pea	<i>Chamaecrista fasciculata</i>
Pawpaw	<i>Asimina sp.</i>
Peelbark St. John's wort	<i>Hypericum fasciculatum</i>
Peppervine	<i>Ampelopsis arborea</i>
Pickernelweed	<i>Pontederia cordata</i>
Piedmont pinweed	<i>Lechea torreyi</i>
Piedmont roseling	<i>Callisia rosea</i>
Pinebarren aster	<i>Oclemena reticulata</i>
Pinebarren beaksedge	<i>Rhynchospora intermedia</i>
Pinebarren flatsedge	<i>Cyperus ovatus</i>
Pinebarren frostweed	<i>Helianthemum corymbosum</i>
Pinebarren goldenrod	<i>Solidago fistulosa</i>
Pineland chaffhead	<i>Carphephorus carnosus</i>
Pineland daisy	<i>Chaptalia tomentosa</i>
Pineland pimpernel	<i>Samolus valerandi ssp. parviflorus</i>
Pineland rayless goldenrod	<i>Bigelowia nudata</i>
Pinewoods fingergrass	<i>Eustachys petraea</i>
Pineywoods dropseed	<i>Sporobolus junceus</i>
Pink sundew	<i>Drosera capillaris</i>
Pinkscale gayfeather	<i>Liatris elegans</i>
Pinweed	<i>Lechea sp.</i>
Pipewort	<i>Eriocaulon sp.</i>
Pitted stripeseed	<i>Piriqueta cistoides ssp. caroliniana</i>
Plumed beaksedge	<i>Rhynchospora plumosa</i>
Pond cypress	<i>Taxodium ascendens</i>
Poor joe	<i>Diodia teres</i>
Poorland flatsedge	<i>Cyperus compressus</i>
Powderpuff	<i>Mimosa strigillosa</i>
Prairie clover	<i>Dalea sp.</i>
Prickly pear	<i>Opuntia humifusa</i>
Primrose willow	<i>Ludwigia sp.</i>
Purple bluestem	<i>Andropogon glomeratus var. glaucopsis</i>
Purple lovegrass	<i>Eragrostis spectabilis</i>
Purple thistle	<i>Cirsium horridulum</i>
Queen-devil	<i>Hieracium gronovii</i>
Queen's delight	<i>Stillingia sylvatica</i>

Common Name	Scientific Name
Rabbitbells	<i>Crotalaria rotundifolia</i>
Racemed milkwort	<i>Polygala polygama</i>
Red maple	<i>Acer rubrum</i>
Redroot	<i>Lachnanthes sp.</i>
Redtop panicum	<i>Panicum rigidulum</i>
Reindeer lichen	<i>Cladina subtenuis</i>
Rice button aster	<i>Symphyotrichum dumosum</i>
Rose gentian	<i>Sabatia sp.</i>
Rosemallow	<i>Hibiscus sp.</i>
Rose-rush	<i>Lygodesmia aphylla</i>
Rosy camphorweed	<i>Pluchea baccharis</i>
Rougeplant	<i>Rivina humilis</i>
Rough hedgehyssop	<i>Gratiola hispida</i>
Rough witchgrass	<i>Dichanthelium leucothrix</i>
Roughhair witchgrass	<i>Dichanthelium strigosum</i>
Roundleaf bluet	<i>Houstonia procumbens</i>
Roundleaf greenbrier	<i>Smilax rotundifolia</i>
Roundleaf thoroughwort	<i>Eupatorium rotundifolium</i>
Roundpod St. John's wort	<i>Hypericum cistifolium</i>
Roundseed witchgrass	<i>Dichanthelium sphaerocarpon</i>
Runner oak	<i>Quercus pumila</i>
Rush	<i>Juncus sp.</i>
Rustweed	<i>Polypreum procumbens</i>
Rusty staggerbush	<i>Lyonia ferruginea</i>
Sand blackberry	<i>Rubus cuneifolius</i>
Sand cordgrass	<i>Spartina bakeri</i>
Sand holly	<i>Ilex ambigua</i>
Sand live oak	<i>Quercus geminata</i>
Sand pine	<i>Pinus clausa</i>
Sand spike-moss	<i>Selaginella arenicola</i>
Sandyfield beaksedge	<i>Rhynchospora megalocarpa</i>
Savannah milkweed	<i>Asclepias pedicellata</i>
Savannah panicum	<i>Phanopyrum gymnocarpon</i>
Savannah primrosewillow	<i>Ludwigia virgata</i>
Savannah yellow-eyed grass	<i>Xyris flabelliformis</i>
Saw greenbrier	<i>Smilax bona-nox</i>
Saw palmetto	<i>Serenoa repens</i>
Sawtooth blackberry	<i>Rubus pensilvanicus</i>

Common Name	Scientific Name
Scaleleaf aster	<i>Symphotrichum adnatum</i>
Scrub oak	<i>Quercus inopina</i>
Seaside primrose willow	<i>Ludwigia maritima</i>
Sedge	<i>Carex sp.</i>
Sensitive brier	<i>Mimosa quadrivalvis</i> var. <i>angustata</i>
Sensitive pea	<i>Chamaecrista sp.</i>
Sensitive pea	<i>Chamaecrista nictitans</i>
Sensitive plant	<i>Mimosa sp.</i>
Shiny blueberry	<i>Vaccinium myrsinites</i>
Shoestring fern	<i>Vittaria lineata</i>
Shortbristle horned beaksedge	<i>Rhynchospora corniculata</i>
Shortleaf basketgrass	<i>Oplismenus setarius</i>
Shortleaf gayfeather	<i>Liatris tenuifolia</i>
Shortleaf rose gentian	<i>Sabatia brevifolia</i>
Shortleaf skeletongrass	<i>Gymnopogon brevifolius</i>
Shortleaf yellow-eyed grass	<i>Xyris brevifolia</i>
Shortspike bluestem	<i>Andropogon brachystachyus</i>
Showy milkwort	<i>Asemeia violacea</i>
Shrubby primrosewillow	<i>Ludwigia suffruticosa</i>
Skyblue lupine	<i>Lupinus diffusus</i>
Slash pine	<i>Pinus elliotii</i>
Slender beaksedge	<i>Rhynchospora gracilentia</i>
Slender flattop goldenrod	<i>Euthamia caroliniana</i>
Slender woodoats	<i>Chasmanthium laxum</i>
Slenderfruit nutrush	<i>Scleria georgiana</i>
Small butterwort	<i>Pinguicula pumila</i>
Smallfruit beggarticks	<i>Bidens mitis</i>
Smallhead beaksedge	<i>Rhynchospora microcephala</i>
Smooth beggarticks	<i>Bidens laevis</i>
Sneezeweed	<i>Helenium sp.</i>
Soft rush	<i>Juncus effusus</i> ssp. <i>solutus</i>
Softstem bulrush	<i>Scirpus tabernaemontani</i>
Sour paspalum	<i>Paspalum conjugatum</i>
South florida bluestem	<i>Schizachyrium rhizomatum</i>
Southeastern sneezeweed	<i>Helenium pinnatifidum</i>
Southern beaksedge	<i>Rhynchospora microcarpa</i>
Southern cattail	<i>Typha domingensis</i>
Southern crabgrass	<i>Digitaria ciliaris</i>

Common Name	Scientific Name
Southern dewberry	<i>Rubus trivialis</i>
Southern needleleaf	<i>Tillandsia setacea</i>
Southern umbrellasedge	<i>Fuirena scirpoidea</i>
Spadeleaf	<i>Centella asiatica</i>
Spanish moss	<i>Tillandsia usneoides</i>
Sparkleberry	<i>Vaccinium arboreum</i>
Spikerush	<i>Eleocharis sp.</i>
Splitbeard bluestem	<i>Andropogon ternarius</i>
Spotted water hemlock	<i>Cicuta maculata</i>
Spreading beaksedge	<i>Rhynchospora divergens</i>
Spurge	<i>Euphorbia sp.</i>
Spurred butterfly pea	<i>Centrosema virginianum</i>
St. Andrew's cross	<i>Hypericum hypericoides</i>
St. John's wort	<i>Hypericum sp.</i>
St. Peter's wort	<i>Hypericum crux-andreae</i>
Staggerbush	<i>Lyonia sp.</i>
Starrush white-top	<i>Rhynchospora colorata</i>
Stiff cowbane	<i>Oxypolis rigidior</i>
Stiff sunflower	<i>Helianthus radula</i>
Sugarberry	<i>Celtis laevigata</i>
Sugarcane plumegrass	<i>Saccharum giganteum</i>
Summer farewell	<i>Dalea pinnata</i>
Sunbonnets	<i>Chaptalia sp.</i>
Sundew	<i>Drosera intermedia</i>
Sunflower	<i>Helianthus sp.</i>
Swallowwort	<i>Cynanchum sp.</i>
Swamp bay	<i>Persea palustris</i>
Swamp hornpod	<i>Mitreola sessilifolia</i>
Swamp laurel oak	<i>Quercus laurifolia</i>
Swamp smartweed	<i>Polygonum hydropiperoides</i>
Swamp tupelo	<i>Nyssa sylvatica var. biflora</i>
Sweet goldenrod	<i>Solidago odora</i>
Sweetbay	<i>Magnolia virginiana</i>
Sweetgum	<i>Liquidambar styraciflua</i>
Tall elephantsfoot	<i>Elephantopus elatus</i>
Tall pinebarren milkwort	<i>Polygala cymosa</i>
Tall threeawn grass	<i>Aristida patula</i>
Tall yellow-eyed grass	<i>Xyris platylepis</i>

Common Name	Scientific Name
Tapered witchgrass	<i>Dichanthelium acuminatum var. acuminatum</i>
Taperleaf water horehound	<i>Lycopus rubellus</i>
Tarflower	<i>Bejaria racemosa</i>
Tenangle pipewort	<i>Eriocaulon decangulare</i>
Thin paspalum	<i>Paspalum setaceum</i>
Thoroughwort	<i>Eupatorium sp.</i>
Threadleaf beaksedge	<i>Rhynchospora filifolia</i>
Threeawn	<i>Aristida sp.</i>
Threesquare bulrush	<i>Scirpus pungens</i>
Tickseed	<i>Coreopsis sp.</i>
Tick-trefoil	<i>Desmodium sp.</i>
Toothache grass	<i>Ctenium aromaticum</i>
Toothed midsorus fern	<i>Blechnum serrulatum</i>
Tracy's beaksedge	<i>Rhynchospora tracyi</i>
Tread-softly	<i>Cnidioscolus stimulosus</i>
Tropical carpetgrass	<i>Axonopus compressus</i>
Tropical resurrection fern	<i>Pleopeltis polypodioides</i>
Tropical waterhyssop	<i>Bacopa innominata</i>
Turkey oak	<i>Quercus laevis</i>
Turkey tangle fogfruit	<i>Phyla nodiflora</i>
Vanillaleaf	<i>Carphephorus odoratissimus</i>
Variable witchgrass	<i>Dichanthelium commutatum</i>
Vetch	<i>Vicia sp.</i>
Violet	<i>Viola sp.</i>
Virginia buttonweed	<i>Diodia virginiana</i>
Virginia chain fern	<i>Woodwardia virginica</i>
Virginia creeper	<i>Parthenocissus quinquefolia</i>
Virginia marsh St. John's wort	<i>Triadenum virginicum</i>
Virginia willow	<i>Itea virginica</i>
Viviparous spikerush	<i>Eleocharis vivipara</i>
Wand goldenrod	<i>Solidago stricta</i>
Ware's hairsedge	<i>Bulbostylis warei</i>
Warty panicgrass	<i>Panicum verrucosum</i>
Warty sedge	<i>Carex verrucosa</i>
Water cowbane	<i>Tiedemannia filiformis</i>
Water oak	<i>Quercus nigra</i>
Water paspalum	<i>Paspalum repens</i>
Water toothleaf	<i>Stillingia aquatica</i>

Common Name	Scientific Name
Wax myrtle	<i>Morella cerifera</i>
West Indian meadowbeauty	<i>Rhexia cubensis</i>
Whip nutrush	<i>Scleria triglomerata</i>
White lobelia	<i>Lobelia paludosa</i>
White screwstem	<i>Bartonia verna</i>
White thoroughwort	<i>Eupatorium album</i>
White waterlily	<i>Nymphaea odorata</i>
Whitehead bogbutton	<i>Lachnocaulon anceps</i>
Whitemouth dayflower	<i>Commelina erecta</i>
Whitetassels	<i>Dalea carnea</i>
Wild Boston fern	<i>Nephrolepis exaltata</i>
Wild lime	<i>Zanthoxylum fagara</i>
Wild pennyroyal	<i>Piloblephis rigida</i>
Wild petunia	<i>Ruellia sp.</i>
Windmill grass	<i>Chloris sp.</i>
Winged sumac	<i>Rhus copallinum</i>
Wiregrass	<i>Aristida stricta</i> var. <i>beyrichiana</i>
Witchgrass	<i>Dichanthelium sp.</i>
Wood sage	<i>Teucrium canadense</i>
Woodland false buttonweed	<i>Spermacoce assurgens</i>
Woodsgrass	<i>Oplismenus hirtellus</i>
Woolly witchgrass	<i>Dichanthelium scabriusculum</i>
Wright's beaksedge	<i>Rhynchospora wrightiana</i>
Wrinkled jointgrass	<i>Coelorachis rugosa</i>
Yankeeweed	<i>Eupatorium compositifolium</i>
Yellow bluestem	<i>Andropogon virginicus</i>
Yellow colic-root	<i>Aletris lutea</i>
Yellow hatpins	<i>Syngonanthus flavidulus</i>
Yellow jessamine	<i>Gelsemium sempervirens</i>
Yellow milkwort	<i>Polygala rugelii</i>
Yellow pondlily	<i>Nuphar advena</i>
Yellow stargrass	<i>Hypoxis sp.</i>
Yellow-eyed grass	<i>Xyris sp.</i>
Zigzag bladderwort	<i>Utricularia subulata</i>

Table 5. Exotic and Invasive Plant Species Known to Occur on the TLWMA

Common name	Scientific name	FLEPPC Category
Alligator weed	<i>Alternanthera philoxeroides</i>	II
Bahiagrass	<i>Paspalum notatum</i>	-
Bermudagrass	<i>Cynodon dactylon</i>	-
Brazilian pepper	<i>Schinus terebinthifolius</i>	I
Caesar weed	<i>Urena lobata</i>	I
Centipede grass	<i>Eremochloa ophiuroides</i>	-
Chamber bitter	<i>Phyllanthus urinaria</i>	-
Chinese tallow, Popcorn tree	<i>Triadica sebifera</i>	I
Cogongrass	<i>Imperata cylindrica</i>	I
Colombian waxweed	<i>Cuphea carthagenensis</i>	I
Epiphytic flatsedge	<i>Cyperus lanceolatus</i>	I
Guava	<i>Psidium guajava</i>	I
Hairy indigo	<i>Indigofera hirsuta</i>	-
Indian cupscale	<i>Sacciolepis indica</i>	-
Japanese climbing fern	<i>Lygodium japonicum</i>	I
Limpo grass	<i>Hemarthria altissima</i>	II
Low flatsedge	<i>Cyperus pumilus</i>	-
Malaysian false pimpernel	<i>Torenia crustacea</i>	-
Natal grass	<i>Melinis repens</i>	I
Old world climbing fern	<i>Lygodium microphyllum</i>	I
Para grass	<i>Urochloa mutica</i>	I
Pennsylvania everlasting	<i>Gamochaeta pensylvanica</i>	-
Peruvian primrose willow	<i>Ludwigia peruviana</i>	I
Shortleaf spikesedge	<i>Cyperus brevifolius</i>	-
Shrubby false buttonweed	<i>Spermacoce verticillata</i>	II
Smutgrass	<i>Sporobolus indicus</i>	-
Sour orange	<i>Citrus x aurantium</i>	-
Thalia lovegrass	<i>Eragrostis atrovirens</i>	-
Threeflower tick-trefoil	<i>Desmodium triflorum</i>	I
Torpedo grass	<i>Panicum repens</i>	I
Tropical mexican clover	<i>Richardia brasiliensis</i>	
Tropical soda apple	<i>Solanum viarum</i>	I
Vaseygrass	<i>Paspalum urvillei</i>	-
Water hyacinth	<i>Eichhornia crassipes</i>	I
Water spangles	<i>Salvinia minima</i>	I
Water-lettuce	<i>Pistia stratiotes</i>	I

Common name	Scientific name	FLEPPC Category
Wild bushbean, phasey bean	<i>Macroptilium lathyroides</i>	II
Yellow nutgrass	<i>Cyperus esculentus</i>	-

2.2.1 FNAI Natural Community Descriptions

Basin marsh (2,968.78 acres)

Basin marsh is an herbaceous or shrub-dominated community usually situated in large, irregularly shaped basins. At the TLWMA, basin marshes are found in two locations: in shallow basins in dry prairies and on flats along the shores of the larger lakes and the drainage-ways connecting them. A small number of larger marshes (>10 acres) occur in the dry prairie matrix community.

Structure and species composition of the lakeshore basin marsh community at the TLWMA is highly variable depending on water depth and perhaps on human manipulation of the lake levels. Zonation along the lakeshores consists of an innermost zone of floating plants, primarily American lotus; a zone of tall, coarse herbs including southern cattail, sawgrass and softstem bulrush; and a dense zone of shorter herbs consisting of maidencane, pickerelweed and bulltongue arrowhead. Maidencane dominates the outermost zone at the upland interface, with dotted smartweed, false nettle, blue maidencane and sand cordgrass and scattered woody species such as wax myrtle, buttonbush, coastalplain willow and non-native Peruvian primrosewillow. In higher areas, dense thickets of wax myrtle may replace the herbaceous species. At the TLWMA, lakeshore basin marshes are found on Delray loamy fine sand, very poorly drained loamy sand with sandy clay loam subsoil.

Basin swamp (4.5 acres)

Basin swamp is an isolated, wetland community forested with hardwood and coniferous trees, occurring in large depressions and drainageways with extended hydroperiods. At the TLWMA, basin swamps occur within a mesic flatwoods matrix. The open canopy is formed by pond cypress and the subcanopy is usually sparse, consisting of evergreen hardwoods such as dahoon and sweetbay. Long unburned basin swamps often have denser, more diverse tree canopies, with red maple, swamp tupelo and sweetbay joining pond cypress in the canopy layer. The shrub layer may be sparse or very dense and is usually dominated by fetterbush and wax myrtle. Fern is often abundant in the herbaceous layer. Open water in the center supports floating bladderwort and big floatingheart. Pond cypress may support large numbers of bromeliads such as airplant species and Spanish moss. Pond cypress is resistant to fire and the shrubs can re-sprout after a fire. At the TLWMA, basin swamps are found on placid fine sand, a very poorly drained sandy soil that may have up to 8 inches of organic muck on the surface.

Baygall (808.75 acres)

Baygall is a forested wetland community dominated by bay trees with high moisture levels maintained by seepage or high water tables. At the TLWMA, baygalls are found primarily on the eastern side of the property in depressions, often within or on the edge of dome swamps. The canopy consists of loblolly bay, sweetbay or a mixture of both. Slash pine and pond cypress may also be present, occasionally forming an emergent layer over the bays. The subcanopy consists of loblolly bay, sweetbay and swamp bay. Loblolly bay may also be present in the shrub layers, which are often so dense as to be impassable. Shrubs are primarily wax myrtle, fetterbush and saw palmetto, laced together with laurel greenbriar. Virginia chain fern and moss dominate the ground layer. Baygalls can withstand a moderate fire frequency since the bay trees re-sprout following fire; however, fire during a drought can kill the trees by burning into the organic soils and killing their roots. At the TLWMA, baygalls are found on both sandy (Basinger fine sand and Placid fine sand) and organic (Samsula and Hontoon mucks) soils.

Blackwater Stream (43.4 acres)

Blackwater streams are characterized as perennial or intermittent seasonal watercourses originating deep in sandy lowlands where extensive wetlands with organic soils function as reservoirs, collecting rainfall and discharging it slowly to the stream. At the KRPUA, the historic course of the Kissimmee River is still present, although heavily altered since most water flow is directed into a large canal.

Vegetation in blackwater streams of the KRPUA occurs along edges and on floating mats and includes spotted water hemlock, flatsedge, floating marsh pennywort, denseflower knotweed, dotted smartweed, pickerelweed, bulltongue arrowhead and broadleaf cattail.

Depression marsh (2,321.85 acres)

Depression marsh is an herbaceous wetland community with concentric zones of vegetation found in circular depressions. At the TLWMA, depression marshes occur in dry prairies, mesic flatwoods and mesic hammocks. Depression marsh vegetation is also found in zones surrounding dome and basin swamps in mesic flatwoods.

The outermost (driest) zone is usually composed of a sparse stand of grasses such as longleaf threeawn, sedges such as southern umbrellasedge and beaksedge, tenangle pipewort and yellow-eyed grasses. Alternatively, the outer zone may be dominated by a relatively dense stand of sand cordgrass. The next zone inward is often dominated by St. John's wort, followed by a zone of dense maidencane and, finally, a central zone of pickerelweed. In depression marshes bordering basin or dome swamps, the outer grass/sedge and St. John's wort zones are similar, but the inner zones of maidencane and pickerelweed are replaced by young pond cypress bordering the forested portion of the

swamp. In depression marshes within mesic hammocks, shrubs such as buttonbush and wax myrtle and deciduous trees such as swamp tupelo and red maple are often found on hummocks within the marsh. The outer zones of depression marshes are sparsely vegetated and subject to alternating inundation and desiccation. Fire in this community kills St. John's wort, which can rapidly re-colonize from seed. At the TLWMA, depression marshes occur primarily on poorly drained Basinger fine sand, depressional, which is sandy throughout the soil profile.

Dome swamp (7,878.94 acres)

Dome swamp is an isolated wetland community occurring in shallow basins and forested with conifers and deciduous trees. On the TLWMA, dome swamps are found in depressions within a mesic flatwoods matrix. Trees in the center are taller than those on the edges, giving the stand a dome-shaped profile. At the TLWMA, the open canopy is formed by pond cypress; the subcanopy is usually sparse, consisting of evergreen hardwoods such as dahoon and sweetbay. The shrub layer may be sparse or very dense and is usually dominated by fetterbush and wax myrtle. Fern is often abundant in the herbaceous layer. Open water in the center supports floating bladderwort and big floatingheart. Pond cypress may support large numbers of bromeliads. At the TLWMA, dome swamps are found on Placid fine sand, a very poorly drained sandy soil that may have up to eight inches of organic muck on the surface.

Dry prairie (15,538.93 acres)

Dry prairie is an upland community of short shrubs and grasses with few or no pines and many of the same species in the shrub and herbaceous layers as are found in mesic flatwoods. The shrubs often are the same height as the grasses and form alternating patches with them, rather than a separate vertical layer. At the TLWMA, dry prairie is the matrix community on the southern half of the property, with mesic flatwoods replacing it as the matrix community on the northern portion. Only larger areas (>20 acres) with few or no trees within the mesic flatwoods portion were mapped as dry prairie.

Longleaf pines, if present, are widely scattered. Wiregrass and low shrubs, primarily stunted saw palmetto and dwarf live oak, form most of the cover, with taller shrubs such as gallberry and coastalplain staggerbush being infrequent. Other common dwarf shrubs include dwarf huckleberry, shiny blueberry, netted pawpaw and coastalplain St. John's wort. Scattered among the wiregrass clumps are species of bluestem and low panic-grasses, plus a relatively high diversity of forbs, some of the more common being yellow hatpins, pineland chaffhead, yellow milkwort, shortleaf rose gentian, pine lilies and Elliott's yelloweyed grass. Several populations of the rare many-flowered grass-pink orchid were found in this community following recent burns. Frequent fires may prevent the establishment of longleaf pines or other trees in this community. The dry prairie that lies near the fire shadow of the three major lakes is being invaded by live oaks from the mesic

hammocks ringing the lakes. At the TLWMA, dry prairie occurs on the same poorly drained soil types as mesic flatwoods (Pomona, Smyrna, Immokalee and Myakka fine sand), all of which are sandy throughout their profiles; in addition, it occurs on Eau Gallie fine sand, a poorly drained soil with a sandy surface soil and sandy clay loam subsoil.

Floodplain marsh (457.41 acres)

Floodplain marsh is a wetland community occurring in river floodplains and dominated by herbaceous vegetation and/or shrubs. Most of the KRPUA parcels are primarily a large floodplain marsh through which the Kissimmee River meandered. Once the river was channelized, the marsh became highly disturbed by lowered water levels and reduced seasonal flooding. Much of the historic marsh was converted to pastures, and areas isolated from fire are now dominated by shrubs. Areas dominated by sand cordgrass likely burned periodically, reducing shrub cover in the historic marsh.

Floodplain marsh of the KRPUA is mainly treeless community dominated by wetland shrub and herb species. Three separate types of floodplain marsh are present at this site. Emergent and aquatic bed plants form a deep-water marsh vegetation subtype often containing water hemlock, floating marsh pennywort, denseflower knotweed, dotted smartweed, pickerelweed, bulltongue arrowhead, yellow pondlily, and non-native water-lettuce and Para grass. The second type of floodplain marsh, located on higher elevation areas of the floodplain, were likely historically dominated by sand cordgrass. This floodplain marsh sub-type is currently only present in small areas that have not been completely converted to pasture. Only one location of intact sand cordgrass was documented. The third type of floodplain marsh present at the KRPUA is a shrub dominated community. These areas typically were not converted into pasture and many occur as isolated islands. Typical shrub species in these areas include groundsel tree, common buttonbush, wax myrtle and coastalplain willow. Herbs are typically lacking due to the dense shrub cover.

Hydric hammock (128.35 acres)

Hydric hammock is a forested wetland community with a canopy of hardwoods, usually including swamp laurel oak and cabbage palm. At the TLWMA, hydric hammock occupies a small total acreage and occurs along drainageways or as an included community in the mesic hammocks around the lakeshores. Other canopy species include red maple, bald cypress and pond cypress; the subcanopy and tall shrub strata include dahoon, swamp red bay and cabbage palm. The ground layer is patchy to sparse and may include redtop panicgrass, savannah panicum and lizard's tail, with occasional denser patches of interrupted maidenfern. At the TLWMA, hydric hammocks are found on Basinger fine sand, depressional soils, a very poorly drained type that is sandy throughout the profile.

Mesic flatwoods (15,671.64 acres)

Mesic flatwoods is an upland forest community with an open pine canopy and understory composed of varying mixtures of shrubs and grasses. At the TLWMA, this matrix community occurs on the northern half of the property with dry prairie replacing it as the matrix community on the southern half. Much of this community has an open, savannah-like aspect, formed by an open canopy of longleaf and slash pines of varying density and an understory of wiregrass and low shrubs such as saw palmetto, gallberry, fetterbush and coastalplain staggerbush. Common dwarf shrubs include dwarf live oak, dwarf huckleberry, shiny blueberry, dwarf wax myrtle and coastalplain St. John's wort. Besides the dominant wiregrass, other common grasses are species of bluestem, low panicgrasses, bottlebrush threeawn, pineywoods dropseed and Florida threeawn. Bracken fern is common in the ground cover at a few sites. This community supports a high diversity of herbs, some of the more common being yellow hatpins, pineland chaffhead, yellow milkwort, Queen's delight and flattop goldenrod. Around the edges of swamps, mesic flatwoods may develop a denser pine canopy and a dense layer of tall shrubs composed primarily of saw palmetto with little to no herbaceous layer. At the TLWMA, mesic flatwoods are found on Pomona fine sand and Smyrna fine sand west of the Florida turnpike and on Immokalee fine sand and Myakka fine sand east of the turnpike. All four types are very similar, poorly drained soils that are sandy throughout their profiles, with weakly cemented subsoils.

Mesic hammock (3,065.07 acres)

Mesic hammock is an upland forest community of evergreen broadleaved trees dominated by live oak in the canopy and cabbage palm in the subcanopy, occurring in naturally fire-protected areas. At the TLWMA, this community occurs around the major lakes and on the borders of dome swamps and depression marshes. The understory is often very open with the shrub layer consisting of scattered clumps of tall saw palmetto and grasses, such as redtop panicum forming clumps in the sparse ground layer. In better developed sites, cabbage palms form relatively dense cover in the subcanopy, tall shrub and short shrub layers and epiphytes are abundant, including resurrection fern, golden polypody and southern needleleaf; butterfly orchid was found in several stands near Lake Kissimmee. Dense patches of woodsgrass and panicgrass occur in canopy gaps in the better developed sites. On wetter sites, lizard's tail may be common in the understory. Along the lower portion of the lakeshores, live oaks become widely scattered in large grassy openings that support bluestems, blue maidencane, big carpetgrass, yellow hatpins, yellow-eyed grasses and beaksedge. At a few sites, remnants of long ago planted non-native Bahiagrass can be found in the ground layer. Most mesic hammock sites did not have signs of fire, except along Lake Kissimmee where many oaks were killed in a wildfire several years ago. Closed canopy mesic hammocks are found on the somewhat poorly drained Adamsville fine sand that has patches of loamy sand in the subsoil and on the poorly drained Lokosee fine sand

that has a sandy clay loam subsoil; hammocks with large grassy openings occur on the poorly drained Pompano fine sand, that is sandy throughout the soil profile.

Prairie/flatwoods lake (1,093.82 acres)

Prairie/flatwoods lake is a generally shallow basin community in flatlands with a high-water table. This area frequently has a broad littoral zone with still water or flow-through, primarily consisting of sand or peat substrate. The water chemistry is variable from colored to clear, acidic to slightly alkaline, oligo-mesotrophic to eutrophic and soft to moderately hard water with moderate mineral content (sodium, chloride, sulfate). The community is found statewide except extreme southern peninsula and Keys. The prairie/flatwoods lake on the TLWMA is located in the southwestern portion of the area consisting of Lake Jackson.

Restoration Dry Prairie (516.21 acres)

Restoration dry prairie is an area in which natural dry prairie communities are being restored. Formerly an altered landcover type, staff is performing active restoration to return the community to its historic state. The restoration dry prairie at TLWMA is comprised of former pine plantations that were clearcut for a variety reasons. These areas currently meet the definition of dry prairie but over time will revert to mesic flatwoods.

Examples of restoration activities include pine thinning, groundcover restoration, hydrological restoration and removal of exotic and invasive plant species and other undesirable vegetation. In historically pyrogenic natural communities, restoration activities are accompanied by the application of prescribed fire. Restoration dry prairie sites on the TLWMA are located in the central, eastern and southeastern portion of the area.

Restoration Mesic Flatwoods (535.46 acres)

Restoration mesic flatwoods is an area in which natural mesic flatwoods communities are being restored. Formerly an altered landcover type, staff is performing active restoration to return the community to its historic state. Examples of restoration activities include pine thinning, longleaf pine planting, groundcover restoration, hydrological restoration and removal of exotic and invasive plant species and other undesirable vegetation. In historically pyrogenic natural communities, restoration activities are accompanied by the application of prescribed fire. Restoration mesic flatwood sites on the TLWMA are located in the northwestern and southeastern portion of the area primarily.

Restoration Wet Prairie (11.47 acres)

Restoration wet prairie is an area in which natural wet prairie communities are being restored. Formerly an altered landcover type, staff is performing active restoration to return the community to its historic state. Examples of restoration activities include pine

thinning, groundcover restoration, hydrological restoration and removal of exotic and invasive plant species and other undesirable vegetation. In historically pyrogenic natural communities, restoration activities are accompanied by the application of prescribed fire.

Sandhill (202.15 acres)

Sandhill is an upland forested community characterized by a sparse canopy of longleaf pine, a subcanopy of turkey oak and a ground layer of wiregrass. This community occupies a very limited area at the TLWMA, usually adjacent to scrub on the eastern portion of the property. Other species found in the subcanopy include bluejack oak and sand live oak. The generally sparse shrub layer contains saw palmetto and Chapman's oak. In addition to wiregrass, gopher apple and beaksedge are found in the herbaceous layer, which is also sparse, with much bare sand exposed. Sandhills naturally have a frequent fire regime and when this is interrupted the oak canopy shades out the wiregrass which is the case in several of the stands at the TLWMA. Sandhill communities occur on the moderately well-drained Pomello and Tavares fine sands, which are sandy throughout the soil profile.

Scrub (751.32 acres)

Scrub is a xeric upland community on dry sands dominated by scrub oaks and other shrubs, with or without a pine canopy. At the TLWMA, this community occurs as isolated small stands on higher knolls within mesic flatwoods or dry prairies and is concentrated mostly on the eastern portion of the property. It consists of the three common scrub oaks, myrtle oak, sand live oak and Chapman's oak, which dominate the tall and short shrub layers. Saw palmetto and fetterbushes are also common. Two characteristic scrub species, Florida rosemary and sand holly, are present in one or two stands. The canopy may be absent or consist of widely scattered longleaf pines or of a denser stand of sand pine. The herbaceous layer is sparse and commonly includes wiregrass, species of lichen and October flower.

The largest scrub patch (approximately 100 acres) is near Lake Marion. This scrub is 9 miles distant from most of the other scrub patches on the eastern border of the property. At the TLWMA, scrub occurs on the moderately well-drained Pomello and Tavares fine sands, which are sandy throughout the soil profile.

Scrubby flatwoods (1,230.88 acres)

Scrubby flatwoods is an upland community similar to mesic flatwoods in structure and species composition, with the addition of scattered clumps of scrub oaks in the tall and short shrub layers. At the TLWMA, it occurs in the ecotone between mesic flatwoods and scrub communities and on slight rises within the mesic flatwoods and dry prairies. It is most commonly encountered along the eastern edge of the property near US Highway 441. Beneath a sparse canopy of longleaf pine, clumps of scrub oaks, including Chapman's oak, sand live oak and myrtle oak are scattered in an understory of typical mesic flatwoods

vegetation consisting of saw palmetto, wiregrass and dwarf live oak. Some of the scrub oaks appear to be hybrids, possibly between myrtle oak and either runner oak or bluejack oak. Herbaceous species found more often in this community than in mesic flatwoods are the fragrant Baldwin's eryngo, golden-aster and wild pennyroyal. At the TLWMA, scrubby flatwoods occur primarily on Pomello fine sand, a moderately well-drained soil that is sandy throughout its profile.

Wet flatwoods (214.49 acres)

Wet flatwoods is a wetland forest community usually with a slash pine canopy and an understory that often includes species characteristic of baygalls and dome swamps. At the TLWMA, it makes up a small percentage of the total acreage and is usually found in the ecotone between mesic flatwoods and basin swamps. The closed canopy consists of slash pine, often intermingled with pond cypress. The subcanopy and tall shrub layers are composed of cabbage palm, dahoon, wax myrtle and swamp red bay; a variety of ferns such as Virginia chain fern, cinnamon fern and swamp fern, are often found in the herbaceous layer. Several stands are associated with ditching in the adjacent basin swamps suggesting that the slash pines may have come in following hydrological disturbance to the swamps or to the adjacent depression marshes and wet prairies. At the TLWMA, wet flatwoods occur primarily on poorly drained Malabar fine sand, which has a sandy clay loam subsoil or Basinger fine sand, which is sandy throughout the soil profile.

Wet prairie (6,676.76 acres)

Wet prairie is a wetland herbaceous community characterized by a seasonally high-water table and frequent fire with dense stands of grass species intermingled with wetland herbs. At the TLWMA, wet prairie borders dome swamps and depression marshes. It also forms irregular patches, sometimes quite large, within the mesic flatwoods and dry prairie communities.

Typically, wet prairie on the TLWMA contains few or no longleaf pines. Individual clumps of saw palmettos are rare but some wet prairies have large, rounded "islands" of saw palmetto scattered throughout. At some sites, often those where the drainage has been disturbed by ditching, wiregrass may be replaced as the dominant species by blue maidencane. In addition to the grasses, numerous herbs are found in wet prairies. Some of the more characteristic herbs are yellow hatpins, rayless goldenrod, soft pipewort, sunbonnets, bog white violet, early whitetop fleabane and low pinebarren milkwort. Graminoid species present include plumed beaksedge and toothache grass. Carnivorous species found in this community include the butterworts and hooded pitcher plant, which is often found on the border between wet prairies and depression marshes. Dwarf shrubs such as dwarf live oak and St. John's wort may also occur in wet prairies.

In the absence of fire, wet prairies are readily invaded by wax myrtle and the height and cover of the latter is a sensitive indicator of past fire history in any given stand. At the TLWMA, wet prairies, like wet flatwoods, occur primarily on poorly drained Malabar fine sand, which has a sandy clay loam subsoil or Basinger fine sand, which is sandy throughout the soil profile.

Xeric hammock (89.46 acres)

Xeric hammock is an upland forest with a canopy of scrub oaks reaching tree stature (>20 feet), usually developing from scrub or sandhill in the absence of fire. At the TLWMA, this community occupies a small total acreage and is found at scattered locations on the eastern side of the property. The canopy is dominated by sand live oak with an understory of saw palmetto. Herbaceous species are sparse, consisting primarily of wiregrass. Xeric hammock usually develops where scrub oaks are protected from fire. Two of the stands at the TLWMA are classic examples of “oak domes” i.e., situations in which the clonal structure of sand live oak is obvious even after it has reached tree size. At the TLWMA, xeric hammocks are found on moderately well-drained Pomello fine sand, a moderately well-drained soil that is sandy throughout its profile.

Altered Community Descriptions

The TLWMA also has 10 altered communities that are listed and described by FNAI as follows. Several of the following altered communities are grouped under the Ruderal community listed in Table 3 and shown in Figures 9 and 10.

Abandoned field/abandoned pasture (457.34 acres)

Old fields, fallow pastures, early successional areas formerly grazed or in agriculture without recent activity to maintain the area as pasture or planted field are considered abandoned field/abandoned pasture. These areas are often dominated by weedy native and non-native species. Abandoned field is generally used for old pastures that have greater than 20 percent cover from woody species.

Artificial pond (83.32 acres)

Artificial ponds include any anthropogenic lacustrine area, such as water retention ponds, cattle ponds, etc.

Canal/ditch (90.53 acres)

Canals and ditches refer to any artificial/anthropogenic drainage way.

Clearing/regeneration (97.03 acres)

Wildlife food plots, recent or historic clearings that have significantly altered the groundcover and/or overstory of the original natural community (old homesites, etc.) comprise the clearing/regeneration areas within TLWMA.

Developed (63.47 acres)

Altered communities designated as developed can include check stations, ORV use areas, parking lots, buildings, maintained lawns (as part of recreational, business, or residential areas), botanical or ornamental gardens, campgrounds, recreational, industrial and residential areas.

Firebreak (399.67 acres)

Firebreaks on the TLWMA are created to make a gap in vegetation in order to form a barrier to reduce the spread of fire during prescribed burns on fire adapted communities.

Linear Feature (316.36 acres)

Linear features can include Electric, gas, telephone and right-of-ways.

Pasture – improved (2,057.97 acres)

Improved pasture areas are dominated by planted non-native or domesticated native forage species and have evidence of current or recent pasture activity and/or cultural treatments including mowing, grazing, burning and fertilizing. Improved pastures have been cleared of their native vegetation. Most improved pastures in the TLWMA were planted with Bahiagrass and Bermudagrass. Weedy native species are often common in improved pastures in Florida and include dogfennel, many species of flatsedge, carpetgrasses, crabgrasses and rustweed among many others.

Pasture – semi-improved (364.53 acres)

Semi-improved pasture areas are dominated by a mix of planted non-native or domesticated native forage species and native groundcover due to an incomplete conversion to pasture, not regeneration. Semi-improved pastures have been cleared of a significant percentage of their native vegetation and planted in non-native or domesticated native forage species, but still retain scattered patches of native vegetation with natural species composition and structure (most often small areas of mesic flatwoods) among the pastured areas. The planted areas are usually dominated by Bahiagrass and can resemble improved pastures. Seeding of Bahiagrass can also occur within areas of native groundcover. This category should apply regardless of recent pasture maintenance.

Pine plantation (360.74 acres)

On the TLWMA, the remaining pine plantations have been shrinking naturally and may soon be excluded from consideration.

Pine plantations are areas altered by silvicultural activities. These include lands where either 1) planted pines are having or will have an ongoing detrimental effect on native groundcover, 2) the history of planted pines has damaged ground cover to the point where further restoration beyond thinning and burning is required and/or 3) the method of planting (e.g. bedding) has severely impacted groundcover. Pine plantations in Florida are often dominated by even-aged loblolly, sand or slash pine. These plantations may be very shrubby or vine-dominated or open at ground level. The groundcover in most cases has been severely impacted by mechanical site preparation, such as roller chopping and bedding. However, while perennial grasses such as wiregrass may be greatly reduced, many components of the native groundcover persist even though the relative abundance is altered. Groundcover on the TLWMA has been partially restored by thinning and/or frequent burning. With activities such as thinning and burning, plantations with intact native groundcover can be restored to the former natural community.

Road (313 acres)

Capped or uncapped roads on the TLWMA.

Successional hardwood forest (34.62 acres)

Successional hardwood forests can contain remnant species of the former natural community such as turkey oak, saw palmetto, gallberry and infrequently wiregrass. Additionally, species such as beautyberry, muscadine and sparkleberry are common. Restoration of these forests includes mechanical tree removal and reintroduction of fire. Where characteristic herbaceous species (e.g., wiregrass) have been lost, reintroduction via seed or plants may be necessary to restore natural species composition and community function.

2.2.2 Imperiled Plants

For the purposes of this Management Plan, the term “imperiled species” as it relates to plants refers to plant species that the DACS or the U.S. Fish and Wildlife Service (USFWS) designated as endangered or threatened. This designation is commonly known as “listed species”, and all names and status determinations were derived from Florida’s Regulated Plant Index Rule (5B-40.0055 F.A.C.) that is maintained by the DACS.

The FWC manages the lands in the WMA system using a proactive natural community focused approach. As applied by the FWC, natural resource management starts by classifying lands into distinct natural communities. The FWC then conducts management activities to maintain or enhance each communities’ structure and function. Land

management that has a positive influence on natural community conditions benefits the species occurring in these habitats.

Table 6. Imperiled Plant Species Observed on the TLWMA

Common Name	Scientific Name	Status
Angle pod	<i>Matelea gonocarpos</i>	ST
Blue-flowered butterwort	<i>Pinguicula caerulea</i>	ST
Butterfly orchid	<i>Encyclia tampensis</i>	CE
Catesby lily	<i>Lilium catesbaei</i>	ST
Cinnamon fern	<i>Osmunda cinnamomea</i>	CE
Common wild-pine	<i>Tillandsia fasciculata</i>	SE
Curtiss's milkweed	<i>Asclepias curtissii</i>	SE
Cut-throat grass	<i>Panicum abscissum</i>	SE
Giant wild-pine	<i>Tillandsia utriculata</i>	SE
Green-fly orchid	<i>Epidendrum conopseum</i>	CE
Hand fern	<i>Ophioglossum palmatum</i>	SE
Hooded pitcher-plant	<i>Sarracenia minor</i>	ST
Inflated and reflexed wildpine	<i>Tillandsia balbisiana</i>	ST
Large-flowered rosemary	<i>Conradina grandiflora</i>	ST
Leafless beaked orchid	<i>Stenorrhynchos lanceolatus</i>	ST
Long-lip ladies' tresses	<i>Spiranthes longilabris</i>	ST
Many-flowered grass-pink	<i>Calopogon multiflorus</i>	ST
Non-crested eulophia	<i>Eulophia ecristata</i>	ST
Pigeon wings	<i>Clitoria fragrans</i>	FT/SE
Plume polypody	<i>Polypodium plumula</i>	SE
Rose pogonia	<i>Pogonia ophioglossoides</i>	ST
Royal fern	<i>Osmunda regalis</i>	CE
Scrub bluestem	<i>Schizachyrium niveum</i>	SE
Scrub pinweed	<i>Lechea cernua</i>	ST
Simpson's stopper	<i>Myrcianthes fragrans</i>	ST
Snowy orchid	<i>Platanthera nivea</i>	ST
Spreading pinweed	<i>Lechea divaricata</i>	SE
Swamp plume polypody	<i>Polypodium ptilodon</i>	SE
Threadroot orchid	<i>Harrisella porrecta</i>	ST
Yellow-flowered butterwort	<i>Pinguicula lutea</i>	ST

Acronym	Status
CE	Commercially Exploited
FT	Federally Threatened
SE	State Endangered
ST	State Threatened

FNAI conducted a listed plant survey in fiscal year 2016/2017 on the TLWMA and identified 22 imperiled plant species. Additionally, eight imperiled species found on the TLWMA have been identified by FWC staff (Table 6). The protections afforded plants that occur on conservations lands, in conjunction with management actions that include non-native plant removal and prescribed fire, will continue to maintain and enhance habitat for these and other rare plants. As such, these species should persist under planned management on the TLWMA.

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

Angle Pod (*Matelea gonocarpus*) - Angle Pod prefers moist well-drained, sunny or semi-shaded areas in alluvial forests, basin swamps, baygalls, blackwater streams, bottomland forests, hydric hammocks, maritime hammocks, mesic hammocks, shell mounds, upland hardwood forests and upland pine communities. This species may occur along wooded roadsides and on the edges of sinkholes. Even though angle pod occurs in upland pine communities, which require frequent fire (2-3 years), it is sensitive to fire, surviving in fire shadows. Managers should vary the seasonality and severity of prescribed burns and allow prescribed fires from adjacent fire-maintained communities to naturally burn into and naturally extinguish in its' preferred communities. Since *Matelea* species are difficult to distinguish without flowers or fruits, flowering or fruiting is the best time for conducting surveys or verifying species identity. Angle Pod flowers from June to August, and fruiting occurs from August to October. Staff may be able to distinguish this species from other *Matelea* species by its yellow or greenish-brown petals without a network of veins and its lance shaped fruits that are smooth. Altered fire regimes, fire suppression and hydrologic disturbances negatively affect this species; therefore, avoid constructing fire breaks in ecotones, restore ecotones by removing existing roads and fire breaks and maintain and restore the natural hydrology.

Blue-Flowered Butterwort (*Pinguicula caerulea*) and Yellow-Flowered Butterwort (*P. lutea*)

- These Butterworts prefer open moist to wet sandy-peaty soils of pine flatwoods, wet prairies and seepage bogs and may occupy moist to wet ditches and roadsides. However, yellow-flowered butterwort frequently occupy somewhat drier habitats than other *Pinguicula* species. These species need a fire regime that includes frequent (2-3 years) growing season fires that reduce the encroachment of woody species and creates open areas allowing sunlight to reach the ground. Soil and hydrologic disturbances negatively affect these species; therefore, maintain and restore the natural hydrology where practicable and avoid using heavy machinery in wetlands with known occurrences of this species. Flowering, which occurs primarily from February to April, is the best time for conducting surveys or verifying species identity.

Butterfly Orchid (*Encyclia tampensis*) - Butterfly orchid is epiphytic on many different trees and prefers moist to wet areas in depression marshes, glades marshes, rockland hammocks, sloughs, strand swamps, tidal swamps and wet flatwoods. It may occur in dome swamps, floodplain swamps, hydric hammocks and mesic hammocks. This species does not require fire, but staff should allow fire to naturally enter and extinguish within its habitats when feasible. Illegal collecting negatively affects this species; therefore, protect known occurrences and make sure not to negatively influence areas with known occurrences. While plants are identifiable all year by their well-developed pseudobulbs, surveys for flowers can occur during peak flowering, which occurs May to September, and surveys for fruits can occur throughout the year.

Catesby lily (*Lilium catesbaei*) - Catesby lily, also known as pine lily, prefers open areas in wet pine flatwoods and wet prairies, especially in pitcher plant bogs with sphagnum. Unlike most lily species, pine lilies require warm, moist, acidic soil and will grow in saturated soil conditions. This species requires a fire regime that includes frequent (2-3 years) fire to maintain and promote the open grassy habitats that it favors, with most fire occurring during the growing season. This species thrives with disturbance from fire, demonstrating a more vigorous flowering. Soil and hydrologic disturbances negatively affect this species; therefore, limit the impact of disruptive activities and maintain and restore the natural hydrology where practicable. Flowering, which occurs from August to November, is the best time for conducting surveys or verifying species identity.

Cinnamon Fern (*Osmunda cinnamomea*) and Royal Fern (*O. regalis*) - These ferns occur in many natural communities in Florida, both wet and dry. While these species grow in many communities that the FWC typically does not actively manage, if conducting management activities near known occurrences, make efforts to protect them from chemical and mechanical treatments. These species do not require fire. However, some of the natural communities in which these species occur are fire adapted and these ferns re-sprout after fire. Illegal collecting and hydrological disturbances negatively affect these species; therefore, protect areas with known occurrences and staff should maintain and restore the

natural hydrology where practicable. As fronds are present year-round, these species can be identified throughout the year

Curtiss' Milkweed (*Asclepias curtissii*) - Curtiss' milkweed prefers open sunny areas in scrub and scrubby flatwoods. It may occur along the edges of fire lanes and sand roads in open areas caused by soil disturbance. While Curtiss' milkweed is able to persist for long periods without fire in these xeric habitats, occasional fire is needed to reduce competition and shading by shrubs. Altered fire regimes and fire suppression negatively affect this species, therefore, prescribed fire intervals should vary by season, frequency and fire intensity to ensure species diversity, and scrub management programs should strive to mimic natural processes that create openings this species prefers. Flowering, which occurs primarily from June to September (peak blooming occurs in late July), is the best time for conducting surveys or verifying species identity.

Cutthroat Grass (*Panicum abscissum*) - Cutthroat grass prefers areas of slight to strong groundwater seepage. It grows mainly on the eastern and western sandy seepage slopes of the Lake Wales Ridge. Cutthroat grass also occurs around depression marshes, ponds and in low spots in wet and mesic flatwoods. This species needs prescribed fire every 1-3 years during the growing season for it to survive. Cutthroat grass very rarely flowers without fire and it blooms vigorously within a few months after a fire. If cutthroat grass is top killed by fire, it survives by re-sprouting from rhizomes. Hydrologic disturbances negatively affect this species; therefore, protect seepage habitats from erosion by limiting vehicular and foot traffic in the seepage habitats to the extent practicable, especially during wet periods. Cutthroat grass is identifiable all year and the best time for conducting flower surveys is from mid-June to late September or a few months after a growing season fire.

Green-fly Orchid (*Epidendrum conopseum*) – Green-fly orchid is epiphytic on many different trees and prefers moist to wet areas in basin swamps, bottomland forests, depression marshes, maritime hammocks, sinkholes and upland hardwood forests. It may occur in dome swamps, floodplain swamps, hydric hammocks and mesic hammocks. This species does not require fire, but staff should allow fire to naturally enter and extinguish within its habitats when feasible. Illegal collecting and hydrological disturbances negatively affect these species; therefore, protect areas with known occurrences and staff should maintain and restore the natural hydrology where practicable. Flowering, which occurs from June to October, or fruiting, which occurs from September to January, is the best time for conducting surveys or verifying species identity.

Hand Fern (*Ophioglossum palmatum*) – Hand fern is an epiphytic fern that prefers dome swamps, floodplain swamps, hydric hammocks, mesic hammocks, strand swamps and wet flatwoods. This species mainly occurs on Cabbage palms. Although plants can be observed at various points along the trunks of the palms, from near the bases to just below the crown, they are generally restricted to the upper parts of the palms. This species is not fire

tolerant, so staff should protect host plants when applying fire around known occurrences. Illegal collecting and hydrological disturbances negatively affect these species; therefore, protect areas with known occurrences, and staff should maintain and restore the natural hydrology where practicable. Hand fern is identifiable throughout the year.

Hooded Pitcherplant (*Sarracenia minor*) - Hooded pitcherplant prefers sunny to lightly shaded, moist to wet, sandy, acid soil in basin swamps, depression marshes, dome swamps, dry prairies, mesic flatwoods, wet flatwoods, wet prairies, shrub bogs, seepage slopes and edges of seepage streams. This species may occur on boggy roadsides and ditches. This species has the widest ecological range compared to other *Sarracenia* species, grows on both wet and dry sites, and is more shade tolerant than most species of the genus. This species needs a fire regime that includes frequent (2-3 years) growing season fires that reduce the encroachment of woody species. Fire usually top kills pitcherplants, but they survive by re-sprouting from rhizomes. Pitchers are identifiable all year. Soil and hydrologic disturbances negatively affect this species; therefore, staff should maintain and restore the natural hydrology where practicable.

Inflated and Reflexed Wildpine (*Tillandsia balbisiana*), Common Wild-pine (*T. fasciculata*), and Giant Wild-pine (*T. utriculata*) - Airplants occur in many natural communities in Florida, both wet and dry. Most airplants are primarily epiphytes (plants that grow harmlessly upon another plant and derive their moisture and nutrients from the air, rain and sometimes from debris accumulating around them) that grow on stumps, tree trunks and branches. However, large individuals may fall to the ground and successfully continue to live. While many airplants grow in communities that the FWC typically does not actively managed, if conducting management activities near known occurrences, make efforts to protect the plant and host plant from fire, chemicals and mechanical treatments. When an individual plant occurs in a fire-maintained habitat, prior to conducting a prescribed fire, to the extent practicable, staff will take appropriate actions to protect known occurrences. Airplants are experiencing massive population losses due to the Mexican bromeliad weevil (*Metamasius callizona*), an exotic pest, making the protection and management of these plants from other threats all the more critical. Flowering, which occurs throughout the year (majority of flowering occurs from early spring to early fall), is the best time for conducting surveys or verifying species identity.

Large-flowered Rosemary (*Conradina grandiflora*) – Large-flowered rosemary prefers sandy openings in scrub and scrubby flatwoods with a scattered overstory of pines (*Pinus* spp.) and interspersed with evergreen scrub oaks (*Quercus* spp.). This species requires periodic, patchy, fires that reduce overstory competition and provide disturbed open sandy areas. Altered fire regimes and fire suppression negatively affect this species, therefore, prescribed fire intervals should vary by season, frequency and fire intensity to ensure species diversity, and scrub management programs should strive to mimic natural

processes that create openings this species prefers. As flowering, occurs throughout the year, conducting surveys can be done year-round.

Leafless Beaked Orchid (*Stenorrhynchos lanceolatus*) - Leafless beaked orchid prefers dry to wet areas with full sunlight to partial shade in basin swamps, dome swamps, floodplain swamps, hydric hammocks, mesic flatwoods, mesic hammocks, sandhills, wet flatwoods, wet prairies and strand swamps. This species may occur along dry to wet roadsides and ditches. The specific fire requirements are unknown for this species. However, since this species occurs in mesic flatwoods, sandhill and wet prairies, a fire regime that includes frequent (2-3 years) growing season fires that reduce the encroachment of woody species will be beneficial for this species when they occur in these natural communities. Fire suppression and hydrologic disturbances negatively affect this species; therefore, avoid constructing fire breaks in ecotones, maintain and restore the natural hydrology and apply natural community specific fire regimes. Flowering, which occurs from late March to July, is the best time for conducting surveys or verifying species identity.

Long-lip Ladies' Tresses (*Spiranthes longilabris*) - Long-lip ladies' tresses prefer open areas in depression marshes, dome swamps, hydric hammocks, marl prairies, mesic flatwoods, sloughs, slough marshes, wet flatwoods and wet prairies. This species may occur along dry to moist roadsides and ditches. The specific fire requirements are unknown for this species. However, since this species occurs in fire-maintained communities, a fire regime that includes frequent growing season fires that reduce the encroachment of woody species and fires allowed to naturally enter and extinguish in wetlands and ecotones will be beneficial for this species. Hydrological disturbances and illegal collecting negatively affect this species; therefore, staff should maintain and restore the natural hydrology where practicable and protect known occurrences. Flowering, which occurs from late October to December, is the best time for conducting surveys or verifying species identity. However, if staff plan on making opportunistic observations for this species, they may need to react when they notice blooming, since this species has a short blooming period (10-40 days).

Many-flowered Grasspink (*Calopogon multiflorus*) - Many-flowered grasspink prefers well-drained soils in open, dry to moist pine flatwoods and prairies. This species needs prescribed fire every 2-3 years during the growing season for it to survive, and it actually thrives with disturbance from fire demonstrating a more vigorous flowering after fire. Soil and hydrologic disturbance negatively affect this species; therefore, avoid roller-chopping in areas of known occurrences. Flowering, which occurs primarily 3-5 weeks post-fire (often in April/May) but may occur from early March to July depending on the fire management regime, is the best time for conducting surveys or verifying species identity.

Non-Crested Eulophia (*Eulophia ecristata*) - Non-crested eulophia prefers open areas, with at least filtered sunlight and no dense shrub competition in mesic flatwoods, pine rocklands, sandhills, scrub, scrubby flatwoods and wet flatwoods. While this species may

persist for long periods in xeric habitats without fire, occasional fire is needed to reduce competition and shading by shrubs. However, non-crested eulophia is dependent on frequent fire in moist habitats that experience rapid shrub growth and prescribed fire should occur with a frequency that will create or maintain open areas, limit the shrub layer and encourage diverse herbaceous cover. Excessive site preparation and illegal collecting negatively affect this species; therefore, protect areas with known occurrences. Flowering, which occurs from July to September, or fruiting, which occurs from September to November, is the best time for conducting surveys or verifying species identity.

Pigeon wings (*Clitoria fragrans*) - Pigeon wings prefer open well-drained sandy soils in sandhill, scrub and scrubby flatwoods. This species is well adapted to growing season fire that reduces the encroachment of woody species and creates open areas allowing sunlight to reach the ground. It responds positively to fire by vigorously flowering and re-sprouting, and seedling establishment increases after a fire. Altered fire regimes and fire suppression negatively affect this species, therefore, prescribed fire should follow appropriate natural community fire regimes and vary by season, frequency and fire intensity to ensure species diversity. Scrub management programs should strive to mimic natural processes that create the openings this species prefers. The best time for conducting surveys or verifying plant identity is during flowering, which occurs from May-June (open, cross-pollinated flowers) and from early July-early September (non-opening, self-pollinating flowers).

Plume Polypody (*Polypodium plumula*) and Swamp Plume Polypody (*P. ptilodon*) - Plume Polypody is usually an epiphytic fern growing on tree branches, usually live oaks, in bottomland forests, floodplain swamps, hydric hammocks, mesic hammocks and sinkholes, while swamp plume polypody is usually a terrestrial fern growing primarily around tree bases in basin swamps, hydric hammocks, rockland hammocks and strand swamps. However, both species may occasionally grow on tree stumps and rocks within their preferred habitats. These species are sensitive to fire and some of their preferred habitats occasionally burn during periods of drought. Hydrological disturbances negatively affect this species; therefore, staff should maintain and restore the natural hydrology where practicable. Surveys or species identification may occur throughout the year for these species.

Rose Pogonia (*Pogonia ophioglossoides*) - Rose pogonia prefers sunny openings in meadows and prairies, wet woods, wet pine flatwoods, pine savannas, seepage slopes, sphagnum bogs and cypress swamps with acidic soils. This species may occur along sandy stream banks and along wet roadside ditches. This species needs a fire regime that includes frequent (2-3 years) growing season fires that reduce the encroachment of woody species and creates open areas allowing sunlight to reach the ground. Soil and hydrologic disturbances negatively affect this species; therefore, maintain and restore the natural hydrology and avoid using heavy machinery in wetlands. Flowering, which occurs primarily from March to May, is the best time for conducting surveys or verifying species identity.

Scrub Bluestem (*Schizachyrium niveum*) – Scrub bluestem prefers open dry sandy areas in sandhill, sand pine (*Pinus clausa*) scrub, rosemary (*Ceratiola ericoides*) scrub and oak scrub communities. While fire has been shown to kill individuals of this species, it recolonizes recently burned areas from nearby seed sources. Scrub bluestem needs fire in its preferred habitats to reduce the encroachment of woody species and create open sandy patches where sunlight reaches the ground. Altered fire regimes and fire suppression negatively affect this species, therefore, prescribed fire intervals should vary by season, frequency and fire intensity to ensure species diversity and scrub management programs should strive to mimic natural processes that create openings this species prefers. Flowering and fruiting, which occurs primarily from September to November, is the best time for conducting surveys or verifying species identity.

Scrub Pinweed (*Lechea cernua*) and Spreading Pinweed (*L. divaricate*) - These pinweeds prefer sunny, dry sandy areas in scrub, scrubby flatwoods and sandhills. These species are well adapted to growing season fires that reduce the encroachment of woody species and create open areas allowing sunlight to reach the ground. They respond positively to fire by re-sprouting and increasing seed production after a fire. Altered fire regimes and fire suppression negatively affect these species, therefore, prescribed fire intervals should vary by season, frequency and fire intensity to ensure species diversity and scrub management programs should strive to mimic natural processes that create openings this species prefers. Fruiting, which occurs from June to October for scrub pinweed and from June to August for spreading pinweed, is the best time for conducting surveys or verifying species identity.

Simpson's Stopper (*Myrcianthes fragrans*) - Simpson's stopper prefers hydric hammocks (including the variant coastal hydric hammock), mesic hammocks, prairie hammocks and rockland hammocks. This species occasionally occurs in dome swamps, floodplain swamps and wet flatwoods. This species is not a fire-adapted species. While fires may reach the edge of hammocks, saturated soils and humid conditions within the hammocks typically limit the extent of a burn. However, periodic burns in adjoining communities can reduce woody encroachment and lessen the likelihood of fires spreading into hammocks. Soil and hydrologic disturbance negatively affect this species; therefore, maintain and restore the natural hydrology where practicable and avoid using heavy machinery in wetlands with known occurrences of these species. Flowering, which occurs throughout the year with the heaviest blooming occurring from February to June, is the best time for conducting surveys or verifying species identity.

Snowy Orchid (*Platanthera nivea*) - Snowy orchid prefers full or partial sun and moist to wet acidic soils in dry prairies, dome swamps, hydric hammocks, mesic flatwoods, mesic hammocks, strand swamps, wet flatwoods and wet prairies. It also occurs in cypress swamps and wet roadside ditches. The specific fire requirements are unknown for this species. However, since it prefers full or partial sun, a fire regime in flatwoods and prairies that includes frequent (2-3 years) growing season fires that reduce the encroachment of

woody species will be beneficial for this species. Soil and hydrologic disturbance negatively affect this species; therefore, maintain and restore the natural hydrology where practicable and avoid using heavy machinery in wetlands with known occurrences of these species. Flowering, which occurs primarily from May to September (usually peaking during June), is the best time for conducting surveys or verifying species identity. Because flowering in this species is highly erratic from year to year, populations may be persisting even if not seen.

Threadroot orchid (*Harrisella porrecta*) - Threadroot orchid is Florida's smallest epiphytic orchid and it prefers dome swamps, mesic hammocks, hydric hammocks, strand swamps and wet flatwoods. Typically, this species prefers non-pyrogenic habitats that only experience occasional burns during drought conditions and not frequent fires. Illegal collecting and hydrological disturbances negatively affect these species; therefore, protect areas with known occurrences, and staff should maintain and restore the natural hydrology where practicable. Fruiting, which occurs from March to June, is the best time for conducting surveys or verifying species identity.

2.2.3 Forest Resources

The 2004 FNAI natural community mapping of the TLWMA indicated approximately 2,427.2 acres were in pine plantation. Since 2004, the majority of this acreage has been harvested, and natural community restoration has been initiated. The most recent FNAI natural community mapping now indicates only 360.74 acres are still classified as pine plantation.

Other forest resources within the TLWMA include pines in sandhill, scrubby flatwoods, mesic flatwoods and wet flatwoods communities, as well as cypress and other hardwoods within the forested wetlands of dome swamps. A Timber Assessment of the forest resources of the TLWMA was conducted in 2000 by the FFS (Appendix 12.14), and the FWC will coordinate with the FFS on obtaining an update to the Timber Assessment for the TLWMA during this planning period. The management of forest resources will be considered in the context of the Timber Assessment and the overall land management goals and activities.

2.3 Fish and Wildlife Resources

In association with the varied assemblage of natural communities described above, a rich diversity of wildlife species is found on the TLWMA. The FWC maintains an inventory of wildlife that occurs on the TLWMA. These species include mammals (Table 7), birds (Table 8), reptiles and amphibians (Table 9), fish (Table 10) and invertebrates (Table 11). In addition to the species listed in the tables below, nine exotic and invasive wildlife species have been documented on the TLWMA (Table 12). These inventories are continuously updated by FWC staff.

Table 7. Mammal Species Observed at the TLWMA

Common Name	Scientific Name
Big brown bat	<i>Eptesicus fuscus</i>
Bobcat	<i>Lynx rufus</i>
Brazilian free-tailed bat	<i>Tadarida brasiliensis</i>
Cotton mouse	<i>Peromyscus gossypinus</i>
Coyote	<i>Canis latrans</i>
Eastern cottontail rabbit	<i>Sylvilagus floridanus</i>
Eastern harvest mouse	<i>Reithrodontomys humulis</i>
Eastern red bat	<i>Lasiurus borealis</i>
Eastern spotted skunk	<i>Spilogale putorius</i>
Eastern woodrat	<i>Neotoma floridana</i>
Eastern gray squirrel	<i>Sciurus carolinensis</i>
Evening bat	<i>Nycticeius humeralis</i>
Florida long-tailed weasel	<i>Mustela frenata peninsulae</i>
Florida black bear	<i>Ursus americanus floridanus</i>
Florida panther	<i>Puma concolor coryi</i>
Feral hog	<i>Sus scrofa</i>
Hispid cotton rat	<i>Sigmodon hispidus</i>
House mouse	<i>Mus musculus</i>
Marsh rice rat	<i>Oryzomys palustris</i>
Nine-banded armadillo	<i>Dasypus novemcinctus</i>
Northern yellow bat	<i>Lasiurus intermedius</i>
Opossum	<i>Didelphis virginiana</i>
Raccoon	<i>Procyon lotor</i>
River otter	<i>Lontra canadensis</i>
Round-tailed muskrat	<i>Neofiber alleni</i>
Seminole bat	<i>Lasiurus seminolus</i>
Southeastern myotis	<i>Myotis austroriparius</i>
Southern flying squirrel	<i>Glaucomys volans</i>
Southern fox squirrel	<i>Sciurus niger niger</i>
Striped skunk	<i>Mephitis mephitis</i>
Tricolored bat	<i>Perimyotis subflavus</i>
White-tailed deer	<i>Odocoileus virginianus</i>

Table 8. Bird Species Observed at the TLWMA

Common Name	Scientific Name
American bittern	<i>Botaurus lentiginosus</i>
American coot	<i>Fulica americana</i>

Common Name	Scientific Name
American crow	<i>Corvus brachyrhynchos</i>
American goldfinch	<i>Spinus tristis</i>
American kestrel	<i>Falco sparverius</i>
American redstart	<i>Setophaga ruticilla</i>
American robin	<i>Turdus migratorius</i>
American white pelican	<i>Pelecanus erythrorhynchos</i>
Anhinga	<i>Anhinga anhinga</i>
Bachman's sparrow	<i>Peucaea aestivalis</i>
Bald eagle	<i>Haliaeetus leucocephalus</i>
Barn owl	<i>Tyto alba</i>
Barn swallow	<i>Hirundo rustica</i>
Barred owl	<i>Strix varia</i>
Belted kingfisher	<i>Megaceryle alcyon</i>
Black rail	<i>Laterallus jamaicensis</i>
Black vulture	<i>Coragyps atratus</i>
Black-bellied whistling duck	<i>Dendrocygna autumnalis</i>
Black-and-white warbler	<i>Mniotilta varia</i>
Black-crowned night-heron	<i>Nycticorax nycticorax</i>
Black-necked stilt	<i>Himantopus mexicanus</i>
Black-throated blue warbler	<i>Setophaga caerulescens</i>
Black-throated green warbler	<i>Dendroica virens</i>
Blue jay	<i>Cyanocitta cristata</i>
Blue-gray gnatcatcher	<i>Polioptila caerulea</i>
Blue-headed vireo	<i>Vireo solitarius</i>
Boat-tailed grackle	<i>Quiscalus major</i>
Bobolink	<i>Dolichonyx oryzivorus</i>
Brown thrasher	<i>Toxostoma rufum</i>
Brown-headed cowbird	<i>Molothrus ater</i>
Brown-headed nuthatch	<i>Sitta pusilla</i>
Carolina wren	<i>Thryothorus ludovicianus</i>
Cattle egret	<i>Bubulcus ibis</i>
Cedar waxwing	<i>Bombycilla cedrorum</i>
Chipping sparrow	<i>Spizella passerina</i>
Chuck-will's-widow	<i>Antrostomus carolinensis</i>
Common gallinule	<i>Gallinula galeatea</i>
Common grackle	<i>Quiscalus quiscula</i>
Common ground-dove	<i>Columbina passerina</i>
Common nighthawk	<i>Chordeiles minor</i>
Common yellowthroat	<i>Geothlypis trichas</i>
Crested caracara	<i>Caracara cheriway</i>

Common Name	Scientific Name
Double-crested cormorant	<i>Phalacrocorax auritus</i>
Downy woodpecker	<i>Picoides pubescens</i>
Eastern bluebird	<i>Sialia sialis</i>
Eastern kingbird	<i>Tyrannus tyrannus</i>
Eastern meadowlark	<i>Sturnella magna</i>
Eastern phoebe	<i>Sayornis phoebe</i>
Eastern towhee	<i>Pipilo erythrophthalmus</i>
Eastern whip-poor-will	<i>Antrostomus vociferus</i>
Eurasian collared dove	<i>Streptopelia decaocto</i>
Field sparrow	<i>Spizella pusilla</i>
Fish crow	<i>Corvus ossifragus</i>
Florida Burrowing owl	<i>Athene cunicularia floridana</i>
Florida grasshopper sparrow	<i>Ammodramus savannarum floridanus</i>
Florida mottled duck	<i>Anas fulvigula</i>
Florida sandhill crane	<i>Antigone canadensis pratensis</i>
Florida scrub jay	<i>Aphelocoma coerulescens</i>
Glossy ibis	<i>Plegadis falcinellus</i>
Gray catbird	<i>Dumetella carolinensis</i>
Great blue heron	<i>Ardea herodias</i>
Great crested flycatcher	<i>Myiarchus crinitus</i>
Great egret	<i>Ardea alba</i>
Great horned owl	<i>Bubo virginianus</i>
Great white pelican	<i>Pelecanus onocrotalus</i>
Greater yellowlegs	<i>Tringa melanoleuca</i>
Green heron	<i>Butorides virescens</i>
Hairy woodpecker	<i>Picoides villosus</i>
Henslow's sparrow	<i>Ammodramus henslowii</i>
Hermit thrush	<i>Catharus guttatus</i>
House wren	<i>Troglodytes aedon</i>
Indigo bunting	<i>Passerina cyanea</i>
Killdeer	<i>Charadrius vociferus</i>
King rail	<i>Rallus elegans</i>
Least bittern	<i>Ixobrychus exilis</i>
Least sandpiper	<i>Calidris minutilla</i>
Lesser yellowlegs	<i>Tringa flavipes</i>
Limpkin	<i>Aramus guarauna</i>
Little blue heron	<i>Egretta caerulea</i>
Loggerhead shrike	<i>Lanius ludovicianus</i>
Long-billed dowitcher	<i>Limnodromus scolopaceus</i>
Louisiana waterthrush	<i>Parkesia motacilla</i>

Common Name	Scientific Name
Merlin	<i>Falco columbarius</i>
Mourning dove	<i>Zenaida macroura</i>
Northern bobwhite quail	<i>Colinus virginianus</i>
Northern cardinal	<i>Cardinalis cardinalis</i>
Northern flicker	<i>Colaptes auratus</i>
Northern harrier	<i>Circus hudsonius</i>
Northern mockingbird	<i>Mimus polyglottos</i>
Northern parula	<i>Setophaga americana</i>
Orange-crowned warbler	<i>Oreothlypis celata</i>
Osceola turkey	<i>Meleagris gallopavo osceola</i>
Osprey	<i>Pandion haliaetus</i>
Ovenbird	<i>Seiurus aurocapilla</i>
Painted bunting	<i>Passerina ciris</i>
Palm warbler	<i>Setophaga palmarum</i>
Peregrine falcon	<i>Falco peregrinus</i>
Pied-billed grebe	<i>Podilymbus podiceps</i>
Pileated woodpecker	<i>Dryocopus pileatus</i>
Pine warbler	<i>Setophaga pinus</i>
Prairie warbler	<i>Setophaga discolor</i>
Purple gallinule	<i>Porphyrio martinicus</i>
Red-bellied woodpecker	<i>Melanerpes carolinus</i>
Red-cockaded woodpecker	<i>Picoides borealis</i>
Red-eyed vireo	<i>Vireo olivaceus</i>
Red-headed woodpecker	<i>Melanerpes erythrocephalus</i>
Red-shouldered hawk	<i>Buteo lineatus</i>
Red-tailed hawk	<i>Buteo jamaicensis</i>
Red-winged blackbird	<i>Agelaius phoeniceus</i>
Rock dove	<i>Columba livia</i>
Roseate spoonbill	<i>Platalea ajaja</i>
Ruby-crowned kinglet	<i>Regulus calendula</i>
Ruby-throated hummingbird	<i>Archilochus colubris</i>
Sandhill crane	<i>Antigone canadensis</i>
Savannah sparrow	<i>Passerculus sandwichensis</i>
Sedge wren	<i>Cistothorus platensis</i>
Semipalmated sandpiper	<i>Calidris pusilla</i>
Short-tailed hawk	<i>Buteo brachyurus</i>
Snail kite	<i>Rostrhamus sociabilis plumbeus</i>
Snowy egret	<i>Egretta thula</i>
Song sparrow	<i>Melospiza melodia</i>
Sora	<i>Porzana carolina</i>

Common Name	Scientific Name
Southern bald eagle	<i>Haliaeetus leucocephalus leucocephalus</i>
Spotted sandpiper	<i>Actitis macularius</i>
Stilt sandpiper	<i>Calidris himantopus</i>
Summer tanager	<i>Piranga rubra</i>
Swallow-tailed kite	<i>Elanoides forficatus</i>
Swamp sparrow	<i>Melospiza georgiana</i>
Tree swallow	<i>Tachycineta bicolor</i>
Tricolored heron	<i>Egretta tricolor</i>
Tufted titmouse	<i>Baeolophus bicolor</i>
Turkey vulture	<i>Cathartes aura</i>
White ibis	<i>Eudocimus albus</i>
White-eyed vireo	<i>Vireo griseus</i>
White-tailed kite	<i>Elanus leucurus</i>
White-winged dove	<i>Zenaida asiatica</i>
Wilson's snipe	<i>Gallinago delicata</i>
Wood duck	<i>Aix sponsa</i>
Wood stork	<i>Mycteria americana</i>
Worm-eating warbler	<i>Helmitheros vermivorum</i>
Yellow-bellied sapsucker	<i>Sphyrapicus varius</i>
Yellow-billed cuckoo	<i>Coccyzus americanus</i>
Yellow-rumped warbler	<i>Setophaga coronata</i>
Yellow-throated warbler	<i>Setophaga dominica</i>

Table 9. Reptile and Amphibian Species Observed at the TLWMA

Common Name	Scientific Name
American alligator	<i>Alligator mississippiensis</i>
Barking treefrog	<i>Hyla gratiosa</i>
Black racer	<i>Coluber constrictor</i>
Broadhead skink	<i>Plestiodon laticeps</i>
Brown water snake	<i>Nerodia taxispilota</i>
Common musk turtle	<i>Sternotherus odoratus</i>
Crawfish frog	<i>Lithobates areolata</i>
Cuban brown anole	<i>Anolis sagrei</i>
Cuban tree frog	<i>Osteopilus septentrionalis</i>
Dusky pygmy rattlesnake	<i>Sistrurus miliarius barbouri</i>
Eastern box turtle	<i>Terrapene carolina</i>
Eastern coachwhip	<i>Masticophis flagellum</i>
Eastern coral snake	<i>Micrurus fulvius</i>
Eastern corn snake	<i>Pantherophis guttatus</i>

Eastern diamondback rattlesnake	<i>Crotalus adamanteus</i>
Eastern garter snake	<i>Thamnophis sirtalis</i>
Eastern glass lizard	<i>Ophisaurus ventralis</i>
Eastern hognose snake	<i>Heterodon platirhinos</i>
Eastern indigo snake	<i>Drymarchon couperi</i>
Eastern lessen siren	<i>Siren intermedia</i>
Eastern mud snake	<i>Farancia abacura abacura</i>
Eastern narrowmouth toad	<i>Gastrophryne carolinensis carolinensis</i>
Eastern rat snake	<i>Pantherophis alleghaniensis</i>
Eastern slender glass lizard	<i>Ophisaurus attenuatus</i>
Eastern spadefoot toad	<i>Scaphiopus holbrookii</i>
Florida banded water snake	<i>Nerodia fasciata</i>
Florida box turtle	<i>Terrapene Carolina bauri</i>
Florida brown snake	<i>Storeria victa</i>
Florida chorus frog	<i>Psuedacris nigrita verrucosa</i>
Florida cottonmouth	<i>Agkistrodon piscivorous conanti</i>
Florida cricket frog	<i>Acris gryllus dorsalis</i>
Florida green water snake	<i>Nerodia cyclopion floridana</i>
Florida pine snake	<i>Pituophis melanoleucus mugitus Barbour</i>
Florida red-bellied cooter	<i>Pseudemys nelsoni</i>
Florida scarlet snake	<i>Cemophora coccinea coccinea</i>
Florida softshell turtle	<i>Apalone ferox</i>
Florida water snake	<i>Nerodia fasciata pictiventris</i>
Gopher frog	<i>Lithobates capito</i>
Gopher tortoise	<i>Gopherus polyphemus</i>
Greater siren	<i>Siren lacertina</i>
Green anole	<i>Anolis carolinensis</i>
Green treefrog	<i>Hyla cinerea</i>
	<i>Eleutherodactylus planirostris</i>
Greenhouse frog	<i>planirostris</i>
Ground skink	<i>Scincella lateralis</i>
Indo-Pacific gecko	<i>Hemidactylus garnotii</i>
Island glass lizard	<i>Ophisaurus compressus</i>
Little grass frog	<i>Limnaoedus ocularis</i>
Narrow-striped dwarf siren	<i>Psuedobranchus striatus axanthus</i>
Northern curly-tailed lizard	<i>Leiocephalus carinatus</i>
Oak toad	<i>Anaxyrus quercicus</i>
Peninsula cooter	<i>Pseudemys peninsularis</i>
Peninsula ribbon snake	<i>Thamnophis sauritus sackeni</i>
Pig frog	<i>Lithobates grylio</i>
Pine woods snake	<i>Rhadinaea flavilata</i>
Pine woods treefrog	<i>Hyla femoralis</i>

Rough green snake	<i>Opheodrys aestivus</i>
Scarlet kingsnake	<i>Lampropeltis elapsoides</i>
Six-lined racerunner	<i>Aspidoscelis sexlineata</i>
Snapping turtle	<i>Chelydra serpentina</i>
Southern Florida swamp snake	<i>Seminatrix pygaea cyclas</i>
Southeastern five-lined skink	<i>Plestiodon inexpectatus</i>
Southern black racer	<i>Coluber constrictor priapus</i>
Southern chorus frog	<i>Pseudacris nigrita</i>
Southern hognose	<i>Heterodon simus</i>
Southern leopard frog	<i>Lithobates sphenoccephalus</i>
Southern ringneck snake	<i>Diadophis punctatus punctatus</i>
Southern toad	<i>Anasyrus terrestris</i>
Squirrel tree frog	<i>Hyla squirella</i>
Striped crayfish snake	<i>Regina alleni</i>
Striped mud turtle	<i>Kinosternon baurii</i>
Two-toed amphiuma	<i>Amphiuma means</i>

Table 10. Fish Species Observed at the TLWMA

Common Name	Scientific Name
Bluegill	<i>Lepomis macrochirus</i>
Brown hoplo	<i>Hoplosternum littorale</i>
Florida gar	<i>Lepisosteus platyrhincus</i>
Largemouth bass	<i>Micropterus salmoides</i>

Table 11. Invertebrates Observed at the TLWMA

Common Name	Scientific Name
Aaron's skipper	<i>Poanes aaroni</i>
American lady	<i>Vanessa virginiensis</i>
Arogos skipper	<i>Atrytone arogos</i>
Barred yellow	<i>Eurema daira</i>
Berry's skipper	<i>Euphyes berryi</i>
Black swallowtail	<i>Papilio polyxenes</i>
Brazilian skipper	<i>Calpodess ethlius</i>
Carolina satyr	<i>Hermeuptychia sosybius</i>
Ceraunus blue	<i>Hemiargus ceraunus</i>
Clouded skipper	<i>Lerema accius</i>
Cloudless sulphur	<i>Phoebis sennae</i>
Common buckeye	<i>Junonia coenia</i>
Confused cloudywing	<i>Thorybes confusus</i>

Common Name	Scientific Name
Crayfish	<i>Procambarus paeninsulanus</i>
Dainty sulphur	<i>Nathalis iole</i>
Delaware skipper	<i>Anatrytone logan</i>
Dorantes longtail	<i>Urbanus dorantes</i>
Dotted skipper	<i>Hesperia attalus</i>
Dun skipper	<i>Euphyes vestris</i>
Eastern tiger swallowtail	<i>Papilio glaucus</i>
Eufala skipper	<i>Lerodea eufala</i>
Fiery skipper	<i>Hylephila phyleus</i>
Florida dusted skipper	<i>Atrytonopsis hianna</i>
Georgia satyr	<i>Neonympha areolata</i>
Giant swallowtail	<i>Papilio cressphontes</i>
Gray hairstreak	<i>Strymon melinus</i>
Great purple hairstreak	<i>Atlides halesus</i>
Great Southern white	<i>Ascia monuste</i>
Gulf fritillary	<i>Agraulis vanillae</i>
Horace's duskywing	<i>Erynnis horatius</i>
Juvenal's duskywing	<i>Erynnis juvenalis</i>
Least skipper	<i>Ancyloxypha numitor</i>
Little metalmark	<i>Calephelis virginensis</i>
Little yellow	<i>Eurema lisa</i>
Long-tailed skipper	<i>Urbanus proteus</i>
Meske's skipper	<i>Hesperia meskei</i>
Monarch	<i>Danaus plexippus</i>
Monk skipper	<i>Asbolis capucinus</i>
Neamathla skipper	<i>Nastra neamathla</i>
Northern cloudywing	<i>Thorybes pylades</i>
Ocola skipper	<i>Panoquina ocola</i>
Palamedes swallowtail	<i>Papilio palamedes</i>
Palatka skipper	<i>Euphyes pilatka</i>
Palmetto skipper	<i>Euphyes arpa</i>
Pearl crescent	<i>Phyciodes tharos</i>
Phaon crescent	<i>Phyciodes phaon</i>
Queen	<i>Danaus gilippus</i>
Red admiral	<i>Vanessa atalanta</i>
Red-banded hairstreak	<i>Calycopis cecrops</i>
Red imported fire ant	<i>Solenopsis invicta</i>
Sachem	<i>Atalopedes campestris</i>

Common Name	Scientific Name
Silver-spotted skipper	<i>Epargyreus clarus</i>
Sleepy orange	<i>Eurema nicippe</i>
Southern broken-dash	<i>Wallengrenia otho</i>
Southern cloudywing	<i>Thorybes bathyllus</i>
Southern hairstreak	<i>Satyrrium favonius</i>
Southern skipperling	<i>Copaeodes minima</i>
spicebush swallowtail	<i>Papilio troilus</i>
Swarthy skipper	<i>Nastra lherminier</i>
Tawny-edged skipper	<i>Polites themistocles</i>
Tropical checkered skipper	<i>Pyrgus oileus</i>
Twin-spot skipper	<i>Oligoria maculata</i>
Variegated fritillary	<i>Euptoieta claudia</i>
Viceroy	<i>Limenitis archippus</i>
Whirlabout	<i>Polites vibex</i>
White hairstreak butterfly	<i>Parrhasius m-album</i>
White peacock	<i>Anartia jatrophae</i>
Zarucco duskywing	<i>Erynnis zarucco</i>
Zebra heliconian	<i>Heliconius charithonia</i>
Zebra swallowtail	<i>Eurytides marcellus</i>

Table 12. Exotic and Invasive Species Observed at the TLWMA

Common Name	Scientific Name
Cuban brown anole	<i>Anolis sagrei</i>
Cuban tree frog	<i>Osteopilus septentrionalis</i>
Eurasian collared dove	<i>Streptopelia decaocto</i>
Greenhouse frog	<i>Eleutherodactylus planirostris</i>
Indo-Pacific house gecko	<i>Hemidactylus garnotii</i>
Northern curly-tailed lizard	<i>Leiocephalus carinatus</i>
Red imported fire ant	<i>Solenopsis invicta</i>
Rock dove	<i>Columba livia</i>
Wild hog	<i>Sus scrofa</i>

2.3.1 Florida Landscape Assessment Model

The FWC has developed the Florida Landscape Assessment Model (FLAM) as a Geographic Information Systems (GIS)-based assessment tool that incorporates a wide variety of landscape and wildlife species data. The FLAM evaluates the Florida landscape based upon important natural resources and habitat needs of wildlife as a way to identify ecologically significant lands in the state, and to assess the potential impacts of management and land-

use changes. The FLAM was developed to provide technical assistance to various local, regional, state and federal agencies and entities interested in wildlife needs and conservation 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 FLAM ranks habitat from a 0-10; a rank of 10 being of greatest value. The FLAM (2020) indicates that the TLWMA has a very high mean wildlife value of 9.3 (Figure 11).

2.3.2 Imperiled Fish and Wildlife

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 the FWC, or that are designated as Endangered or Threatened by the USFWS. This designation is also commonly known as “listed species.” At its November, 2016, Commission meeting, the FWC approved Florida’s Imperiled Species Management Plan (<http://myfwc.com/wildlifehabitats/imperiled/plan/>), which included changes to the listing status for many wildlife species. Subsequent rule changes (68A-27.003 and 68A-27.005 FAC) came into effect in January 2017. All federally listed species that occur in Florida are included in Florida’s Endangered and Threatened Species list (<https://myfwc.com/media/1945/threatened-endangered-species.pdf>) as federally-designated Endangered or federally-designated Threatened. Species that are not federally listed, but which have been identified by the FWC as being at some level of risk of extinction, are listed as state-designated Threatened. Additionally, the FWC continues to maintain a separate Species of Special Concern category. This category was reviewed as part of Florida’s Imperiled Species Management Plan, with the majority of the species previously contained within the category either being removed from Florida’s Endangered and Threatened Species list due to conservation success or had their status changed to state-designated Threatened.

Table 13. Imperiled Wildlife Species Observed on the TLWMA

Common Name	Scientific Name	Status
American alligator	<i>Alligator mississippiensis</i>	FT (S/A)
Audubon's crested caracara	<i>Caracara cheriway</i>	FT
Eastern indigo snake	<i>Drymarchon couperi</i>	FT
Florida burrowing owl	<i>Athene cunicularia floridana</i>	ST
Florida grasshopper sparrow	<i>Ammodramus savannarum floridanus</i>	FE
Florida panther	<i>Puma (=Felis) concolor coryi</i>	FE
Florida pine snake	<i>Pituophis melanoleucus mugitus</i>	ST
Florida sandhill crane	<i>Antigone canadensis pratensis</i>	ST
Florida scrub-jay	<i>Aphelocoma coerulescens</i>	FT

Common Name	Scientific Name	Status
Gopher tortoise	<i>Gopherus polyphemus</i>	ST
Little blue heron	<i>Egretta caerulea</i>	ST
Red-cockaded woodpecker	<i>Picoides borealis</i>	FE
Roseate spoonbill	<i>Platalea ajaja</i>	ST
Everglade snail kite	<i>Rostrhamus sociabilis plumbeus</i>	FE
Tricolored heron	<i>Egretta tricolor</i>	ST
Wood stork	<i>Mycteria americana</i>	FT

Acronym	Status
FE	Federally Endangered
FT	Federally Threatened
FT (S/A)	Federally Threatened due to Similarity of Appearance
SE	State Endangered
ST	State Threatened

2.3.3 FWC Wildlife Observations and FNAI Element Occurrences

A diversity of wildlife species is found on the TLWMA. The FNAI element occurrence records include several occurrences of rare plant species and imperiled wildlife species in the vicinity of the TLWMA. As defined by the FNAI, an “element” is any exemplary or rare component of the natural environment, such as a species, natural community, bird colony, 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. The FNAI assigns a rank to each “element” occurrence. 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 FNAI element occurrences from the most recent GIS databases are displayed in Figure 12. Appendix 12.8 contains a letter from the FNAI authorizing the FWC to utilize their database for the purpose of displaying known plant and animal resources.

2.4 Native Landscapes

Native landscapes of the TLWMA include 21 identified natural communities. Vast low-density canopy tree pine savannahs and dry prairies allow for extensive vistas of this Florida landscape. Other native landscapes include the forested wetlands, as well as the open waterbodies including Lake Marian and Lake Jackson. The natural communities of the TLWMA are regarded as being in excellent condition and represent benchmark examples of Florida native habitat. Complete descriptions of the natural communities found on the TLWMA may be found in Section 2.2.1 of this Management Plan.

2.5 Water Resources

All surface waters of the State are classified by the DEP according to designated uses as described in Chapter 62-302.44 FAC. The surface waters of the TLWMA 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 the DEP to afford the highest protection to Outstanding Florida Waters (OFW) and Outstanding National Resource Waters (Chapter 62-302.700 FAC). Portions of the TLWMA, including Three Lakes Prairie Lakes and Prairie Lakes State Preserve, are designated as OFW (Figure 13). No degradation of water quality, other than that allowed in subsections Chapter 62-4.242(2) and (3) FAC, is permitted in these OFW, notwithstanding any other DEP rules that may allow water quality lowering.

A watershed divide exists along the 80-foot contour line, separating drainage patterns into the St. Johns and Kissimmee River basins. Roughly 12,500 acres in the northeastern TLWMA drain to the north through the Bull Creek watershed and thereby eventually into the St. Johns River. The remainder of the TLWMA acreage drains to the south through the Kissimmee River system into Lake Okeechobee.

Three major lakes, Lake Kissimmee, Lake Jackson and Lake Marian, are found in association with TLWMA, providing roughly 17 linear miles of lakeshore within the TLWMA boundary. Jurisdictional wetland areas contained within TLWMA include the wetlands and marshes associated with these lakes, with many additional dispersed isolated wetlands.

2.6 Beaches and Dunes

There are no beaches or dunes associated with the TLWMA or the KRPWA.

2.7 Mineral Resources

There are no known mineral resources within the TLWMA or the KRPWA.

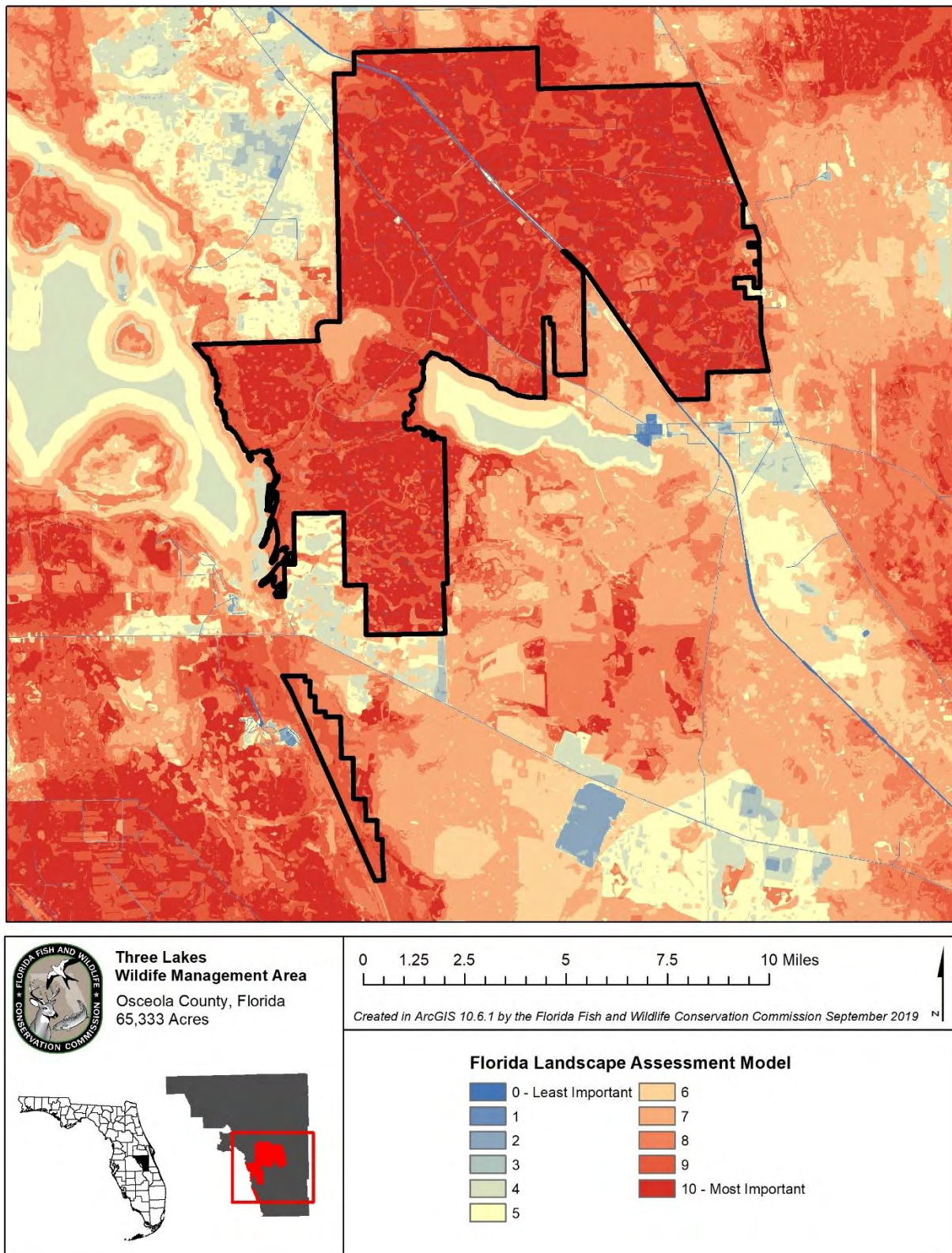


Figure 11. Florida Landscape Assessment Model – TLWMA

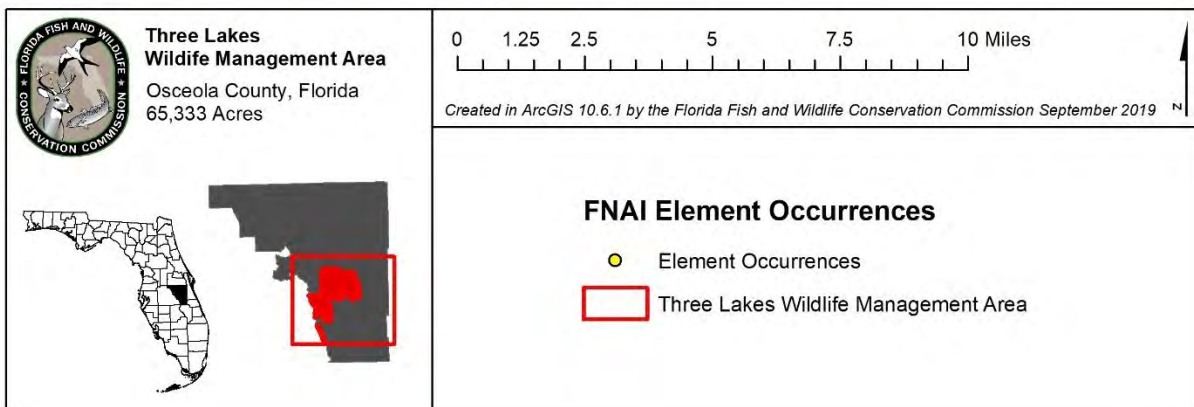


Figure 12. FNAI Element Occurrences Surrounding the TLWMA

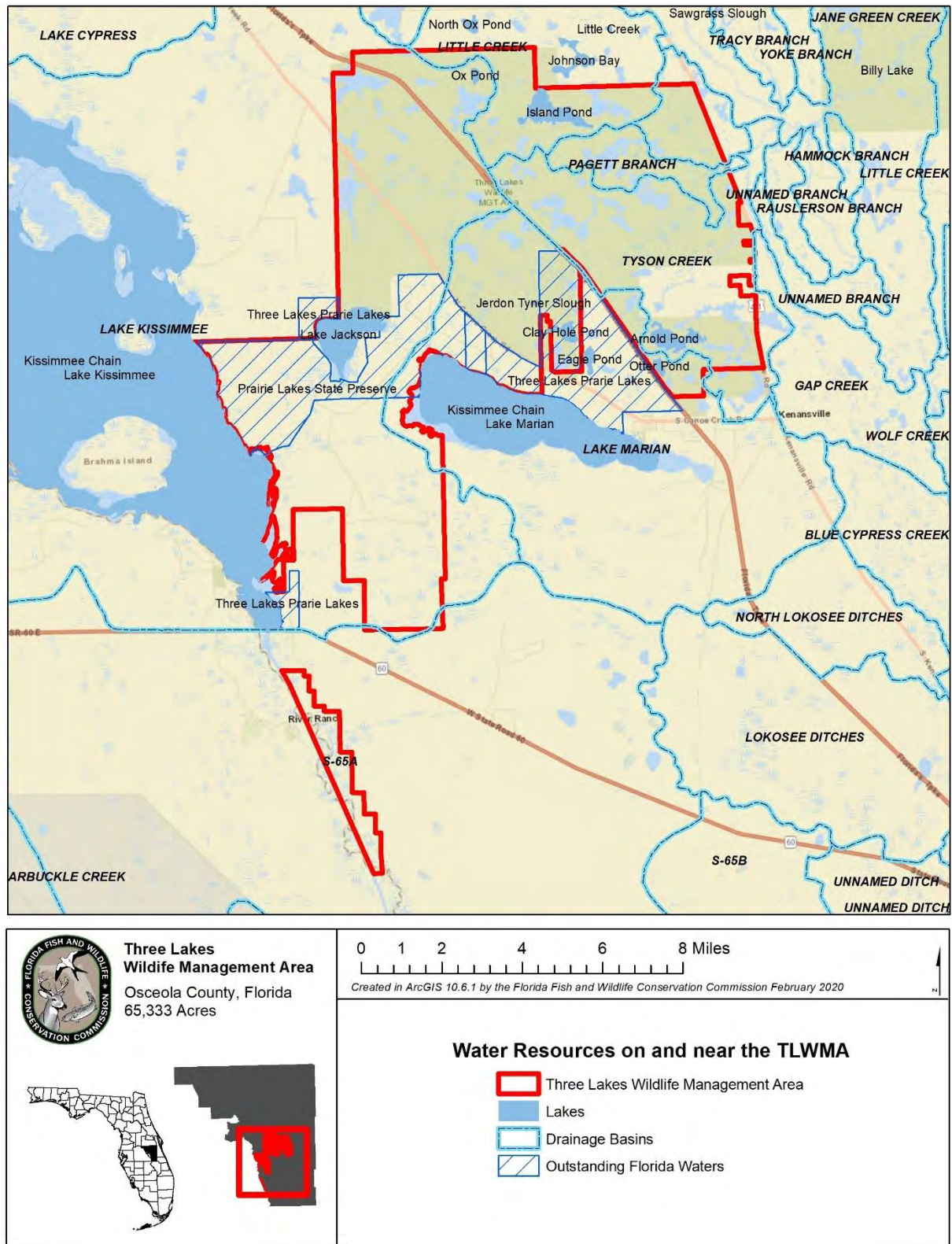


Figure 13. The TLWMA Water Resources

2.8 Historical Resources

Procedures outlined by the Florida Department of State's Division of Historical Resources (DHR) will be followed to preserve historical resources. The FWC will continue to consult with the DHR to locate and preserve any historical or archaeological features on the area. As necessary, the FWC will also contact professionals from the DHR for assistance prior to any ground-disturbing activity on the area.

A review of the Florida Master Site File by the DHR revealed 22 historical sites and 3 structures, for a total of 25 historical resources on the TLWMA. These sites represent prehistoric mounds and middens, Belle Glade era (700 BC – AD 1700) mounds and middens and nineteenth and twentieth century homesteads. The FWC has coordinated and will continue to coordinate with the DHR on any additional found sites.

As a part of this management plan, the FWC will ensure that management staff receive Archaeological Resource Management (ARM) training. Furthermore, the FWC will ensure all known sites are recorded in the DHR Master Site File.

2.9 Scenic Resources

Scenic resources of the TLWMA include the views of the vast mesic flatwoods and dry prairies. The low-density of canopy tree species associated with these habitats allow for extensive vistas. Other scenic resources include the forested wetlands, as well as the open waterbodies of Lake Marian, Lake Jackson and Lake Kissimmee. The natural communities of the TLWMA are regarded as being in excellent condition and represent benchmark examples of Florida native habitat. Complete descriptions of the natural communities found on the TLWMA may be found in Section 2.2.1 of this Management Plan.

3 Uses of the Property

3.1 Previous Use and Development

Prior to European settlement, the landscape of Florida including this area of the peninsula was settled and used by a variety of aboriginal peoples whose culture relied mainly on hunting, fishing and subsistence agriculture. 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, 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 through much of the central Florida peninsula throughout most of the European settlement era from the 16th through the 20th century. Use of these

agricultural practices began an era of increased alteration of the natural landscape. However, it wasn't until the 19th and 20th century that major settlement and more extensive alteration of the landscape in the area began with the widespread use of agriculture and associated development.

Historical development associated with the early settlement of the TLWMA is similar to other early settlements in east-central Florida. Exploitation of timber resources and agricultural development were the main factors that opened the area to settlers. One of the original settlers, George W. Hopkins, purchased approximately 104,000 acres in 1902. The nearby HHBCWMA represents a portion of the Hopkins' original tract. Construction of the Union Cypress Railroad began in 1902 and was followed by the development of a timber company of the same name. Completion of Flagler's east coast railroad to Melbourne provided the means to move timber to northern markets. Timber harvesting operations in the Bull Creek and Jane Green Swamp, east of the TLWMA, began in 1912 and was concluded by 1928.

The TLWMA was part of the last large open range cattle ranching in the United States, which persisted until 1949 when the Florida Legislature passed the Fence Law requiring all cattle to be fenced. The Seminoles first herded cattle here at the beginning of the 19th century. American colonists replaced them after the Second Seminole War (1842) when the surviving Indians sought refuge in the Everglades and Big Cypress. In the later part of the 19th century, it was not unusual for these early cowmen to see wolves and hear panthers as they moved their herds across the range from Kissimmee to Tampa.

The prairie was home to the Florida cow, a small, bony, long-horned descendant of Spanish cattle able to survive heat, drought, insects and poor forage, and the rugged, independent semi-nomadic Florida cow hunter who rounded up and herded cattle with the help of well-trained dogs.

Each year from February to the end of March, cattlemen burned the prairie to kill back pine saplings, oak and palmetto and to encourage the growth of grass. Early in the 20th century, lumbering and naval store industries followed the railroad south. At first large stands of pine were turpented, then the larger saw timber was cut and finally the pulpwood was removed.

3.2 Current Use of the Property

Currently, the TLWMA is managed by the FWC to protect and provide for water conservation and 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 the TLWMA each year including activities such as prescribed burning; wildlife habitat restoration and improvement; invasive and 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.

The TLWMA is being managed as a multiple-use conservation land. Multiple-use management strategies incorporate uses related to wildlife, fisheries, forest management and natural resource based public outdoor recreation. Wildlife-based public outdoor educational and recreational opportunities are provided that are compatible with the original purposes for acquisition of the TLWMA. Current and anticipated resource uses of the property are diverse. Hunting continues to be a popular recreational activity on the TLWMA. The area also offers excellent opportunities for bird watching, especially for red-cockaded woodpeckers, Bachman's sparrows 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 Osceola County, public use can be expected to increase as public awareness of opportunities increases.

The FWC established a communication tower to facilitate statewide program delivery of services. This communication tower is currently being used by the FFS to facilitate statewide wildfire and other natural disaster response. The FFS use of this site is consistent with Chapter 589.011(6), F.S. Additionally, activities occurring on the TLWMA include cattle grazing, apiaries and a monitored automated weather station tower.

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 the TLWMA and contribute to the overall economy for this region of Florida. In Fiscal Year 2018-19, an estimated 73,540 people visited the TLWMA. Primarily, as a result of this visitation and use of the area, the FWC economic analysis estimates indicate that the TLWMA generated an estimated annual economic impact of \$8,401,945 retail sales and \$852,328 in state and local taxes for the State and the Northeast Florida region. This estimated annual economic impact has aided in the support or creation of an estimated 146 jobs.

Additional revenue is generated from the cattle grazing contract that is currently in place on the area (Section 1.6, Appendix 12.2) and an existing apiary contract (Appendix 12.11). Revenues from the cattle grazing contract vary year-to-year based on the number of cattle present on the area.

Further revenue generating potential of the TLWMA will depend upon future uses described in this Management Plan. Additional revenue from environmental lands such as the TLWMA 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

The TLWMA will be managed under the multiple-use concept as a Wildlife Management Area. The TLWMA 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 the TLWMA will be managed under the guidance of the 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 the TLWMA. 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 12.9). 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:

	<u>Approved</u>	<u>Conditional</u>	<u>Rejected</u>
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 the TLWMA are made in accordance with the requirements of Section 253.034(10) F.S. 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 ARC and the Board of Trustees prior to any incompatible use or linear facility being authorized on the TLWMA.

3.3.3 Assessment of Impact of Planned Uses of the Property

To communicate the 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 the TLWMA (Sections 5 -7). 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 the FWC is the lead manager, the FWC evaluates and identifies recommended areas for a potential surplus designation by the DSL, ARC and the Board of Trustees. This evaluation consists of GIS modeling and analysis, aerial photography interpretation, analysis of fish and wildlife resources, a review of resource and operational management needs and a review of public access and recreational use of the area. Also, FWC considers recommendations for surplus lands as they relate to Florida's "No Net Loss of Hunting Lands" legislation (Ch. 379.3001 F.S.), as well as surplus restrictions for lands acquired through the Federal Aid in Wildlife Restoration Act (Pittman-Robertson) or through other federal grant programs.

The evaluation of the TLWMA by the FWC has determined that all portions of the area are being managed and operated for the original purposes of acquisition and remain integral to

the continued conservation of important fish and wildlife resources and continue to provide good fish and wildlife resource based public outdoor recreational opportunities. Therefore, no portion of the TLWMA is recommended for potential surplus review.

4 Accomplished Objectives from the TLWMA Management Plan 2012-2022 or Interim Management Activities

This section is dedicated to reporting the extent to which the Objectives described in the TLWMA Management Plan 2012 – 2022 were successfully completed. Accomplishments for the TLWMA 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 2012 – 2022 TLWMA Management Plan describe the planned activities for the TLWMA during this period. The degree to which the FWC was able to accomplish the planned activities during this period is reflected as Percent Accomplished for each associated Objective.

Goals and Objectives	Percent Accomplished
Habitat Restoration and Improvement Goal 1: Protect, maintain, enhance and restore the unique ecosystems of Three Lakes WMA.	
Objective 1: Conduct prescribed burning on approximately 20,000 acres per year of fire-adapted natural communities. (August 2012-August 2014) <i>Comment: FWC staff continues to maintain habitats within their target fire return interval.</i>	100%
Objective 2: Maintain 20,000 acres (31.5%) per year within 1 - 4 year target fire return interval. (August 2012- August 2014) <i>Comment: FWC staff continue to meet and exceed annual fire return percentages.</i>	100%
Objective 3: Contract for mapping of historic natural communities on the U.S. Justice, Sunset Ranch, and Lucky L Ranch tracts, and other altered areas as necessary. (August 2012- August 2014) <i>Comment: Historical mapping was deemed unnecessary. Through an initial assessment, FNAI found the current communities were similar to the historic.</i>	0%
Objective 4: Contract for mapping of historic and current natural communities mapping for the Kissimmee River PUA. (August 2012-August 2014) <i>Comment: Historical mapping was not completed due to difficulty accessing the KRP UA.</i>	0%

Objective 5: Develop and implement an updated prescribed burn plan. (August 2012- August 2014) <i>Comment: The update is expected to be completed before the end of this planning period.</i>	50%
Objective 6: Conduct habitat/natural community improvement on 100 acres per year (dry prairie and mesic flatwoods habitat in management unit 60). (August 2012- August 2014) <i>Comment: FWC staff continues to improve natural communities/habitats at a rate of 100 acres per year.</i>	100%
Objective 7: Conduct habitat/natural community restoration activities including 100 acres of ground cover restoration (50 acres annually) on Sunset Ranch and Lucky L Ranch tracts. (August 2012- August 2014) <i>Comment: Ground cover restoration continues to be completed by FWC staff on Sunset Ranch and Lucky L Ranch tracts.</i>	100%
Objective 8: Continue to plant longleaf pine seedlings in completed ground cover restoration areas (~50 acres annually) as appropriate. (August 2012- August 2014) <i>Comment: FWC staff continues to plant longleaf pine seedlings as appropriate.</i>	100%
Objective 9: Continue to monitor vegetation parameters within natural communities to ensure management efforts are achieving OBVM established desired future conditions. (August 2012- August 2014) <i>Comment: OBVM continues to be implemented on the TLWMA in order to achieve OBVM established desired future conditions.</i>	100%
Objective 10: Continue to implement OBVM for natural communities. (August 2012- August 2014) <i>Comment: OBVM continues to be implemented on the TLWMA in order to achieve OBVM established desired future conditions.</i>	100%
Objective 11: Continue to utilize low intensity cattle grazing as a vegetative management tool within the existing cattle lease area. (August 2012- August 2014) <i>Comment: Low intensity cattle grazing continues to be used as a vegetative management tool within the existing cattle lease area.</i>	100%
Objective 12: Continue to conduct prescribed burning on approximately 20,000 acres per year of fire-adapted natural communities. (August 2012- August 2022) <i>Comment: FWC staff continues to conduct prescribed burning on all fire-adapted natural communities.</i>	100%
Objective 13: Continue to conduct habitat/natural community improvement on 100 acres per year (dry prairie and mesic flatwoods habitat in management unit 60). (August 2012- August 2022) <i>Comment: Habitat/natural community improvements by FWC staff continue on dry prairie and mesic flatwoods habitat at a rate of 100 acres per year.</i>	100%

Objective 14: Continue to conduct habitat/natural community restoration activities on 300 acres of ground cover restoration (37.5 average acres annually) on Sunset Ranch and Lucky L Ranch. (August 2012- August 2022) <i>Comment: Habitat/natural community restoration activities continue on Sunset Ranch and Lucky L Ranch.</i>	100%
Objective 15: For the purposes of habitat restoration, conduct a timber harvest of offsite slash pine on ~700 acres. (August 2012- August 2022) <i>Comment: Timber harvest of offsite slash pine was completed on ~700 acres between the summer of 2014 and winter of 2017.</i>	100%
Objective 16: Continue to plant longleaf pine seedlings in completed ground cover restoration areas (~50 acres annually) as appropriate. (August 2012- August 2022) <i>Comment: FWC staff continues to plant longleaf pine seedlings as appropriate.</i>	100%
Objective 17: Continue to monitor vegetation parameters within natural communities to ensure management efforts are achieving OBVM established desired future conditions. (August 2012- August 2022) <i>Comment: FWC staff continues to monitor vegetation parameters to achieve OBVM established desired future conditions.</i>	100%
Objective 18: Continue to utilize low intensity cattle grazing as a vegetative management tool within the existing cattle lease area. (August 2012- August 2022) <i>Comment: Low intensity cattle grazing continues to be used as a vegetative management tool within the existing cattle lease area.</i>	100%
Imperiled Species Habitat Maintenance, Enhancement, Restoration, or Population Restoration Goal 2: Maintain, improve, or restore imperiled species populations and habitats.	
Objective 1: Develop and implement a WCPR strategy for imperiled and focal species to include monitoring of six species; Florida grasshopper sparrow, RCW, snail kite, whooping crane, bald eagle, and Florida scrub-jay. (August 2012- August 2014) <i>Comment: WCPR strategy was developed and implemented October 2014.</i>	100%
Objective 2: Continue to monitor extant RCW clusters. (August 2012- August 2014) <i>Comment: FWC staff continues to monitor extant RCW clusters.</i>	100%
Objective 3: Continue to conduct annual point-count surveys for Florida scrub-jay in designated scrub-jay monitoring areas; look for expansion of scrub-jays into suitable scrub habitat. (August 2012- August 2014) <i>Comment: FWC staff continues to conduct annual point-count surveys for Florida scrub-jay.</i>	100%

Objective 4: To coordinate timing of land management activities, continue to monitor up to 25 bald eagle nests. (August 2012- August 2014) <i>Comment: FWC staff continues to monitor bald eagle nests to coordinate timing of land management activities.</i>	100%
Objective 5: To augment RCW nesting, install artificial tree cavities as necessary and where appropriate. (August 2012- August 2014) <i>Comment: FWC staff continues to install artificial tree cavities to augment RCW nesting.</i>	100%
Objective 6: Continue to conduct annual point-count surveys for Florida grasshopper sparrow on the Highway 60 unit and the Prairie Lakes Island Unit; monitor for expansion of sparrows into suitable habitat. (August 2012- August 2014) <i>Comment: FWC staff continues to conduct surveys and monitor for Florida grasshopper sparrows.</i>	100%
Objective 7: Coordinate with the University of Florida to monitor snail kite nesting activity. (August 2012- August 2014) <i>Comment: FWC staff continues to coordinate with the UF to monitor snail kite nesting activity.</i>	100%
Objective 8: Continue to monitor whooping crane nesting activity. (August 2012- August 2014) <i>Comment: FWC staff continues monitoring efforts but found no nesting activity of whooping cranes during this planning period.</i>	100%
Objective 9: Continue to collect opportunistic wildlife species occurrence data. (August 2012- August 2014) <i>Comment: FWC staff continues to collect opportunistic wildlife species occurrence data.</i>	100%
Objective 10: Continue to implement WCPR strategy by managing identified habitats and monitoring identified species. (August 2012- August 2022) <i>Comment: FWC staff continues to implement WCPR strategy.</i>	100%
Objective 11: If determined to be necessary by the WCPR strategy, conduct a gopher tortoise population density survey and assessment at least once every five years. (August 2012- August 2022) <i>Comment: A gopher tortoise baseline was completed, but it was determined that no additional surveys or assessments were necessary.</i>	100%
Objective 12: Continue to monitor extant RCW clusters. (August 2012- August 2022) <i>Comment: FWC staff continues to monitor extant RCW clusters.</i>	100%
Objective 13: To augment RCW nesting, continue to install artificial tree cavities as necessary and where appropriate. (August 2012- August 2022) <i>Comment: FWC staff continues to install artificial tree cavities to augment RCW nesting.</i>	100%

Objective 14: Continue to conduct annual point-count surveys for Florida grasshopper sparrow on the Highway 60 unit and the Prairie Lakes Island Unit; look for expansion of sparrows into suitable habitat. (August 2012- August 2022) <i>Comment: FWC staff continues to conduct Florida grasshopper sparrow surveys.</i>	100%
Objective 15: Pursuant to development of the WCPR strategy, investigate the feasibility of expanding population through translocation of Florida grasshopper sparrow. (August 2012- August 2022) <i>Comment: The feasibility of expanding the Florida grasshopper sparrow population through translocation has been investigated and implemented through the Fish and Wildlife Research Institute (FWRI).</i>	100%
Objective 16: Continue to coordinate with the University of Florida to monitor snail kite nesting activity. (August 2012- August 2022) <i>Comment: FWC staff continues to work with UF to monitor snail kite nesting activity.</i>	100%
Objective 17: Continue to monitor whooping crane nesting activity. (August 2012- August 2022) <i>Comment: FWC staff found no nesting activity of whooping cranes.</i>	100%
Objective 18: Continue to collect opportunistic wildlife species occurrence data. (August 2012- August 2022) <i>Comment: FWC staff continues to collect opportunistic wildlife species occurrence data.</i>	100%
Other Game and Non-game Wildlife Habitat Maintenance, Enhancement, Restoration, or Population Restoration. Goal 3: Maintain, improve, or restore game and non-game species populations and habitats.	
Objective 1: Continue to conduct annual spring and fall point-count surveys for Northern bobwhite. (August 2012- August 2014) <i>Comment: FWC staff continues to conduct annual surveys for Northern bobwhite.</i>	100%
Objective 2: Continue to collect biological harvest data at check station for species including white-tailed deer, wild turkey, wild hogs and Northern bobwhite. (August 2012- August 2014) <i>Comment: FWC staff continues to collect biological harvest data for specified species.</i>	100%
Objective 3: Continue to collect opportunistic wildlife occurrence data. (August 2012- August 2014) <i>Comment: FWC continues to collect opportunistic wildlife occurrence data.</i>	100%

Objective 4: In cooperation with the USFWS, continue to trap and band mourning doves annually. (August 2012- August 2014) <i>Comment: FWC staff continues to work in cooperation with U.S. Fish and Wildlife Service (USFWS) to trap and band mourning doves.</i>	100%
Objective 5: Continue to monitor 55 bluebird nesting boxes annually. (August 2012- August 2014) <i>Comment: FWC staff continues to monitor bluebird nesting boxes.</i>	100%
Objective 6: Continue to monitor 5 bat houses. (August 2012- August 2014) <i>Comment: FWC staff continues to monitor bat houses.</i>	100%
Objective 7: Continue to monitor 34 wood duck nesting boxes. (August 2012- August 2014) <i>Comment: FWC staff continues to monitor wood duck nesting boxes.</i>	100%
Objective 8: Continue to monitor 8 American kestrel boxes. (August 2012- August 2014) <i>Comment: FWC staff continues to monitor American kestrel boxes.</i>	100%
Objective 9: Initiate a small mammal inventory. (August 2012- August 2014) <i>Comment: FWC staff completed a small mammal inventory in the dry prairie community and the results were uploaded to the shared agency database for recording and monitoring species.</i>	100%
Objective 10: Continue to inventory amphibians and reptiles. (August 2012- August 2014) <i>Comment: FWC staff inventory amphibians and reptiles via opportunistic observations.</i>	100%
Objective 11: Continue to conduct annual spring and fall point-count surveys for Northern bobwhite. (August 2012- August 2022) <i>Comment: FWC staff continues to conduct annual surveys for Northern bobwhite.</i>	100%
Objective 12: Continue to collect biological harvest data at check station for species including white-tailed deer, wild turkey, wild hogs and Northern bobwhite. (August 2012- August 2022) <i>Comment: FWC staff continues to collect biological harvest data of specified species.</i>	100%
Objective 13: Continue to collect opportunistic wildlife occurrence data. (August 2012- August 2022) <i>Comment: FWC staff continues to collect opportunistic wildlife occurrence data.</i>	100%
Objective 14: In cooperation with the USFWS, continue to trap and band mourning doves annually. (August 2012- August 2022) <i>Comment: FWC staff continues to trap and band mourning doves in cooperation with USFWS.</i>	100%

Objective 15: Continue to monitor 55 bluebird nesting boxes annually. (August 2012- August 2022) <i>Comment: FWC staff continues to monitor bluebird boxes on the area.</i>	100%
Objective 16: Continue to monitor 5 bat houses. (August 2012- August 2022) <i>Comment: FWC staff continues to monitor bat houses on the area.</i>	100%
Objective 17: Continue to monitor 34 wood duck nesting boxes. (August 2012- August 2022) <i>Comment: FWC staff continues to monitor wood duck nesting boxes.</i>	100%
Objective 18: Continue to monitor 8 American kestrel boxes. (August 2012- August 2022) <i>Comment: FWC staff continues to monitor American kestrel boxes.</i>	100%
Objective 19: Continue to conduct a small mammal inventory. (August 2012- August 2022) <i>Comment: FWC staff conducted a small mammal inventory in fiscal year 2015/2016. FWC staff continues to inventory small mammals via opportunistic observations.</i>	100%
Objective 20: Continue to inventory amphibian and reptiles. (August 2012- August 2022) <i>Comment: FWC staff continues to inventory amphibians and reptiles via opportunistic observations.</i>	100%
Public Access and Recreational Opportunities Goal 4: Provide public access and recreational opportunities.	
Objective 1: Maintain public access and recreational opportunities to allow for a recreational carrying capacity of 1,563 visitors per day. (August 2012- August 2014) <i>Comment: FWC staff continues to maintain access and recreational opportunities to allow for the area's carrying capacity.</i>	100%
Objective 2: Continue to provide 14 interpretive signs, website, three two panel kiosks, trail brochure for Sunset Ranch, bird list, recreation guide for the Prairie Lakes Unit, and driving tour guide for interpretation and education. (August 2012- August 2014) <i>Comment: FWC staff continues to provide interpretive and educational information for the TLWMA.</i>	100%
Objective 3: Continue to provide hunting opportunities for deer, turkey, small game, waterfowl, and wild hogs. (August 2012- August 2014) <i>Comment: FWC staff continues to provide hunting opportunities for a variety of species.</i>	100%
Objective 4: Continue to provide fishing opportunities on appropriate water bodies including borrow pits, Lake Jackson, Parker Slough, and Lake Marian via canoe/kayak access from Parker Slough. (August 2012- August 2014) <i>Comment: FWC staff continues to provide fishing opportunities in established, appropriate water bodies.</i>	100%

Objective 5: Continue to provide paddling opportunities including boat ramp at Lake Jackson, Jackson Canal canoe and kayak access to Lake Kissimmee, and Parker Slough canoe and kayak access to Lake Marian. (August 2012- August 2014) <i>Comment: FWC staff continues to provide paddling opportunities on established, appropriate water bodies.</i>	100%
Objective 6: Implement a Recreation Master Plan (RMP) in coordination with Triple N Ranch and Herky Huffman/Bull Creek WMAs. (August 2012- August 2014) <i>Comment: An RMP was implemented in coordination with adjacent WMA's.</i>	100%
Objective 7: Continue to participate in interpretive/education programs. (August 2012- August 2014) <i>Comment: FWC staff continues to participate in interpretive/education programs.</i>	100%
Objective 8: Continue to coordinate with U.S. Forest Service, DEP, and Florida Trail Association (FTA) to improve connectivity of the Florida National Scenic Trail (FNST). (August 2012- August 2014) <i>Comment: FWC staff continues to coordinate with associated agencies to improve the FNST connectivity.</i>	100%
Objective 9: Continue to coordinate with FTA to maintain 39 miles of trails within TLWMA. (August 2012- August 2014) <i>Comment: FWC staff continues to coordinate with the FTA to maintain trails.</i>	100%
Objective 10: Monitor trails biannually for visitor impacts. (August 2012- August 2014) <i>Comment: FWC staff continues to monitor trails for visitor impacts.</i>	100%
Objective 11: Investigate feasibility of designating TLWMA portion of the Florida National Scenic Trail as a multi-use trail. (August 2012- August 2014) <i>Comment: The investigation by FWC staff found designating the TLWMA portion of the FNST as a multi-use trail was not feasible.</i>	100%
Objective 12: Continue to maintain public access and recreational opportunities to allow for a recreational carrying capacity of 1,563 visitors per day. (August 2012- August 2022) <i>Comment: FWC staff continues to maintain access and recreational opportunities to allow for the area's carrying capacity.</i>	100%
Objective 13: Cooperate with other agencies, Osceola County, stakeholders, and regional landowners to investigate regional recreational opportunities including linking hiking and multi-use trail systems between adjacent public areas. (August 2012- August 2022) <i>Comment: This was not found to be feasible as there are no directly adjacent public areas.</i>	0%

Objective 14: Continue to monitor trails biannually for visitor impacts. (August 2012- August 2022) <i>Comment: FWC staff continues to monitor trails for visitor impacts.</i>	100%
Objective 15: Reassess recreational opportunities every three years. (August 2012- August 2022) <i>Comment: FWC staff reassess recreational opportunities every three years.</i>	100%
Objective 16: Continue to provide hunting opportunities for deer, turkey, small game, waterfowl, and wild hogs. (August 2012- August 2022) <i>Comment: FWC staff continues to provide hunting opportunities for specific species.</i>	100%
Objective 17: Continue to provide paddling opportunities including boat ramp at Lake Jackson, Jackson Canal canoe and kayak access to Lake Kissimmee, and Parker Slough canoe and kayak access to Lake Marian. (August 2012- August 2022) <i>Comment: FWC staff continues to provide paddling opportunities on available and appropriate water bodies.</i>	100%
Objective 18: Continue to coordinate with U.S. Forest Service, DEP, and FTA to improve connectivity of the Florida National Scenic Trail. (August 2012- August 2022) <i>Comment: FWC staff continues to coordinate with other agencies to improve the FNST connectivity.</i>	100%
Objective 19: Continue to participate in interpretive and education programs. (August 2012- August 2022) <i>Comment: FWC staff continues to participate in interpretive and education programs.</i>	100%
Objective 20: Continue to identify partnerships that could provide for environmental educational programs and outreach. (August 2012- August 2022) <i>Comment: FWC staff continues to identify partnerships to provide educational programs and outreach.</i>	100%
Hydrological Preservation and Restoration Goal 5: Protect water quality and quantity, restore hydrology to the extent feasible, and maintain the restored condition.	
Objective 1: Complete Phase III of the ongoing hydrological assessment to identify potential hydrology restoration needs, including Fodderstack Slough, and other hydrological systems within the Kissimmee River basin. (August 2012- August 2014) <i>Comment: Phase III of the ongoing hydrologic assessment has been completed.</i>	100%
Objective 2: To maintain and enhance natural hydrological functions, install and maintain low-water crossings and culverts as appropriate. (August 2012- August 2014)	100%

<i>Comment: FWC staff continues to install and maintain low-water crossings and culverts as appropriate to enhance hydrological functions.</i>	
Objective 3: Replace the G113 water structure to provide a more natural flow regime through Fodderstack Slough. (August 2012- August 2014) <i>Comment: The G113 water structure was replaced and a weir in Fodderstack slough was constructed.</i>	100%
Objective 4: Continue to maintain 2 water control structures (G113 and G111). (August 2012- August 2014) <i>Comment: FWC staff continues to maintain two water control structures.</i>	100%
Objective 5: Within the Kissimmee River basin of TLWMA, implement Phase IV of the ongoing hydrological assessment including restoring natural hydrology to former rice fields and Fodderstack Slough, plugging or backfilling ditches north of Canoe Creek Road, and potential plugging of the Ford and Dead canals. (August 2012- August 2022) <i>Comment: Phase IV of the ongoing hydrological assessment was implemented.</i>	100%
Objective 6: To enhance natural hydrological functions, continue to install and maintain low-water crossings and culverts as appropriate. (August 2012- August 2022) <i>Comment: FWC staff continues to install and maintain low-water crossings and culverts as appropriate to enhance hydrological functions.</i>	100%
Forest Resource Management Goal 6: Manage timber resources to improve or restore natural communities for the benefit of wildlife.	
Objective 1: Continue to consult with the FFS or a professional forestry consultant regarding forest management activities as appropriate. (August 2012- August 2014) <i>Comment: FWC staff continues to consult with the FFS/professional forestry consultants.</i>	100%
Objective 2: Continue to consult with the FFS or a professional forestry consultant regarding forest management activities as appropriate. (August 2012- August 2022) <i>Comment: FWC staff continues to consult with the FFS/professional forestry consultants.</i>	100%
Exotic and Invasive Species Maintenance and Control Goal 7: Remove exotic and invasive plants and animals and conduct needed maintenance- control.	
Objective 1: Continue to annually treat ~600 acres of EPPC Category I and Category II invasive exotic plant species including pasture areas of Lucky L Ranch, Sunset Ranch, and U.S. Justice tracts. (August 2012- August 2014)	100%

<i>Comment: FWC staff continues to annually treat EPPC Category I and II invasive and exotic plant species.</i>	
Objective 2: Continue to implement control measures on one exotic and nuisance animal species (wild hog). (August 2012- August 2014) <i>Comment: FWC staff continues to implement control measures of wild hog.</i>	100%
Objective 3: Continue to implement control hydrilla methods on Lake Jackson. (August 2012- August 2014) <i>Comment: FWC staff continues to implement control methods of hydrilla on Lake Jackson.</i>	100%
Objective 4: Continue to coordinate with EPPC Working Group to fund and schedule control measures for exotic plant species. (August 2012- August 2014) <i>Comment: FWC staff continues to coordinate with the EPPC Working Group to control exotic plant species.</i>	100%
Objective 5: Continue to annually treat ~600 acres of EPPC Category I and Category II invasive exotic plant species including pasture areas of Lucky L Ranch, Sunset Ranch, and U.S. Justice tracts. (August 2012- August 2022) <i>Comment: FWC staff continues to annually treat EPPC Category I and II invasive and exotic plant species.</i>	100%
Objective 6: Periodically survey dome swamps and strand swamps for the occurrence of exotic plant species including lygodium. (August 2012- August 2022) <i>Comment: FWC staff continues to periodically survey dome and strand swamps for occurrences of exotic plant species including lygodium.</i>	100%
Objective 7: Continue to implement control hydrilla methods on Lake Jackson. (August 2012- August 2022) <i>Comment: FWC staff continues to implement control methods of hydrilla on Lake Jackson.</i>	100%
Objective 8: Continue to coordinate with EPPC Working Group to fund and schedule control measures for exotic plant species. (August 2012- August 2022) <i>Comment: FWC staff has not participated in the EPPC Working Group in recent years, however FWC staff is highly involved with the FWC's invasive plant management section which has funds being made available for control of exotic and invasive plant species.</i>	100%
Capital Facilities and Infrastructure	
Goal 8: Develop the capital facilities and infrastructure necessary to meet the goals and objectives of this management plan.	
Objective 1: Continue to maintain 28 facilities. (August 2012- August 2014) <i>Comment: FWC staff continues to maintain facilities.</i>	100%
Objective 2: Maintain 75.4 miles of public access roads. (August 2012- August 2014) <i>Comment: FWC staff continues to maintain public access roads.</i>	100%

Objective 3: Continue to coordinate with FTA to maintain 39 miles of trails existing on site. (August 2012- August 2014) <i>Comment: FWC staff continues to coordinate with the FTA to maintain trails.</i>	100%
Objective 4: Improve or repair 14 (50%) facilities. (August 2012- August 2014) <i>Comment: FWC staff made improvements and repairs to 50% of facilities.</i>	100%
Objective 5: Improve or repair ~6 miles of roads. (August 2012- August 2014) <i>Comment: FWC staff made improvements and repairs to roads.</i>	100%
Objective 6: Improve ~1.8 miles of existing service road to the north of the U.S. Justice tract, and ~1.2 miles of road to the west of the Sunset Ranch Tract to allow for all season management and public access. (August 2012- August 2014) <i>Comment: FWC staff made road improvements to allow for all season management and public access.</i>	100%
Objective 7: Monitor trails and infrastructure biannually for visitor impacts. (August 2012- August 2022) <i>Comment: FWC staff continues to monitor trails and infrastructure for visitor impacts.</i>	100%
Objective 8: Continue to maintain 28 facilities. (August 2012- August 2022) <i>Comment: FWC staff continues to maintain facilities.</i>	100%
Objective 9: Continue to maintain 75.4 miles of public access roads. (August 2012- August 2022) <i>Comment: FWC staff continues to maintain public access roads.</i>	100%
Objective 10: Continue to maintain 39 miles of trails within TLWMA. (August 2012- August 2022) <i>Comment: FWC staff continues to maintain trails within the TLWMA.</i>	100%
Objective 11: Continue to improve or repair all 28 (100%) facilities. (August 2012- August 2022) <i>Comment: FWC staff continues to improve or repair facilities.</i>	100%
Objective 12: Improve or repair ~25 miles of roads. (August 2012- August 2022) <i>Comment: FWC staff continues to improve or repair roads as appropriate.</i>	100%
Cultural and Historical Resources	
Goal 9: Protect, preserve, and maintain the cultural resources of the TLWMA.	
Objective 1: Pursuant to recommendations by the DHR, monitor, protect, and preserve as necessary up to 25 identified sites. (August 2012- August 2014) <i>Comment: FWC staff continues to monitor, protect and preserve up to 25 identified sites per the Division of Historical Resources (DHR).</i>	100%
Objective 2: If determined to be necessary by DHR, contract for a cultural and archaeological resources survey. (August 2012- August 2014)	100%

<i>Comment: FWC staff has contracted for a cultural and archaeological resources survey as recommended by the DHR.</i>	
Objective 3: Monitor the 25 known recorded sites and submit updates of additional sites to DHR for inclusion in their Master Site file. (August 2012- August 2014) <i>Comment: FWC staff continues to monitor sites and submit updates to the DHR.</i>	100%
Objective 4: Ensure management staff has DHR Archaeological Resources Monitoring training. (August 2012- August 2014) <i>Comment: FWC staff continues to complete DHR Archaeological Resources Monitoring training as needed.</i>	100%
Objective 5: Follow DHR's Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties for the management of cultural and historic resources. (August 2012- August 2014) <i>Comment: FWC staff continues to follow the DHR's Management Procedures.</i>	100%
Objective 6: Cooperate with DHR or trained FWC staff in designing site plans for development of infrastructure. (August 2012- August 2022) <i>Comment: FWC staff continues to cooperate with the DHR in designing site plans for development of infrastructure.</i>	100%
Objective 7: Pursuant to recommendations by DHR, continue to monitor, protect, and preserve as necessary all identified sites. (August 2012- August 2022) <i>Comment: FWC staff continues to monitor, protect and preserve identified sites per the DHR recommendations.</i>	100%
Objective 8: Continue to monitor the 25 known recorded sites and submit updates of additional sites to DHR for inclusion in their Master Site file. (August 2012- August 2022) <i>Comment: FWC staff continues to monitor and submit updates to the DHR.</i>	100%
Objective 9: Continue to coordinate with DHR for cultural resource management guideline training for new FWC staff. (August 2012- August 2022) <i>Comment: FWC staff continues to coordinate with the DHR for cultural resource management training of new staff.</i>	100%
Objective 10: Continue to follow DHR's Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties for the management of cultural and historic resources. (August 2012- August 2022) <i>Comment: FWC staff continues to follow the DHR's procedures.</i>	100%
Research Opportunities	
Goal 10: Explore and pursue cooperative research opportunities.	

Objective 1: Develop a baseline knowledge base and data inventory; coordinate with cooperators and partners to identify information gaps. (August 2012- August 2014) <i>Comment: FWC staff continues to develop a baseline knowledge base and data inventory, as well as coordinate with partners in that endeavor.</i>	100%
Objective 2: Continue to cooperate with the University of Florida (UF) to monitor snail kite nesting activity. (August 2012- August 2014) <i>Comment: FWC staff continues to cooperate with UF to monitor snail kite nesting activity.</i>	100%
Objective 3: Continue to cooperate with UF's vegetative chopping/burning avian study. (August 2012- August 2014) <i>Comment: FWC staff continues to cooperate with UF's avian study.</i>	100%
Objective 4: As appropriate, continue to participate in the Tall Timbers Upland Ecosystem Restoration Project. (August 2012- August 2014) <i>Comment: FWC staff continues to participate in the Tall Timbers Upland Ecosystem Restoration Project.</i>	100%
Objective 5: Investigate the feasibility of partnering with UF to assist with research pertaining to their \$20 million climate change grant. (August 2012- August 2014) <i>Comment: FWC staff have investigated the feasibility of a partnership with UF assisting with climate change research.</i>	100%
Objective 6: As appropriate, explore and pursue additional cooperative research opportunities with universities and other research entities. (August 2012- August 2022) <i>Comment: FWC staff continues to explore and pursue cooperative research opportunities with universities and other research entities.</i>	100%
Objective 7: Continue to cooperate with the UF to monitor snail kite nesting activity. (August 2012- August 2022) <i>Comment: FWC staff continues to cooperate with UF to monitor snail kite nesting activity.</i>	100%
Objective 8: Continue to cooperate with UF's vegetative chopping/burning avian study. (August 2012- August 2022) <i>Comment: FWC staff continues to cooperate with UF's avian study</i>	100%
Objective 9: As appropriate, continue to participate in the Tall Timbers Upland Ecosystem Restoration Project. (August 2012- August 2022) <i>Comment: FWC staff continues to participate in the Tall Timbers Upland Ecosystem Restoration Project.</i>	100%
Land Conservation and Stewardship Partnerships Goal 11: Enhance wildlife conservation, resource and operational management through development of an Optimal Conservation Planning Boundary and a Conservation Action Strategy.	
Objective 1: Identify potential important wildlife habitat, landscape-scale linkages, wildlife corridors and operational/resource management. (August 2012- August 2014)	100%

<i>Comment: During the development of the TLWMA Management Plan, the FWC develops an OCPB (Optimal Conservation Planning Boundary) for the area to determine potential habitat and resource needs to further enhance the area.</i>	
Objective 2: Continue to identify and pursue acquisition needs and conservation stewardship partnerships. (August 2012- August 2014) <i>Comment: FWC staff continue to work to identify and pursue any potential conservation acquisition needs and regularly interact with adjoining landowners and other agencies and assess potential conservation stewardship partnerships.</i>	100%
Objective 3: Develop and maintain a GIS shapefile and other necessary data to facilitate nominations from the FWC optimal boundary for FWC's Landowner Assistance and Land Acquisition Programs. (August 2012- August 2014) <i>Comment: The FWC continues to maintain a GIS shapefile and geodatabase to further assist acquisition program needs and potential partnership programs.</i>	100%
Objective 4: Develop a Conservation Action Strategy. (August 2012- August 2014) <i>Comment: The FWC has developed a Conservation Action Strategy for the TLWMA.</i>	100%
Objective 5: Contact and inform adjoining landowners about the FWC Landowners Assistance Program to pursue non-acquisition conservation stewardship partnerships. (August 2012- August 2014) <i>Comment: FWC staff regularly discusses the voluntary Landowner's Assistance Program with multiple adjoining landowners.</i>	100%
Objective 6: Determine which parcels should be nominated for addition to the FWC acquisition list. (August 2012- August 2014) <i>Comment: FWC staff developed an OCPB for the TLWMA, and the FWC has identified nominations to the FWC Additions and Inholdings list that will be completed before the end of this planning period and implement into the updated management plan.</i>	100%
Objective 7: Identify potential non-governmental organization partnerships and grant program opportunities. (August 2012- August 2014) <i>Comment: The FWC continues to work towards identifying partnerships and grant opportunities as needed and appropriate.</i>	100%
Objective 8: Determine efficacy of conducting an adjacent landowner's assistance/conservation stewardship partnership workshop. (August 2012- August 2014) <i>Comment: The FWC assessed the need and feasibility of a landowner's assistance/conservation stewardship partnership workshop and determined it unnecessary at this time.</i>	100%
Objective 9: To minimize fragmentation of the area, continue to identify strategic parcels to revise the completed optimal boundary for TLWMA as deemed necessary. (August 2012- August 2022)	100%

<i>Comment: During the development of the TLWMA Management Plan, the FWC develops an OCPB for the area to determine potential habitat and resource needs to further enhance the area, and the FWC continues to maintain and revise this boundary as necessary.</i>	
Objective 10: Continue to maintain a GIS shapefile and other necessary data to facilitate nominations from the FWC optimal boundary for the FWC Landowner Assistance Program and for the Land Acquisition Program. (August 2012- August 2022) <i>Comment: The FWC continues to maintain a GIS shapefile and geodatabase to further assist acquisition program needs and potential partnership programs.</i>	100%
Objective 11: Continue to determine which nominated parcels should be added to the FWC acquisition list. (August 2012- August 2022) <i>Comment: FWC staff developed an OCPB for the TLWMA, and the FWC has identified nominations to the FWC Additions and Inholdings list that will be completed before the end of this planning period and included in the updated management plan.</i>	100%
Objective 12: Propose nominations of selected properties as additions to the FWC acquisition list. Pursue acquisition of parcels added to the FWC acquisition list as acquisition work plan priorities and funding allow. (August 2012- August 2022) <i>Comment: FWC staff developed an OCPB for the TLWMA, and the FWC has identified nominations to the FWC Additions and Inholdings list that will be completed before the end of this planning period and included in the updated management plan.</i>	100%
Objective 13: Pursue acquisition of parcels added to the FWC acquisition list as acquisition work plan priorities and funding allow. (August 2012- August 2022) <i>Comment: FWC staff continues to work to identify and pursue any potential conservation acquisition needs.</i>	100%
Objective 14: Periodically (at least every three to five years) continue to contact and meet with adjacent landowners for willingness to participate in the Conservation Action Strategy. Coordinate landowner assistance/ conservation stewardship partnership workshop as deemed appropriate. (August 2012- August 2022) <i>Comment: FWC staff regularly interact with multiple adjoining landowners and talk with them about the voluntary Landowners Assistance Program, and the Conservation Action Strategy for this area has been developed.</i>	100%
Objective 15: Coordinate landowner assistance/conservation stewardship partnership workshop as deemed appropriate. (August 2012- August 2022) <i>Comment: The FWC assessed the need and feasibility of a landowner's assistance/conservation stewardship partnership workshop and determine it unnecessary at this time.</i>	100%

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 the TLWMA 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 the TLWMA. 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 section 259.032, F.S. According to statute, the review team "shall evaluate the extent to which the existing management plan provides sufficient protection to threatened or endangered species, unique or important natural or physical features, geological or hydrological functions or archaeological features. The review shall also evaluate the extent to which the land is being managed for the purposes for which it was acquired and the degree to which actual management practices, including public access, are in compliance with the adopted management plan."

A land management review of the TLWMA was conducted in August of 2019, and the results of that review and the FWC responses to recommendations are included as Appendix 12.16. It was determined that the TLWMA 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 the TLWMA.

5.2.1 Monitoring

A well-developed monitoring protocol is also one of the principal, required criteria for the management of the TLWMA. 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 locally important fish and wildlife species, monitoring protocols are established through the 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 the FWC's Public Access Services Office (PASO) 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 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 TLWMA 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, PASO, Recreation Master Plans, etc.) underway to accomplish needed conservation actions that are planned to manage the natural resources of the TLWMA 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 the TLWMA, the FWC will focus on managing for native habitat diversity, emphasizing maintenance of high-quality natural communities and restoration of altered or degraded areas. Restoration may be achieved on degraded 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. The TLWMA has high-quality native communities including dry prairie, mesic flatwoods, dome swamp, wet prairie, mesic hammock and depression marsh that the FWC will continue to manage and protect. On degraded upland sites, the FWC intends to continue natural community restoration as necessary and appropriate.

FNAI has conducted surveys and mapped the current vegetative communities on the TLWMA. Historic vegetative community mapping on the TLWMA was deemed unnecessary as the current natural communities are believed to be consistent with historic conditions. 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. 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, FWC land managers will identify those natural communities that will influence and guide management decisions, known as the actively managed natural communities. Through OBVM monitoring, the FWC collects data on specific vegetation attributes that provide insight about the condition of the natural community. Because the 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 actively managed dominant natural communities. 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 provide 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

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, mesic flatwoods and other plant communities at the TLWMA would follow a successional pattern through mixed pine-hardwood forests to an exclusively hardwood community. Land managers use prescribed fire as the key tool to maintain the plant communities in their natural condition, but the dominant role of fire in controlling hardwoods is equally important in either ecosystem.

The FWC employs a fire management regime to increase both species and habitat diversity and will continue a prescribed burning program on the TLWMA 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 managed lands, 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. 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 if not done properly. Therefore, its application will be limited to situations where necessary and appropriate.

Whenever possible, existing firebreaks such as roads and trails, as well as natural breaks such as creeks and wetlands, will be used to define prescribed burn units. Disk harrows, mowing and foam lines will be used if 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 2-4 years, preferably during the spring and early summer months.

During the previous 10-year planning period, 100% of the area's fire adapted communities have been treated with prescribed fire. Additionally, 100% of the fire-adapted communities are maintained within the recommended fire return intervals. As detailed in the goals and objectives in Section 6 below, the FWC plans to conduct prescribed burning on 100% of the area's fire adapted communities resulting in 100% of the area being maintained within the recommended fire return intervals during this planning period. Potential projected challenges with continuing to successfully implement prescribed fire on the area are described further in Section 7. The continuing benefits of prescribed fire on the area's wildlife habitats along with other ongoing habitat restoration activities that are being implemented on TLWMA are discussed in more detail below.

In addition to the general prescribed fire management guidelines described above, an area-specific Prescribed Fire Plan has been developed and will continue to be implemented and updated for the TLWMA (Appendix 12.12). This plan includes, but not limited to, delineation of burn management units, detailed descriptions of prescribed fire methodology, safety and smoke management guidelines.

5.3.3 Habitat Restoration

Significant habitat management activities have taken place within many of the natural communities of the TLWMA over the course of the previous management period beginning in 2012. Since 2012 all management units with fire-adapted natural communities have been treated with prescribed fire, most on a repeated basis as established within the management plan. This has aided in the restoration of native ground cover and improved wildlife habitat throughout TLWMA. In addition to conducting prescribed burning, roller-chopping and mowing has been conducted on dry prairie and mesic flatwoods to further improve the habitat value of the natural communities at the TLWMA and encourage better habitat conditions for a variety of wildlife. Within the dry prairie, oaks and cabbage palms were cut to mitigate for previous fire suppression and hydrological alterations, to allow for increased sunlight, promote grassy ground cover species and encourage habitat conditions for the Florida grasshopper sparrow. Additionally, timber harvesting has been conducted to improve natural community structure and habitat value for wildlife such as the red-cockaded woodpeckers. The TLWMA has a total of 9 groundcover restoration plots, totaling approximately 298 acres. Activities on these areas include, but are not limited to, native plantings, exotic and invasive plant removal and prescribed fire.

FWC employs OBVM to describe the structural character of managed natural communities, allowing FWC staff to make informed management decisions. Continuing habitat

management activities on the TLWMA will focus on enhancing natural communities, restoring altered communities, maintaining recommended fire return intervals for fire adapted communities, treating and removing exotic and invasive plant species and controlling vegetation through mowing and roller chopping as needed. Chemical and mechanical treatments may also be implemented in some select hardwood habitats in the successional hardwood forest and mesic flatwoods in order to restore these areas to an earlier successional condition. Exotic and invasive species control is more extensively discussed in Section 5.5, below. Further specific habitat management and improvement objectives planned for TLWMA are described in Section 6 below.

5.4 Fish and Wildlife Management, Imperiled and Locally Important 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 and common game and non-game species, can be found on the TLWMA. 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 dry prairie, mesic flatwoods, dome swamp, wet prairie, mesic hammock and depression marsh. Natural communities that are less represented on the TLWMA include scrubby flatwoods, scrub and floodplain marsh.

The size and natural community diversity of the TLWMA 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, the TLWMA provides resources critical to many migratory birds including waterfowl, passerines, raptors and others. Habitats important to migratory species will be protected, maintained or enhanced.

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, 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.

During wildlife monitoring, an emphasis is placed on documenting the occurrence and abundance of imperiled, common and locally important 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 all 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.

5.4.2 Imperiled and Locally Important Species: Wildlife Conservation Prioritization and Recovery (WCPR)

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 FWC-managed areas. Restoring and maintaining the form and function of Florida's natural communities is the foundation of this management philosophy. The FWC uses the OBVM to monitor how specific vegetative parameters are responding to the FWC management and uses the WCPR program to ensure management is having the desired effect on wildlife.

The goal of the WCPR is to provide assessment, recovery and planning support for the FWC-managed areas to enhance management of locally important species and the recovery of imperiled species. The WCPR program objectives include prioritizing what the FWC does for imperiled and locally important species on the 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 (Appendix 12.13).

The WCPR program helps the FWC take a proactive, science-based approach to species management on the FWC-managed lands, 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 locally-important species which are the focus of the WCPR program. Staff combines these assessments with area-specific management considerations to develop a Species 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 identifies 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 fish and wildlife species (see <https://myfwc.com/media/1945/threatend-endangered-species.pdf>), as well as WCPR locally important species found on the area.

For the FWC-managed areas, the WCPR program helps assess imperiled and locally-important wildlife species needs and opportunities, prioritize what the FWC does for imperiled and locally-important 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, the FWC will facilitate fulfilling the needs of locally important and imperiled wildlife species on the TLWMA. In the long-term, by implementing these strategies on FWC-managed lands and continuing to assess wildlife species' needs, the FWC will continue to play an integral role in aiding the recovery of imperiled species and preventing the future imperilment of declining and currently stable wildlife species.

One of the focuses of conservation-minded management on the TLWMA is on the critically imperiled species populations in the mesic flatwoods and dry prairie, which takes a huge amount of coordination and cooperation among agency entities. Since area management focuses on natural community, rather than single-species management, area staff focus on maintaining habitat in a condition that benefits a suite of local species. Staff managed mesic flatwoods and dry prairie on a 1-3-year fire return interval, with an emphasis on areas that have imperiled species occupying them, which includes red-cockaded woodpeckers (RCW) and Florida grasshopper sparrows.

The TLWMA is identified as a support population, located within the South/Central Florida Recovery Unit in the Federal RCW Recovery Plan. In 2018-2019, the TLWMA had 128 confirmed woodpeckers, with 48 total potential breeding groups, 35 of which produced successful fledglings. Area biologists focused on natural cluster recruitment for RCWs and taking multi-area approach, growing-out the RCW population into the interior of the species footprint on the TLWMA. Personnel replaced and installed new artificial cavities to maintain quality roost sites throughout the property and to augment natural cavities within clusters. This effort also includes efforts to maintain the population, such as nest monitoring, banding, pairing single bird groups, and maintaining suitable habitat conditions around occupied clusters.

Area staff also monitor 174 points on the main dry prairie unit on the TLWMA, and 57 points on the large section of prairie north of the main prairie for Florida grasshopper sparrows. Recovery efforts on the TLWMA include captive-raised birds released on the area, building exclusion fencing and conducting predator-control efforts through coordination with FWRI and the US Fish & Wildlife Service. Responsibilities between area staff and these entities are clearly defined, and the intensive efforts will continue.

The FWC's conservation role on the area is ensuring RCW and Florida grasshopper sparrow work is growing local populations. As the area staff continues to make great strides in these efforts, the FWC will also be working towards conducting surveys to document other imperiled species on the areas through striped newt dip-netting, black rail callback surveys and inventory-style monitoring. More information on the wide range of monitoring, surveying and goals and objectives for management of the TLWMA's imperiled and locally important wildlife species can be found in the area's WCPR Strategy (Appendix 12.13).

The WCPR Strategy for the TLWMA was completed in October 2014 and is set to be updated during this planning period. In addition to the activities mentioned above, during the previous planning period, the following species were also monitored during the implementation of the Strategy: gopher frog, gopher tortoise, Bachman's sparrow, brown-headed nuthatch, Florida scrub-jay, Northern bobwhite and Southern bald eagle (nests). Surveys were also conducted for Eastern black rail, Eastern spotted skunk, butterflies and multiple bat species. The FWC monitored all existing nest boxes including eight southeastern American kestrel nest boxes, 47 Eastern bluebird nest boxes, 34 wood duck nest boxes and six bat houses during the previous planning period. In addition to implementing the Strategy during the next planning period, inventory-style monitoring of terrestrial taxa groups will be implemented at 10-year intervals in an effort to develop a comprehensive species list for the area. These imperiled species projects, along with other ongoing imperiled and locally important species management activities, will continue to be implemented in accordance with the TLWMA WCPR Species Management Strategy.

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 and II plants on the TLWMA. 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 TLWMA and which are treated annually by FWC include cogongrass, Caesar weed, hydrilla, natal grass, Brazilian pepper, Chinese tallow, torpedograss, hairy indigo, Brazilian pepper, alligator weed, Chinese tallow, Japanese climbing fern and old world climbing fern. Exotic and invasive plant species have been identified as occurring at varying densities on the TLWMA. However, the FWC's methodology for determining the number of acres "infested" with invasive and non-native plants only represents a cumulative acreage and does not reflect the degree of the invasive non-native occurrence. The degree of infestation among areas identified with invasive and non-native 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 and non-native plant occurrences, as well as treating any new occurrences as they are identified through continued monitoring.

Additionally, the FWC will continue efforts to control the introduction of exotic and invasive species, as well as pests and pathogens, on the TLWMA 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, the FWC implements a proactive approach to controlling the introduction of non-native pests and pathogens to the area.

Currently, maintenance and control of invasive and exotic plant species (Table 5) continues to be a significant management challenge at the TLWMA. During the previous 10-year planning period, the FWC continued to implement extensive exotic and invasive species control and maintenance activities throughout the TLWMA. These included exotic and invasive plant species treatments on a total of 8,747 acres on the area. The FWC will continue to focus control and maintenance activities on areas identified as having invasive and exotic plant occurrences, as well as treating any new occurrences as they are identified through continued monitoring activities. Ongoing invasive and exotic plant species objectives and challenges for the TLWMA are further detailed in Sections 6 – 7 below.

An exotic animal species of concern on the TLWMA 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. Feral hog populations are controlled by hunts during the archery, small game, general gun, muzzleloading gun seasons and during special hog hunts. Feral hog populations may also be controlled by trapping, as necessary, to aid in minimizing the negative impacts caused by feral hog populations on the area.

5.6 Public Access and Recreational Opportunities

5.6.1 Americans with Disabilities Act (ADA)

When public facilities are developed on areas managed by the 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 ADA⁴ 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 the TLWMA. To accomplish this, the FWC has worked with recreational stakeholders and the general public to develop a Recreation Master Plan for the TLWMA. The Recreation Master Plan will be used to further design and develop appropriate infrastructure that will support the recreational use of the area by the general public. Additionally, it includes planning for parking, trail design and area resource interpretation.

To facilitate wildlife viewing recreational opportunities on the area, FWC has continued to establish and maintain an observation tower and platforms, a viewing blind, boardwalk, and kiosks. During the previous 10-year planning period, the FWC completed several public access, recreational and facility improvements on the TLWMA, including improving or repairing several miles of roads and trails, and other facilities on the area. Further planned public access facility improvements are detailed in Section 6 below. Ongoing public access and recreational opportunity management challenges are addressed in Section 7 below. In addition, the FWC will continue to implement public access, recreational and educational opportunities on the area in accordance with the TLWMA Recreation Master Plan (Appendix 12.15).

5.6.3 Public Access Carrying Capacity

Baseline carrying capacities for users on the FWC-managed lands are established by conducting a site-specific sensitivity analysis using available data for the site. The intent of the carrying capacity analysis is to minimize wildlife and habitat disturbance and provide the experience of being “immersed in nature” that visitors to the FWC-managed areas desire. Carrying capacities are just a first step; management of recreational use requires a means of monitoring visitor impacts. Responding to these impacts may require adjusting the carrying capacities as necessary. The carrying capacities generated through this

process are used as a tool to help plan 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, the FWC has determined that the TLWMA can currently support 1,862 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 the TLWMA 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

The TLWMA is home to a variety of resident wildlife found within its dry prairie, mesic flatwoods and other natural communities. The TLWMA size and variety of habitat types create outstanding wildlife viewing opportunities. Additionally, wildlife viewing opportunities are projected to increase upon the completion of planned improvements for public access and wildlife viewing outlined in Section 6.9 of this plan.

5.6.5 Hunting

Currently, the TLWMA offers numerous hunting opportunities, including archery, small game, muzzleloading gun, general gun, general gun-dog, turkey, hog and migratory game birds.

5.6.6 Fishing

Fishing is authorized year-round at the TLWMA.

5.6.7 Roads and Trails

Currently, the TLWMA offers over 39.7 miles of marked, multi-use trails. There are approximately 116.30 miles of roads used and maintained by FWC staff for vehicular use, with 76.85 miles of these open to the public for vehicular access. Many of the area's marked and unmarked trails are along the maintenance roads used by FWC staff. All marked and unmarked trails are available to the public for hiking and biking use only. Roads and trails on the TLWMA are further depicted in Figure 16.

5.6.8 Hiking

Currently, the TLWMA offers nearly 39.7 miles of marked, multi-use trails that are available for hiking. The TLWMA trail network also connects to the FNST. A federally designated National Scenic Trail, the Florida Trail is administered by the USDA Forest Service Southern Region and managed to a set of agreed upon standards in cooperation

with land management partners and stakeholders. The FNST was designated in Three Lakes WMA first in 1993 and redesigned in 2006 and 2017 as part of an agreement between the FWC and National Forests in Florida. As prescribed by the agreement, the FWC will collaborate with the FNST Administrator to coordinate all programs and activities related to the trail.

5.6.9 Bicycling

Bicycling is permitted year-round on the TLWMA.

5.6.10 Equestrian

Apart from trail access during small game season, currently, equestrian users of the TLWMA do not have access to hiking trails and can only use named or numbered roads.

5.6.11 Camping

During hunting season, camping is authorized in designated areas on the TLWMA. The TLWMA also has designated campsites for hikers along the FNST. During periods closed to hunting, there are primitive campsites available in the Prairie Lakes unit that can be reserved at no cost.

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 the FWC-managed lands is governed by specific guidelines. These guidelines may be found on the following the FWC website: <https://myfwc.com/license/public-land-use/geocaching/guidelines/>.

5.7 Hydrological Preservation and Restoration

5.7.1 Hydrological Assessment, Restoration and Management

The TLWMA contains several waterbodies on the area, including Lake Jackson. The FWC will continue to work with the SFWMD, SJRWMD and the DEP on monitoring groundwater resources and water quality. In 2008 a Hydrology Assessment was completed on the TLWMA. To date, phase I-IV of the assessment have been completed on the area. The FWC will continue to cooperate with the SFWMD and the SJRWMD on any activities

occurring on the area and assess the need for an assessment in the future, as needed and appropriate.

5.7.2 Water Resource Monitoring

In cooperation with the SFWMD, the SJRWMD, and the Army Corps of Engineers, natural water regimes will be re-established to the extent feasible and appropriate. This is consistent with the primary purpose for the acquisition of the land and relates directly to the water quantity and quality aspects of the ecosystem. In this capacity, the FWC will primarily rely on the expertise and staff support of the WMDs and DEP to conduct these monitoring activities.

5.8 Forest Resource Management

A Timber Assessment of the timber resources of the TLWMA will be updated by the FFS 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 objectives.

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 naturally 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 OBVM management goals, the FWC will continue to manage timber resources for wildlife benefits and natural community restoration. Management activities including the use of timber thinning and harvesting may be utilized. The primary management technique for encouraging reforestation is 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.

A Timber Assessment of the forest resources of the TLWMA was conducted by the FFS in 2000. The management of forest resources will be considered in the context of the Timber Assessment and the overall land management goals and activities. The FWC will continue to consult with the FFS or a professional forestry consultant regarding forest management activities as appropriate. Additionally, the FWC will work with the FFS on scheduling an update of the timber assessment for the TLWMA.

As of the last timber assessment, approximately 2,585 acres of the TLWMA were comprised of timber growing in plantations and approximately 17,825 acres of natural pine timberland. These represent the natural communities with the most potential for forest resource (timber) production. However, the number of acres of timber have greatly reduced on the area since the last timber assessment. At the TLWMA, these natural communities contain a sparse canopy of slash pine or longleaf pine. These pine canopies are often very sparse when adjacent to scrubby flatwoods, scrub and prairie communities and somewhat denser when grading down slope towards hammock communities. The TLWMA did not have a high enough density of woodlands that would be deemed suitable for harvest as of the last timber assessment.

5.9 Historical Resources

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

To date, the DHR Master Site File indicates 22 known historic sites and three structures on the TLWMA. These sites represent prehistoric mounds and middens, Belle Glade era (700 BC – AD 1700) mounds and middens and nineteenth and twentieth century homesteads. The FWC will submit subsequently located historic sites on the TLWMA to the DHR for inclusion in their Master Site File. In cooperation with DHR, FWC will also continue to monitor the remaining sites that are located on the area on an annual 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.

Current capital facilities and infrastructure on the TLWMA include three residence areas, three trailheads, three check stations, four game cleaning stations, five iron rangers, six primitive campsites with three hunter campgrounds, one picnic shelter, one boat ramp on Lake Jackson, eight bathroom facilities, an observation tower, two observation platforms, a

viewing blind, two boardwalks, an FWC office, check station sheds, equipment storage area, and three water control structures.

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 a 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. In addition, the OCPB incorporates 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 the TLWMA (Figure 14). 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. As they are currently managed, these lands appear to contribute to regional conservation and may support conservation landscape linkages.

5.11.3 Conservation Action Strategy

The CAS (Appendix 12.21) 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

The FWC Florida Forever Additions and Inholdings Acquisition list identifies lands within or adjacent to FWC-managed areas that are important for the conservation of fish and wildlife, serve as a link or corridor to other publicly owned property, enhance the protection or management of the property, would create a more manageable boundary configuration, have a high resource value that would otherwise be unprotected, or that could be acquired at

substantially less than fair market value. Parcels on the list have been ranked high, medium or low priority based on a score generated by a GIS-based resource evaluation model, along with technical input from FWC staff.

The order of acquisition priority may be changed as necessary based on factors including available funding necessary to complete a particular acquisition project, changing development pressures, landowner willingness, funding partnerships, unique acquisition opportunities like bargain sales (less than 80% of appraised value) and donations.

The FWC Additions and Inholdings list is updated through time, thus staying up-to-date for land ownerships, County parcel records, land conservation opportunities and evolving management challenges. The FWC continually analyzes, evaluates and prioritizes its recommended conservation actions in a systematic, comprehensive and consistent manner over time. Participation in any of these FWC acquisition efforts is entirely voluntary and at the sole choice of willing landowners.

Currently, the FWC has identified 68,500 acres of potential additions or privately held inholdings for the TLWMA (Figure 15). In addition, 41,872 acres remain in the Big Bend Swamp/Holopaw Ranch Florida Forever Project; 27,500 acres remain in the Osceola Pine Savannas Ranch Florida Forever Project; and 12,515 acres remain in the Ranch Reserve Florida Forever Project to be acquired. Additions to the FWC Florida Forever Additions and Inholdings acquisition list may be recommended as necessary and appropriate.

5.12 Research Opportunities

The FWC intends to cooperate with researchers, universities and others as feasible and appropriate. For the TLWMA, the FWC will continue to assess and identify research needs and cooperate with research and environmental education partnership opportunities as appropriate. Research proposals involving the use of the area are evaluated on an individual basis. Current research partnerships that occur on the area include snail kite monitoring in cooperation with the UF. All research activities on the TLWMA must have prior approval by the FWC.

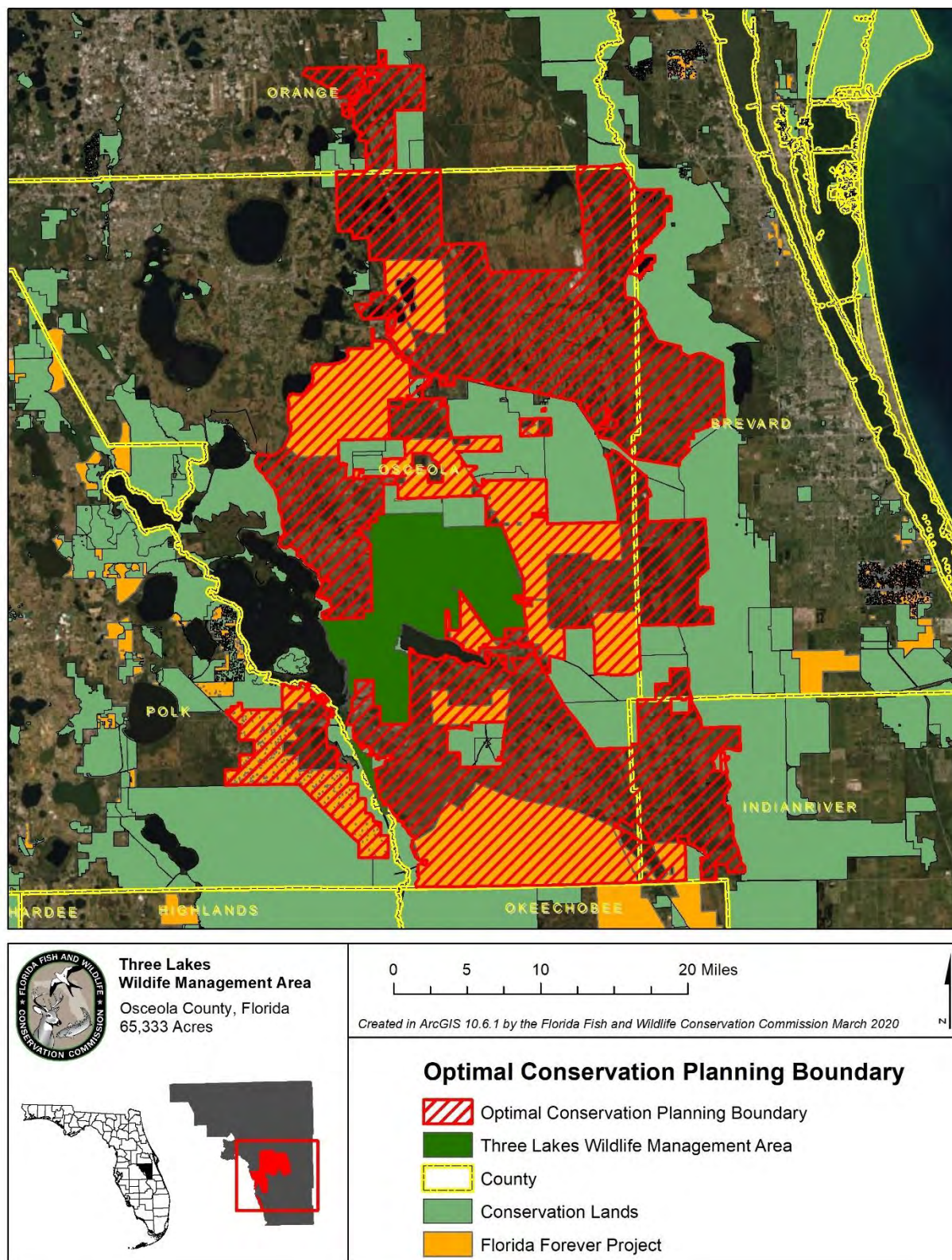


Figure 14. Optimal Conservation Planning Boundary for the TLWMA

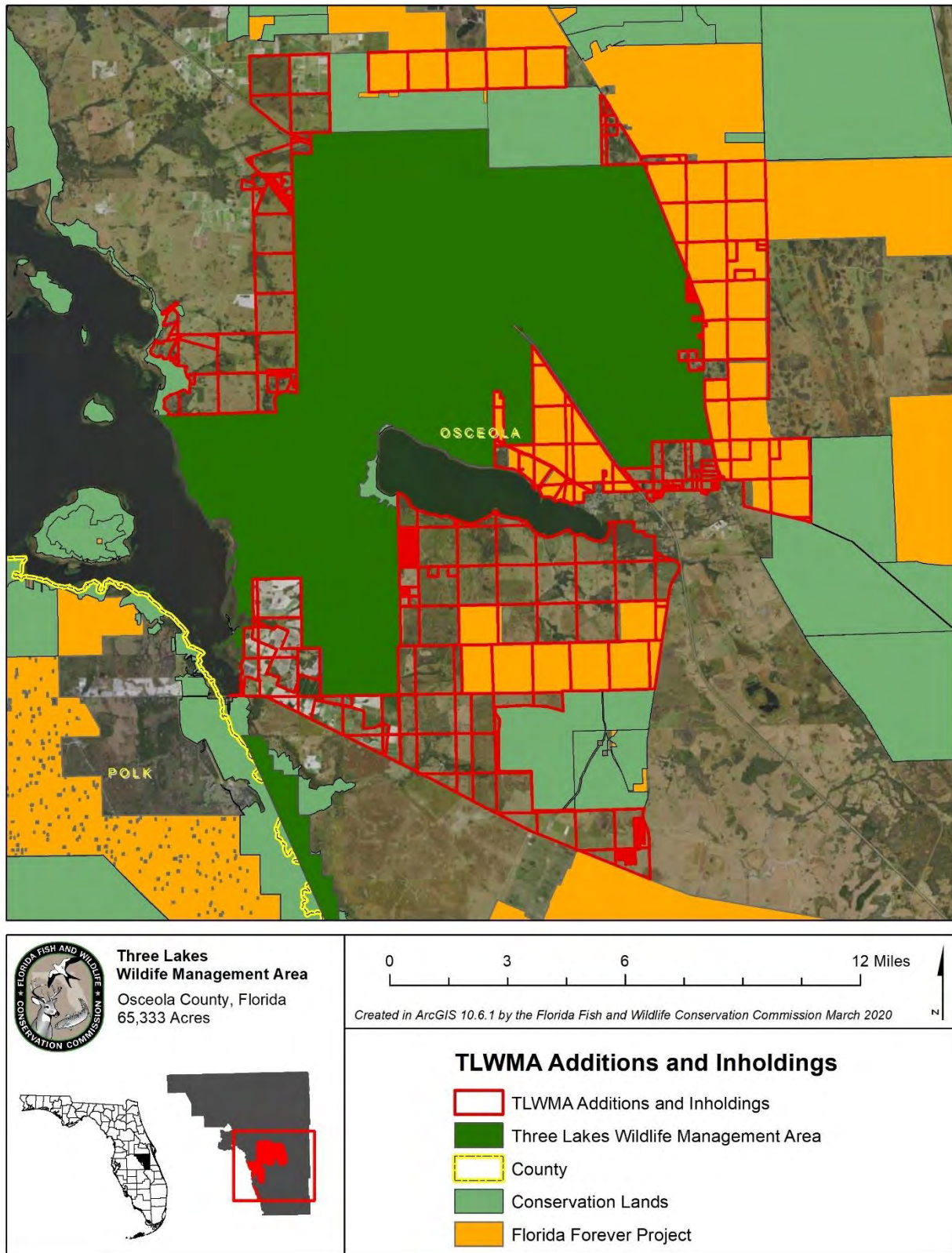


Figure 15. FWC Additions and Inholdings for the TLWMA

5.13 Cooperative Management and Special Uses

5.13.1 Cooperative Management

The FWC is responsible for the overall management and operation of the TLWMA as set forth in the lease agreements with the Board of Trustees, the SJRWMD and the SFWMD. 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 (Appendix 12.18) 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, SFWMD and DEP for the monitoring and management of both ground and surface water resources and the overall management of the TLWMA.

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 the TLWMA. Such activities are considered allowable uses only when undertaken intermittently for short periods of time in a manner that does not impede the management and public use of the TLWMA 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 the TLWMA. 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 the FWC to the DSL and the ARC for approval consideration prior to authorization.

5.13.3 Cattle Grazing

As previously discussed, cattle grazing occurred on the TLWMA for a long time prior to state acquisition of the property. Presently, cattle grazing is utilized as a management tool on a portion of the TLWMA through a cattle grazing lease. As described in Section 1.6 of this Management Plan, approximately 25,179 acres of the TLWMA are under a cattle grazing agreement with lessee 4-L Land and Cattle LLC. (Appendix 12.2). As previously discussed, these cattle grazing agreements generate revenues for the State of Florida (Section 3.2.1).

The cattle grazing agreement is subject to Prescribed Grazing Plans which ensure that cattle grazing is used as a tool to assist in the management of wildlife habitat and allows for grazing to be adjusted in order to address management and resource concerns. These

Prescribed Grazing Plans set forth cattle stocking rates and grazing systems in order to manage wildlife habitat and maintain stable and desired plant communities.

The current cattle grazing agreement is set to be renewed in 2023. Pending the possible renewal of the agreement in 2023, in 2028 the contract will be rebid, at which time the FWC will review the acreage being grazed and will solicit competitive bids for any proposed future grazing of those areas of the TLWMA.

5.13.4 Apiaries

Currently, there is an apiary contract # 16160 (Appendix 12.11) operating on the TLWMA. Use of apiaries is conditionally approved for the TLWMA, 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 12.9). Location, management and administration of apiaries on the TLWMA will be guided by the FWC Apiary Policy (Appendix 12.10).

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 century⁵.

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 non-native invasive species⁹ and loss of habitat in coastal areas due to sea level rise¹⁰. 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° F¹¹. A number of ecosystems are projected to be affected at temperature increases well below these levels.

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, the 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 non-native and invasive species. Currently, the 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 the 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, the FWC will participate in organizations such as the Peninsular Florida Land Conservation Cooperative or similar organizations so that the 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.

To address the potential impacts of climate change on the TLWMA, goals and objectives have been developed as a component of this Management Plan (Section 6.11). 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 TLWMA 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 the TLWMA. 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.

Long-term (UP TO 10 YEARS)

- 6.1.1 Contract for recertification of current natural community mapping.
- 6.1.2 Utilize OBVM monitoring to evaluate actively managed natural communities and adjust management efforts to meet desired future conditions.
- 6.1.3 Continue to implement prescribed burn plan.
- 6.1.4 Continue to conduct habitat/natural community improvements as necessary.
- 6.1.5 Continue to conduct habitat/natural community restoration activities as necessary.
- 6.1.6 Conduct aquatic plant harvesting and muck removal, if needed for Lake Jackson.

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

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

Long-term

- 6.2.1 Continue to implement WCPR strategy (Appendix 12.13) by managing identified habitats and monitoring imperiled and locally important species.
- 6.2.2 Continue to collect and record opportunistic wildlife species occurrence data.
- 6.2.3 Update WCPR Strategy.

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

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

Long-term

- 6.3.1 Continue to monitor game and non-game wildlife species, as identified in the WCPR strategy.
- 6.3.2 Continue to collect biological harvest data at check stations.
- 6.3.3 Continue to collect opportunistic wildlife occurrence data.

6.4 Exotic and Invasive Species Maintenance and Control

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

Long-term

- 6.4.1 Monitor the TLWMA for the level of infestation of FLEPPC Category I and Category II invasive and exotic plant species and treat as needed and appropriate. (Table 5)
- 6.4.2 Annually monitor and treat aquatic exotic and invasive plant species as needed.
- 6.4.3 Continue to implement control measures on exotic and nuisance animal species, including feral hogs, as needed or appropriate.

6.5 Public Access and Recreational Opportunities

Goal: Provide public access and recreational opportunities.

Long-term

- 6.5.1 Continue to implement the Recreation Master Plan and update if new acquisitions or other factors warrant. (Appendix 12.15)
- 6.5.2 Maintain public access and recreational opportunities to allow for a recreational carrying capacity of 1,862 visitors per day.
- 6.5.3 Continue to provide interpretative signs, website, seven kiosks, trail brochure for Sunset Ranch, recreation guide for the prairie lakes unit and driving tour guide for interpretation and education.
- 6.5.4 Continue to maintain 39.7 miles of designated trails.
- 6.5.5 Monitor trails annually for visitor impacts.
- 6.5.6 Continue to provide hunting opportunities for deer, turkey, migratory game birds and feral hogs.
- 6.5.7 Continue to provide camping opportunities on the area.
- 6.5.8 Continue to provide paddling opportunities on appropriate water bodies.
- 6.5.9 Continue to provide fishing opportunities on appropriate water bodies.

6.6 Hydrological Preservation and Restoration

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

Long-term

- 6.6.1 To enhance natural hydrological functions, continue to install and maintain low-water crossings and culverts as appropriate.
- 6.6.2 Continue to cooperate with the SFWMD and SJRWMD for the monitoring of surface and ground water quality and quantity.
- 6.6.3 Monitor the G113, G111 and Fodderstack water control structures for any maintenance issues and repair if needed.

6.7 Forest Resource Management

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

Short-term (UP TO TWO YEARS)

6.7.1 Coordinate with the FFS on obtaining an updated Timber Assessment for the area.

Long-term

6.7.2 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 historical resources.

Long-term

6.8.1 Ensure all known sites are recorded in the Florida DHR Master Site file.

6.8.2 Coordinate with the DHR to schedule and conduct a historical resource reconnaissance survey, if needed or appropriate.

6.8.3 Cooperate with the DHR to manage and maintain known existing historical resources.

6.8.4 Continue to monitor, protect, and preserve as necessary 25 identified sites.

6.8.5 Coordinate with the DHR for Archeological Resource Management guideline staff training.

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

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 Construct Lake Jackson viewing platform and floating dock.

Long-term

6.9.2 Monitor trails and infrastructure annually for visitor impacts.

6.9.3 Continue to maintain and improve 30 facilities.

6.9.4 Continue to maintain and improve 76.3 miles of roads.

6.9.5 Continue to maintain 39.7 miles of trails existing on site.

- 6.9.6 Replace, repair or demolish the Sunset Ranch pole barn if needed.
- 6.9.7 Continue to maintain boundary fencing and assess the need for a boundary survey as needed.
- 6.9.8 Assess public access structures and plan for repair, renovation or removal as needed.

6.10 Land Conservation and Stewardship Partnerships

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

Long-term

- 6.10.1 Continue to identify and evaluate potential important wildlife habitat, landscape-scale linkages, wildlife corridors, and operational management needs and update the OCPB for the TLWMA as appropriate and necessary.
- 6.10.2 Continue to contact and inform adjoining private landowners about the FWC Landowners Assistance Program and coordinate with public entities to pursue conservation stewardship partnerships.
- 6.10.3 Continue to evaluate and identify FWC inholdings and additions priority parcels for potential conservation acquisition and pursue acquisitions as funding allows.
- 6.10.4 Continue to maintain a GIS shapefile and other necessary data to facilitate nominations within the FWC OCPB for the FWC landowner assistance and conservation acquisition programs.
- 6.10.5 Continue to update the FWC Conservation Action Strategy for the TLWMA as necessary.
- 6.10.6 Continue to identify potential non-governmental land stewardship organization partnerships and grant program opportunities.
- 6.10.7 Determine the efficacy of conducting a landowner assistance/conservation stewardship partnership workshop(s) and pursue as necessary and appropriate.
- 6.10.8 Continue to evaluate and determine if any portions of the TLWMA are no longer needed for conservation purposes and therefore may be designated as surplus lands.

6.11 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 TLWMA.

Long-term

- 6.11.1 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 TLWMA.
- 6.11.2 As appropriate, update the TLWMA Prescribed Fire Plan, WCPR Strategy and Recreation Master Plan to incorporate new scientific information regarding projected climate change.
- 6.11.3 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.

6.12 Cooperative Management, Special Uses, and Research Opportunities

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

Long Term

- 6.12.1 Continue to cooperate with researchers, FWRI, the UF and others as appropriate.
- 6.12.2 Continue to assess the need for research and environmental education partnership opportunities as appropriate.
- 6.12.3 Coordinate and cooperate with Department of Defense military branches to allow for training opportunities for military personnel and other initiatives as appropriate and compatible with the conservation of the TLWMA.

7 Resource Management Challenges and Strategies

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

7.1 Challenge 1: Currently, the FWC aims to meet FWC law enforcement and management staff standards and needs.

- 7.1.1 Strategy: Agency staff levels will continue to be evaluated to determine if increased staffing or other alternatives can improve management needs.
- 7.1.2 Strategy: Pursue funding for increased law enforcement, management staffing and additional private sector contract services as appropriate.
- 7.1.3 Strategy: Explore potential volunteer resources for assisting with management.

7.2 Challenge 2: Currently, the Kissimmee River unit (KRPUA) is not easily accessible and therefore land management cannot take place.

- 7.2.1 Strategy: Explore accessibility by contacting adjacent landowners and pursuing acquisitions on additions and inholdings list.

7.3 Challenge 3: While currently at minimal levels, unauthorized access, illegal dumping, littering, vandalism, poaching and unauthorized ORV use may pose an increased threat in the future.

- 7.3.1 Strategy: Continue to provide area-wide security through FWC law enforcement patrols.
- 7.3.2 Strategy: Provide interpretive signs or explore other options to inform the public that ‘mudding’ and destructive off-road use is not allowed.

7.4 Challenge 4: Currently, exotic and invasive plant infestations continue to be an ongoing challenge on the area.

- 7.4.1 Strategy: Establish a treatment rotation and continue funding projects for contract spraying.
- 7.4.2 Strategy: Explore the feasibility of utilizing contractual services for appropriate activities.
- 7.4.3 Strategy: Cooperate with other nearby FWC staff to assist when needed.

7.5 Challenge 5: Potential future development on adjacent lands can result in incompatible land uses increasing management challenges for the area.

- 7.5.1 Strategy: Cooperate and work with Osceola County to ensure land use and zoning designations adjacent to the TLWMA will continue to be compatible with the management of the area.

7.6 Challenge 6: The TLWMA's proximity to major roadways and residential areas presents significant smoke management challenges during prescribed burning.

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

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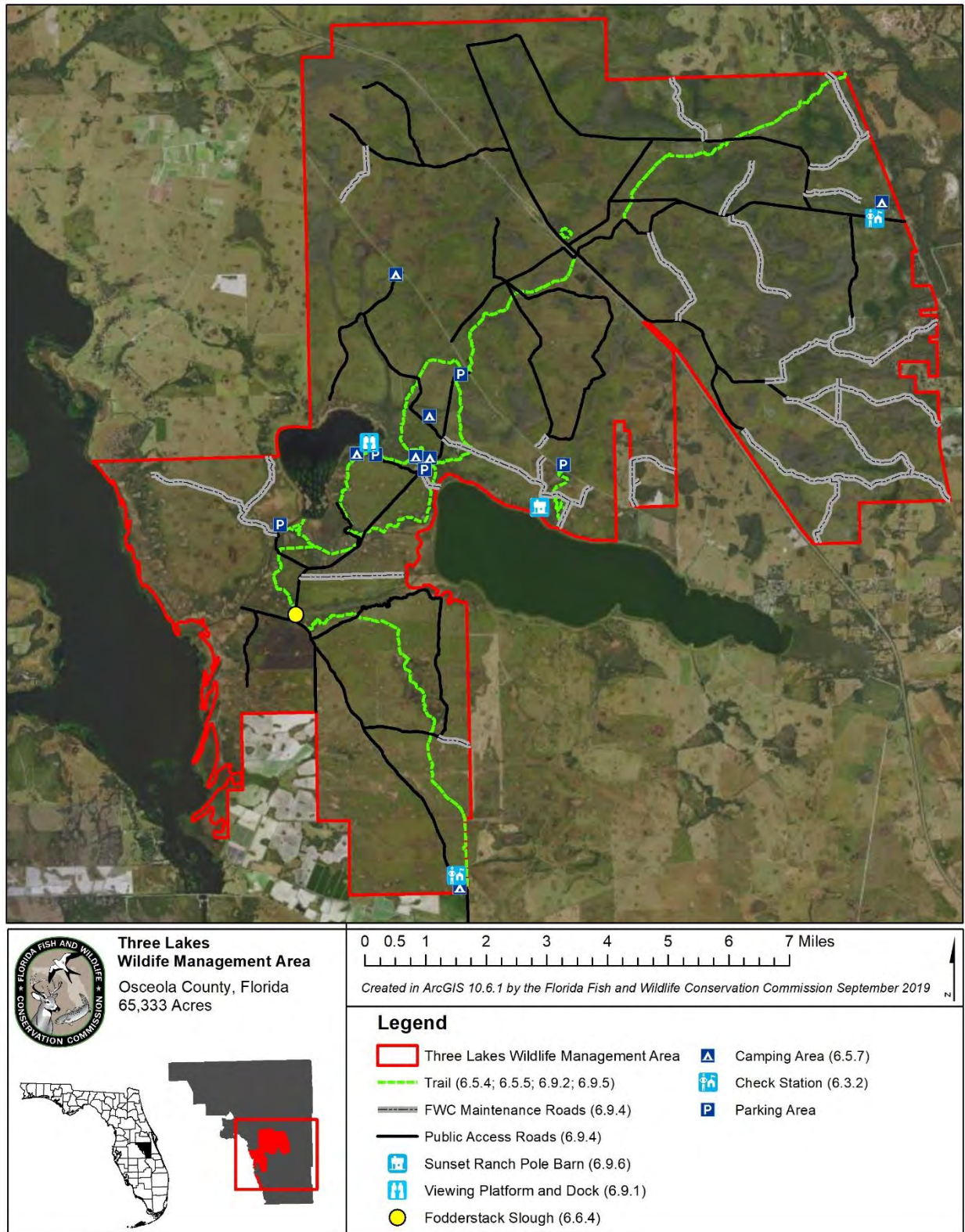


Figure 16. Project Locations

Florida Fish and Wildlife Conservation Commission | Three Lakes WMA Management Plan

8 Cost Estimates and Funding Sources

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

The cost estimate below, although exceeding what the FWC typically receives through the appropriations process, is estimated to be what is necessary for optimal management and is consistent with the current and planned resource management and operation of the TLWMA. Cost estimate categories are those currently recognized by the FWC and the Land Management Uniform Accounting Council. More information on these categories, as well as the Fiscal Year 2018-2019 operational plan showing detailed cost estimates by activity and categories of expenditures, may be found in Appendix 12.20.

Three Lakes WMA Management Plan
Cost Estimate
Maximum expected one-year expenditure

<u>Resource Management</u>	<u>Expenditure</u>	<u>Priority</u>	Priority schedule:
Exotic Species Control	\$376,626	(1)	(1) Immediate (annual)
Prescribed Burning	\$113,773	(1)	(2) Intermediate (3-4 years)
Cultural Resource Management	\$1,503	(1)	(3) Other (5+ years)
Timber Management	\$1,503	(1)	
Hydrological Management	\$103,270	(1)	
Other (Restoration, Enhancement, Surveys, Monitoring, etc.)	\$273,412	(1)	
Subtotal	\$870,088		
<u>Administration</u>			
General administration	\$15,034	(1)	
<u>Support</u>			
Land Management Planning	\$39,592	(1)	
Land Management Reviews	\$27,349	(3)	
Training/Staff Development	\$73,182	(1)	
Vehicle Purchase	\$514,279	(2)	
Vehicle Operation and Maintenance	\$165,509	(1)	
Other (Technical Reports, Data Management, etc.)	\$33,499	(1)	
Subtotal	\$853,411		
<u>Capital Improvements</u>			
New Facility Construction	\$41,464	(2)	
Facility Maintenance	\$394,353	(1)	
Subtotal	\$435,817		
<u>Visitor Services/Recreation</u>			
Info./Education/Operations	\$18,517	(1)	
<u>Law Enforcement</u>			
Resource protection	\$59,671	(1)	
<u>Total</u>	\$2,252,538	*	

* Based on the characteristics and requirements of this area, 11 FTE positions would be optimal to fully manage this area. All land management funding is dependent upon annual legislative appropriations.

Three Lakes WMA Management Plan Cost Estimate

Ten-year projection

<u>Resource Management</u>	<u>Expenditure</u>	<u>Priority</u>	Priority schedule:
Exotic Species Control	\$3,309,081	(1)	(1) Immediate (annual)
Prescribed Burning	\$999,620	(1)	(2) Intermediate (3-4 years)
Cultural Resource Management	\$13,209	(1)	(3) Other (5+ years)
Timber Management	\$13,209	(1)	
Hydrological Management	\$907,342	(1)	
Other (Restoration, Enhancement, Surveys, Monitoring, etc.)	\$2,402,228	(1)	
Subtotal	\$7,644,689		
<u>Administration</u>			
General administration	\$132,087	(1)	
<u>Support</u>			
Land Management Planning	\$347,861	(1)	
Land Management Reviews	\$78,291	(3)	
Training/Staff Development	\$642,986	(1)	
Vehicle Purchase	\$1,809,771	(2)	
Vehicle Operation and Maintenance	\$1,454,182	(1)	
Other (Technical Reports, Data Management, etc.)	\$294,325	(1)	
Subtotal	\$4,627,415		
<u>Capital Improvements</u>			
New Facility Construction	\$119,770	(2)	
Facility Maintenance	\$3,464,824	(1)	
Subtotal	\$3,584,594		
<u>Visitor Services/Recreation</u>			
Info./Education/Operations	\$162,690	(1)	
<u>Law Enforcement</u>			
Resource protection	\$524,279	(1)	
<u>Total</u>	\$16,675,754	*	

*Based on the characteristics and requirements of this area, 11 FTE positions would be optimal to fully manage this area. All land management funding is dependent upon annual legislative appropriations.

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

	Approved	Conditional	Rejected
• Dike and levee maintenance			✓
• Non-native species control			✓
• Mechanical vegetation treatment			✓
• Public contact and educational facilities development			✓
• Prescribed burning			✓
• Timber harvest activities	✓		
• Vegetation inventories			✓

10 Compliance with Federal, State, and Local Governmental Requirements

The operational functions of the 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 the 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 the TLWMA are in compliance with the Conceptual State Lands Management Plan and its requirement for “balanced public utilization,” and are in compliance with the mission of the FWC as described in its Agency Strategic Plan (Appendix 12.9). 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 the TLWMA in compliance with Chapter 388.4111 F.S. (Appendix 12.22). This plan was developed in cooperation with the local Osceola County arthropod control agency. This plan is also in conformance with the Local Government Comprehensive Plan as approved and adopted for Osceola County, Florida, (Appendix 12.23).

11 Endnotes

¹Shanahan, D.R. A living document: reincarnating the research article. *Trials* **16**, 151 (2015).

² SJRWMD. “Physiographic Divisions” [layer]. Scale Not Given. “Physiographic Divisions of Florida (SJRWMD)”. February 2020.
<https://www.arcgis.com/home/item.html?id=6d6a4a1da4cd4cc9bdb38021bf2983de>

³ Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Official Soil Series Descriptions. Available online. Accessed [2019].

⁴ Sadahisa Kato & Jack Ahern (2008) ‘Learning by doing’: adaptive planning as a strategy to address uncertainty in planning, *Journal of Environmental Planning and Management*, 51:4, 543-559.

⁵ Wilhere, G. F. 2002. Adaptive management in Habitat Conservation Plans. *Conservation Biology* 16:20-29.

⁶ Walters, C. J. and R. Hilborn. 1978. Ecological optimization and adaptive management. *Annual Review of Ecology and Systematics* 9:157–188.

⁷ Architectural and Transportation Barriers Compliance Board on Final Accessibility Guidelines for Outdoor Developed Areas, Final Report (2013).

⁸ Karl, T. R., J. M. Melillo, and T. C. Peterson (Eds.). 2009. *Global Climate Change Impacts in the United States*. Cambridge University Press. New York, NY.

- ⁹ McCarty, J. P. 2001. Ecological consequences of recent climate change. *Conservation Biology* 15:320-331.
- ¹⁰ Walther, G. R., E. Post, P. Convey, A. Menzel, C. Parmesan, T. J. . Beebee, J. M. Fromentin, O. Hoegh-Guldberg, and F. Bairlein. 2002. Ecological responses to recent climate change. *Nature* 416:389–395.
- ¹² Parmesan, C. 2006. Ecological and evolutionary responses to recent climate change. *Annual Review of Ecology, Evolution, and Systematics* 37:637-669.
- ¹³ Logan, J. A., and J. A. Powell. 2009. Ecological consequences of climate change altered forest insect disturbance regimes. In *Climate Warming in Western North America: Evidence and Environmental Effects* (F. H. Wagner, Ed.). University of Utah Press, Salt Lake City, UT.
- ¹⁴ Stevenson, J. C., M. S. Kearney, and E. W. Koch. 2002. Impacts of sea level rise on tidal wetlands and shallow water habitats: A case study from Chesapeake Bay. *American Fisheries Society Symposium* 32:23-36.
- ¹⁵ IPCC. 2007b. *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge, UK.
- ¹⁶ Emanuel, K.A. 1987. The Dependence of Hurricane Intensity on Climate. *Nature* 326: 483-485.
- ¹⁷ Emanuel, K.A. 2005. Increasing Destructiveness of Tropical Cyclones Over the Past 30 Years.
- ¹⁸ Webster et al. 2005; Webster, P. J., et al. 2005. Changes in Tropical Cyclone Number, Duration, and Intensity, in a Warming Environment. *Science* 309: 1844–1846.
- ¹⁹ Mann, M.E. and K.A. Emanuel. 2006. Atlantic Hurricane Trends Linked to Climate Change. *Eos Trans. AGU* 87: 233-244.
- ²⁰ Stanton, E.A. and F. Ackerman. 2007. *Florida and Climate Change: The Costs of Inaction*. Tufts University Global Development and Environment Institute and Stockholm Environment Institute–US Center, Tufts University, Medford, MA.
- ²¹ Clough, J.S. 2008. *Application of the Sea-Level Affecting Marshes Model (SLAMM 5.0) to Crystal River NWR*. Warren Pinnacle Consulting, Inc. for U.S. Fish and Wildlife Service. 46 pp.

12 Appendices

12.1 Lease Agreement

LEASE AGREEMENT

No. 2785

WHEREAS, the State of Florida Board of Trustees of the Internal Improvement Trust Fund by virtue of Section 253.03, Florida Statutes, holds title to certain lands and property for the use and benefit of the State of Florida, and

WHEREAS, the State of Florida Department of Natural Resources by formal action on September 3, 1974, authorized and requested the said Trustees to enter into an agreement with the State of Florida Game and Fresh Water Fish Commission, to permit certain uses of and activities on the lands and properties hereinafter described to provide for environmental protection and enhancement, game and wildlife management and related purposes, in compliance with Chapter 259, Florida Statutes, (Land Conservation Act of 1972).

NOW, THEREFORE, this agreement made between the STATE OF FLORIDA BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND, as LESSOR, and the STATE OF FLORIDA GAME AND FRESH WATER FISH COMMISSION, as LESSEE.

W I T N E S S E T H:

The parties hereto, for and in consideration of the mutual covenants and agreements hereinafter contained, do hereby covenant and agree as follows:

1. The lessor does hereby lease to the lessee the following described parcels of land, situate in Osceola County, Florida, viz:

(See Exhibit A - Attached)

TO HAVE AND TO HOLD the above described land for a period of ninety-nine (99) years from the date hereof; to provide for environmental protection and enhancement, game and wildlife management and related purposes, in compliance with the Management Concept, dated August 2, 1974, marked "Exhibit B", attached hereto and made a part hereof, as well as with Chapter 259, Florida Statutes, administered by the State of Florida Department of Natural Resources.

2. The lessee shall have the right to enter upon said land for all purposes necessary to the full enjoyment by said lessee of the rights herein conveyed to it.

3. The lessee shall through its agents and employees cooperate to prevent the unauthorized use of said land or any use thereof not in conformity with this lease.

4. This agreement is for the specific purpose of providing for environmental protection and enhancement, game and wildlife management and related purposes, and the lessee shall have the right to enter into further agreements or to sublease all or any part of the leased land so long as the agreement and/or sublease shall effectively carry out and further the general purposes herein described. The lessee agrees to give advance written notice to the State of Florida Department of Natural Resources, of any proposed agreement and/or sublease, and shall obtain written approval by the Department, before any such agreement and/or sublease is executed.

5. The lessor and the State of Florida Department of Natural Resources, or their duly authorized agents, shall have the right at any time to inspect the said land and the works and operations thereon of the lessee in any matter pertaining to this agreement.

6. The lessee hereby covenants and agrees to investigate all claims of every nature at its own expense, and to indemnify, protect, defend, hold and save harmless the State of Florida Board of Trustees of the Internal Improvement Trust Fund and/or the State of Florida from any and all claims, actions, lawsuits, and demands of any kind or nature arising out of this agreement to the extent allowed by the Laws of Florida.

7. This agreement is subject to the reversion to the State of Florida Board of Trustees of the Internal Improvement Trust Fund of the lands described herein and the cessation and termination of this lease when, in the opinion of the State of Florida Department of Natural Resources, said lands are not being utilized for the purpose outlined in this lease; and any costs or expenses arising out of the implementation of this clause shall be borne completely, wholly, and entirely by the lessee.

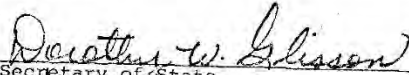
8. Any inequities that may subsequently appear in this lease shall be subject to negotiation upon written request of either party, and the parties agree to negotiate in good faith as to any such inequities.

9. This agreement is executed in duplicate, each copy of which shall for all purposes be considered an original.

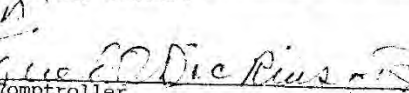
IN TESTIMONY WHEREOF the Trustees, for and on behalf of the State of Florida Board of Trustees of the Internal Improvement Trust Fund, have hereunto subscribed their names and have caused the official seal of the State of Florida Board of Trustees of the Internal Improvement Trust Fund to be hereunto affixed in the City of Tallahassee on this 11th day of December, 1974, and the State of Florida Game and Fresh Water Fish Commission, and agency of the State of Florida, have hereunto set their hands and official seal at Tallahassee, Florida, this 11th day of December, 1974.


Governor

(SEAL)
STATE OF FLORIDA
BOARD OF TRUSTEES
OF THE INTERNAL
IMPROVEMENT TRUST
FUND


Secretary of State


Attorney General


Comptroller


Treasurer


Commissioner of Education


Commissioner of Agriculture

As and Constituting the State
of Florida Board of Trustees
of the Internal Improvement
Trust Fund, Lessors

(SEAL)

STATE OF FLORIDA
GAME AND FRESH WATER FISH COMMISSION
An Agency of the State of Florida

BY: Clyde M. Phillips
Chairman

Lease No. 2785

All of Section 1; All of Section 12; Township 29 South, Range 32 East; All lying West of U. S. Highway No. 441 of Section 3; all lying West of U. S. Highway No. 441 of Section 4; all of Section 5; all of Section 6; all of Section 7; all of Section 8; all of Section 9; all lying West of U. S. Highway No. 441 of Section 10; all that part of Southwest Quarter of Southwest Quarter lying West of U. S. Highway No. 441 of Section 14; all lying West of U. S. Highway No. 441 of Section 15; all of Section 16; all of Section 17; all being in Township 29 South, Range 33 East; LESS the following described right of way conveyed to Osceola County, a political subdivision in the State of Florida on June 12, 1953:

A strip of land 25 feet in width each side of a line extending from a point 1508.0 feet South of the Northwest corner of Section 17, Township 29 South, Range 33 East, Osceola County, Florida; run thence North 57 degrees 43 minutes East 1764.14 feet; run thence on a 5 degree curve to the right 819.0 feet; thence run South 81 degrees 20 minutes East 13,080.0 feet to the West line of right of way of U. S. Highway No. 441, and being 33 feet off centerline of said highway; also, said point being 533.2 feet West of the East line of Section 15, Township 29 South, Range 33 East;

All of Section 31, LESS the Northwest Quarter thereof; all of Section 32; all of Section 33; all of Section 34; all of Section 35; all in Township 28 South, Range 32 East.

All of Sections 2 through 11, inclusive; all of Sections 14 through 23, inclusive; all of Sections 26 through 35, inclusive; all in Township 29 South, Range 32 East.

All of Sections 1 through 4, inclusive; all of Sections 10 through 15, inclusive; all of Sections 23 and 24; the West 3/8 of Section 26; all of Section 35, LESS the East half of Southeast Quarter; East half of West half of Southeast Quarter; East half of Northeast Quarter of Northeast Quarter; Southeast Quarter of Northeast Quarter; and East half of Southwest Quarter of Northeast Quarter; all in Township 30 South, Range 31 East.

That part of Section 2 lying North and East of State Road 523; that part of Section 3 lying North and East of State Road 523; all of Sections 4 through 9, inclusive, all of Section 31; all in Township 30 South, Range 32 East.

All of Section 11, LESS the North half East of Lake Kissimmee, and LESS the Northeast Quarter of Southeast Quarter; the Northwest Quarter of Northwest Quarter of Northwest Quarter; South half of Northwest Quarter of Northwest Quarter; Southwest Quarter of Northwest Quarter; West half of Southwest Quarter; West half of Northeast Quarter of Southwest Quarter; West half of Southeast Quarter of Southwest Quarter; Southeast Quarter of Southeast Quarter of Southwest Quarter; Southwest Quarter of Southwest Quarter of Southeast Quarter of Section 13; All of Section 14 lying Easterly of the Westerly bank of Central and Southern Florida Flood Control District Canal C-38; All of Sections 24 and 25 lying Easterly of the Westerly bank of Central and Southern Florida Flood Control District Canal C-38; all of Section 36; all in Township 31 South, Range 31 East.

East half of Section 6; West Quarter of Section 30; all of Section 31 lying Easterly of the Westerly bank of Central and Southern Florida Flood Control District Canal C-38, LESS the Northeast Quarter, and LESS the East half of Southeast Quarter; all in Township 31 South, Range 32 East.

EXHIBIT A

Smith, Hearn & Smith, Attorneys At Law, P. O. Box 1030, Vero Beach, Florida 32980

Lease No. 2785

All of Section 6 lying Easterly of the Westerly bank of Central and Southern Florida Flood Control District Canal C-38, Township 32 South, Range 32 East.

All of Section 13; all of Section 24 in Township 29 South, Range 32 East.

All of Section 18; all of Section 19, in Township 29 South, Range 33 East.

All of fractional West 1/2 of Section 16; all of the West 1/2 and all of the fractional East 1/2 of Section 17, Township 30 South, Range 32 East.

South half; South half of Northwest Quarter; Northwest Quarter of Northwest Quarter; North half of Northeast Quarter of Northwest Quarter, Section 18, Township 30 South, Range 32 East.

All of Blocks 1 to 5, inclusive; Lots 1 and 2, 4 to 21, inclusive, 23, 26 to 48, inclusive, Block 6; Lots 1 to 24, inclusive, 29 to 48, inclusive, Block 7; all of Blocks 8 to 20, inclusive, AQUA VISTA, BISCAYNE SECTION according to plat thereof recorded in Plat Book 1, page 114, public records of Osceola County, Florida.

All of Blocks 1 to 20, inclusive, AQUA VISTA, LAKE SHORE SECTION, according to plat thereof recorded in Plat Book 1, page 115, public records of Osceola County, Florida.

Lots 1 to 192, inclusive, EXCEPT Lots 26, 39, 41, 42, 47 and 56, LAKE MARIAN PARK FIVE ACRE TRACTS, according to plat thereof recorded in Plat Book 1, page 122, public records of Osceola County, Florida.

Northwest Quarter; North half of Northeast Quarter; Southeast Quarter of Northeast Quarter; South half of Southwest Quarter of Northeast Quarter; Northeast Quarter of Southwest Quarter of Northeast Quarter; North half of Southwest Quarter; Southeast Quarter of Southwest Quarter; Northeast Quarter of Southeast Quarter; Southwest Quarter of Southeast Quarter; Northeast Quarter of Northwest Quarter of Southeast Quarter; Southwest Quarter of Northwest Quarter of Southeast Quarter; Southwest Quarter of Southwest Quarter, of Section 20, Township 30 South, Range 32 East.

Lots 1 to 6, inclusive, 8 to 22, inclusive, 25 to 35, inclusive, 37 to 56, inclusive, of ORANGE RIDGE ACRES, according to plat thereof recorded in Plat Book 1, page 121, public records of Osceola County, Florida.

Lots 1, 2, 3, 5 to 32, inclusive, Block 1; Lots 6 to 32, inclusive, Block 2; Lots 1 to 32, inclusive, Block 3; Lots 2 to 32, inclusive, Block 4; Blocks 5 to 15, inclusive; Lots 3 to 14, inclusive; 17 to 32, inclusive, Block 16; all of Blocks 17 to 43, inclusive; Lots 1 to 4, inclusive, 7 to 32, inclusive, Block 44; all of Blocks 45 to 57, inclusive, all of Blocks 59 to 62, inclusive; all of Blocks 65 and 66, of LAKE MARIAN PARK NO. 4, according to plat thereof recorded in Plat Book 1, page 165, public records of Osceola County, Florida.

All of Blocks 1 to 41, inclusive; Lots 1 to 15, inclusive, 18 to 32, inclusive, Block 42; all of Blocks 43 to 63, inclusive, and Block 66, LAKE MARIAN PARK NO. 5, according to plat thereof recorded in Plat Book 1, page 253, public records of Osceola County, Florida.

West half of West half; East 3/4 of Northeast Quarter of Northwest Quarter of Section 28, Township 30 South, Range 32 East.

EXHIBIT A

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Smith, Heath & Smith, Attorneys At Law, P. O. Box 1030, Vero Beach, Florida 32960

Lease No. 2785

Lots 17 to 59, inclusive, Lots 61 to 64, inclusive, of ORANGE RIDGE ACRES FIVE ACRE TRACTS, also referred to as TOWNSITE OF ORANGE RIDGE ACRES FIVE ACRE TRACTS, according to plat thereof recorded in Plat Book B, page 77, public records of Osceola County, Florida.

Lots 5 to 14, inclusive, 19 to 28, inclusive, Block 6; Lots 1 to 48, inclusive, Block 7; all of Blocks 8 to 15, inclusive; all of Block 29; Lots 1 to 48, inclusive, Block 16; Lots 5 to 28, inclusive, Block 17; Lots 1 to 8, inclusive, 11 to 46, inclusive, Block 28; Lots 1 to 48, inclusive, Block 30; all of Blocks 31 to 34, inclusive; all of Blocks 36, 38, 39; Lots 1 to 48, inclusive, Block 35; Lots 1 to 14, inclusive, 19 to 48, inclusive, Block 37, of ORANGE RIDGE, also referred to as TOWNSITE OF ORANGE RIDGE, according to plat thereof recorded in Plat Book B, page 77, public records of Osceola County, Florida.

West half of Southwest Quarter of Southeast Quarter; North half of Northeast Quarter; Southwest Quarter of Northeast Quarter; Northwest Quarter of Southeast Quarter; East half of Southeast Quarter of Southeast Quarter; West half of Southeast Quarter of Southeast Quarter; East half of Southwest Quarter of Southeast Quarter, Section 29, Township 30 South, Range 32 East.

All of Blocks 1 to 11, inclusive, LESS Lots 5 to 8, inclusive, and 41 to 46, inclusive, Block 9; all of Blocks 12 to 16, inclusive; Lots 1 to 18, inclusive, Block 17; all of Blocks 18 to 20, inclusive, all of Blocks 22 to 26, inclusive, Lots 1 to 20, inclusive, Block 21, LAKEVIEW PARK UNIT A, according to plat thereof recorded in Plat Book 1, page 182, public records of Osceola County, Florida.

All of Blocks 27 to 31, inclusive; 33 to 38, inclusive; 40, 41, 43 to 46, inclusive; Lots 1 to 24, inclusive, 43 to 46, inclusive, Block 39; Lots 1 to 14, inclusive, 24, 25, 27 to 46, inclusive, Block 47, LAKEVIEW PARK, according to plat thereof recorded in Plat Book 1, page 175, public records of Osceola County, Florida.

South half of Northwest Quarter; Northeast Quarter of Northwest Quarter; Northwest Quarter of Southwest Quarter; Southeast Quarter; Northeast Quarter of Southwest Quarter, and South half of Southwest Quarter of Section 30, Township 30 South, Range 32 East.

All of Section 32, Township 30 South, Range 32 East.

West half of Section 33, Township 30 South, Range 32 East.

West half of Section 4, all of Section 5, in Township 31 South, Range 32 East.

A strip of land 26 feet in width each side of the following described centerline: Commence from a point 1,508 feet South of the Northwest corner of Section 17, Township 29 South, Range 33 East, Osceola County, Florida; thence run North 88 1/4 degrees West a distance of 845 feet; thence run North 75 degrees West a distance of 1,110 feet; thence run North 65 3/4 degrees West a distance of 785 feet; thence run North 70 1/4 degrees West a distance of 2,341 feet; thence run South 89 1/2 degrees West a distance of 5818 feet; thence run South 2 1/2 degrees West a distance of 1,565 feet; thence run South 58 3/4 degrees West a distance of 6,701 feet; thence run South 54 1/4 degrees West a distance of 1,577 feet; thence run South 65 1/4 degrees West a distance of 3,645 feet; Thence run South 36 1/4 degrees West a distance of 1,925 feet; thence run South 45 degrees West a distance of 2,523 feet; thence run South 32 1/2 degrees West a distance of 1,543 feet to the East line of right of way of Canoe Creek Road.

The Northwest Quarter of the Northwest Quarter of Section 30, Township 30 South, Range 32 East.

EXHIBIT A

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Smith, Heath & Smith, Attorneys At Law, P. O. Box 1030 Vero Beach, Florida 32950

Lease No. 2785

The Northeast Quarter of the Southeast Quarter of Section 29,
Township 30 South, Range 32 East.

The West half of the Northwest Quarter of the Northwest Quarter
of the Southeast Quarter, Section 20, Township 30 South, Range
32 East.

The East 60 feet of the West half of Section 9 and the East 60
feet of that part of the West half of Section 16 lying North of
State Road 60 in Township 31 South, Range 32 East.

EXHIBIT A

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Lease No. 2785

the following described

land situated and being in Osceola County, Florida, to wit:

Southeast Quarter of Northeast Quarter of Section 29, Township 30 South, Range 32 East;

South half of Northeast Quarter of Northwest Quarter of Section 18, Township 30 South, Range 32 East;

Lots 7 and 36, ORANGE RIDGE ACRES, according to plat thereof recorded in Plat Book 1, page 121

Lots 26, 39, 41, 42, 47, 56, LAKE MARIAN PARK FIVE ACRE TRACTS, according to plat thereof recorded in Plat Book 1, page 122, Osceola County public records;

Lots 2, 22, 24, 25, Block 6; Lots 25 to 28, inclusive, Block 7, of AQUA VISTA, BISCAYNE SECTION, according to plat thereof recorded in Plat Book 1, page 114, Osceola County public records;

Lot 4, Block 1; Lots 1 to 5, inclusive, Block 2; Lot 1, Block 4; Lots 1, 2, 15, 16, Block 16; Lots 5, 6, Block 44; All of Blocks 58, 63 and 64, of LAKE MARIAN PARK NO. 4, according to plat thereof recorded in Plat Book 1, page 165, Osceola County public records;

Lots 16, 17, Block 42; all of Blocks 64 and 65, LAKE MARIAN PARK NO. 5, according to plat thereof recorded in Plat Book 1, page 253, Osceola County public records;

Lots 5, 6, 7, 8 and 41 to 46, inclusive, Block 9, LAKEVIEW PARK UNIT A, according to plat thereof recorded in Plat Book 1, page 182, Osceola County public records;

Lots 25 to 42, inclusive, Block 39, Lots 15 to 23, inclusive and Lot 26, Block 47; all of Blocks 32 and 42, LAKEVIEW PARK, according to plat thereof recorded in Plat Book 1, page 175, Osceola County public records;

Southeast Quarter of Northwest Quarter; East half of Southwest Quarter; West half of Southeast Quarter of Section 28, Township 30 South, Range 32 East.

EXHIBIT A-1

Lease No. 2785

SUBJECT TO THE FOLLOWING:

Exclusion of that portion of Section 6, Township 30 South, Range 32, East, lying between the original government meander line and the shore line as revealed by other available maps (the lines of said government meander line and the lines of Lake Jackson as indicated by other maps being substantially different).

Exclusion of that portion of Sections 31 and 32, Township 29 South, Range 32 East, lying between the original government meander line and shore lines as revealed by other available maps (the lines of said government meander line and the lines of Lake Jackson as indicated by other maps being substantially different).

As to all property in Township 29 South, Range 33 East, except Sections 18 and 19, and as to all property in Sections 1 and 29, Township 29 South, Range 32 East, Consolidated Naval Stores, by deed dated August 4, 1959, recorded in O.R. Book 47, page 294, Osceola County public records, reserved a royalty interest as follows:

a. As to each transaction or product, one-half interest of any rentals, bonuses or royalties paid the party of second part by virtue of any lease or sale of gas, oil or other minerals, provided, however, that such amounts shall in no case exceed those set forth below, insofar as it affects the following items, specifically:

(I) One-sixteenth of the royalty received by the party of the second part from any lease for oil, gas or other minerals, except sulphur and phosphate, on, in or under and produced from the above described land;

(II) Fifty cents (\$.50) per long ton from all sulphur produced from the above described land;

(III) One-half of any revenues from the sale or lease of any phosphate on, in or under and produced from the above described land.

b. The royalties and revenues hereinabove described shall be delivered and/or paid to the party of the first part, its successors and assigns, out of and deducted from the royalties payable as the same are received, and the royalties and revenues herein reserved unto the party of the first part, its successors and assigns, are and shall remain a charge and burden on the land herein described and binding on the party of the second part, its successors or assigns; provided, however, that the party of the second part, its successors or assigns shall always have the right to grant leases, enter into exploration contracts or contracts for the mining, production, development and sale of the whole or any part thereof of the above described land, notwithstanding the royalty interest reserved unto the party of the first part, its successors or assigns and the said party of the first part's interest reserved herein is solely the right to receive the royalties or revenues as set forth above, if any, as and when they are received by the party of the second part; and the party of the second part, its successors and assigns, shall always have the right not to produce any product for which royalties are herewith reserved.

As to all property in Sections 13 and 24, Township 29 South, Range 32 East, and all property in Sections 18 and 19, Township 29 South, Range 32 East, in a warranty deed from Consolidated Naval Stores Company, a Florida corporation, to R. J. Simmons, dated February 3, 1950, recorded in Deed Book 129, page 371, Osceola County public records, Consolidated Naval Stores reserved for itself, its successors, assigns or grantees, an undivided one-half interest in all mineral leases, rentals or royalties derived therefrom, together with an undivided one-half interest

EXHIBIT A-2

Smith, Heath & Smith, Attorneys At Law, P.O. Box 1673, Vero Beach, Florida 33596

Lease No. 2785

in and to all the oil, gas and minerals which may be upon, under, or in the above property, and further reserve the right of ingress and egress over and upon the above described land for the purpose of exploring and developing said land, or any portion thereof for oil, gas or minerals with such other rights as may be incident to such purpose and such reservations.

As to all property in Sections 13, 18, 19, and 24, Township 29 South, Range 32 East, R. J. Simmons and Mabel Simmons, his wife, entered into an agreement with Osceola County, Florida, which said agreement is dated July 3, 1952, recorded in Misc. Book 2, page 456. This agreement authorized Osceola County and its contractors to enter upon the lands of R. J. Simmons for the purpose of establishing, constructing and/or improving and maintaining said highway; and Simmons also agreed to execute proper conveyance of that portion of said land which is required for a roadway right of way 50 feet in width in Section 13, Township 29 South, Range 32 East, and Section 18, Township 29 South, Range 32 East, upon representation of such deed containing legal description of said required right of way. The Board of County Commissioners of Osceola County, on May 15, 1961, agreed to abandon this agreement in return for Three Lakes Ranch, Inc., conveying a 50-foot road right of way on an existing road as per map filed with these minutes through certain property owned by said Three Lakes Ranch, Inc.

As to all property in Township 28 South, Range 32 East, all property in Township 30 South, Range 31 East, all property in Township 31 South, Range 31 East, all property in Township 31 South, Range 32 East, all property in Township 32 South, Range 32 East, all property in Township 29 South, Range 32 East, except Sections 1, 12, 13 and 24; and as to property in Sections 2, 3, all of 4 through 9, inclusive, and Section 31, in Township 30 South, Range 32 East, Kate D. Mann, Roberta Brook, G. W. Mann, Jr., and Frances E. Mann, his wife, by deed dated January 13, 1959, recorded in O.R. Book 35, page 46, Osceola County public records, reserved an undivided one-half interest in and to all minerals, oil, gas, petroleum and petroleum products on all of the above property.

Any interest held by the Trustees of the Internal Improvement Fund of the State of Florida in and to the submerged portions of the old Kissimmee River and/or Central and Southern Florida Flood Control District Canal C-38.

Right of way of Central and Southern Florida Flood Control District Canal C-38 and any portion of subject land taken by the Central and Southern Florida Flood Control District in Common Law Case No. 2871, filed in the Circuit Court of the Ninth Judicial Circuit Court of Florida, in and for Osceola County.

All rights of Central and Southern Florida Flood Control District to any portion of subject land that lie within the boundary of those lands described in that deed recorded in Official Record Book 988, page 240, Polk County public records.

As to Section 31, Township 31 South, Range 32 East, and Section 6, Township 32 South, Range 32 East, there is reserved an undivided 1/2 interest in and to all the oil, gas and minerals which may be upon, under or in the lands described above, to Consolidated Financial Corporation, a Florida corporation, contained in the deed dated September 20, 1962, recorded in O.R. Book 636, page 781, Polk County public records, which was subsequently deeded by Consolidated Financial Corporation to Consolidated-Tomoka Land Co., a Delaware corporation authorized to do business in the State of Florida, by deed dated September 30, 1969, recorded in O.R. Book 1247, page 612, said public records.

Lease No. 2785

LESS AND EXCEPT a parcel conveyed to Southern Bell Telephone and Telegraph Company, described as follows:

Begin at the Southwest corner of Section 14, Township 29 South, Range 33 East, Osceola County, Florida, run thence North 0° 09' 44" East, along the section line 330 feet; thence South 89° 13' 46" East, parallel to the South line of said Section 14, a distance of 396.23 feet to the Westerly right of way line of U. S. Highway No. 441; thence South 20° 01' 24" East along said right of way line 352.98 feet to the South boundary of said Section 14; thence North 89° 13' 46" West along said South boundary 518.03 feet to point of beginning. The foregoing being a parcel of land lying in the South-West Quarter of the Southwest Quarter of Section 14, Township 29 South, Range 33 East, comprising 3.8 acres, more or less.

As to property in Sections 2, 3 and 10, Township 30 South, Range 32 East, there is a right of way easement from Three Lakes Ranch, Inc., to Peace River Valley Electric Membership Cooperative, Inc., a Florida corporation, dated October 23, 1959, for the right to place, construct, erect, operate, maintain and replace an electric transmission or distribution line or lines in, on, along, over, through, across certain lands.

Less and Except rights of way for Sunshine State Parkway, Canoe Creek Road, State Road 60, U. S. Highway No. 441, State Road 15, and State Road S-523.

Subject to an undivided one-half interest in and to all of the oil, gas and other minerals of every kind and character, as more fully described in Mineral Right and Royalty Transfer from Arthur A. Simpson and Geraldine L. Simpson, to Bill McBirney, dated February 6, 1945, recorded in Misc. Book T, page 27, Osceola County public records.

ALSO LESS AND EXCEPT THE FOLLOWING:

Township 30 South, Range 31 East

All of fractional Sections 1, 3, 4, 10, and 15

All of Sections 2 and 11

All of Sections 12 and 13 north and west of the southeast bank of the Jackson Canal

All of fractional Section 14 north and west of the southeast bank of the Jackson Canal

Township 29 South, Range 32 East

The South 1/2 of Section 28 west of State Road 523 (Canoe Creek Road)

The SE 1/4 of Section 29

The East 1/2 and the SW 1/4 of fractional Section 32

All of Sections 33 and 34 south and west of State Road 523 (Canoe Creek Road)

Township 30 South, Range 32 East

The West 1/2 of fractional Section 3

All of fractional Sections 4 and 6

All of Section 5

The North 1/2 of fractional Sections 7 and 8

Consisting of 8,003 acres, more or less

-3-

Smith, Heath & Smith, Attorneys At Law, P. O. Box 1030, Vero Beach, Florida 32960

FLORIDA DEPARTMENT OF NATURAL RESOURCES
DIVISION OF RECREATION AND PARKS

MANAGEMENT CONCEPT

for the

THREE LAKES RANCH
ENVIRONMENTALLY ENDANGERED LANDS PROJECT

August 2, 1974

I. The Three Lakes Ranch property, as shown on the attached map, has been acquired under the Florida Environmentally Endangered Lands program to serve the following environmental protection purposes endorsed by the Interagency Advisory Committee and established by the Executive Board of the Department of Natural Resources:

- (1) To protect and manage the wet prairies and marshes which absorb nutrients and filter out pollutants, thereby improving water quality of the three lakes and the Kissimmee River system.
- (2) To protect and manage exceptional or endangered natural plant communities, especially the Kissimmee (dry) prairie and longleaf pine community.
- (3) To protect and manage the native animals associated with these communities, with emphasis on the bald eagle, osprey, sandhill crane, wood stork, burrowing owl, Florida panther, caracara, and red-cockaded woodpecker.
- (4) To protect and manage the wildlife values and biological productivity of the property, especially the marshes.
- (5) To provide natural flood storage area.

Exhibit B

II. In order to achieve the above objectives, the procedures listed below will be followed:

- (1) Natural water regimes will be restored by filling or plugging ditches and canals where appropriate for the purpose of reestablishing aquatic communities. A hydrologic study will be conducted within three years to permit the implementation of this objective.
- (2) Natural fire regimes will be maintained to preserve the dry prairies, pine flatwoods, and other fire-type communities.
- (3) Native plant communities will be maintained in their natural state to the extent possible. However, some limited manipulation of vegetation by cultivation, or similar management measures may be permitted for the benefit of native wildlife populations. Except as provided for above, purely artificial communities such as "improved pastures" will, as opportunity permits, be restored to the approximate community type existing before alteration.
- (4) Special protective and management measures will be provided for the bald eagle, osprey, sandhill crane, burrowing owl, caracara, wood stork, red-cockaded woodpecker, Florida panther, and any other rare, endangered or unique species which occur on the area.
- (5) Outdoor recreation uses - such as camping, hiking, picnicking, fishing and hunting - shall be permitted where compatible with primary management objectives. A general policy of de-emphasizing vehicular travel on the area will be observed.

-2-

Exhibit B

- (6) Compatible grazing use may be permitted, provided that cattle numbers are balanced with natural range in order to protect the natural communities. The managing agency(ies) desiring to have grazing shall conduct research to determine the carrying capacity for cattle on each of the natural community types in order to assure that grazing practices are not detrimental to these communities. This research shall be completed prior to entering any new grazing lease. Feral pig numbers shall not be allowed to reach a level that would be detrimental to native plant and animal species.
- (7) Limited selective timbering may be permitted if compatible with other management objectives. The bald eagle and osprey nest in large cypress and the red-cockaded woodpecker nests in mature longleaf pines on the area. Timbering will not be permitted in the vicinity of nesting sites. Mature trees suitable for the nests of these species will not be cut, and an adequate number of trees must be maintained to replace mature trees lost due to natural causes.
- (8) The managing agency(ies) shall maintain close coordination with the state planning agency and other appropriate agencies and will cooperate fully with state approved objectives for restoring the Kissimmee River watershed.
- (9) Grazing, timbering, recreation or any other uses may be excluded from certain areas where, or during certain periods of the year when, they are determined to be (a) incompatible with higher priority uses - such as maintaining "wilderness" or "museum" examples of various habitats - or (b) detrimental to the welfare of important or unique forms of wildlife.

-3-

Exhibit B

S U B L E A S E

THIS INDENTURE, made on this 7th day of January, 19 75,
by and between the STATE OF FLORIDA DEPARTMENT OF NATURAL RESOURCES
DIVISION OF RECREATION AND PARKS, hereinafter called "Sublessor",
and the STATE OF FLORIDA GAME AND FRESH WATER FISH COMMISSION, herein-
after called "Sublessee";

W I T N E S S E T H :

WHEREAS, the Sublessor is the Lessee of certain property herein-
after described from the State of Florida Board of Trustees of the
Internal Improvement Trust Fund in order to provide for environmental
protection and enhancement, park and recreation management and related
purposes pursuant to Chapter 259, Land Conservation Act of 1972, Florida
Statutes; and

WHEREAS, the Sublessee is desirous of managing the said property
on an interim basis in conjunction with its management program for
adjacent lands and is in a position to do so effectively;

NOW THEREFORE, for and in consideration of the covenants here-
inafter contained, the parties hereto agree as follows:

1. Subject to all the terms and conditions of the Lease Agreement
of December 11, 1974, to include the Management Concept dated August 2,
1974, attached hereto as Exhibit "A", entered into between the State
of Florida Board of Trustees of the Internal Improvement Trust Fund,
as Lessor, and the State of Florida Department of Natural Resources, as
Lessee, the Sublessor does hereby sublease to the Sublessee those
certain lands lying, being and situated in Osceola County, Florida,
described in Exhibit "B", attached hereto and made a part hereof.

2. The Sublessee shall have and hold the described lands, and
protect, maintain, operate and use them as a portion of its adjoining
management area for a maximum period of 3 years beginning on the date
first mentioned above, providing, however;

- a. At least once during the sublease period the flatwoods,
prairie and marsh communities shall be control burned.
- b. There shall be no cutting of trees or manipulating of
other vegetation by mechanical or chemical means.

c. There shall be no recreational uses made of the property, to include hunting

d. There shall be no physical alterations of the property.

3. The Sublessee shall have the right to enter and occupy the subleased lands for all purposes necessary to the full enjoyment of the rights herein conveyed.

4. The sublessor or its duly authorized agent shall have the right at any reasonable time to inspect the subleased lands and the works and operations thereon of the Sublessee in any manner pertaining to this agreement. Should the Sublessee fail to keep and perform any of its covenants, the Sublessor shall give ninety (90) days written notice requiring the satisfactory correction of that failure. Any failure to effect the correction during the ninety (90) day period shall give the Sublessor the right to terminate the Sublease upon thirty (30) days written notice by the Sublessor.

5. The Sublessee shall hold the Sublessor harmless from any liability or claims that may result from injuries to persons or damage to property resulting from the management and use by the Sublessee of subleased premises.

6. This Sublease and any rights and privileges conferred herein may be assigned or transferred by the Sublessee, but only with the prior written consent of the Sublessor.

IN WITNESS WHEREOF, the State of Florida Department of Natural Resources, and the State of Florida Game and Fresh Water Fish Commission, have caused these presents to be signed by their duly authorized officers, and their official seals have been hereunto affixed this 7th day of January, 1975.

WITNESS

STATE OF FLORIDA
DEPARTMENT OF NATURAL RESOURCES

BY:

Harmon W. Shields
Harmon W. Shields
Executive Director

ATTEST:

Mary J. Novak
Mary J. Novak
Executive Secretary

APPROVED AS TO
FORM AND LEGALITY
1/10/75

STATE OF FLORIDA
COUNTY OF LEON

I Hereby Certify, That on this 24th day of September, 1970,
before me personally appeared O. E. Lutz Jr. and
H. E. Wallace to me well known and known to me to be the
Director and Assistant Director of the
State of Florida Game and Fresh Water Fish Commission, described in and
who executed the foregoing Sublease and acknowledged the execution
therefore to be their free act and deed for the uses and purposes
therein mentioned.

Witness my signature and official seal at Tallahassee
in the County of Leon and State of Florida the day and year last
aforesaid.

Wida M. E. E. E.
Notary Public
State of Florida at Large
Notary Public, State of Florida at Large
My Commission Expires Mar. 30, 1977
Bonded by American Fire & Casualty Co.

STATE OF FLORIDA
COUNTY OF LEON

I Hereby Certify, That on this ____ day of _____, 19____,
before me personally appeared _____ and
_____ to me well known and known to me to be the
Executive Director and Executive Secretary of the State of Florida
Department of Natural Resources described in and who executed the
foregoing Sublease and acknowledged the execution thereof to be their
free act and deed for the uses and purposes therein mentioned.

Witness my signature and official seal at Tallahassee in the
County of Leon and State of Florida the day and year last aforesaid.

Notary Public
State of Florida at Large

LEASE AGREEMENT

No. 2784

Management Project No. 83

WHEREAS, the State of Florida Board of Trustees of the Internal Improvement Trust Fund by virtue of Section 253.03, Florida Statutes, holds title to certain lands and property for the use and benefit of the State of Florida; and

WHEREAS, the State of Florida Department of Natural Resources by formal action on September 3, 1974, authorized and requested the said Trustees to enter into an agreement with the State of Florida Department of Natural Resources, for the use and benefit of the Division of Recreation and Parks, to provide for environmental protection and enhancement, park and recreation management and related purposes in compliance with Chapter 259, Florida Statutes, (Land Conservation Act of 1972).

NOW, THEREFORE, this agreement made between the STATE OF FLORIDA BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND, as LESSOR, and the STATE OF FLORIDA DEPARTMENT OF NATURAL RESOURCES, for the use and benefit of the Division of Recreation and Parks, as LESSEE.

W I T N E S S E T H:

The parties hereto, for and in consideration of the mutual covenants and agreements hereinafter contained, do hereby covenant and agree as follows:

I. The lessor does hereby lease to the said lessee the following described parcels of lands, situate in Osceola County, Florida, viz:

(See Exhibit A - Attached)

TO HAVE AND TO HOLD the above described land for a period of ninety-nine (99) years from the date hereof, to provide for environmental protection and enhancement, park and recreation management and related purposes in compliance with the Management Concept, dated August 2, 1974, marked "Exhibit B", attached hereto and made a part hereof, as well as with Chapter 259, Florida Statutes.

EXHIBIT A

2. The lessee shall have the right to enter upon said lands

for all purposes necessary to the full enjoyment by said lessee of the rights herein conveyed to it.

3. The lessee shall through its agents and employees cooperate to prevent the unauthorized use of said land or any use thereof not in conformity with this lease.

4. This agreement is for the specific purpose of environmental protection and enhancement, park and recreation management and related purposes, and the lessee shall have the right, after written notice to the lessor, to enter into further agreements or to sublease all or any part of the leased land so long as the agreement and/or sublease shall effectively carry out and further the general purposes herein described.

5. The lessor or its duly authorized agent shall have the right at any time to inspect the said land and the works and operations thereon of the lessee in any matter pertaining to this agreement.

6. The lessee hereby covenants and agrees to investigate, to the extent it deems necessary, all claims of every nature at its own expense, and to indemnify, protect, defend, hold and save harmless the State of Florida Board of Trustees of the Internal Improvement Trust Fund and/or the State of Florida from any and all claims, actions, lawsuits and demands of any kind or nature arising out of this agreement to the extent allowed by the Laws of Florida.

7. The lessor does not warrant or guarantee title, right or interest in the property herein described.

8. Any inequities that may subsequently appear in this lease shall be subject to negotiation upon written request of either party, and the parties agree to negotiate in good faith as to any such inequities.

9. This agreement is executed in duplicate, each copy of which shall for all purposes be considered an original.

IN TESTIMONY WHEREOF the Trustees, for and on behalf of the State of Florida Board of Trustees of the Internal Improvement Trust Fund, have hereunto subscribed their names and have caused the official seal of the State of Florida Board of Trustees of the Internal Improvement Trust Fund to be hereunto affixed in the City of Tallahassee on

EXHIBIT A

this 11th day of December, 19 74, and the State of Florida Department of Natural Resources, an agency of the State of Florida, have hereunto set their hands and official seal at Tallahassee, Florida, this 11th day of December, 19 74.

(SEAL)
STATE OF FLORIDA
BOARD OF TRUSTEES
OF THE INTERNAL
IMPROVEMENT TRUST
FUND

Robert G. Viles
Governor

Reverend W. G. Glinn
Secretary of State

Robert L. Harris
Attorney General

Frederick Dickinson
Comptroller

Thomas W. Conalley
Treasurer

Robert T. Robinson
Commissioner of Education

David G. Brown
Commissioner of Agriculture

As and Constituting the State of Florida Board of Trustees of the Internal Improvement Trust Fund, Lessor.

Robert G. Viles
Governor

Reverend W. G. Glinn
Secretary of State

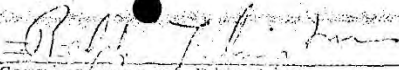
Robert L. Harris
Attorney General

Frederick Dickinson
Comptroller

Thomas W. Conalley
Treasurer

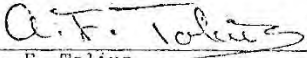
David G. Brown
Commissioner of Agriculture

EXHIBIT A


Commissioner of Education

As and Constituting the State of
Florida Department of Natural
Resources, Lessee.

This instrument prepared by:


A. F. Tolius
Division of Recreation and Parks
Crown Building
Tallahassee, Florida. 32304

Approved as to form and legality by:

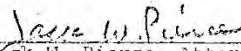

Jack W. Pierce, Attorney
Department of Natural Resources
Crown Building
Tallahassee, Florida 32304

EXHIBIT A

9/3/74

Legal Description

Township 30 South, Range 31 East

All of fractional Section 1
All of Section 2
All of fractional Sections 3, 4, and 10
All of Section 11
All of Sections 12 and 13 north and west of the southeast
bank of the Jackson Canal
All of fractional Section 14 north and west of the southeast
bank of the Jackson Canal
All of fractional Section 15

Township 29 South, Range 32 East

The South $\frac{1}{2}$ of Section 28 west of State Road 523 (Canoe Creek
Road)
The SE $\frac{1}{4}$ of Section 29
The East $\frac{1}{2}$ and the SW $\frac{1}{4}$ of fractional Section 32
All of Section 33 south and west of State Road 523 (Canoe
Creek Road)
All of Section 34 south and west of State Road 523 (Canoe
Creek Road)

Township 30 South, Range 32 East

The West $\frac{1}{2}$ of fractional Section 3
All of fractional Section 4
All of Section 5
All of fractional Section 6
The North $\frac{1}{2}$ of fractional Section 7
The North $\frac{1}{2}$ of fractional Section 8

Consisting of 8,003 acres, more or less.

EXHIBIT A

FLORIDA DEPARTMENT OF NATURAL RESOURCES
DIVISION OF RECREATION AND PARKS

MANAGEMENT CONCEPT

for the

THREE LAKES RANCH
ENVIRONMENTALLY ENDANGERED LANDS PROJECT

August 2, 1974

I. The Three Lakes Ranch property, as shown on the attached map, has been acquired under the Florida Environmentally Endangered Lands program to serve the following environmental protection purposes endorsed by the Interagency Advisory Committee and established by the Executive Board of the Department of Natural Resources:

- (1) To protect and manage the wet prairies and marshes which absorb nutrients and filter out pollutants, thereby improving water quality of the three lakes and the Kissimmee River system.
- (2) To protect and manage exceptional or endangered natural plant communities, especially the Kissimmee (dry) prairie and longleaf pine community.
- (3) To protect and manage the native animals associated with these communities, with emphasis on the bald eagle, osprey, sandhill crane, wood stork, burrowing owl, Florida panther, caracara, and red-cockaded woodpecker.
- (4) To protect and manage the wildlife values and biological productivity of the property, especially the marshes.
- (5) To provide natural flood storage area.

EXHIBIT A

II. In order to achieve the above objectives, the procedures listed below will be followed:

- (1) Natural water regimes will be restored by filling or plugging ditches and canals where appropriate for the purpose of reestablishing aquatic communities. A hydrologic study will be conducted within three years to permit the implementation of this objective.
- (2) Natural fire regimes will be maintained to preserve the dry prairies, pine flatwoods, and other fire-type communities.
- (3) Native plant communities will be maintained in their natural state to the extent possible. However, some limited manipulation of vegetation by cultivation, or similar management measures may be permitted for the benefit of native wildlife populations. Except as provided for above, purely artificial communities such as "improved pastures" will, as opportunity permits, be restored to the approximate community type existing before alteration.
- (4) Special protective and management measures will be provided for the bald eagle, osprey, sandhill crane, burrowing owl, caracara, wood stork, red-cockaded woodpecker, Florida panther, and any other rare, endangered or unique species which occur on the area.
- (5) Outdoor recreation uses - such as camping, hiking, picnicking, fishing and hunting - shall be permitted where compatible with primary management objectives. A general policy of de-emphasizing vehicular travel on the area will be observed.

- 2 -

EXHIBIT A

- (6) Compatible grazing use may be permitted, provided that cattle numbers are balanced with natural range in order to protect the natural communities. The managing agency(ies) desiring to have grazing shall conduct research to determine the carrying capacity for cattle on each of the natural community types in order to assure that grazing practices are not detrimental to these communities. This research shall be completed prior to entering any new grazing lease. Feral pig numbers shall not be allowed to reach a level that would be detrimental to native plant and animal species.
- (7) Limited selective timbering may be permitted if compatible with other management objectives. The bald eagle and osprey nest in large cypress and the red-cockaded woodpecker nests in mature longleaf pines on the area. Timbering will not be permitted in the vicinity of nesting sites. Mature trees suitable for the nests of these species will not be cut, and an adequate number of trees must be maintained to replace mature trees lost due to natural causes.
- (8) The managing agency(ies) shall maintain close coordination with the state planning agency and other appropriate agencies and will cooperate fully with state approved objectives for restoring the Kissimmee River watershed.
- (9) Grazing, timbering, recreation or any other uses may be excluded from certain areas where, or during certain periods of the year when, they are determined to be (a) incompatible with higher priority uses - such as maintaining "wilderness" or "museum" examples of various habitats - or (b) detrimental to the welfare of important or unique forms of wildlife.

Legal Description

Township 30 South, Range 31 East

- All of fractional Section 1
- All of Section 2
- All of fractional Sections 3, 4, and 10
- All of Section 11
- All of Sections 12 and 13 north and west of the southeast bank of the Jackson Canal
- All of fractional Section 14 north and west of the southeast bank of the Jackson Canal
- All of fractional Section 15

Township 29 South, Range 32 East

- The South $\frac{1}{2}$ of Section 28 west of State Road 523 (Canoe Creek Road)
- The SE $\frac{1}{4}$ of Section 29
- The East $\frac{1}{2}$ and the SW $\frac{1}{4}$ of fractional Section 32
- All of Section 33 south and west of State Road 523 (Canoe Creek Road)
- All of Section 34 south and west of State Road 523 (Canoe Creek Road)

Township 30 South, Range 32 East

- The West $\frac{1}{2}$ of fractional Section 3
- All of fractional Section 4
- All of Section 5
- All of fractional Section 6
- The North $\frac{1}{2}$ of fractional Section 7
- The North $\frac{1}{2}$ of fractional Section 8

Consisting of 8,003 acres, more or less.

EXHIBIT B

88085

AMENDMENT TO
BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND
LEASE NUMBER 2785

THIS LEASE AMENDMENT is entered into this 20th day of December, 1988, by and between the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA (hereinafter referred to as the BOARD) and the STATE OF FLORIDA GAME AND FRESH WATER FISH COMMISSION (hereinafter referred to as the LESSEE);

W I T N E S S E T H

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

WHEREAS, on December 11, 1974, the BOARD and the LESSEE entered into Lease No. 2785; and

WHEREAS, the BOARD and LESSEE desire to amend the lease to allow LESSEE to add additional land to the leased property;

NOW THEREFORE, the BOARD and LESSEE hereby agree as follows:

1. Exhibit A of the lease is hereby amended by adding the following:

(See Description of Additional Property on Page 3)

2. Paragraph 6 is hereby amended to read as follows: The LESSEE agrees to assist in the investigation of injury or damage claims either for or against the LESSOR or the State of Florida pertaining to the LESSEE'S respective areas of responsibility under this lease agreement; or arising out of the LESSEE'S respective management programs or activities and to contact the LESSOR regarding the legal action deemed appropriate to remedy such damage or claims.

3. It is understood and agreed by the BOARD and the LESSEE that in each and every respect the terms of the lease, except as amended hereby, shall remain unchanged; and the same are hereby ratified, approved and confirmed by the BOARD and the LESSEE.

Copy Sent

Amendment to Lease No. 2785
Page 1 of 3

IN TESTIMONY WHEREOF, the lawfully designated agents of the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND and the STATE OF FLORIDA GAME AND FRESH WATER FISH COMMISSION, have hereunto subscribed their names and have caused their official seals to be hereunto affixed, in the City of Tallahassee, Florida, on the day and year first written above.

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

By: Dubrada Hart (SEAL)
CHIEF, BUREAU OF UPLANDS
MANAGEMENT, DIVISION OF STATE
LANDS, FLORIDA DEPARTMENT OF
NATURAL RESOURCES, AGENT FOR THE
BOARD OF TRUSTEES OF THE INTERNAL
IMPROVEMENT TRUST FUND OF THE
STATE OF FLORIDA

Bonnie Peter
Witness

Barnard Knight
Witness

STATE OF FLORIDA
LEON COUNTY

The foregoing instrument was acknowledged before me this 22nd day of December, 1988, by Dubrada Hart as Chief, Bureau of Uplands Management, Division of State Lands, Florida Department of Natural Resources.

Verena R. Cook
NOTARY PUBLIC
My Commission Expires: July 14, 1992

Approved as to Form and Legality:

By: Capitol M. Cluff
DNR Attorney

STATE OF FLORIDA GAME AND FRESH WATER FISH COMMISSION

By: Robert M. Brantly (SEAL)
EXECUTIVE DIRECTOR, FLORIDA
GAME AND FRESH WATER FISH
COMMISSION

Jimmie C. Lewis
Witness
James C. Cook
Witness

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 13th day of December, 1988, by Robert M. Brantly as Executive Director, Florida Game and Fresh Water Fish Commission.

Rosemary Wynn
NOTARY PUBLIC
My Commission Expires: Oct. 20, 1991

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY

Amall
Commission Attorney

Amendment to Lease No. 2785
Page 2 of 3

APPROVED AS FISCALLY
AND BUDGETARILLY SOUND

William C. Sumner
DIRECTOR
DIVISION OF ADMINISTRATIVE SERVICES

Legal Description

Township 30 South, Range 31 East

All of fractional Section 1
 All of Section 2
 All of fractional Sections 3, 4, and 10
 All of Section 11
 All of Sections 12 and 13 north and west of the southeast
 bank of the Jackson Canal
 All of fractional Section 14 north and west of the southeast
 bank of the Jackson Canal
 All of fractional Section 15

Township 29 South, Range 32 East

The South $\frac{1}{2}$ of Section 28 west of State Road 523 (Canoe Creek
 Road)
 The SE $\frac{1}{4}$ of Section 29
 The East $\frac{1}{2}$ and the SW $\frac{1}{4}$ of fractional Section 32
 All of Section 33 south and west of State Road 523 (Canoe
 Creek Road)
 All of Section 34 south and west of State Road 523 (Canoe
 Creek Road)

Township 30 South, Range 32 East

The West $\frac{1}{2}$ of fractional Section 3
 All of fractional Section 4
 All of Section 5
 All of fractional Section 6
 The North $\frac{1}{2}$ of fractional Section 7
 The North $\frac{1}{2}$ of fractional Section 8

Also,

N $\frac{5}{8}$ of the N $\frac{1}{2}$ of Section 12, East of the east bank
 of the Lake Jackson Canal, Township 30 South, Range 31
 East, Osceola County, Florida. Approximately 200 acres.

Also,

W $\frac{1}{2}$ and E $\frac{1}{2}$ less that part of the E $\frac{3}{4}$ of E $\frac{1}{2}$
 south and west of State Road 523 (sometimes referred to
 as the Kenanville Road or the Canoe Creek Road), being
 in Section 3, Township 30 South, Range 32 East.

ATL8101

BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND

AMENDMENT NO. 2 TO LEASE NUMBER 2785

#2
THIS LEASE AMENDMENT is entered into this 19th day of August, 1992, by and between the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, hereinafter referred to as "LESSOR", and the STATE OF FLORIDA GAME AND FRESH WATER FISH COMMISSION, hereinafter referred to as "LESSEE";

W I T N E S S E T H

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

WHEREAS, on December 11, 1974, LESSOR and LESSEE entered into Lease No. 2785;

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

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

1. The legal description of the leased premises set forth in Exhibit A of Lease No. 2785 is hereby amended to include the real property described in Exhibit "A", to this amendment, a copy of which is attached hereto and by reference made a part hereof.

2. It is understood and agreed by and between LESSOR and LESSEE that the lands described in Exhibit "A" attached to this amendment are subject to an oral cattle grazing lease in favor of Jimmy Carter. Said oral grazing lease is scheduled to terminate on October 10, 1992.

3. It is further understood and agreed by LESSOR and LESSEE that Lease No. 2785 as amended, shall remain in full force and effect, and the same is hereby ratified, approved and confirmed by LESSOR and LESSEE.

Page 1 of 5
Amendment to Lease No. 2785

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

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

Bonnie Wilson
Witness
Kelly R. Williams
Witness

By: Daniel T. Crabb (SEAL)
CHIEF, BUREAU OF LAND
MANAGEMENT SERVICES, DIVISION
OF STATE LANDS, DEPARTMENT OF
NATURAL RESOURCES

"LESSOR"

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this
19th day of AUGUST, 1992 by Daniel T. Crabb, as Chief,
Bureau of Land Management Services, Division of State Lands,
Department of Natural Resources, who is personally known to me
and who did not take an oath.

My Commission Expires:

My Commission Expires July 25, 1993

Bonded Three Year Fails - Insurance Inc.
Approved as to Form
and Legality

By: William C. Robinson
DNR Attorney

Sylvia Scott
Notary Public, State of Florida
Printed, typed or stamped name:

Sylvia Scott

(Serial Number, if any)

STATE OF FLORIDA GAME AND FRESH
WATER FISH COMMISSION

Daniel J. Cook
Witness
Terry M. ...
Witness

By: Allen L. Leggett (SEAL)

Its: Assistant Executive Director

"LESSEE"

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this
3rd day of August, 1992 by Allen L. Leggett,
as Assistant Executive Director, who (is)
personally known to me and who (did) take an oath.

My Commission Expires:

Notary Public, State of Florida
My Commission Expires Nov. 7, 1993
Bonded Three Year Fails - Insurance Inc.

Jimmie C. Bevis
Notary Public, State of Florida
Printed, typed or stamped name:
JIMMIE C. BEVIS

(Serial Number, if any)

APPROVED AS FISCALLY
AND BUDGETARILLY SOUND

William C. Sumner

DIRECTOR
DIVISION OF ADMINISTRATIVE SERVICES
QFWFC

Page 2 of 5
Amendment to Lease No. 2785

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY

William C. Sumner
Commission Attorney

KICOMMITEE, FL 33007

Prepared by: DENIS H. NOAH
P. O. Box 280
Ft. Myers, FL 33902
(813) 334-4121

Date: 5/21/92

WARRANTY DEED

Wherever used herein, the term "party" shall include the heirs, personal representatives, successors and/or assigns of the respective parties hereto; the use of the singular number shall include the plural, and the plural the singular; the use of any gender shall include all genders.

THIS INDENTURE, made this 15th day of April 1992 between J. JAY BARNETT and HELEN T. BARNETT, husband and wife, whose post office address is 1302 Jambalana Lane, Ft. Myers, FL 33907, of the County of Lee and State of Florida, party of the first part, and BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, whose post office address is c/o Department of Natural Resources, Division of State Lands, 3900 Commonwealth Blvd., Mail Station 115, Tallahassee, FL 32399, of the County of Leon and State of Florida, party of the second part,

WITNESSETH that the said party of the first part, for and in consideration of the sum of TEN (\$10.00) DOLLARS and other good and valuable consideration, to them in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged, has granted, bargained and sold to the said party of the second part, its successors and assigns forever, the following described land, situate lying and being in the County of Osceola, State of Florida, to wit:

IN SECTION 2: All that part lying south and west of State Road 523 (sometimes referred to as the Kenansville Road or Canoe Creek Road);

Property Appraiser's I.D. #02-30-32-0000-0020.0000

IN SECTION 3: That part of the East 3/4 of the East 1/2 (the East 3/8) lying south and west of State Road 523 (sometimes referred to as the Kenansville Road or Canoe Creek Road);

Property Appraiser's I.D. #03-30-32-0000-0030.0000

IN SECTION 10: The East 3/4 of the East 1/2 (the East 3/8) of the fractional section;

Property Appraiser's I.D. #10-30-32-0000-0010.0000

IN SECTION 11: All fractional part of the section, less and except a portion of Section 11, Township 30 South, Range 32 East, Osceola County, Florida, more particularly described as follows:

Commence at the intersection of the South right-of-way line of State Road 523, a 100 foot right-of-way, as shown on State of Florida Department of Transportation Right-of-Way Maps, Section 92520-2603, sheets 4 and 5 of 13, dated 8/4/65, and the East line of Section 2, Township 30 South, Range 32 East, Osceola County, Florida; thence S00°05'29"W along said East line for a distance of 786.18 feet to the Northeast corner of said Section 11; thence S00°05'21"W along the East line of said Section 11 for a distance of 2,400.00 feet to the Point of Beginning; thence N89°54'39"W for a distance of 806.00 feet; thence S00°05'21"E for a distance of 586 feet more or less to the shoreline of Lake Marian; thence Easterly meandering along said shoreline for a distance of 875 feet more or less to a point on

14332.00

NO. 2785
EXHIBIT A
PAGE 3 OF 5

the East line of said Section 11; thence N00°05'21"E along said East line for a distance of 625 feet more or less to the Point of Beginning.

Property Appraiser's I.D. #11-30-32-0000-0010.0000,

All of the above lying and being in Township 30 South, Range 32 East, Osceola County, Florida.

Subject to utility easement in favor of Peace River Electric Cooperative, Inc. recorded in O.R. Book 385, page 372, Public Records of Osceola County, Florida (as to land in Section 3).

Subject to drainage easement in favor of State of Florida, recorded in O.R. Book 187, page 97, Public Records of Osceola County, Florida (as to land in Section 2).

Subject to riparian/littoral rights for Lake Marian, as to parcels in Sections 10 and 11.

Subject to an undivided one-half interest in and to all minerals, oil, gas, petroleum and petroleum products reserved by and retained by Kate D. Mann, Roberta Brook, also known as Bob Brook, and G. W. Mann, Jr., also known as Geo. W. Mann, Jr., also known as George W. Mann, Jr. and his wife, Frances E. Mann ("claimants") in warranty deed recorded in O. R. Book 35, page 466, together with notice of minerals, oil, gas, petroleum and petroleum products reservations recorded in O.R. Book 321, page 673, Public Records of Osceola County, Florida (as to lands in Sections 2, 3 10 and 11). There is no record of any subsequent conveyance by claimants or their heirs, legal representatives, successors and assigns, of any portion of this outstanding one-half interest in and to all minerals, oil, gas, petroleum and petroleum products. Claimants, their heirs, legal representatives, successors and assigns do not have the right to explore for, mine or develop any of said retained interest.

Subject to ingress, egress and utility easement to Robert L. Stinnett recorded in O.R. Book 771, page 1849, Public Records of Osceola County, Florida (as to lands in Sections 2, 3, 10 and 11).

And the said party of the first part does hereby fully warrant the title to said land, and will defend the same against the lawful claims of all persons whomsoever.

IN WITNESS WHEREOF, the said party of the first part have hereunto set their hands and seals the day and year first above written.

Signed, Sealed and Delivered
in the Presence of:

Dennis H. Noah
Witness Signature

Dennis H. Noah
Print/Type Name of Witness

Judith M. Perry
Witness Signature

Judith M. Perry
Print/Type Name of Witness

J. Jay Barnett
J. Jay Barnett
1302 Jambalana Lane
Ft. Myers, FL 33907

DRBK1063 P62156

Dennis H. Noah
Witness Signature
Dennis H. Noah
Print/Type Name of Witness
Judith M. Perry
Witness Signature
Judith M. Perry
Print/Type Name of Witness

Helen T. Barnett
Helen T. Barnett
1302 Jambalana Lane
Ft. Myers, FL 33907

STATE OF FLORIDA

COUNTY OF LEE

I HEREBY CERTIFY that on this day personally appeared before me, an officer duly authorized to administer oaths and take acknowledgments, J. JAY BARNETT and HELEN T. BARNETT, husband and wife, (who are personally known to me) or who have produced NA as identification and who did not take an oath, and that they executed the same freely and voluntarily for the purposes therein expressed.

WITNESS my hand and official seal at Fort Myers, County of Lee, and State of Florida, this 15th day of April 1992.

My Commission Expires:



DENNIS H. NOAH
MY COMMISSION # AA 676087 EXPIRES
JUNE 18, 1993
BONDED THIRD PARTY FIDELITY INSURANCE, INC.

Dennis H. Noah
Notary Public Signature
Dennis H. Noah
Print/Type Name of Notary
Commission No. AA 676087

FILED, RECORDED AND
RECORDS VERIFIED
MEL WILLS JR., CLK. CIR. CT.
LEE COUNTY
AK D.C.

920030435

1992 APR 26 09:01

-3-

NO. 2785
EXHIBIT A
PAGE 5 OF 5

ATL8101

BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND

AMENDMENT NO. 3 TO LEASE NUMBER 2785

THREE LAKES WILDLIFE MANAGEMENT AREA

THIS LEASE AMENDMENT is entered into this 2nd day of May, 1994, by and between the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, hereinafter referred to as "LESSOR", and the STATE OF FLORIDA GAME AND FRESH WATER FISH COMMISSION, hereinafter referred to as "LESSEE";

W I T N E S S E T H

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

WHEREAS, on December 11, 1974, LESSOR and LESSEE entered into Lease No. 2785;

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

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

1. The legal description of the leased premises set forth in Exhibit "A" of Lease No. 2785 is hereby amended to include the real property described in that certain deed from Robert J. Stinnett to LESSOR, dated June 23, 1993, and recorded in Official Record Book 1130, Page 2621, of the Public Records of Osceola County, Florida. A copy of such deed is attached hereto as Exhibit "A" and by reference made a part hereof.

2. It is understood and agreed by LESSOR and LESSEE that in each and every respect the terms of the Lease No. 2785 except as amended hereby, shall remain unchanged and in full force and effect and the same are hereby ratified, approved and confirmed by LESSOR and LESSEE.

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

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

Glenn Maddox
Witness

Glenn Maddox
Print/Type Witness Name

David B. Stevenson
Witness

DAVID B. STEVENSON
Print/Type Witness Name

By: Daniel T. Crabb (SEAL)
CHIEF, BUREAU OF LAND
MANAGEMENT SERVICES, DIVISION
OF STATE LANDS, DEPARTMENT OF
ENVIRONMENTAL PROTECTION

"LESSOR"

STATE OF FLORIDA
COUNTY OF LEON

2nd The foregoing instrument was acknowledged before me this
day of May, 1997 by Daniel T. Crabb, as
Chief, Bureau of Land Management Services, Division of State
Lands, Department of Environmental Protection, who is personally
known to me and who did not take an oath.



SYLVIA Y. SCOTT
MY COMMISSION # CC295550 EXPIRES
July 25, 1997
BONDED THRU TROY PAUL INSURANCE, INC.

Sylvia Y. Scott
Notary Public, State of Florida
Sylvia Y. Scott
Print/Type Notary Public Name

Commission Number CC295550

My Commission Expires: July 25, 1997

Approved as to Form and Legality

By: [Signature]
DEP Attorney

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

STATE OF FLORIDA GAME AND FRESH
WATER FISH COMMISSION

Gimmie C. Davis
Witness

Gimmie C. Davis
Print/Type Witness Name

Gale F. Cook
Witness

GALE F. COOK
Print/Type Witness Name

By: William C. Sumner (SEAL)
Its: Assistant Executive Director

"LESSEE"

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this
21st day of April, 1994 by William C. Sumner
as Not Ex. Dir., State of Florida Game and
Fresh Water Fish Commission, who is/are personally known to me
and who did/(did not) take an oath.

(SEAL)



ROSEMARY MARA
MY COMMISSION # CC 153492 EXPIRES
OCTOBER 20, 1995
BONDED THRU TROY FAIR INSURANCE, INC.

Rosemary Mara
Notary Public, State of Florida

Print/Type Notary Public Name

Commission Number _____

My Commission Expires: _____

EXHIBIT A"

PREPARED BY AND RETURN TO:

Kimberly M. Snyder
OSCEOLA TITLE
316 N. Bermuda Ave. Suite 14
Kissimmee, Florida 34741

WARRANTY DEED

Approved As to Form and Legality

By: Paul J. Stinnett

Date: 5/3/93

Property Appraisers Parcel I.D.
11 30 32 0000 0020 0000
FILE 9321503

THIS WARRANTY DEED Made the 23rd day of JUNE, 1993A.D. by ROBERT J. STINNETT, A MARRIED MAN hereinafter called the grantor,

to BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA whose postoffice address is c/o DNR, 3900 COMMONWEALTH BLVD., MAIL ST. 115, TALLAHASSEE, FLORIDA 32399 Hereinafter called the grantee:

(Wherever used herein the terms "grantor" include all the parties to this instrument and the heirs, legal representatives and assigns of individuals, and the successors and assigns of corporations and public bodies.)

WITNESSETH: That the grantor, for and is consideration of the sum of \$10.00 and other valuable considerations, receipt whereof is hereby acknowledged, hereby grants, bargains, sells, aliens, remises, releases, conveys and confirms unto the grantee, grantee's successors and assigns forever, all that certain land situate in Osceola County, Florida, viz:

SEE ATTACHED EXHIBIT "A"

THE ABOVE DESCRIBED REAL PROPERTY DOES NOT CONSTITUTE THE RESIDENCE OF THE GRANTOR AND, THEREFORE, IS NOT HOMESTEAD PROPERTY WITHIN THE DEFINITION OF ARTICLE X, SECTION 4 OF THE FLORIDA CONSTITUTION.

TOGETHER, with all the tenements, hereditaments and appurtenances thereto belonging or is anywise appertaining. TO HAVE AND TO HOLD, the same in fee simple forever. AND the grantor hereby fully warrants the title to said land and will defend the same against the lawful claims of all persons whomsoever.

IN WITNESS WHEREOF, the said grantor has signed and sealed these presents the day and year first above written.

Signed, sealed and delivered in the presence of:

WITNESS
Printed Name KIMBERLY M. SNYDER

WITNESS
Printed Name MARIA R. SENATORE

ROBERT J. STINNETT
3215 GUENNA LANE
SARASOTA, FLORIDA 34239-3408

STATE OF FLORIDA COUNTY OF OSCEOLA

The foregoing instrument was acknowledged before me this 23rd day of June, 1993 by ROBERT J. STINNETT who is personally known to me or has produced Driver's License as identification and who did NOT take an oath.

MY COMMISSION EXPIRES: 5/23/94
SEAL

NOTARY PUBLIC
Printed Name KIMBERLY M. SNYDER
Commission No. 00015132

Page 4 of 5
Amendment No. 3 to Lease No. 2785

06/23/93 14:15 VERIFIED: CCM INSTR # 93-046154 PG 2621

EXHIBIT "A"

LEGAL DESCRIPTION OF THE PROPERTY

A portion of Section 11, Township 30 South, Range 32 East, Osceola County, Florida, more particularly described as follows:

Commence at the intersection of the South Right-of-way line of State Road 523, a 100-foot right-of-way, as shown on State of Florida Department of Transportation Right-of-way Maps, Section 92520-2603, sheets 4 and 5 of 13, dated 8/4/65 and the East line of Section 2, Township 30, Range 32 East, Osceola County, Florida; thence S00°05'29"W along said East line for a distance of 786.18 feet to the Northeast corner of said Section 11; thence S00°05'21"W, along the East line of said Section 11, for a distance of 2400.00 feet to the Point of Beginning; thence N89°54'39"W, for a distance of 806.00 feet; thence S00°05'21"E for a distance of 586 feet more or less to the shoreline of Lake Marian; thence Easterly meandering said shoreline for a distance of 875 feet, more or less to a point on the East line of said Section 11; thence N00°05'21"E along said East line for a distance of 625 feet more or less to the Point of Beginning. Together with an easement 60 feet in width for ingress, egress, installation and maintenance of utilities from the boundary of the Property to State Road 523 along existing farm roads, provided that if and when said existing farm roads or new roads are improved, said easement shall apply only to such improved road, which may or may not be co-extensive with said farm roads.

BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND

AMENDMENT NO. 4 TO LEASE NUMBER 2785

THREE LAKES WILDLIFE MANAGEMENT AREA

THIS LEASE AMENDMENT is entered into this 26th day of August, 1974, by and between the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, hereinafter referred to as "LESSOR", and the STATE OF FLORIDA GAME AND FRESH WATER FISH COMMISSION, hereinafter referred to as "LESSEE";

W I T N E S S E T H

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

WHEREAS, on December 11, 1974, LESSOR and LESSEE entered into Lease No. 2785;

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

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

1. The legal description of the leased premises set forth in Exhibit "A" of Lease No. 2785 is hereby amended to include the real property described in Exhibit "A" and by reference made a part hereof.

2. It is understood and agreed by LESSOR and LESSEE that in each and every respect the terms of the Lease No. 2785 except as amended hereby, shall remain unchanged and in full force and effect and the same are hereby ratified, approved and confirmed by LESSOR and LESSEE.

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

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

Olessa Hunter
Witness

Olessa Hunter
Print/Type Witness Name

David B. Stevenson
Witness
DAVID B STEVENSON
Print/Type Witness Name

By: [Signature] (SEAL)
CHIEF, BUREAU OF LAND
MANAGEMENT SERVICES, DIVISION
OF STATE LANDS, DEPARTMENT OF
ENVIRONMENTAL PROTECTION

"LESSOR"

STATE OF FLORIDA
COUNTY OF LEON

26th day of August, 1999, by Daniel T. Crabb, as
Chief, Bureau of Land Management Services, Division of State
Lands, Department of Environmental Protection, who is personally
known to me or who produced identification, as



SYLVIA Y. SCOTT
MY COMMISSION # CC295550 EXPIRES
July 25, 1997
BONDED THRU TROY PAIR INSURANCE, INC.

[Signature]
Notary Public, State of Florida
Sylvia Y. Scott
Print/Type Notary Name

Commission Number CC295550

My Commission Expires: July 25, 1997

Approved as to Form and Legality

By: [Signature]
DEP Attorney

STATE OF FLORIDA GAME AND FRESH
WATER FISH COMMISSION

Jimmie C. Bevis
Witness

Jimmie C. Bevis
Print/Type Witness Name

Witness

Print/Type Witness Name

By: [Signature] (SEAL)
Allan L. Egbert
Print/Type Name

Its: Executive Director

"LESSEE"

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

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this
11th day of August, 1994 by Walter E. Egbert
as Executive Director, State of Florida Game and
Fresh Water and Fish Commission, who is/are personally known to
me or who produced _____ as identification.



ROSEMARY MAHA
MY COMMISSION # CC 15102 EXPIRES
October 20, 1995
BONDED THRU TROY FAIR INSURANCE, INC.



ROSEMARY MAHA
MY COMMISSION # CC 15102 EXPIRES
October 20, 1995
BONDED THRU TROY FAIR INSURANCE, INC.

Rosemary Maha
Notary Public, State of Florida

Print/Type Notary Name

Commission Number

My Commission Expires:

EXHIBIT "A"

LEGAL DESCRIPTION OF THE LEASED PREMISES

Township 29 South, Range 32 East, Osceola County, Florida:

Section 25: All that part lying north and east of the right-of-way for Sunshine State Parkway.

Township 29 South, Range 33 East, Osceola County, Florida:

Section 30: All that part lying north and east of the right-of-way for Sunshine State Parkway.

LESS AND EXCEPT that Borrow Pit identified as Parcel 1K in Order of Taking dated February 17, 1962, filed February 20, 1962, and recorded in Circuit Court Minute Book K, Page 459 of the Public Records of Osceola County, Florida, described as follows:

Commencing on the West line of said Section 30 at a point S 00°28'38" W, a distance of 2135.28 ft. from the Northwest corner thereof, at a point on a curve concave Southwest and having a Radius of 11,659.19 ft. and a Tangent bearing of S 49°59'01" E; run thence 229.70 ft. along the arc of said curve to the Point of Beginning; run thence from a Tangent bearing of S 39°51'17" E; run thence N 50°16'05" E, a distance of 300.05 ft; run thence N 39°43'55" W, a distance of 175.00 ft; run thence N 50°16'05" E, a distance of 800.00 ft; run thence S 38°43'55" E, a distance of 400.00 ft; run thence S 50°16'05" W, a distance of 800.00 ft; run thence N 39°43'55" W, a distance of 175.00 ft; run thence S 50°16'05" W, a distance of 300.05 ft. to the arc of aforementioned curve; run thence from a Tangent bearing of N 39°36'33" W; run Northwesterly, a distance of 50.00 ft. along the arc of said curve to the Point of Beginning, lying and being in the NW 1/4 of Section 30, Township 29 South, Range 33 East, Osceola County, Florida.

Section 31: All that part lying north and east of the right-of-way for Sunshine State Parkway.

Section 32: All that part lying north and east of the right-of-way for Sunshine State Parkway.

Section 33: All.

Section 34: All.

Section 35: That part of the SW 1/4 and the S 1/2 of NW 1/4 lying west of the right-of-way for State Road 15 (also known as U.S. Highway 441).

Township 30 South, Range 33 East, Osceola County, Florida:

Section 2: All that part lying west of the right-of-way for State Road 15 (also known as U.S. Highway 441) and State Road 29.

LESS the following described lands:

Beginning at the Southwest corner of Section 2, T 30 S, R 33 E, Osceola County, Florida, run S 89° 54' 26" E, along the South line of said Section 2, 2657.82 ft. to the Point of Beginning; run thence N 09° 50' 37" W, parallel to the West Right of Way line of U.S. Highway No. 441, 32.00 ft; run thence S 89° 54' 26" E, parallel to aforesaid South Section line, 26.00 ft. to the aforesaid West Right of Way line of U.S. Highway No. 441; run

Page 4 of 5
Amendment No. 4 to Lease No. 2785

thence S 09° 50' 37" E, along said Right of Way line, 32.00 ft. to aforesaid South Section line; run thence N 89° 54' 26" W, along said South Section line, 26.00 ft. to the Point of Beginning.

Section 3: All.

Section 4: All.

Section 5: All that part lying north and east of the right-of-way for Sunshine State Parkway.

Section 8: All that part lying north and east of the right-of-way for Sunshine State Parkway.

Section 9: All that part lying north and east of the right-of-way for Sunshine State Parkway.

LESS the following described lands:

Beginning at the northeast corner of Section 16, Township 30 South, Range 33 East, Osceola County, Florida, run south 00°05'08" west along the east line of said Section 16, 1069.28 feet, to the northeast corner of Fire Tower lease, run thence north 89°52'18" west 208.71 feet to the northwest corner of said lease, run thence south 00°05'08" west 208.71 feet to the north right-of-way line of State Road No. 523, run thence north 89°52'18" west along said right-of-way line 582.73 feet, run thence north 75°50'08" west along said right-of-way line 206.16 feet, run thence north 89°52'18" west along said right-of-way line 623.84 feet to the easterly right-of-way line of Florida's Turnpike, run thence north 38°51'58" west along said right-of-way line 3926.55 feet, run thence south 89°58'24" east parallel to the south line of Section 9, Township 30 South, Range 33 East, 4083.97 feet to the east line of said Section 9; run thence south 00°05'58" west along said line 1831.0 feet to the point of beginning.

ATL1

1,846.20 Acres (approximately)

BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT
TRUST FUND

AMENDMENT NUMBER 5 TO LEASE NUMBER 2785

THREE LAKES WILDLIFE MANAGEMENT AREA

THIS LEASE AMENDMENT is entered into this 28th day of
May, 1998, by and between the BOARD OF TRUSTEES OF
THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA,
hereinafter referred to as "LESSOR" and the STATE OF FLORIDA GAME
AND FRESH WATER FISH COMMISSION, hereinafter referred to as
"LESSEE";

W I T N E S S E T H

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

WHEREAS, on September 3, 1974, LESSOR and LESSEE entered
into Lease Number 2785; and

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

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

1. The legal description of the leased premises set forth
in Exhibit "A" of Lease Number 2785 is hereby amended to include
the real property described in Exhibit "A", attached hereto, and
by reference made a part hereof.

2. It is understood and agreed by LESSOR and LESSEE that
in each and every respect the terms of the Lease Number 2785

Page 1 of 6

Amendment No. 5 to Lease No. 2785

except as amended, shall remain unchanged and in full force and effect and the same are hereby ratified, approved and confirmed by LESSOR and LESSEE.

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

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

[Signature]
Witness

Daniel T. Crabb
Print/Type Witness Name

[Signature]
Witness

Gayle H. Brett
Print/Type Witness Name

By: [Signature] (SEAL)
DANIEL T. CRABB, CHIEF,
BUREAU OF PUBLIC LAND
ADMINISTRATION, DIVISION
OF STATE LANDS, DEPARTMENT OF
ENVIRONMENTAL PROTECTION

"LESSOR"

STATE OF FLORIDA
COUNTY OF LEON

28th The foregoing instrument was acknowledged before me this day of May, 1998, by Daniel T. Crabb, as Chief, Bureau of Public Land Administration, Division of State Lands, Florida Department of Environmental Protection, as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida. He is personally known to me.

[Signature]
Notary Public, State of Florida

(SEAL)

Print/Type Notary Name

Commission Number:

Commission Expires:



GAYLE H. BRETT
MY COMMISSION # CC392215 EXPIRES
July 13, 1998
BONDED THRU TROY PAUL INSURANCE, INC.

Approved as to Form and Legality

By: [Signature]
DEP Attorney

Page 2 of 6

Amendment No. 5 to Lease No. 2785

FLORIDA GAME AND FRESH WATER
FISH COMMISSION

Ron Wright
Witness

Ron Wright
Print/Type Witness Name

Rosemary Mara
Witness

Rosemary Mara
Print/Type Witness Name

By: Victor J. Heller (SEAL)

Victor J. Heller
Print/Type Name

Title: Assist. Exec. Director

"LESSEE"

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this
15th day of March, 1998, by Victor J. Heller
as Assistant Executive Director of the Florida Game and Fresh
Water Fish Commission. He/~~she~~ is personally known to me.

(SEAL)

Jimmie C. Bevis
Notary Public, State of Florida

JIMMIE C. BEVIS

Print/Type Notary Name

Commission Number:

Commission Expires:



Jimmie C. Bevis
MY COMMISSION # CC702862 EXPIRES
December 28, 2001
BONDED THRU TROY FAIR INSURANCE, INC.

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY
Victor J. Heller
Commission Attorney

Page 3 of 6

Amendment No. 5 to Lease No. 2785

EXHIBIT "A" LEGAL DESCRIPTION

A parcel of land situate in Osceola County, Florida, more particularly described as follows:

All that portion of Section 11, Township 31 South, Range 31 East, lying Easterly of the Westerly bank of the Central and Southern Florida Flood Control District Canal C-38, less the Northeast one-quarter (NE 1/4) of the Southeast one-quarter (SE 1/4) and less the North one-half (N 1/2) of said Section 11.

AND

All that part of Section 14, Township 31 South, Range 31 East, lying Easterly of the Westerly bank of Central and Southern Florida Flood Control District Canal C-38.

AND

All that part of Section 24, Township 31 South, Range 31 East, lying Easterly of the Westerly bank of Central and Southern Florida Flood Control District Canal C-38.

AND

All that part of Section 13, Township 31 South, Range 31 East, lying Easterly of the Westerly bank of Central and Southern Florida Flood Control District Canal C-38, less the following: The Northeast one-quarter of the Northwest one-quarter of the Northwest one-quarter (NE 1/4, NW 1/4, NW 1/4); the East one-half of the Northwest one-quarter (E 1/2, NW 1/4); the East one-half of the Northeast one-quarter of the Southwest one-quarter (E 1/2, NE 1/4, SW 1/4); the Northeast one-quarter of the Southeast one-quarter of the Southwest one-quarter (NE 1/4, SE 1/4, SW 1/4); the North three-quarters of the East one-half (N 3/4, E 1/2); the Northwest one-quarter of the Southwest one-quarter of the Southeast one-quarter (NW 1/4, SW 1/4, SE 1/4); the East one-half of the Southwest one-quarter of the Southeast one-quarter (E 1/2, SW 1/4, SE 1/4); the Southeast one-quarter of the Southeast one-quarter (SE 1/4, SE 1/4).

AND

All that part of Section 25, Township 31 South, Range 31 East, lying Easterly of the Westerly bank of Central and Southern Florida Flood Control District Canal C-38.

AND

All that part of Section 36, Township 31 South, Range 31 East, lying Easterly of the Westerly bank of Central and Southern Florida Flood Control District Canal C-38.

- 1 -

PAGE 4 OF 6
EXHIBIT A
AMENDMENT NO. 5 TO LEASE NO. 2785

AND

All that part of Section 30, Township 31 South, Range 32 East, lying Westerly of the Easterly Ordinary High Water Line of the Kissimmee River;

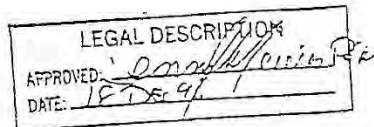
AND

All that portion of Section 31, Township 31 South, Range 32 East, lying Easterly of the West bank of Central and Southern Florida Flood Control District Canal C-38 and lying Westerly of the Easterly Ordinary High Water Line of the Kissimmee River.

AND

All that portion of Section 6, Township 32 South, Range 32 East, lying Easterly of the Westerly bank of Central and Southern Florida Flood Control District Canal C-38 and Westerly of the Easterly Ordinary High Water Line of the Kissimmee River.

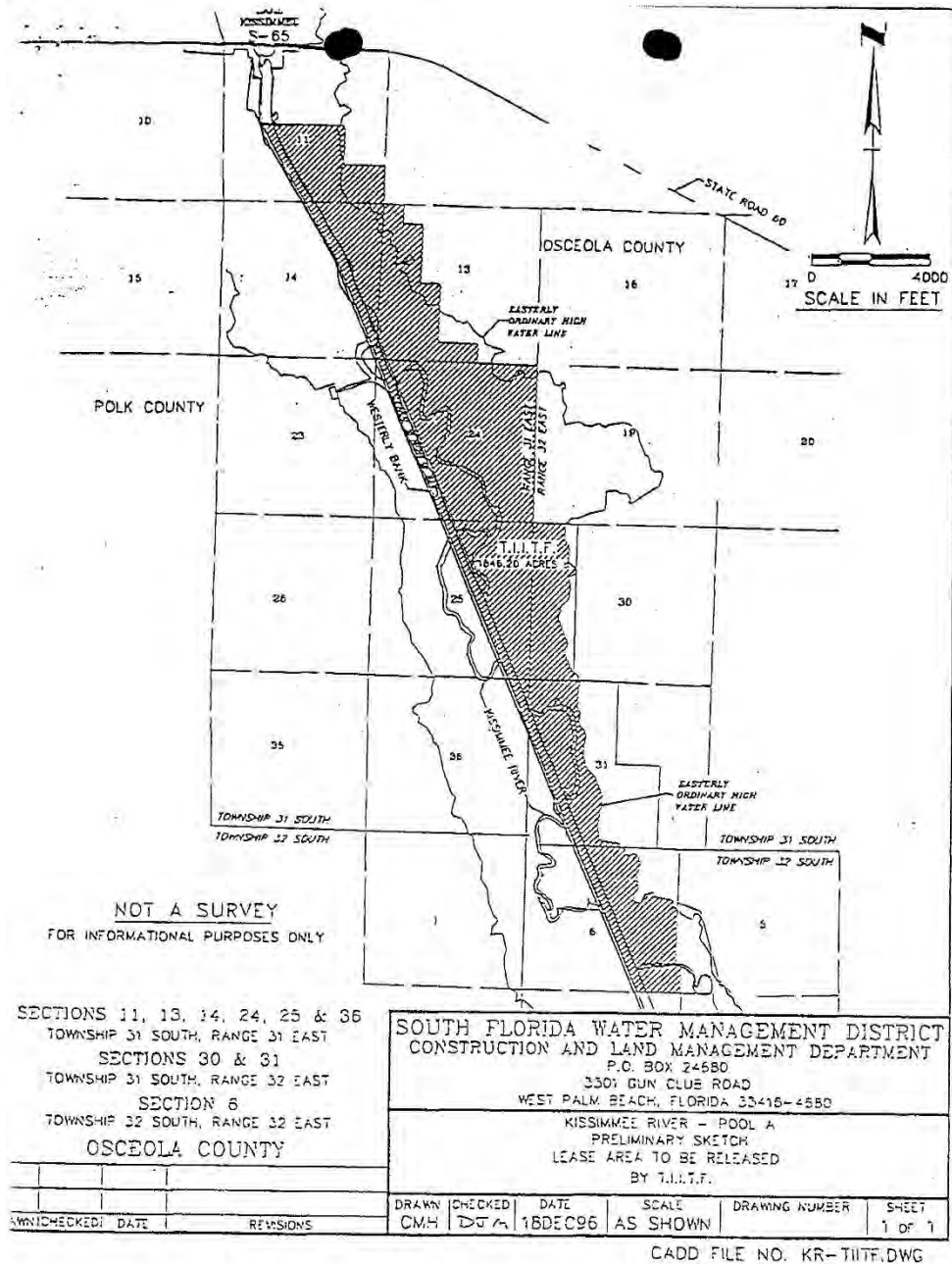
Containing 1846.20 acres, more or less.



z:Vrhiliff
December 17, 1996
Revised: December 18, 1996

- 2 -

PAGE 5 OF 6
EXHIBIT A
AMENDMENT NO. 5 TO LEASE NO. 2785



PAGE 6 OF 6
EXHIBIT A
AMENDMENT NO. 5 TO LEASE NO. 2785

ATL1

2,086.72 Acres

BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT

TRUST FUND OF THE STATE OF FLORIDA

AMENDMENT NUMBER 6 TO LEASE NUMBER 2785

THREE LAKES WILDLIFE MANAGEMENT AREA

THIS LEASE AMENDMENT is entered into this 29th day of February, 2002 by and between the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, hereinafter referred to as "LESSOR" and the FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION, successor in interest to FLORIDA GAME AND FRESH WATER FISH COMMISSION, hereinafter referred to as "LESSEE";

W I T N E S S E T H

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

WHEREAS, on ~~September 3~~ ^{December 11}, 1974, LESSOR and LESSEE entered into Lease Number 2785; and

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

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

1. The legal description of the leased premises set forth in Exhibit "A" of Lease Number 2785 is hereby amended to include the real property described in Exhibit "A," attached hereto, and by reference made a part hereof.
2. It is understood and agreed by LESSOR and LESSEE that in each and every respect the terms of the Lease Number 2785 except as amended shall remain unchanged and in full force and effect and the same are hereby ratified, approved and confirmed by LESSOR and LESSEE.

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

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

Judy Woodard
Witness

Judy Woodard
Print/Type Witness Name

Florence Davis
Witness

Florence Davis
Print/Type Witness Name

STATE OF FLORIDA
COUNTY OF LEON

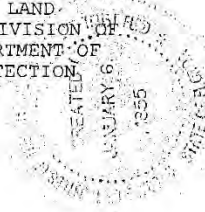
The foregoing instrument was acknowledged before me this
29th day of February, 2000, by Gloria C. Nelson, as
Operations and Management Consultant Manager, Bureau of Public
Land Administration, Division of State Lands, Florida Department
of Environmental Protection, as agent for and on behalf of the
Board of Trustees of the Internal Improvement Trust Fund of the
State of Florida. She is personally known to me.



Sylvia S. Roberts
MY COMMISSION # C0654057 EXPIRES
July 25, 2001
BONDED THRU TROY FAIR INSURANCE, INC.

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

"LESSOR"



Sylvia S. Roberts
Notary Public, State of Florida

Print/Type Notary Name

Commission Number:

Commission Expires:

Approved as to Form and Legality

By: Sam H. Heia
DEP Attorney

FLORIDA FISH AND WILDLIFE
CONSERVATION COMMISSION, SUCCESSOR
IN INTEREST TO FLORIDA GAME AND
FRESH WATER FISH COMMISSION

Brenda Collins
Witness

Brenda Collins
Print/Type Witness Name

Cynthia Ward
Witness

Cynthia Ward
Print/Type Witness Name

By: Victor J. Heller (SEAL)

Victor J. Heller
Print/Type Name

Title: ASSISTANT Ex. Director

"LESSEE"

STATE OF _____

COUNTY OF _____

The foregoing instrument was acknowledged before me this
2nd day of February, by Victor J. Heller
as Assistant Executive Director, of the FLORIDA FISH AND WILDLIFE
CONSERVATION COMMISSION. He/she is personally known to
me.

Jimmie C. Bevis
Notary Public, State of Florida

JIMMIE C. BEVIS

Print/Type Notary Name

Commission Number:  My Commission # CC707862 EXPIRES
December 28, 2001
BONDED THRU TROY FAIR INSURANCE, INC.

Commission Expires:

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY
Jimmie C. Bevis
Commission Attorney

This Instrument Prepared By:

Joseph R. Boyd, Esquire
BOYD, LINDSEY & BRANCH, P.A.
1407 Piedmont Drive East
Tallahassee, Florida 32312

SPECIAL WARRANTY DEED

THIS INDENTURE, made this 23 day of September,
A.D., 1999, between UNITED STATES OF AMERICA, whose address is c/o
Don Moreland, United States Marshal for the Middle District of Florida, 801 North
Florida Ave., Tampa, Florida 33602, of the County of Hillsborough in the State of
Florida, grantor, and the BOARD OF TRUSTEES OF THE INTERNAL
IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, whose post
office address is c/o Florida Department of Environmental Protection, Division of
State Lands, 3900 Commonwealth Boulevard, Mall Station 115, Tallahassee, FL
32399-3000, grantee,

**APPROVED
FOR CLOSING**

OCT 5 1999

By: William C. Robinson, Jr.
(DEP Attorney)

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

WITNESSETH: That the said grantor, for and in consideration of the sum of \$10.00 and other good and valuable considerations to said
grantor in hand paid by said grantee, the receipt whereof is hereby acknowledged, has granted, bargained and sold to the said grantee,
and grantee successors and assigns forever, the following described land situate, lying and being in OSCEOLA County, Florida, to-wit:
See Exhibit "A" attached hereto and by reference made a part hereof.

Property Appraiser's Parcel ID Number: 26-29-33-0000-0040-0000; 26-29-33-0000-0070-0000; 27-29-0000-0010-0000;
27-29-33-0000-0030-0000; 28-29-33-0000-0010-0000 and 29-29-33-0000-0010-0000

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

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

THE GRANTOR does hereby specially warrant title to the property hereby conveyed, including the process used to forfeit the property
conveyed, to the grantee and its successors and assigns, against all persons claiming by, through or under the grantor.

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

Signed, sealed and delivered in
the presence of:

UNITED STATES OF AMERICA

BY: Don Moreland
DON MORELAND
UNITED STATES MARSHAL
MIDDLE DISTRICT OF FLORIDA

Robin A. Hill
Signature of First Witness

Robin A. Hill
Printed Name of First Witness

Brenda L. Forebee
Signature of Second Witness

Brenda L. Forebee
Printed Name of Second Witness

State of FLORIDA

County of HILLSBOROUGH

The foregoing instrument was acknowledged before me this 23rd day of September, 1999, by Don
Moreland, U.S. Marshal, Middle District of Florida, on behalf of the United States of America. Such person(s) (Notary Public must
check applicable box):

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

NO. 2785
EXHIBIT A
PAGE 4 OF 5

EXHIBIT "A"

That part of the W 1/2 of Section 26, Township 29 South, Range 33 East, lying West of Highway 441 LESS AND EXCEPT:

From the NW corner of section 26, Township 29 South, Range 33 East, Osceola County, Florida, run East, along the North line of said Section 26, 2001.0 feet to the West right of way line of U.S. Highway No. 441, said point being 50.0 feet off the centerline of said Highway; run thence S 01°00' West, parallel to the centerline of said highway, 1877.0 feet, to the point of beginning, continue thence S 01°00' West 417.42 feet; run thence North 89°00' West, 626.13 feet; run thence N 01°00' East 417.42 feet; run thence South 89°00' East 626.13 feet to the point of beginning.

Beginning at the SW corner of said Section thence East 1157.99 feet, thence North 0°11' West 1320.2 feet; thence West 1157.99 feet, thence South 0°11' East 1320.2 feet to the point of beginning.

North 100 feet of West 1/2 of Section 26 lying West of Highway 441.

All of Section 27, Township 29 South, Range 33 East, LESS AND EXCEPT SE 1/4 of SE 1/4 and LESS AND EXCEPT North 100 feet of said Section.

East 42.2 feet of Section 28, Township 29 South, Range 33 East, LESS North 100 feet.

All of Section 28, Township 29 South, Range 33 East, LESS AND EXCEPT,

The East 42.2 feet of Section 28, Township 29 South, Range 33 East, LESS AND EXCEPT the North 100 feet of said East 42.2 feet of Section 28.

All of Section 29, Township 29 South, Range 33 East. The North 100 feet of the West 1/2 of Section 26, Township 29 South, Range 33 East lying West of Highway 441. The North 100 feet of Section 27, Township 29 South, Range 33 East. Said land lying and situate in Osceola County, Florida.

Three Lakes WMA, U.S. Justice, Osceola County

Page 1 of 1

NO. 2785

1961 976 858

ESM
BVT/KS 07/10/78
12:00 66-58-100

NO. 2785
EXHIBIT A
PAGE 5 OF 5

ATLI

5.6 Acres

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

AMENDMENT NUMBER 7 TO LEASE NUMBER 2785

THREE LAKES WILDLIFE MANAGEMENT AREA

THIS LEASE AMENDMENT is entered into this 18th day of August, 2000, by and between the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, hereinafter referred to as "LESSOR" and the FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION, successor in interest to FLORIDA GAME AND FRESH WATER FISH COMMISSION, hereinafter referred to as "LESSEE";

W I T N E S S E T H

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

WHEREAS, on September 3, 1974, LESSOR and LESSEE entered into Lease Number 2785; and

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

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

1. The legal description of the leased premises set forth in Exhibit "A" of Lease Number 2785 is hereby amended to include the real property described in Exhibit "A", attached hereto, and by reference made a part hereof.
2. It is understood and agreed by LESSOR and LESSEE that in each and every respect the terms of the Lease Number 2785 except as amended shall remain unchanged and in full force and effect and the same are hereby ratified, approved and confirmed by LESSOR and LESSEE.

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

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

Judy Woodard
Witness
Judy Woodard
Print/Type Witness Name

Florence Davis
Witness
Florence Davis
Print/Type Witness Name

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this
18th day of August, 2000, by Gloria C. Nelson, as
Operations and Management Consultant Manager, Bureau of Public
Land Administration, Division of State Lands, Florida Department
of Environmental Protection, as agent for and on behalf of the
Board of Trustees of the Internal Improvement Trust Fund of the
State of Florida. She is personally known to me.



Sylvia S. Roberts
MY COMMISSION # CC654087 EXPIRES
July 25, 2001
BONDED THRU TROY FAIR INSURANCE, INC.

Sylvia S. Roberts
Notary Public, State of Florida

Print/Type Notary Name

Commission Number:

Commission Expires:

Approved as to Form and Legality

By: Samuel H. Hester
DEP Attorney

FLORIDA FISH AND WILDLIFE
CONSERVATION COMMISSION, SUCCESSOR
IN INTEREST TO FLORIDA GAME AND
FRESH WATER FISH COMMISSION

Brenda Collins
Witness

Brenda Collins
Print/Type Witness Name

Cynthia Ward
Witness

Cynthia Ward
Print/Type Witness Name

STATE OF Florida

COUNTY OF Leon

By: Victor J. Heller (SEAL)

Victor J. Heller

Print/Type Name

Title: Assistant Executive Director

"LESSEE"

The foregoing instrument was acknowledged before me this
8th day of August, 2000, by Victor J. Heller
as Asst. Executive Director, of the FLORIDA FISH AND WILDLIFE
CONSERVATION COMMISSION. He/~~she~~ is personally known to
me.

Jimmie C. Bevis
Notary Public, State of Florida

JIMMIE C. BEVIS

Print/Type Notary Name

Commission Number:



Jimmie C. Bevis
MY COMMISSION # CC702862 EXPIRES
December 28, 2001
BONDED THRU TROY FAIR INSURANCE, INC.

Commission Expires:

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY

P. C. [Signature]
Commission Attorney

This Instrument Prepared By and
Please Return To:
Krystal Whitlock
American Home Title Insurance, Inc.
6703 N. Himes Avenue
Tampa, FL 33614
AHT # 94977

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

THIS INDENTURE, made this 16th day of
January, A.D. 2000, between Roland J. Purdy and
Colleen J. Purdy, individually, and as Trustees of the Roland J. and Colleen
J. Purdy Trust dated April 21, 1997, whose address is 5126 S.E. 30th
Avenue, Apt. #49, Portland, OR 97202-4565, grantor, and the BOARD OF
TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF
THE STATE OF FLORIDA, whose post office address is c/o Florida
Department of Environmental Protection, Division of State Lands, 3900
Commonwealth Boulevard, Mail Station 115, Tallahassee, FL 32399-3000,
grantee,

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

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

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

Property Appraiser's Parcel Identification Number: R29-30-32-3900-0039-0350

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

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

AND the said grantor does hereby fully warrant the title to said land, and will defend the same against the lawful claims
of all persons whomsoever.

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

Signed, sealed and delivered in the presence of:

Rachel Guinard
(Signature of first Witness)

Rachel Guinard
(Printed, typed or stamped name of first Witness.)

Roland J. Purdy
Roland J. Purdy, Individually, and as Trustee of the
Roland J. and Colleen J. Purdy Trust dated April 21,
1997

Donna S. Loupal
(Signature of second Witness)

DONNA S. LOUPAL
(Printed, typed or stamped name of second witness)

Samuel L. Kempel
(Signature of first Witness)

SAMUEL L. KEMPEL
(Printed, typed or stamped name of first Witness.)

Colleen J. Purdy
Colleen J. Purdy, Individually, and as Trustee of the
Roland J. and Colleen J. Purdy Trust dated April 21,
1997

Donna S. Loupal
(Signature of second Witness)

DONNA S. LOUPAL
(Printed, typed or stamped name of second witness)

APPROVED
FOR CLOSING

MAR 21 2000

WCR
By: William C. Robinson, Jr.
(DEP Attorney)

NO. 2785
EXHIBIT A
PAGE 4 OF 15

STATE OF OREGONCOUNTY OF MULTNOMAH

The foregoing instrument was acknowledged before me this 18th day of January, 2000, by Roland J. Purdy and Colleen J. Purdy, Individually, and as Trustees of the Roland J. and Colleen J. Purdy Trust dated April 21, 1997. Such person(s) (Notary Public must check applicable box):

☒ is personally known to me,
produced a current driver license,
produced _____ as identification.

Mary E. Bishop
Notary Public

MARY E. BISHOP
(Printed, Typed or Stamped Name of Notary Public)

Commission No.: 051368

My Commission Expires 3/8/00

(NOTARY PUBLIC SEAL)



NO. 2785
EXHIBIT A
PAGE 5 OF 15

EXHIBIT "A"

Lots 35 through 42, Inclusive, Block 39, LAKE VIEW PARK UNIT A, according to the map or plat thereof as recorded in Plat Book 1, Page 182, of the Public Records of Osceola County, Florida.

PARCEL 6
FASURVEYACQUISITIONLEGALOSCEOLA\THREELAKES\PURDY

SHEET 1 OF 1

DATE: 3/23/99

NO. 2785
EXHIBIT A
PAGE 6 OF 15

This Instrument Prepared By and
Please Return To:
Kystal Whitlock
American Home Title Insurance, Inc.
6703 N. Himes Avenue
Tampa, FL 33614
AHT # 94811

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

THIS INDENTURE, made this _____ day of _____ A.D. 2000, between Jane M. Haviland f/w/a Jane Asp, whose address is 314 E. Jefferson Street, Clifton, IL 61727, grantor, and the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, whose post office address is c/o Florida Department of Environmental Protection, Division of State Lands, 3900 Commonwealth Boulevard, Mail Station 115, Tallahassee, FL 32399-3000, grantee,

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

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

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

Property Appraiser's Parcel Identification Number: 21-30-32-3860-0063-0170

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

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

AND the said grantor does hereby fully warrant the title to said land, and will defend the same against the lawful claims of all persons whomsoever.

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

Signed, sealed and delivered in the presence of:

Allen Cooper
(Signature of first Witness)

Allen Cooper
(Printed, typed or stamped name of first Witness.)

Tina V. Sherman
(Signature of second Witness)

Tina V. Sherman
(Printed, typed or stamped name of second witness)

Jane M. Haviland
Jane M. Haviland f/w/a Jane Asp

APPROVED
FOR CLOSING

MAR 21 2000

WCR
By: William C. Robinson, Jr.
(DEP Attorney)

NO. 2785
EXHIBIT A
PAGE 7 OF 15

STATE OF _____

COUNTY OF _____

The foregoing instrument was acknowledged before me this 15 day of February 2000, by Jane M. Howland f/k/a Jane Asp. Such person(s) (Notary Public must check applicable box):



is personally known to me,
produced a current driver license,
produced _____ as identification.

Michelle Massey
Notary Public

MICHELLE MASSEY
(Printed, Typed or Stamped Name of Notary Public)

Commission No.: _____

My Commission Expires: 08/07/2003

(NOTARY PUBLIC SEAL)



NO. 2785
EXHIBIT A
PAGE 8 OF 15

EXHIBIT "A"

Lots 17 through 24, Inclusive, Block 63, LAKE MARIAN PARK SUBDIVISION NO. 4, according to the map or plat thereof as recorded in Plat Book 1, Page 165, of the Public Records of Osceola County, Florida.

PARCEL 16
FISURVEYACQUISITIONLEGAL/OSCEOLA/THREELAKES/NOVLAND

SHEET 1 OF 1

Page 13

3/23/99

NO. 2785
EXHIBIT A
PAGE 9 OF 15

This Instrument Prepared By and
Please Return To:
Krysal Whitlock
American Home Title Insurance, Inc.
6703 N. Himes Avenue
Tampa, FL 33614
AHT # 94812

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

THIS INDENTURE, made this 15th day of January, A.D. 1999, between Warren H. Pence and Patsy J. Pence, individually and as Trustees of the Patsy J. Pence Trust, dated September 23, 1997, whose address is 718 Shady Hollow Lane, Millford, OH 45150, grantor, and the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, whose post office address is c/o Florida Department of Environmental Protection, Division of State Lands, 3900 Commonwealth Boulevard, Mail Station 115, Tallahassee, FL 32399-3600, grantee,

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

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

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

Property Appraiser's Parcel Identification Number: 19-30-32-3880-0001-0500

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

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

AND the said grantor does hereby fully warrant the title to said land, and will defend the same against the lawful claims of all persons whomsoever.

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

Signed, sealed and delivered in the presence of:

Kristen A. Norris
(Signature of first Witness)
Kristen A. Norris
(Printed, typed or stamped name of first Witness.)

Cheslie Blanton
(Signature of second Witness)
Cheslie Blanton
(Printed, typed or stamped name of second witness)

Kristen A. Norris
(Signature of first Witness)
Kristen A. Norris
(Printed, typed or stamped name of first Witness.)

Cheslie Blanton
(Signature of second Witness)
Cheslie Blanton
(Printed, typed or stamped name of second witness)

Warren H. Pence and Patsy J. Pence
Warren H. Pence, Individually and as Trustee of the Patsy J. Pence Trust, dated September 23, 1997
Patsy J. Pence Trust
Sr.
Dated September 23, 1997

Patsy J. Pence
Patsy J. Pence, Individually and as Trustee of the Patsy J. Pence Trust, dated September 23, 1997
Patsy J. Pence Trust

**APPROVED
FOR CLOSING**

MAR 21 2000

By: William C. Robinson, Jr.
(DEP Attorney)

NO. 2785
EXHIBIT A
PAGE 10 OF 15

STATE OF OhioCOUNTY OF Clemon

The foregoing instrument was acknowledged before me this 15 day of December, 1999, by Warren H. Pance and Patsy J. Pence, individually and as Trustees of the Patsy J. Pence Trust, dated September 23, 1997. Such person(s) (Notary Public must check applicable box):

☒ is personally known to me,
☐ produced a current driver license.
☐ produced _____ as identification.

Helen Joyce Howell
 Notary Public

Helen Joyce Howell
 (Printed, Typed or Stamped Name of Notary Public)

Commission No.: 22314 JEN JOYCE HOWELL
 My Commission Expires: June 2, 2004
 by Public State of Ohio

(NOTARY PUBLIC SEAL)

NO. 2785
 EXHIBIT A
 PAGE 11 OF 15

EXHIBIT "A"

Lots 35 through 42, Inclusive, Block 39, LAKE VIEW PARK UNIT A, according to the map or plat thereof as recorded in Plat Book 1, Page 182, of the Public Records of Osceola County, Florida.

PARCEL 6
F:\SURVEY\ACQUISITION\LEGAL\OSCEOLA\THREELAKES\PURDY

SHEET 1 OF 1

DATE: 3/23/99

NO. 2785
EXHIBIT A
PAGE 12 OF 15

This Instrument Prepared By and
Please Return To:
Krystal Whitlock
American Home Title Insurance, Inc.
6703 N. Himes Avenue
Tampa, FL 33614
AHT # 94807

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

THIS INDENTURE, made this 10th day of
JANUARY, A.D. 2000, between Marie Hasemann, whose
address is 190 Matthews St., Binghamton, NY 13905-2558, grantor, and the
BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST
FUND OF THE STATE OF FLORIDA, whose post office address is c/o
Florida Department of Environmental Protection, Division of State Lands, 3900
Commonwealth Boulevard, Mail Station 115, Tallahassee, FL 32399-3000,
grantee,

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

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

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

Property Appraiser's Parcel Identification Number: 21-30-32-3860-0063-0010

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

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

AND the said grantor does hereby fully warrant the title to said land, and will defend the same against the lawful claims
of all persons whomsoever.

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

Signed, sealed and delivered in the presence of:

Gail Secchia
(Signature of first Witness)

GAIL SECCIA
(Printed, typed or stamped name of first Witness.)

ARLOVE C. KRASSIN
(Signature of second Witness)

ARLOVE C. KRASSIN
(Printed, typed or stamped name of second witness)

Marie Hasemann
Marie Hasemann

**APPROVED
FOR CLOSING**

APR 17 2000

WCR

By: William C. Robinson, Jr.
(DEP Attorney)

NO. 2785
EXHIBIT A
PAGE 13 OF 15

STATE OF New York
COUNTY OF Bronx

The foregoing instrument was acknowledged before me this 10th day of March, 2000, by Marie Hasemann. Such person(s) (Notary Public must check applicable box):

☐ is personally known to me.
☐ produced a current driver license.
☒ produced NYS DL 977940512 as identification.

Paul Securi
Notary Public

(Printed, Typed or Stamped Name of Notary Public)

Commission No. _____

My Commission Expires: _____

GAIL SECURIA
Notary Public, State of New York
Qualified in Bronx County
My Commission Expires December 7, 20 00

(NOTARY PUBLIC SEAL)

NO. 2785
EXHIBIT A
PAGE 14 OF 15

EXHIBIT "A"

Lots 1 through 8, Inclusive, Block 63, LAKE MARIAN PARK SUBDIVISION NO. 4,
according to the map or plat thereof as recorded in Plat Book 1, Page 165, of the Public
Records of Osceola County, Florida.

PARCEL 14
F:\SURVEY\ACQUISITION\LEGAL\OSCEOLA\THREELAKES\HASEMANN

SHEET 1 OF 1

DATE 3/03/99

NO. 2785
EXHIBIT A
PAGE 15 OF 15

ATL1

3.9 Acres

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

AMENDMENT NUMBER 8 TO LEASE NUMBER 2785

THREE LAKES WILDLIFE MANAGEMENT AREA

THIS LEASE AMENDMENT is entered into this 5th day of February, 2001, by and between the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, hereinafter referred to as "LESSOR" and the FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION, successor in interest to FLORIDA GAME AND FRESH WATER FISH COMMISSION, hereinafter referred to as "LESSEE";

W I T N E S S E T H

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

WHEREAS, on September 3, 1974, LESSOR and LESSEE entered into Lease Number 2785; and

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

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

1. The legal description of the leased premises set forth in Exhibit "A" of Lease Number 2785 is hereby amended to include the real property described in Exhibit "A", attached hereto, and by reference made a part hereof.
2. It is understood and agreed by LESSOR and LESSEE that in each and every respect the terms of the Lease Number 2785 except as amended shall remain unchanged and in full force and effect and the same are hereby ratified, approved and confirmed by LESSOR and LESSEE.

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

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

Fredrica W. Jones
Witness

Fredrica W. Jones
Print/Type Witness Name

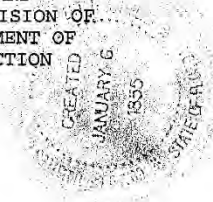
Judy Woodard
Witness

Judy Woodard
Print/Type Witness Name

STATE OF FLORIDA
COUNTY OF LEON

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

"LESSOR"



5th The foregoing instrument was acknowledged before me this
day of February, 2001, by Gloria C. Nelson, as
Operations and Management Consultant Manager, Bureau of Public
Land Administration, Division of State Lands, Florida Department
of Environmental Protection, as agent for and on behalf of the
Board of Trustees of the Internal Improvement Trust Fund of the
State of Florida. She is personally known to me.

Florence L. Davis
Notary Public, State of Florida

Print/Type Notary Name

Commission Number:

Commission Expires:



Florence L. Davis
MY COMMISSION # CC974560 EXPIRES
October 11, 2004
BONDED THRU TROY FARM INSURANCE, INC.

Approved as to Form and Legality

By: Sam L. Hearn
DEP Attorney

FLORIDA FISH AND WILDLIFE
CONSERVATION COMMISSION, SUCCESSOR
IN INTEREST TO FLORIDA GAME AND
FRESH WATER FISH COMMISSION

Brenda Collins
Witness

Brenda Collins
Print/Type Witness Name

Cynthia Ward
Witness

Cynthia Ward
Print/Type Witness Name

STATE OF Florida

COUNTY OF Levy

By: Victor J. Heller (SEAL)

Victor J. Heller
Print/Type Name

Title: Assistant Executive Director

"LESSEE"

The foregoing instrument was acknowledged before me this
29th day of January, 20 01, by Victor J. Heller
as Assistant Executive Director, of the FLORIDA FISH AND WILDLIFE
CONSERVATION COMMISSION. He/she is personally known to
me.

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

Print/Type Notary Name

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

This Instrument Prepared By and
Please Return To:
Krystal Whitlock
American Home Title Insurance, Inc.
2901 W. Busch Blvd., Suite 910
Tampa, FL 33618
AHT # 6221

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

THIS INDENTURE, made this _____ day of _____, A.D. 2000, between Hilton Donoghue, whose address is 4100 Ponytrail Drive, Suite 1603, Mississauga, ON, Canada L4W2Y1, grantor, and the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, whose post office address is c/o Florida Department of Environmental Protection, Division of State Lands, 3900 Commonwealth Boulevard, Mail Station 115, Tallahassee, FL 32399-3000, grantee,

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

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

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

Property Appraiser's Parcel Identification Number: 19-30-32-3880-0001-0470

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

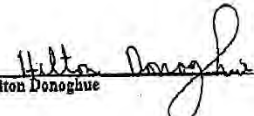
This property is not, nor ever has been, the homestead property of the grantor, nor contiguous to homestead property, as such homestead is defined under Florida law.

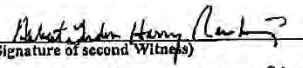
AND the said grantor does hereby fully warrant the title to said land, and will defend the same against the lawful claims of all persons whomsoever.

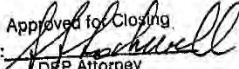
IN WITNESS WHEREOF the grantor has hereunto set grantor's hand and seal, the day and year first above written.

Signed, sealed and delivered in the presence of:


(Signature of first Witness)
VICTORIA ANN LINDSAY
(Printed, typed or stamped name of first Witness)


Hilton Donoghue


(Signature of second Witness)
HERBERT GORDON HARRY RAWBING
(Printed, typed or stamped name of second witness)

Approved for Closing
By: 
DEP Attorney
Date: 11-2-00

PAGE 4 OF 6
EXHIBIT A
AMENDMENT NO. 8 TO LEASE NO. 2785

STATE OF PROVINCE OF ONTARIO

COUNTY OF Regional Municipality of Peel

The foregoing instrument was acknowledged before me this 23rd day of October, 2000, by Hilton Donoghue. Such person(s) (Notary Public must check applicable box):



is personally known to me.
produced a current driver license.
produced _____ as identification.

Herbert Gordon Harry Rawnsley
Notary Public

HERBERT GORDON HARRY RAWNSLEY
(Printed, Typed or Stamped Name of Notary Public)

Commission No.: N/A

My Commission Expires: N/A

(NOTARY PUBLIC SEAL)

PAGE 5 OF 6
EXHIBIT A
AMENDMENT NO. 8 TO LEASE NO. 2785

EXHIBIT "A"

Tract 47, REVISED PLAT OF LAKE MARION, FIVE ACRE TRACTS, according to the map or plat thereof as recorded in Plat Book 1, Page 187, of the Public Records of Osceola County, Florida.

ESM

Date: 3/23/98

PARCEL 4
SURVEY ACQUISITION LEGAL OSCEOLA THREE LAKES DONOVUE

SHEET 1 OF 1

PAGE 6 OF 6
EXHIBIT A
AMENDMENT NO. 8 TO LEASE NO. 2785

ATL1

6.71 Acres

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

AMENDMENT NUMBER NINE TO LEASE NUMBER 2785
THREE LAKES WILDLIFE MANAGEMENT AREA

THIS LEASE AMENDMENT is entered into this 12th day of FEBRUARY,
2007, by and between the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT
TRUST FUND OF THE STATE OF FLORIDA, hereinafter referred to as "LESSOR" and
the STATE OF FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION, successor
in interest to the STATE OF FLORIDA GAME AND FRESH WATER FISH COMMISSION,
referred to as "LESSEE";

W I T N E S S E T H

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

WHEREAS, on December 11, 1974, LESSOR and LESSEE entered into Lease
Number 2785; and

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

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

1. The legal description of the leased premises set forth in Exhibit "A"
of Lease Number 2785 is hereby amended to include the real property
described in Exhibit "A," attached hereto, and by reference made a part
hereof.
2. It is understood and agreed by LESSOR and LESSEE that in each and
every respect the terms of the Lease Number 2785, except as amended, shall
remain unchanged and in full force and effect and the same are hereby
ratified, approved and confirmed by LESSOR and LESSEE.
3. It is understood and agreed by LESSOR and LESSEE that this Amendment
Number *NINE* to Lease Number 2785 is hereby binding upon the parties hereto
and their successors and assigns.

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

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

Dave Fewell
Witness

DAVE FEWELL
Print/Type Witness Name

Joe Duncan
Witness

Joe Duncan
Print/Type Witness Name

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

"LESSOR"

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 12th day of FEBRUARY, 2007, by Gloria C. Barber, Operations and Management Consultant Manager, Bureau of Public Land Administration, Division of State Lands, State of Florida Department of Environmental Protection, as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida. She is personally known to me.

Cheryl J. King
Notary Public, State of Florida

Print/Type Notary Name

Commission Number:

Commission Expires:



Approved as to Form and Legality

By: [Signature]
DEP Attorney

STATE OF FLORIDA FISH AND WILDLIFE
CONSERVATION COMMISSION

[Signature]
Witness

Richard C. Mogens
Print/Type Witness Name

[Signature]
Witness

Majda Schirvan
Print/Type Witness Name

By: [Signature] (SEAL)

Edwin J. Moyer
Print/Type Name

Title: Dep Dir, HSC

"LESSEE"

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY

[Signature]
Commission Attorney

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 11th day of February, 2008, by Edwin J. Moyer as Dep Dir, HSC, on behalf of the STATE OF FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION. He/she is personally known to me.

[Signature]
Notary Public, State of Florida

Print/Type Notary Name

Commission Number:

Commission Expires:

 P. S. McChesney
Commission # DD524435
Expires April 28, 2010
Bogues Top Pen Insurance, Inc. 603-986-7010

DRBK0941 PG0547

QUIT-CLAIM DEED

RAMCO FORM 8

This Quit-Claim Deed, Executed this 9th day of October, A. D. 1989, by

R. STEPHEN MILES, JR., individually and as Trustee
first party, to
THE TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF
THE STATE OF FLORIDA
whose postoffice address is The Capitol, Tallahassee, Florida 32301

second party:

(Wherever used herein the terms "first party" and "second party" shall include singular and plural, heirs, legal representatives, and assigns of individuals, and the successors and assigns of corporations, wherever the context so admits or requires.)

Witnesseth, That the said first party, for and in consideration of the sum of \$ 1.00 in hand paid by the said second party, the receipt whereof is hereby acknowledged, does hereby remise, release and quit-claim unto the said second party forever, all the right, title, interest, claim and demand which the said first party has in and to the following described lot, place or parcel of land, situate, lying and being in the County of Osceola State of Florida to-wit:

Lots 1-32, Block 43, LAKE MARION PARK SUBDIVISION NO. 2, Section 21, Township 28 South, Range 32 East, according to the official plat thereof as filed and recorded among the Public Records of Osceola County, Florida; and,

Lot 36 of ORANGE RIDGE ACRES, Section 20, Township 30 South, Range 32 East, according to the official plat thereof as filed and recorded among the Public Records of Osceola County, Florida.

SCRIPERS
ERROR:
Should
Read
SEC 21
Twp 30S
Rge 32E

Documentary Tax Pd. \$ 1.55
Intangible Tax Pd.
MEL WILLS JR., CLERK OF COURT
OSCEOLA COUNTY BY *[Signature]*

FILED, RECORDED AND
RECORD VERIFIED
MEL WILLS JR., CLK FOR CT.
OSCEOLA COUNTY
BY *[Signature]* D.C.

To Have and to Hold the same together with all and singular the appurtenances thereto belonging or in anywise appertaining, and all the estate, right, title, interest, lien, equity and claim whatsoever of the said first party, either in law or equity, to the only proper use, benefit and behoof of the said second party forever.

In Witness Whereof, The said first party has signed and sealed these presents the day and year first above written.

Signed, sealed and delivered in presence of:

Debra A. Davis
Witness
Janetta Van Vleet-Huyson
Witness
STATE OF FLORIDA,
COUNTY OF OSCEOLA

R. Stephen Miles, Jr.
R. STEPHEN MILES, JR., individually
and as Trustee

I HEREBY CERTIFY that on this day, before me, an officer duly authorized in the State aforesaid and in the County aforesaid to take acknowledgments, personally appeared R. STEPHEN MILES, JR., individually and as Trustee to me known to be the person described in and who executed the foregoing instrument and he acknowledged before me that he executed the same.

WITNESS my hand and official seal in the County and State last aforesaid this
October A. D. 19 89

Debra A. Davis
Notary Public
My Commission Expires: 10/20/90

This Instrument prepared by:
Address
MILES AND CUMBIE P.A.
4305 NEPTUNE ROAD
ST. CLOUD, FLORIDA 32769

Exhibit "A"
Page 4 of 4 Pages
Amendment Number 9 to Lease No. 2785

890061585

999 OCT 12 PM 12:37

ATL1

1649.80 Acres

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

AMENDMENT NUMBER TEN TO LEASE NUMBER 2785
THREE LAKES WILDLIFE MANAGEMENT AREA

THIS LEASE AMENDMENT is entered into this 2nd day of FEBRUARY,
2009, by and between the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT
TRUST FUND OF THE STATE OF FLORIDA, hereinafter referred to as "LESSOR" and
the FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION, successor in
interest to the FLORIDA GAME AND FRESH WATER FISH COMMISSION, referred to
as "LESSEE";

W I T N E S S E T H

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

WHEREAS, on December 11, 1974, LESSOR and LESSEE entered into Lease
Number 2785; and

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

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

1. The legal description of the leased premises set forth in Exhibit "A"
of Lease Number 2785 is hereby amended to include the real property
described in Exhibit "A," attached hereto, and by reference made a part
hereof.
2. It is understood and agreed by LESSOR and LESSEE that in each and
every respect the terms of the Lease Number 2785, except as amended, shall
remain unchanged and in full force and effect and the same are hereby
ratified, approved and confirmed by LESSOR and LESSEE.
3. It is understood and agreed by LESSOR and LESSEE that this Amendment
Number TEN to Lease Number 2785 is hereby binding upon the parties hereto
and their successors and assigns.

Rev. 3/07

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

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

David Fewell
Witness

DAVE FEWELL
Print/Type Witness Name

Gudy Woodward
Witness
Gudy Woodward
Print/Type Witness Name

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

"LESSOR"

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 2nd day of February, 2009, by Gloria C. Barber, Operations and Management Consultant Manager, Bureau of Public Land Administration, Division of State Lands, State of Florida Department of Environmental Protection, as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida. She is personally known to me.



David L. Fewell
Notary Public, State of Florida

Print/Type Notary Name

Commission Number:

Commission Expires:

Approved as to Form and Legality

By: Sam L. H...
DHP Attorney

FLORIDA FISH AND WILDLIFE
CONSERVATION COMMISSION

Matthew Matlock
Witness

MATTHEW MATLOCK
Print/Type Witness Name

Richard C. Maspons
Witness

Richard C. Maspons
Print/Type Witness Name

By: *Lawson E. Snyder* (SEAL)

LAWSON E. SNYDER
Print/Type Name

Title: *Deputy Division Director*

"LESSEE"

STATE OF FLORIDA
COUNTY OF LEON

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY
Julia M. Baker
Commission Attorney

The foregoing instrument was acknowledged before me this 28th day of January, 2009, by Lawson E. Snyder as Dep Dir H&C, on behalf of the FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION. He/she is personally known to me.

P. S. McChesney
Notary Public, State of Florida

Print/Type Notary Name

Commission Number:

Commission Expires:

 P. S. McChesney
Commission # DD524435
Expires April 28, 2010
Bonded Third Party Insurance, No. 000-089-7919

This Instrument Prepared By and

Please Return To:

April M. Hayden, Esq.
FOLEY & LARDNER LLP
111 North Orange Avenue, Suite 1800
Orlando, Florida 32801
(407) 423-7656

CFM 2008092036
Bk 03699 Pas 0002 - 67 (5995)
DATE: 06/12/2008 04:19:31 PM
LARRY WHALEY, CLERK OF COURT
OSCEOLA COUNTY
RECORDING FEES 44.00
DEED 000 81,557.06

WARRANTY DEED

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

THIS INDENTURE, made this 4 day of June, A.D. 2008,
between **LLR-11 LIMITED PARTNERSHIP**, a Florida limited partnership, whose post office address is 12200 Treetop Court,
Orlando, Florida 32832-5716, grantor, and the **BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST**
FUND OF THE STATE OF FLORIDA, whose post office address is c/o Florida Department of Environmental Protection,
Division of State Lands, 3900 Commonwealth Boulevard, Mail Station 115, Tallahassee, FL 32399-3000, grantee,

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

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

SEE EXHIBIT "A" ATTACHED HERETO AND BY REFERENCE MADE A PART HEREOF

Property Appraiser's Parcel Identification Number: **R252932-000000100000; R362932-000000100000; and**
R013032-000000100000

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

AND the said grantor does hereby fully warrant the title to said land, and will defend the same against the lawful claims of all
persons whomsoever.

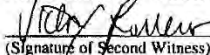
IN WITNESS WHEREOF the grantor has hereunto set grantor's hand and seal, the day and year first above written.

Signed, sealed and delivered in the presence of:


(Signature of First Witness)

Chad Wilkins

Printed name of First Witness

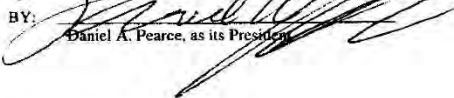

(Signature of Second Witness)

VICTOR X ROMERO
Printed name of Second Witness

TEVA
STATE OF FLORIDA
COUNTY OF BEXAR

LLR-11 LIMITED PARTNERSHIP, a Florida limited
partnership

BY: **LLR-11, Inc.**, a Florida corporation, as its General
Partner

BY: 
Daniel A. Pearce, as its President

(CORPORATE SEAL)

Exhibit "A"
Page 4 of 8 Pages
Amendment Number 10 to Lease No. 2785

EXHIBIT "A"

PARCEL 1

THAT PART OF SECTION 25, TOWNSHIP 29 SOUTH, RANGE 32 EAST, OSCEOLA COUNTY, FLORIDA, LYING SOUTH AND WEST OF THE SOUTHWESTERLY RIGHT OF WAY LINE OF THE FLORIDA TURNPIKE.

PARCEL 2

SECTION 36, TOWNSHIP 29 SOUTH, RANGE 32 EAST, OSCEOLA COUNTY, FLORIDA, LESS THAT PORTION OF LANDS IN THE SOUTHWEST ONE QUARTER OF SAID SECTION 36, BEING MORE PARTICULARLY DESCRIBED AS: A PARCEL LYING IN THE SOUTHWEST QUARTER OF SECTION 36, TOWNSHIP 29 SOUTH, RANGE 32 EAST, OSCEOLA COUNTY, FLORIDA, DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID SECTION 36, RUN NORTH ALONG THE WEST LINE OF SAID SECTION FOR A DISTANCE OF 2110.58 FEET; THENCE RUN EAST 870.00 FEET; THENCE RUN SOUTH 828.5 FEET; THENCE RUN EAST 450.0 FEET; THENCE RUN SOUTH TO THE SOUTH LINE OF SAID SECTION 36; THENCE RUN WEST ALONG SAID SOUTH LINE OF SECTION 36 TO THE POINT OF BEGINNING.

PARCEL 3

SECTION 1, TOWNSHIP 30 SOUTH, RANGE 32 EAST, OSCEOLA COUNTY, FLORIDA, LYING NORTH OF THE NORTHERLY RIGHT OF WAY LINE OF CANOE CREEK ROAD (STATE ROAD 523)

LESS AND EXCEPT THAT PORTION OF LANDS IN SECTION 1 MORE PARTICULARLY DESCRIBED AS: A PARCEL LYING IN THE WEST ONE-HALF OF SECTION 1, TOWNSHIP 30 SOUTH, RANGE 32 EAST, OSCEOLA COUNTY, FLORIDA, DESCRIBED AS FOLLOWS: BEGINNING AT A POINT 898.36 FEET NORTH OF THE SOUTHWEST CORNER OF SAID SECTION 1, SAID POINT BEING ON THE NORTH RIGHT OF WAY LINE OF STATE ROAD 523 (ALSO KNOWN AS CANOE CREEK ROAD), RUN SOUTHEASTERLY ALONG SAID RIGHT OF WAY LINE 1480.71 FEET; RUN THENCE NORTH TO THE NORTH LINE OF SAID SECTION 1; RUN THENCE WEST ALONG SAID NORTH LINE TO THE NORTHWEST CORNER OF SAID SECTION 1; RUN THENCE SOUTH ALONG THE WEST LINE OF SAID SECTION 4436.97 FEET TO THE POINT OF BEGINNING.

THREE LAKES WMA,
LLR-11 LIMITED PARTNERSHIP
FFWCC A&I
LAST REVISED: 5.13.08

PAGE 1 OF 1

BSM
By RLS Date 5.13.08

Exhibit "A"
Page 5 of 8 Pages
Amendment Number 10 to Lease No. 2785

PARTNERSHIP AFFIDAVIT

BEFORE ME, the undersigned authority personally appeared **DANIEL A. PEARCE** ("Affiant"), who under oath warrants, represents, deposes and says as follows:

1. The facts and matters contained and recited in this Affidavit are based upon the personal knowledge of the Affiant and are true and correct as of the date of execution of this Affidavit.

2. **DANIEL A. PEARCE** is the President of **LLR-11, INC.**, a Florida corporation and General Partner of **LLR-11 LIMITED PARTNERSHIP** (the "Partnership"), which is a limited partnership organized under the laws of the State of Florida.

3. The Partnership is solvent and there are no proceedings pending for the dissolution of the Partnership.

4. The principal place of business of the Partnership is 12200 Treetop Court, Orlando, Florida 32832.

5. The Partnership owns and holds the fee simple title to the real property described in **Exhibit "A"** (the "Property"), attached hereto and made a part hereof, and any buildings and improvements thereon.

6. Under the terms of the partnership agreement of the Partnership, **LLR-11, INC.**, as the General Partner, has the full right, power and authority to execute any and all documents conveying or encumbering the Partnership real property, including the Property, which documents and instruments include, without limitation, deeds, easements, affidavits, closing statements and similar related closing documents. Affiant, as the President of the General Partner, has the full right, power and authority to execute all such documents on behalf of the General Partner.

7. Any person, partnership, corporation, or other business entity dealing with the Partnership shall be entitled to rely fully on any documents executed in the name of the Partnership providing they are signed by the General Partner of the Partnership.

This Affidavit is given for the purpose of inducing Fidelity National Title Insurance Company and Foley & Lardner LLP to insure title to the Property, knowing that said parties are going to rely on the accuracy of the information contained herein.

Exhibit "A"
Page 6 of 8 Pages
Amendment Number 10 to Lease No. 2785

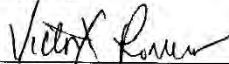
FURTHER AFFIANT SAYETH NAUGHT.


DANIEL A. PEARCE

TEYAS
STATE OF ~~FLORIDA~~
COUNTY OF BEYAR

The foregoing instrument was sworn to and subscribed before me this 4 day of JUNE, 2008, by DANIEL A. PEARCE, as President of LLR-11, INC., a Florida corporation and General Partner of LLR-11 LIMITED PARTNERSHIP, a Florida limited partnership. He ☐ is personally known to me, or ☐ has produced FLDL as identification.




Signature of Notary

VICTOR X. ROMERO
Name of Notary (Typed, Printed or Stamped)

Commission Number (if not legible on seal): TV
My Commission Expires (if not legible on seal): JAN 09, 2011

Exhibit "A"
Page 7 of 8 Pages
Amendment Number 10 to Lease No. 2785

EXHIBIT "A"

PARCEL 1

THAT PART OF SECTION 25, TOWNSHIP 29 SOUTH, RANGE 32 EAST, OSCEOLA COUNTY, FLORIDA, LYING SOUTH AND WEST OF THE SOUTHWESTERLY RIGHT OF WAY LINE OF THE FLORIDA TURNPIKE.

PARCEL 2

SECTION 36, TOWNSHIP 29 SOUTH, RANGE 32 EAST, OSCEOLA COUNTY, FLORIDA, LESS THAT PORTION OF LANDS IN THE SOUTHWEST ONE QUARTER OF SAID SECTION 36, BEING MORE PARTICULARLY DESCRIBED AS: A PARCEL LYING IN THE SOUTHWEST QUARTER OF SECTION 36, TOWNSHIP 29 SOUTH, RANGE 32 EAST, OSCEOLA COUNTY, FLORIDA, DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID SECTION 36, RUN NORTH ALONG THE WEST LINE OF SAID SECTION FOR A DISTANCE OF 2110.58 FEET; THENCE RUN EAST 870.00 FEET; THENCE RUN SOUTH 828.5 FEET; THENCE RUN EAST 450.0 FEET; THENCE RUN SOUTH TO THE SOUTH LINE OF SAID SECTION 36; THENCE RUN WEST ALONG SAID SOUTH LINE OF SECTION 36 TO THE POINT OF BEGINNING.

PARCEL 3

SECTION 1, TOWNSHIP 30 SOUTH, RANGE 32 EAST, OSCEOLA COUNTY, FLORIDA, LYING NORTH OF THE NORTHERLY RIGHT OF WAY LINE OF CANOE CREEK ROAD (STATE ROAD 523)

LESS AND EXCEPT THAT PORTION OF LANDS IN SECTION 1 MORE PARTICULARLY DESCRIBED AS: A PARCEL LYING IN THE WEST ONE-HALF OF SECTION 1, TOWNSHIP 30 SOUTH, RANGE 32 EAST, OSCEOLA COUNTY, FLORIDA, DESCRIBED AS FOLLOWS: BEGINNING AT A POINT 898.36 FEET NORTH OF THE SOUTHWEST CORNER OF SAID SECTION 1, SAID POINT BEING ON THE NORTH RIGHT OF WAY LINE OF STATE ROAD 523 (ALSO KNOWN AS CANOE CREEK ROAD), RUN SOUTHEASTERLY ALONG SAID RIGHT OF WAY LINE 1480.71 FEET; RUN THENCE NORTH TO THE NORTH LINE OF SAID SECTION 1; RUN THENCE WEST ALONG SAID NORTH LINE TO THE NORTHWEST CORNER OF SAID SECTION 1; RUN THENCE SOUTH ALONG THE WEST LINE OF SAID SECTION 4436.97 FEET TO THE POINT OF BEGINNING.

THREE LAKES WMA
LLR-11 LIMITED PARTNERSHIP
FWCC A-1
LAST REVISED: 5.13.08

PAGE 1 OF 1

BSM
By RLB Date 5.13.08

ORLA_1050429.1

A-1

Exhibit "A"
Page 8 of 8 Pages
Amendment Number 10 to Lease No. 2785

ATL1

7.86 Acres

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

AMENDMENT NUMBER ELEVEN TO LEASE NUMBER 2785
THREE LAKES WILDLIFE MANAGEMENT AREA

THIS LEASE AMENDMENT is entered into this 14th day of JANUARY,
2011, by and between the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT
TRUST FUND OF THE STATE OF FLORIDA, hereinafter referred to as "LESSOR" and
the FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION, successor in
interest to the FLORIDA GAME AND FRESH WATER FISH COMMISSION, referred to
as "LESSEE";

W I T N E S S E T H

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

WHEREAS, on December 11, 1974, LESSOR and LESSEE entered into Lease
Number 2785; and

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

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

1. The legal description of the leased premises set forth in Exhibit "A"
of Lease Number 2785 is hereby amended to include the real property
described in Exhibit "A," attached hereto, and by reference made a part
hereof.
2. It is understood and agreed by LESSOR and LESSEE that in each and
every respect the terms of the Lease Number 2785, except as amended, shall
remain unchanged and in full force and effect and the same are hereby
ratified, approved and confirmed by LESSOR and LESSEE.
3. It is understood and agreed by LESSOR and LESSEE that this Amendment
Number ELEVEN to Lease Number 2785 is hereby binding upon the parties
hereto and their successors and assigns.

Rev.3/07

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

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

David L. Fewell
Witness

DAVE FEWELL
Print/Type Witness Name

Juliette McGuff
Witness

Juliette McGuff
Print/Type Witness Name

STATE OF FLORIDA
COUNTY OF LEON

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

"LESSOR"

The foregoing instrument was acknowledged before me this 14th day of JANUARY, 2011, by Gloria C. Barber, Operations and Management Consultant Manager, Bureau of Public Land Administration, Division of State Lands, State of Florida Department of Environmental Protection, as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida. She is personally known to me.



David L. Fewell
Notary Public, State of Florida

Print/Type Notary Name

Commission Number:

Commission Expires:

Approved as to Form and Legality

By: [Signature]
DEP Attorney

FLORIDA FISH AND WILDLIFE
CONSERVATION COMMISSION

[Signature]
Witness

Richard C. Mospens
Print/Type Witness Name

W.D. [Signature]
Witness

Webster D. Jernyn
Print/Type Witness Name

By: Lawson E. Snyder (SEAL)

Lawson E. Snyder
Print/Type Name

Title: Deputy Division Director

"LESSEE"

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

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 11th day of January, 2010, by Lawson E. Snyder as Deputy Division Director on behalf of the FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION. He is personally known to me.

Susan Wilkes
Notary Public, State of Florida

Print/Type Notary Name

Commission Number:

Commission Expires:



920878

PREPARED BY AND RETURN TO:
Kimberly M. Snyder
OSCEOLA TITLE
316 N. Bermuda Ave. Suite 14
Kissimmee, Florida 34741

WARRANTY DEED

Property Appraisers Parcel I.D.
19 30 32 3880 0001

THIS WARRANTY DEED Made the 16th day of June, 1993 A.D. by P.E. DAVIS
hereinafter called the grantor,

to BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE
STATE OF FLORIDA whose postoffice address is c/o DNR, 3900
COMMONWEALTH BLVD., MAIL ST. 115, TALLAHASSEE, FLORIDA 32399
Hereinafter called the grantees:

(Wherever used herein the terms "grantor" include all
the parties to this instrument and the heirs, legal
representatives and assigns of individuals, and the
successors and assigns of corporations and public
bodies.)

WITNESSETH that the grantor for and in consideration of the sum
of \$50,000 and other valuable considerations, receipt whereof is
hereby acknowledged, hereby grants, bargains, sells, aliens,
releases, conveys and confirms unto the grantee, grantee's
successors and assigns forever, all that certain land situate in
Osceola County Florida, viz:

Lots 26 and 39, REVISED PLAT OF LAKE MARIAN FIVE ACRE TRACTS,
according to the Official Plat thereof as recorded in Plat Book 1,
Page 187, Public Records of Osceola County, Florida.

THE ABOVE DESCRIBED REAL PROPERTY DOES NOT CONSTITUTE THE RESIDENCE
OF THE GRANTOR AND, THEREFORE, IS NOT HOMESTEAD PROPERTY WITHIN THE
DEFINITION OF ARTICLE X, SECTION 4 OF THE FLORIDA CONSTITUTION.

TOGETHER, with all the tenements, hereditaments and appurtenances
thereto belonging or in any way appertaining,
TO HAVE AND TO HOLD, the same in fee simple forever,
AND the grantor hereby fully warrants the title to said land and
will defend the same against the lawful claims of all persons
whosoever.

IN WITNESS WHEREOF, the said grantor has signed and sealed these
presents the day and year first above written.

Signed, sealed and delivered in the
presence of:

Marie P. Davison
Printed Name: Marie P. Davison

Carl A. Leaman
Printed Name: Carl A. Leaman

P. E. Davis
P. E. DAVIS
230 SHERIDAN LANE
BIRMINGHAM, ALABAMA 35216

ALABAMA
STATE OF JEFFERSON COUNTY

The foregoing instrument was acknowledged before me this 16 day
of June, 1993 by P.E. DAVIS who is personally known to me
and who did not take oath.

MY COMMISSION EXPIRES: 1-23-94

Betty J. Parrish
NOTARY PUBLIC
Printed Name: Betty J. Parrish
Commission No.: n/a Alabama

RECEIVED
06/18/93 13:19
CLERK OF THE CIRCUIT COURT - OSCEOLA CITY
VERIFIED: FOR INSTR # 93-04540
DOC STAMP \$53.90
BK 1130
PG 0179

Exhibit "A"
Page 4 of 4 Pages
Amendment Number 11 to Lease No. 2785

This instrument prepared by:
Delbert Harvey,
Department of Environmental Protection
Bureau of Public Administration
Division of State Lands
3900 Commonwealth Blvd. MS 130
Tallahassee, Florida 32399-3000
AID #26466
ATL1

FDACS CONTRACT #
022727

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

**AMENDMENT NUMBER TWELVE TO LEASE NUMBER 2785
THREE LAKES WILDLIFE MANAGEMENT AREA**

THIS LEASE AMENDMENT is entered into this 9th day of November, 2015, by and between the **BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA**, hereinafter referred to as "LESSOR" and **FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION**, successor in interest to the **FLORIDA GAME AND FRESH WATER FISH COMMISSION**, hereinafter referred to as "LESSEE", and **STATE OF FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES, FLORIDA FORESTRY SERVICE**, hereinafter referred to as "FFS";

WITNESSETH:

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

WHEREAS, on December 11, 1974, LESSOR and LESSEE entered into Lease Number 2785 (the "lease"); and

WHEREAS, LESSOR and LESSEE desire to amend the lease to add FFS as a cooperating agency co-tenant for the sole purpose of accessing and operating an existing communication tower on the lease premises (collectively LESSEE and FFS shall be referred to as the "MANAGING AGENCY").

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

1. The sole purpose of adding FFS to the lease is to allow FFS to access and operate an existing communications tower and to use the communication tower to facilitate statewide wildfire and other natural disaster response. The change of the towers use is set forth in the latest management plan for the leased premises. LESSEE will assist FFS in protecting the state's conservation land from natural disasters along with protecting the states citizens during similar times. LESSEE & FFS heavily

participate in disaster preparation and relief and better communications will improve response time thereby potentially minimizing impacts to the state's citizens and property.

2. Lease Number 2785 is hereby amended to include the Exhibit "C," attached hereto, and by reference made a part hereof.

3. Paragraph 10 is hereby added to the lease as follows:

"Notwithstanding the foregoing, in addition to the interest leased to Lessee, Lessor does hereby lease that portion of the leased land described in Exhibit "A" which is used as a communication tower, as more particularly depicted in Exhibit "C" attached hereto, to the Florida Department of Agriculture and Consumer Services, Florida Forest Service ("FFS"), as co-tenant with Lessee, but only to the extent necessary for FFS to access and operate the communication tower as described in Lessee's Management Plan. All rights, duties, covenants and obligations of the Lessee contained within the lease are hereby binding upon and inure to the benefit of FFS, and shall become the joint duties, covenants, and obligations of FFS, but only to the extent of FFS's leasehold interest described in this paragraph."

4. It is understood and agreed by LESSOR and MANAGING AGENCY that in each and every respect the terms of Lease Number 2785, except as amended, shall remain unchanged and in full force and effect and the same are hereby ratified, approved and confirmed by LESSOR and MANAGING AGENCY as of the date of this amendment.

5. It is understood and agreed by LESSOR and MANAGING AGENCY that this Amendment Number 12 to Lease Number 2785 is hereby binding upon the parties hereto and their successors and assigns.

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

Page 2 of 7
Amendment Number 12 to Lease No. 2785
Revised 05/13

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

WITNESSES:

David Lee Fewell
Original Signature

DAVE FEWELL
Print/Type Name of Witness

Kathy Coughlin
Original Signature

Kathy Coughlin
Print/Type Name of Witness

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

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

"LESSOR"

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 9th day of NOVEMBER, 2015, by Cheryl C. McCall, Chief, Bureau of Public Land Administration, Division of State Lands, State of Florida Department of Environmental Protection, as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida. She is personally known to me.

APPROVED SUBJECT TO PROPER EXECUTION:

David Lee Fewell 8.31.15
DEP Attorney Date

David Lee Fewell
Notary Public, State of Florida

Printed, Typed or Stamped Name

Commission/Serial No. _____

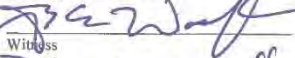
My Commission Expires: _____



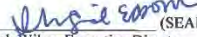
FLORIDA FISH AND WILDLIFE CONSERVATION
COMMISSION


Witness

Richard C. Mospan
Print/Type Witness Name


Witness

Peter E. Woodruff
Print/Type Witness Name

By:  (SEAL)
for Nick Wiley, Executive Director

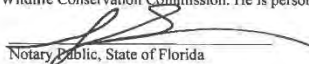
"LESSEE"

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 22 day of October, 2015, by Nick Wiley,
as Executive Director, on behalf of Florida Fish and Wildlife Conservation Commission. He is personally known to me.

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY

Commission Attorney


Notary Public, State of Florida

Jamie C. Sorin
Print/Type Notary Name

Commission/Serial No. FF182536

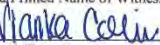
My Commission Expires: 1-30-2019



WITNESSES:

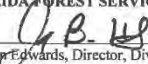

Original Signature

Cory Pierce
Typed/Printed Name of Witness


Original Signature

Viantha Colvin
Typed/Printed Name of Witness

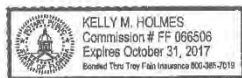
STATE OF FLORIDA DEPARTMENT OF
AGRICULTURE AND CONSUMER SERVICES,
FLORIDA FOREST SERVICE

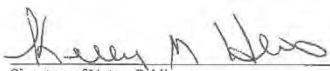
BY: 
D. Alan Edwards, Director, Division of Administration

"FFS"

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 13 day of September, 2015, by ~~D. Alan~~ Joey B. Hicks as Director, Division of Administration, on behalf of the State of Florida Department of Agriculture and Consumer Services, Florida Forest Service. He is personally known to me.




Signature of Notary Public

Kelly M. Holmes
Printed, Typed or Stamped Name

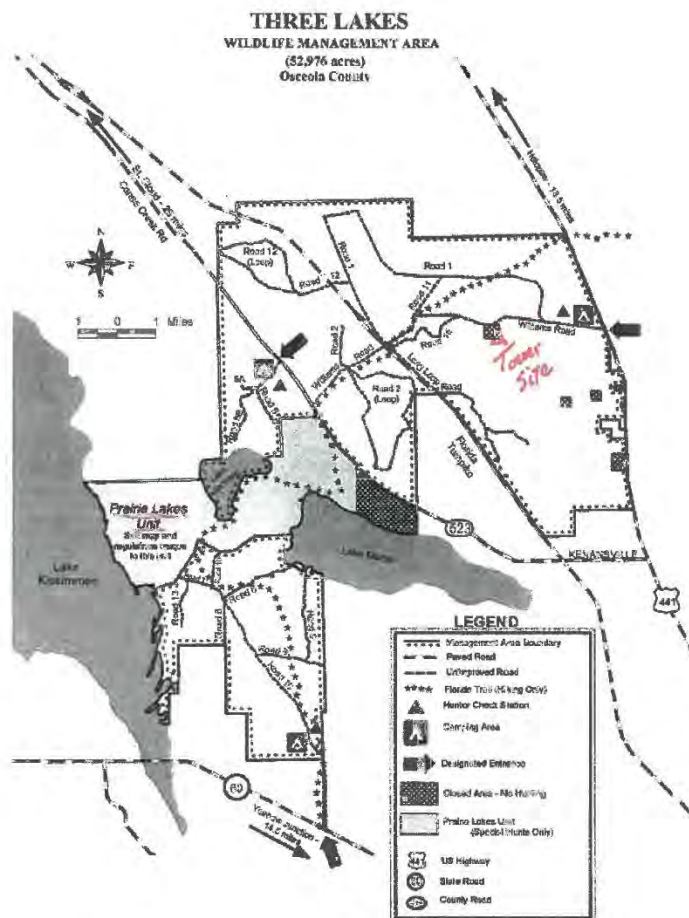
Commission/Serial No. FF 066506

My Commission Expires: 10/31/17

EXHIBIT "C"



Page 6 of 7
Amendment Number 12 to Lease No. 2785
Revised 05/13



Page 7 of 7
Amendment Number 12 to Lease No. 2785
Revised 05/13

12.2 Cattle Lease Agreement

**CONTRACT FOR
GRAZING ON THREE LAKES WILDLIFE MANAGEMENT AREA (WMA)**

This CONTRACT is entered into by and between the FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION, whose address is 620 South Meridian Street, Tallahassee, Florida 32399-1600, hereinafter "COMMISSION" and 4-L Lands and Cattle LLC, hereinafter called the "CONTRACTOR". If the CONTRACTOR is a corporation, its Florida corporate status must be current and an individual must sign as the guarantor.

NOW THEREFORE, the COMMISSION and the CONTRACTOR, for the consideration hereafter set forth, agree as follows:

1. **PROJECT DESCRIPTION.** The CONTRACTOR shall be provided access to **THREE LAKES WMA**, to perform cattle grazing activities on the property as specified herein and shall perform those specific responsibilities and obligations, as set forth in the ITB # FWC 18/19-04 which includes the COMMISSION'S Prescribed Grazing Plan (Scope of Work). The term "Scope of Work" when used in this Contract shall include ITB # FWC 18/19-04 and Exhibits I, II and III of this Contract.

The COMMISSION and the CONTRACTOR intend to partner together to provide cattle grazing services in accordance with ITB # FWC 18/19-04, this Contract, and the awarded vendor's response. ITB # FWC 18/19-04 and the awarded vendor's response are hereby attached and incorporated into this contract. In case of any conflict, the order of precedence and prevailing terms shall be in this order: ITB# FWC 18/19-04, this Contract, and the awarded vendor's response.

2. **PERFORMANCE.** The CONTRACTOR shall perform cattle grazing as described in the Scope of Work in a proper and satisfactory manner. Any and all equipment, products or materials necessary or appropriate to perform under this Contract shall be supplied by the CONTRACTOR. The CONTRACTOR shall be licensed as necessary to perform under this Contract as may be required by law, rule, or regulation, and shall provide evidence of such compliance to the COMMISSION upon request. The CONTRACTOR shall procure all supplies; pay all charges, fees, taxes and incidentals that may be required for the completion of this Contract. By acceptance of this Contract, the CONTRACTOR warrants that it has the capability in all respects to fully perform the contract requirements and the integrity and reliability that will assure good-faith performance as a responsible vendor. The CONTRACTOR shall comply with Chapter 287, F.S., and all other applicable laws, rules and ordinances.

Contractor – Quarterly Minority and Service-Disabled Veteran Business Enterprise Report. Contractor shall provide a quarterly Minority and Service-Disabled Veteran Business Enterprise Report to the Commission's Contract Manager, summarizing the participation of certified and non-certified minority and service-disabled veteran subcontractors/material suppliers for the current quarter and project to date. The report shall include the names, addresses and dollar amount of each certified and non-certified Minority Business Enterprise and Service-Disabled Veteran Enterprise participant and a copy must be forwarded to the Commission's Contract Manager. The Office of Supplier Diversity at (850) 487-0915 will assist in furnishing names of qualified minorities. The Commission's Minority Coordinator at (850) 488-3427 will assist with questions and answers.

3. **Contractor Responsibilities.** Contractor agrees that all Contractor employees, subcontractors, or agents performing work under the Contract shall be properly trained technicians who meet or exceed any specified training qualifications. Upon request, Contractor shall furnish a copy of technical certification or other proof of qualification. All employees, subcontractors, or agents performing work under the Contract must comply with all security and administrative requirements of the Commission. The Commission may conduct, and Contractor shall cooperate in, a security background check or otherwise assess any employee, subcontractor, or agent furnished by Contractor. The Commission may refuse access to, or require replacement of, any personnel for cause, including, but not limited to, technical or training qualifications, quality of work, change in security status, or non-compliance with the Commission's security or other requirements. Such refusal shall not relieve Contractor of its obligation to perform all work in compliance with the Contract. The Commission may reject and bar from any facility for cause any of Contractor's employees, subcontractors, or agents.

DELIVERABLES

The following services or service tasks are identified as deliverables for the purposes of this Contract:

- a. Performance of all services set forth in this Contract and the Scope of Work.
 - b. Submission of all invoicing, supporting documentation, Corrective Action Plans and reports.
4. **PROPERTY.** The property on which these activities described in this Contract will occur is shown in Exhibit III of this Contract. This is a Contract for the provision of cattle grazing by the CONTRACTOR, and shall not be construed to be a lease of real property.
5. **TERM.** This Contract shall begin upon execution by both parties and end five (5) years from that date, inclusive unless terminated earlier in accordance with its term.
6. **RENEWAL.** The Commission has the option to renew this Contract for a period of five (5) years after the initial Contract period upon the same terms and conditions contained herein. Exercise of the renewal option is at the Commission's sole discretion and shall be conditioned, at a minimum on the Contractor's satisfactory performance of this Contract and is subject to the availability of funds. The Contractor if it desires to exercise this renewal option will provide written notice to the Commission no later than thirty (30) days prior to the Contract expiration date. The renewal term shall require written approval from the Commission's Contract Administrator.
7. **AMENDMENT OR MODIFICATION.**

Waiver or Modification. No waiver or modification of this Contract or of any covenant, condition, or limitation herein contained shall be valid unless in writing and lawfully executed by both parties.

Change Orders. The Commission may, at any time, by written order, make a change to this Contract. Such changes are subject to the mutual agreement of both parties as evidenced in writing. Any change which causes an increase or decrease in the Contractor's cost or time shall require an Amendment. Minor changes, such as those updating a party's contact information, may be accomplished by a Modification.

Renegotiation upon Change in Law or Regulations. The Parties agree to renegotiate this Contract if federal and/or state revisions of any applicable laws or regulations make changes in the Contract necessary.

8. **CONTRACTOR'S RESPONSIBILITIES.** In addition to the general provisions of this Contract the CONTRACTOR shall have the following specific responsibilities:

- 8.1. **CONTRACTUAL PAYMENT SCHEDULE.** The CONTRACTOR shall submit the first semi-annual payment and the \$ 40,000.00 Performance Bond within ten (10) consecutive calendar days after the execution of the contract. The COMMISSION shall invoice the CONTRACTOR for subsequent semiannual payments. All invoice payments shall be submitted to the Florida Fish and Wildlife Conservation COMMISSION, Finance & Budget Office, Post Office Box 6150, Tallahassee, FL 32314-6150. The contract and revenue (R) number should be included in the note field on all payments.
- 8.2. The CONTRACTOR shall provide a Performance Bond each renewal period on or before the expiration date of the previous bond issued. The Performance Bond shall be submitted to the COMMISSION's Contract Manager. The bond must state on its front page: the name, principal business address, and phone number of the CONTRACTOR, the Surety, the COMMISSION's full name, the purchase order or contract number assigned to the project by the COMMISSION, and a description of the property and a general description of the project. Please note: A Notice to Proceed will not be issued until after the required bond has been received.

The Bond shall be issued from a reliable Surety Company acceptable to the COMMISSION, licensed to do business in the State of Florida and signed by a Florida Licensed Resident Agent. CONTRACTOR is to ensure the Surety Company includes in the performance bond language pertaining to payment in case the CONTRACTOR does not perform the yearly fire line diskling requirement, fence maintenance, holding pens maintenance or in case of a default violation according to contract. Such a bond shall be accompanied by a duly authenticated power of attorney evidencing that the person executing the Bonds in behalf of the Surety had the authority to do so on the date of the bond. The cost of the Performance Bond shall be borne by the CONTRACTOR.

In lieu of a Performance Bond, the COMMISSION may prior approve an alternate form of security in the form of an irrevocable letter of credit. The alternative form of security shall be for the same purpose and be subject to the same conditions as those applicable to the Performance Bond.

The performance bond total value will be based on the total income derived based upon 12-month period which is calculated by using the animal units allowed on the WMA times the cost of an animal unit (rate bid), plus the estimated value of fence maintenance each year (\$5,000.00), plus the estimated value of each holding pen (\$15,000.00 each), plus the estimated cost of diskling fire lines each year (total length of 104 miles X 2 @\$35.00 per mile). The performance bond number calculated will be rounded up to nearest \$5000 increment. Example: If the total number comes to \$17,595.00 then the annual bond requirement will be set at \$20,000.

Work shall not begin before the COMMISSION receives the Performance Bond and Power of Attorney. Failure to provide a Performance Bond and Power of Attorney may be grounds to find the Vendor in default, which could include; cancellation of the contract, and/or the Vendor's removal from the State's approved vendor list for future solicitations.

Failure of the CONTRACTOR to provide the initial Performance Bond within ten (10) consecutive calendar days after execution of the contract or provide a new bond annually within thirty (30) consecutive calendar days of the COMMISSIONS semi-annual invoice date during the term of this Contract may be grounds to find the CONTRACTOR in default, which could include; cancellation of the Contract, and/or the CONTRACTOR removal from the FWC approved vendor list for future solicitations.

The CONTRACTOR is required to submit the original of the Performance Bond and original of the

FWC Contract 18124

Power of Attorney to the COMMISSION'S Contract Manager. Additionally, the CONTRACTOR is required to provide a copy of the bond and power of attorney to the Wildlife and Habitat Management (WHM) Section Leader. This requirement is in effect for both the original issuance and the yearly renewals during the term of this Contract. Below are the addresses for which the CONTRACTOR shall send the originals and copies of the documents after each issuance event:

ORIGINALS MAILED TO:

Florida Fish and Wildlife Conservation
Commission
Attn: WHM Contract Manager
FWC 18/19-04
620 South Meridian Street, M/S - 10
Tallahassee, Florida, 32399-1600

COPY OF ORIGINALS MAILED TO:

Florida Fish and Wildlife Conservation
Commission
Attn: WHM Section Leader
620 South Meridian Street, M/S - 10
Tallahassee, Florida, 32399-1600

- 8.3. **STOCKING RATE.** The CONTRACTOR shall semi-annually pay the COMMISSION \$82.77 per animal grazing unit for the first year of grazing (\$8,277.00 semi-annually for a first-year total of \$16,554.00). Cattle shall be stocked at a rate not to exceed 200 animal grazing units on **THREE LAKES WMA**, based on the 2018 Assessment (LIVESTOCK FORAGE INVENTORY) completed by NRCS dated February 2018. The stocking rate will be adjusted if necessary following any updated grazing plans by NRCS. The stocking rate may only be increased with written permission by the COMMISSION. The stocking rate may be decreased by the COMMISSION upon written notice to the CONTRACTOR if grazing is excessive for optimum wildlife management. The CONTRACTOR shall accordingly increase or decrease such stocking rate within 60 days of written notice by the COMMISSION.
- 8.4. **MARKING OWNERSHIP.** The CONTRACTOR shall mark all cattle with the CONTRACTOR's brand, tag, or other owner identification before releasing the cattle for grazing on the above COMMISSION land. The CONTRACTOR shall mark all calves born in the grazing lands at the first gathering after their births, which shall be undertaken within six months of such births. All cattle grazed under this CONTRACT shall be the property of the CONTRACTOR and therefore the sole responsibility of the CONTRACTOR.
- 8.5. **FENCE MAINTENANCE AND HOLDING PENS.** The CONTRACTOR shall maintain all grazing lands, exterior and interior fences, cattle guards and holding pens in good and operable condition. The CONTRACTOR shall perform necessary fence replacement and repair in accordance with specifications for fence construction detailed in **Exhibit I**, attached hereto. All fences, gates and cattle guards must be maintained in a manner to prevent egress of cattle to areas outside the contracted property. CONTRACTOR shall maintain all holding pens in good condition and vegetation free. Replacement and/or repair of all posts, cattle guards, gates, holding pens, material and labor shall be at the sole and exclusive expense of the CONTRACTOR, except as stated under "COMMISSION RESPONSIBILITIES". The CONTRACTOR shall promptly remove storm debris from fencing and make the appropriate repairs. The CONTRACTOR shall relinquish all fences, including posts, gates, cattle guards, and holding pens in good working condition, to the COMMISSION upon termination of this CONTRACT. Furthermore, the CONTRACTOR shall be required to use only the COMMISSION's furnished key or combination locks for said gates.

Failure of the CONTRACTOR to properly maintain the holding pens and fences shall allow the COMMISSION to make a claim on the Performance Bond. In the event of such a claim, the CONTRACTOR shall provide the monies from the Performance Bond to the COMMISSION immediately upon notification by the COMMISSION.

- 8.6. **GRAZING ACCOUTREMENTS.** The CONTRACTOR shall be required to have the COMMISSION's Contract Manager's written permission to construct or make any physical alterations or improvements to the grazing lands. The CONTRACTOR shall be required to maintain all fences within authorized grazing units in accordance with specifications in **Exhibit I** and other constructed physical alterations or improvements to the grazing lands that are necessary to the CONTRACTOR's grazing operations and which are necessary for the CONTRACTOR to fulfill the covenants to which he or she is bound. The CONTRACTOR shall not cross-fence the grazing lands without prior written approval of the COMMISSION. Hay shall not be brought onto the property for supplemental feeding. Pellets, minerals and liquid feeds are allowed. All supplemental feeding sites shall be rotated every 90 days unless written approval is given by the COMMISSION. All supplemental feeding sites shall be located to avoid imperiled species and the locations shall be approved by the Project Manager. All approved cross fences and related constructed physical alterations or improvements constructed solely at the expense of the CONTRACTOR shall remain the property of the CONTRACTOR and the CONTRACTOR shall expeditiously remove same upon termination of this CONTRACT and shall reasonably restore such grazing lands to the condition existing prior to the construction of such physical alterations and improvements, except as otherwise approved in writing by the COMMISSION.
- 8.7. **GROUND DISTURBING ACTIVITIES.** The CONTRACTOR shall not initiate any ground disturbing activities including construction of ditches or ponds, vegetation manipulation, or application of pesticide, herbicide, or fertilization upon the grazing lands without prior written approval from the COMMISSION except as outlined herein. These restrictions do not exempt the CONTRACTOR from the annual fire line maintenance requirement.
- 8.8. **EXOTIC VEGETATION:** In an effort to control exotic plants such as Tropical Soda Apple, all cattle shall be held six (6) days in a designated quarantine pen on the **THREE LAKES WMA** before being released to graze on other pastures. The quarantine pen and grazing units may be inspected at various times by the Project Manager. If it can be determined that the CONTRACTORS' cattle are spreading Tropical Soda Apple and/or other exotics because cattle were not held for the full required quarantined period, the CONTRACTOR will be responsible for the elimination of the exotics in the other infested pastures. The CONTRACTOR is responsible for maintaining the quarantine pen free of exotics between quarantines.

Exotic plant elimination shall be done in accordance with **Exhibit II** attached hereto, Tropical Soda Apple Best Management Practices (BMP). Failure to remedy the situation in a timely manner shall result in cancellation of the CONTRACT, forfeiture of Performance Bond and immediate payment of remaining CONTRACT fees.

Tropical Soda Apple is listed as a state noxious weed (B-57.007 F.A.C.). Movement of this plant within the State of Florida without a permit is illegal.

- 8.9. **FIRE LINES.** No less than once every 12 months between October 15 and January 15 of each year, the CONTRACTOR shall disk existing fire lines (104 miles) of no less than ten foot widths within the authorized grazing units. Such fire lines shall divide established burn units and completely encircle the perimeter of each management/pasture unit within the contracted area as identified in **Exhibit III**, attached hereto. Such fire lines shall be disked two times with a minimum disked depth of six inches, while maintaining natural topography (i.e. soil remains in fire line to avoid creating a ditch). The CONTRACTOR may request from the COMMISSION, in writing, an extension of time past January 15 of any year for such disking in the event of wet conditions which make such disking impractical.

The CONTRACTOR may request from the COMMISSION, in writing, to disk fire lines in a different

time of year. CONTRACTOR shall disk fire lines following written acceptance of the request by the Project Manager. Such request for extension shall be made by the CONTRACTOR on or before October 1 of each year. Approval for such extension must be in writing from the COMMISSION and shall specify the date upon which the extension shall expire. The granting of an extension for fire line maintenance shall not be unreasonably withheld.

Failure of the CONTRACTOR to properly disk no earlier than October 15 of each calendar year and no later than January 15 of the following calendar year or such date upon which any extension shall expire if such extension is approved by the COMMISSION, shall allow the COMMISSION to make a claim on the Performance Bond. In the event of such a claim, the CONTRACTOR shall provide the monies from the Performance Bond to the COMMISSION immediately upon notification by the COMMISSION.

- 8.10. **WATER CONTROL STRUCTURES.** The CONTRACTOR shall not manipulate any water control structures and/or water level monitoring staff gauges.
- 8.11. **BURNING.** The CONTRACTOR specifically agrees not to willfully set fire, or allow any agent or employee of the CONTRACTOR to set fire, to the grazing lands. Failure to comply will be cause for immediate cancellation of the CONTRACT after review by the COMMISSION. If it is determined by the COMMISSION that the CONTRACTOR was negligent, the negligence shall provide grounds for a claim against the CONTRACTOR's Performance Bond.
- 8.12. **VEHICLES.** The CONTRACTOR shall register with the Contract Manager any vehicles used by the CONTRACTOR, its agents and employees on the grazing lands. Only registered vehicles may operate as part of this Contract.
- 8.13. **CAMPING.** The CONTRACTOR shall not allow camping, except as approved in writing by the COMMISSION and at campsites designated by the COMMISSION.
- 8.14. **GATHERING NOTICE.** The CONTRACTOR shall give no fewer than seven days written notice to the COMMISSION and other CONTRACTOR's whose use or contract adjoins the grazing lands, prior to the gathering or round-up of cattle within the grazing lands.
- 8.15. **REGULATIONS:** The CONTRACTOR shall abide by all laws, rules and regulations relating to the taking of wild animal life or freshwater aquatic life and use of the grazing lands for outdoor recreational purposes as hereinafter provided, and the CONTRACTOR shall be responsible to the COMMISSION under this CONTRACT for its agents and employees so abiding by all such laws, rules and regulations.
- 8.16. **ASSIGNMENT:** The CONTRACTOR shall not assign any or all of the rights, liabilities, duties or obligations of the CONTRACT nor subcontract any part of the grazing lands, without the prior written approval of the COMMISSION.
- 8.17. **INDEMNITY:** If Contractor is a state agency or subdivision, as defined in Subsection 768.28(2), F.S., pursuant to Subsection 768.28(19), F.S., neither Party indemnifies nor insures the other Party for the other Party's negligence. If Contractor is not a state agency or subdivision as defined above, Contractor shall be fully liable for the actions of its agents, employees, partners, or subcontractors and shall fully indemnify, defend, and hold harmless the State and the Commission, and their officers, agents, and employees, from suits, actions, damages, and costs of every name and description, including attorneys' fees, arising from or relating to personal injury and damage to real or personal tangible property alleged to be caused in whole or in part by Contractor, its agents, employees, partners, or subcontractors, provided, however, that Contractor shall not indemnify for that portion of any loss or damages proximately caused by the negligent act or omission of the State or the Commission.

- 8.18. **INSURANCE:** The CONTRACTOR shall, throughout the term of this CONTRACT, at his own cost and expense, provide, maintain and keep in force general liability insurance (including personal injury and property damage), insuring against liability for injury to persons or property occurring in, on or about the property or arising out of CONTRACTOR's possession, use, occupancy or maintenance thereof in an amount not less than \$500,000 (Five Hundred Thousand Dollars) per occurrence and \$1,000,000 annual aggregate for bodily injury and not less than \$100,000 per occurrence and \$300,000 annual aggregate for property damage and comprehensive automobile liability coverage with limits of not less than \$300,000 combined single limit for bodily injury and property damage. The COMMISSION shall be named as an additional insured, under such insurance.

CONTRACTOR is to ensure the General Liability Insurance Company issuing the Certificate of Liability Insurance indicates the Florida Fish and Wildlife Conservation Commission, 620 South Meridian Street, Tallahassee, FL 32399-1600 in the Certificate Holder section of the certificate form and references the FWC Contract Number in the Description of Operations section of the form.

Failure of the CONTRACTOR to provide Insurance or to continuously maintain the insurance in effect during the term of this Contract may be grounds to find the CONTRACTOR in default, which could include; cancellation of the Contract, and/or the CONTRACTOR removal from the Commission's approved vendor list for future solicitations.

8.19. **RECORD KEEPING REQUIREMENTS:**

Contractor Responsibilities. The Contractor shall maintain accurate books, records, documents and other evidence that sufficiently and properly reflect all direct and indirect costs of any nature expended in the performance of this Contract, in accordance with generally accepted accounting principles.

State Access to Contractor Books, Documents, Papers, and Records. The Contractor shall allow the Commission, the Chief Financial Officer of the State of Florida, the Auditor General of the State of Florida, the Florida Office of Program Policy Analysis and Government Accountability or authorized representatives of the state or federal government to have access to any of Contractor's books, documents, papers, and records, including electronic storage media, as they may relate to this Contract, for the purposes of conducting audits or examinations or making excerpts or transcriptions.

Contractor Records Retention. Unless otherwise specified in the Scope of Work, these records shall be maintained for five (5) years following the close of this Contract. Contractor shall cooperate with the Commission to facilitate the duplication and transfer of such records upon the Commission's request.

Contractor Responsibility to Include Records Requirements – Subcontractors. In the event any work is subcontracted under this Contract, Contractor shall include the aforementioned audit and record keeping requirements in all subcontract agreements.

Compliance with Federal Funding Accountability and Transparency. Any federal funds awarded under this Contract must comply with the Federal Funding Accountability and Transparency Act (FFATA) of 2006. The intent of the FFATA is to empower every American with the ability to hold the government accountable for each spending decision. The result is to reduce wasteful spending in the government. The FFATA legislation requires that information on federal awards (federal financial assistance and expenditures) be made available to the public via a single, searchable website: <http://www.USASpending.gov>. Grant recipients awarded a new Federal grant greater than

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or equal to \$25,000 awarded on or after October 1, 2010 are subject to the FFATA. Contractor agrees to provide the information necessary, over the life of this Contract, for the Commission to comply with this requirement.

8.20. PUBLIC RECORDS:

This Contract may be unilaterally canceled by the Commission for refusal by the Contractor to allow public access to all documents, papers, letters, or other material subject to the provisions of Chapter 119, Florida Statutes, and made or received by the Contractor in conjunction with this Contract, unless exemption for such records is allowable under Florida law.

Pursuant to Section 119.0701, F.S., the Contractor shall comply with the following:

- a. Keep and maintain public records that ordinarily and necessarily would be required by the Commission in order to perform the service.
- b. Provide the public with access to public records on the same terms and conditions that the Commission would provide the records and at a cost that does not exceed the cost provided in Chapter 119, F.S. or as otherwise provided by law.
- c. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law.
- d. Meet all requirements for retaining public records and transfer, at no cost, to the Commission all public records in possession of the Contractor upon termination of the contract and destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. All records stored electronically must be provided to the public agency in a format that is compatible with the information technology systems of the Commission.

8.21. PUBLIC RECORDS OF NONGOVERNMENT CONTRACTORS: All records in conjunction with this contract shall be public records and shall be treated in the same manner as other public records are under Chapter 119, Florida Statutes.

8.22. COOPERATION WITH INSPECTOR GENERAL: Pursuant to subsection 20.055(5), F.S., Contractor, and any subcontractor to the Contractor, understand and will comply with their duty to cooperate with the Inspector General in any investigation, audit, inspection, review, or hearing. Upon request of the Inspector General or any other authorized State official, the Contractor shall provide any type of information the Inspector General deems relevant to the Contractor's integrity or responsibility. Such information may include, but shall not be limited to, the Contractor's business or financial records, documents, or files of any type or form that refer to or relate to the Purchase Order. The Contractor agrees to reimburse the State for the reasonable costs of investigation incurred by the Inspector General or other authorized State official for investigations of the Contractor's compliance with the terms of this or any other agreement between the Contractor and the State which results in the suspension or debarment of the Contractor. Such costs shall include, but shall not be limited to: salaries of investigators, including overtime; travel and lodging expenses; and expert witness and documentary fees.

9. COMMISSION ACTIVITIES AND RESPONSIBILITIES. In consideration of this Contract, COMMISSION permits CONTRACTOR to utilize the Property to CONTRACTOR'S benefit in accordance with this Contract. The COMMISSIONS' activities and responsibilities in regard to the Property will be as follows:

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9.1. **LAND MANAGEMENT AND PUBLIC USE.** COMMISSION shall retain the right to access and utilize the Property in all ways, it being understood by the parties that the CONTRACTOR'S activities on the Property under this Contract are strictly limited to activities specifically permitted by this Contract. COMMISSION will continue to conduct public recreation and general management activities, including but not limited to public hunting and fishing, without interference from the CONTRACTOR. The COMMISSION may engage in land management, controlled burns and exotic plant control activities, which include areas of the Property and immediately adjacent to the Property. All prescribed burning shall be performed by COMMISSION personnel, or under COMMISSION supervision. The CONTRACTOR shall not willfully nor negligently set fire, or allow any agent or employee of the CONTRACTOR to set fire, to the grazing lands. Failure to comply will be cause for immediate cancellation of this Contract.

9.2. **WITHDRAWAL OF ACREAGE.** When the COMMISSION, in its sole discretion, determines that it is necessary for wildlife management or other management reasons (including but not limited to a sale or other disposition of all or part of the Property), to withdraw acreage from the Property, such acreage shall be withdrawn upon 60 days' notice to CONTRACTOR. Upon such withdrawal, the COMMISSION shall notify the CONTRACTOR of the reduction of payments due under this Contract. Such reduction shall be determined by the COMMISSION based on the price paid by the CONTRACTOR per animal unit, times the number of animal units permitted on the reduced acreage.

10. COMMISSION'S RIGHTS AND RESPONSIBILITIES

10.1. **FENCE.** The COMMISSION, at its discretion, may install new fencing, and shall coordinate such activities with those of the CONTRACTOR.

10.2. **BURNING.** All burning prescribed shall be conducted by the COMMISSION and/or its authorized agents.

10.3. **OUTDOOR RECREATION.** The COMMISSION shall have the right to conduct public outdoor recreational activities on the grazing lands, including but not limited to controlled public hunting and fishing, without interference from the CONTRACTOR activities authorized under this CONTRACT.

10.4. **MINERAL USE.** The COMMISSION shall have the right to remove or cause to be removed any or all minerals, oil or gas occurring on the grazing lands. It is specifically understood that the rights of the CONTRACTOR are confined solely to the grazing of cattle.

10.5. **OTHER USES.** The COMMISSION shall have the right to conduct any other activity not specified that is not reasonably inconsistent with and does not unreasonably interfere with cattle grazing uses.

10.6. SUBCONTRACTS

Contractor shall ensure, and provide assurances to the Commission upon request, that any subcontractor selected for work under this Contract has the necessary qualifications and abilities to perform in accordance with the terms and conditions of this Contract. Contractor must provide the Commission with the names of any subcontractor considered for work under this Contract in writing; the Commission reserves the right to reject any subcontractor. Contractor agrees to be responsible for all work performed and all expenses incurred with the project. Any subcontract arrangements must be evidenced by a written document available to the Commission upon request. Contractor further agrees that the Commission shall not be liable to any subcontractor for any expenses or liabilities incurred under the subcontract and Contractor shall be solely liable to the subcontractor for all expenses and liabilities incurred under the subcontract. Contractor, at its expense, will defend the Commission against such claims. The following provisions apply, in addition to any terms and conditions included in the Scope of Work.

Contractor Payments to Subcontractor. The Contractor agrees to make payments to the subcontractor within seven (7) working days after receipt of full or partial payments from the Commission in accordance with Section 287.0585, F.S., unless otherwise stated in the contract between Contractor and subcontractor. Contractor's failure to pay its subcontractors within seven (7) working days will result in a penalty charged against Contractor and paid to the subcontractor in the amount of one-half of one (1) percent of the amount due per day from the expiration of the period allowed herein for payment. Such penalty shall be in addition to actual payments owed and shall not exceed fifteen (15) percent of the outstanding balance due.

Commission Right to Reject Subcontractor Employees. The Commission shall retain the right to reject any of Contractor's or subcontractor's employees whose qualifications or performance, in the Commission's judgment, are insufficient.

Subcontractor as Independent Contractor. The Contractor agrees to take such actions as may be necessary to ensure that each subcontractor will be deemed to be an independent contractor and will not be considered or permitted to be an agent, servant, joint venturer, or partner of the State of Florida.

11. SPECIAL CONDITIONS

11.1. **CONTRACT ADJUSTMENTS.** The initial annual CONTRACT payment shall be adjusted if the COMMISSION increases or decreases the stocking rate. The COMMISSION shall notify the CONTRACTOR in writing of any stocking rate adjustments. Within thirty (30) days of date of invoice, the CONTRACTOR shall pay the COMMISSION the amount of such adjustment. The annual CONTRACT payment shall also be adjusted if the COMMISSION withdraws acreage for management purposes or if the State sells a part of the grazing lands which affects the CONTRACTOR. Within thirty (30) days of written notice by the COMMISSION, the CONTRACTOR shall adjust cattle stocking rates or remove the cattle from the acreage withdrawn or sold, accordingly. The COMMISSION shall rebate the amount of such adjustment to the CONTRACTOR.

11.2. **LATE FEE.** Should the CONTRACTOR fail to make the semiannual CONTRACT payment, CONTRACTOR shall be charged interest at the rate of one and one-half percent (1 ½%) per month, or fraction thereof, on the amount of the delinquent payment beginning the first day following the due date of payment until paid. Any court costs and attorney's fees required to collect past due CONTRACT payments will be at the expense of the CONTRACTOR.

11.3. **TERMINATION.** This CONTRACT may be terminated in the following ways:

- a. This CONTRACT shall terminate immediately upon the COMMISSION giving written notice to the CONTRACTOR in the event of fraud or willful misconduct or breach of this CONTRACT. The COMMISSION at its option may allow up to thirty (30) calendar days to correct a breach of this CONTRACT.
- b. This CONTRACT shall terminate upon the COMMISSION giving written notice to the CONTRACTOR in the event the annual CONTRACT payment is not paid when due. Such termination is at the option of the COMMISSION.
- c. This CONTRACT shall terminate upon the COMMISSION giving written notice to the CONTRACTOR, in the event the CONTRACTOR, his agents or employees fail to abide by all laws, rules and regulations relating to the taking of wild animal life or freshwater aquatic life, and the use of grazing lands as herein provided, or for failing to abide by other laws and rules of the State of Florida.

- d. This CONTRACT shall terminate sixty (60) days following the COMMISSION giving written notice to the CONTRACTOR that the grazing lands are to be sold. Within thirty (30) days of confirmation by the COMMISSION that CONTRACTOR has to remove his cattle, the COMMISSION shall rebate the prorated share of the annual contract payment to the CONTRACTOR.
- e. This CONTRACT may be terminated by the COMMISSION in its sole discretion upon thirty (30) days written notice to the CONTRACTOR in the event the continuation of cattle grazing activities on the premises are found to be incompatible with the COMMISSIONS' management plans or activities on the THREE LAKES WMA.
- f. If the CONTRACT is terminated upon written notice, the CONTRACTOR shall have thirty (30) days after receipt of the written notice in which to remove his cattle from the grazing lands. Additionally, at the end of the Lease the CONTRACTOR shall have thirty (30) days to remove his cattle from the grazing lands.
- g. Either party may terminate this Contract, for any reason, by giving written notice to the other party specifying the termination date, at least 60 days prior to the termination date specified in the notice. In the event of termination under this provision by the COMMISSION, the CONTRACTOR may be given reasonable time, determined by the sole discretion of the COMMISSION, to remove equipment, etc. In the event of termination under this provision by the CONTRACTOR, the CONTRACTOR must ensure all provisions that impact the condition of the WMA (fencing, roads, etc) and/or payments owed must be paid in full including any partial payments due the COMMISSION for use days since last payment before contract closeout.

11.4. **RELATIONSHIP OF PARTIES.**

Independent Contractor. The Contractor shall perform as an independent contractor and not as an agent, representative, or employee of the Commission. The Contractor covenants that it presently has no interest and shall not acquire any interest that would conflict in any manner or degree with the performance of services required. Each party hereto covenants that there is no conflict of interest or any other prohibited relationship between the Contractor and the Commission.

- 11.5. **NOTICE.** Unless a notice of change of address is given, any and all notices shall be delivered to the parties at the following addresses:

CONTRACTOR

4-L Land and Cattle, LLC
C/O Bobby Lines
11150 South West Fox Brown Road
Indiantown, FL 34956

COMMISSION

Florida Fish and Wildlife
Conservation Commission
WHM Contract Manager
620 South Meridian Street
Tallahassee, FL 32399

- 11.6. **Commission Rights to Assign or Transfer.** Contractor agrees that the State of Florida shall at all times be entitled to assign or transfer its rights, duties, or obligations under this Contract to another governmental agency in the State of Florida, upon giving prior written notice to Contractor.
- 11.7. **Commission Rights to Undertake or Award Supplemental Contracts.** Contractor agrees that the Commission may undertake or award supplemental contracts for work related to the Contract. Contractor and its subcontractors shall cooperate with such other contractors and the Commission in all such cases.
- 11.8. **OWNERSHIP OF DOCUMENTS/DATA/REPORTS/RESEARCH/SURVEYS ETC.**

The Contractor hereby agrees that all documents (data, reports, research, surveys, etc.) in hard copy or electronic that are collected or used for this project are the sole property of the Commission. The Contractor also hereby agrees to unconditionally transfer and assign to the Commission all copyright claims, trade secrets or other proprietary rights with respect to such documents. Upon request by the Commission at any time during and for 5 years after the expiration of this agreement, Contractor shall immediately deliver, transfer, and transmit to the Commission all originals and all copies of said documents and materials referenced herein.

11.9. NON-DISCRIMINATION.

Non-Discrimination in Performance. No person, on the grounds of race, creed, color, national origin, age, sex, or disability, shall be excluded from participation in, be denied the proceeds or benefits of, or be otherwise subjected to discrimination in performance of this Contract.

Discriminatory Vendor List. In accordance with Section 287.134, F.S., an entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity; may not submit a bid, proposal or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity. Contractor has a continuing duty to disclose to the Commission whether they appear on the discriminatory vendor list.

11.10. PUBLIC ENTITY CRIMES.

Convicted Vendor List. Pursuant to Subsection 287.133(2)(a), F.S., a person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not be awarded or perform work as a contractor, supplier, subcontractor or consultant under a contract with any public entity and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, F.S., for Category Two for a period of thirty-six (36) months from the date of being placed on the convicted vendor list.

Notice of Conviction of Public Entity Crime. Any person must notify the Department of Management Services and the Commission within 30 days after conviction of a public entity crime applicable to that person or an affiliate of that person as defined in Section 287.133, F.S.

11.11. **PROHIBITION OF UNAUTHORIZED ALIENS.** In accordance with federal Executive Order 96-236, the Commission shall consider the employment by the Contractor of unauthorized aliens a violation of Section 274A(e) of the Immigration and Nationalization Act. Such violation shall be cause for unilateral cancellation of this Contract if the Contractor knowingly employs unauthorized aliens.

11.12. EMPLOYMENT ELIGIBILITY VERIFICATION

Requirement to Use E-Verify. Executive Order 11-116, signed May 27, 2011, by the Governor of Florida, requires Commission contracts in excess of nominal value to expressly require the Contractor to: 1.) utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by Contractor during the Contract term; and, 2.) include in all subcontracts under this Contract, the requirement that subcontractors performing work or providing services pursuant to this Contract utilize the E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the term of the subcontract.

E-Verify Online. E-Verify is an Internet-based system that allows an employer, using information reported on an employee's Form I-9, Employment Eligibility Verification, to determine the eligibility of all new employees hired to work in the United States after the effective date of the required Memorandum of Understanding (MOU); the responsibilities and elections of federal contractors, however, may vary, as stated in Article II.D.1.c. of the MOU. There is no charge to employers to use E-Verify. The Department of Homeland Security's E-Verify system can be found online at: http://www.dhs.gov/files/programs/gc_1185221678150.shtm

Enrollment in E-Verify. If Contractor does not have an E-Verify MOU in effect, the Contractor must enroll in the E-Verify system prior to hiring any new employee after the effective date of this Contract.

E-Verify Recordkeeping. The Contractor further agrees to maintain records of its participation and compliance with the provisions of the E-Verify program, including participation by its subcontractors as provided above, and to make such records available to the Commission or other authorized state entity consistent with the terms of the Contractor's enrollment in the program. This includes maintaining a copy of proof of the Contractor's and subcontractors' enrollment in the E-Verify Program (which can be accessed from the "Edit Company Profile" link on the left navigation menu of the E-Verify employer's homepage).

Employment Eligibility Verification. Compliance with the terms of the Employment Eligibility Verification provision is made an express condition of this Contract and the Commission may treat a failure to comply as a material breach of the Contract.

11.13. **SEVERABILITY AND CHOICE OF VENUE.** This Contract has been delivered in the State of Florida and shall be construed in accordance with the laws of Florida. Wherever possible, each provision of this Contract shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Contract shall be prohibited or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provision or the remaining provisions of this Contract. Any action in connection herewith, in law or equity, shall be brought in Leon County, Florida, to the exclusion of all other lawful venues.

11.14. **NO THIRD-PARTY RIGHTS:** The parties hereto do not intend nor shall this Contract be construed to grant any rights, privileges or interest to any person not a party to this Contract.

11.15. **JURY TRIAL WAIVER:** As part of the consideration for this Contract, the parties hereby waive trial by jury in any action or proceeding brought by any party against any other party pertaining to any matter whatsoever arising out of or in any way connected with this Contract, or with the products or services provided under this Contract, including but not limited to any claim by the Contractor of *quantum meruit*.

11.16. **DAMAGES TO STATE PROPERTY**

Any damages to state property (i.e. structures, roads, culverts, fences, trees, or other natural resources) caused by the Contractor while working on this project shall be the responsibility of the Contractor to remedy, as determined by the Commission. The Contractor shall be responsible for the conduct of all Contractor personnel at all times while on the job site.

Should any historical or cultural artifacts be uncovered the Contractor shall immediately halt work and notify the Contract Manager. Please note: The State Archeologist has the power to halt work if he or she has reason to believe artifacts are being disturbed.

11.17. **CONTRACT RELATED PROCUREMENT:**

PRIDE. In accordance with Section 946.515(6), F.S., if a product or service required for the performance of this Contract is certified by or is available from Prison Rehabilitative Industries and Diversified Enterprises, Inc. (PRIDE) and has been approved in accordance with Subsection 946.515(2), F.S., the following statement applies:

It is expressly understood and agreed that any articles which are the subject of, or required to carry out, this contract shall be purchased from [PRIDE] in the same manner and under the same procedures set forth in Subsections 946.515(2) and (4), F.S.; and for purposes of this contract the person, firm or other business entity carrying out the provisions of this contract shall be deemed to be substituted for this agency insofar as dealings with such corporation are concerned.

The above clause is not applicable to subcontractors unless otherwise required by law. Additional information about PRIDE and the products it offers is available at <https://www.pride-enterprises.org/>.

Respect of Florida. In accordance with Subsection 413.036(3), F.S., if a product or service required for the performance of this Contract is on the procurement list established pursuant to Subsection 413.035(2), F.S., the following statement applies:

It is expressly understood and agreed that any articles that are the subject of, or required to carry out, this contract shall be purchased from a nonprofit agency for the blind or for the severely handicapped that is qualified pursuant to Chapter 413, F.S., in the same manner and under the same procedures set forth in Subsections 413.036(1) and (2), F.S.; and for purposes of this contract, the person, firm or other business entity carrying out the provisions of this contract shall be deemed to be substituted for the state agency insofar as dealings with such qualified nonprofit agency are concerned.

Additional information about the designated nonprofit agency and the products it offers is available at <https://www.respectofflorida.org/>.

Procurement of Recycled Products or Materials. Contractor agrees to procure any recycled products or materials which are the subject of or are required to carry out this Contract in accordance with Section 403.7065, F.S.

11.18. **FEDERAL DEBARMENT/SUSPENSION CERTIFICATION FORM**

Contractor Federal Certification. In accordance with federal Executive Order 12549, Debarment and Suspension, Contractor shall agree and certify that neither it, nor its principals, is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency; and, that the Contractor shall not knowingly enter into any lower tier contract, or other covered transaction, with a person who is similarly debarred or suspended from participating in this covered transaction.

Contractor Commission Certification. Upon execution of this Contract by the Contractor, the Contractor shall complete, sign and return to the Commission's Contract Manager a completed copy of Attachment F, "Certifications and Assurances." This includes the Certification Regarding Debarment, Suspension, and Other Responsibility Matters.

11.19. **PROHIBITION AGAINST LOBBYING**

The Contractor certifies that no Federal appropriated funds have been paid or will be paid, on or after December 22, 1989, by or on behalf of the Contractor, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress,

or an employee of a Member of Congress, in connection with the awarding, renewal, amending or modifying of any Federal contract, grant, or cooperative agreement. If any non-Federal funds are used for lobbying activities as described above in connection with this Contract, the Contractor shall submit Standard Form-LLL, "Disclosure Form to Report Lobbying", and shall file quarterly updates of any material changes. The Contractor shall require the language of this certification to be included in all subcontracts, and all subcontractors shall certify and disclose accordingly.

Pursuant to the Lobbying Disclosure Act of 1995, the Contractor agrees to refrain from entering into any subcontracts under this Agreement with any organization described in Section 501(c)(4) of the Internal Revenue Code of 1986, unless such organization warrants that it does not, and will not, engage in lobbying activities prohibited by the Act as a special condition of the subcontract.

11.20. OTHER AGREEMENTS: This CONTRACT and corresponding solicitation materials and addenda, if any, and the successful proposal contains the complete CONTRACT between the COMMISSION and the CONTRACTOR and, as of the effective date hereof, shall supersede all other agreements, communication or representations, either verbal or written, between the COMMISSION and CONTRACTOR.

11.21. COMPLETE CONTRACT: The COMMISSION and CONTRACTOR stipulate that neither of them has made any representations except such representations specifically contained within this CONTRACT and each party acknowledges reliance on its own judgment in entering into this CONTRACT. The COMMISSION and CONTRACTOR further acknowledge that any payments or any representations that may have been made outside of those specifically contained herein are of no binding effect and have not been relied upon by either party in its dealings with the other in entering into this CONTRACT.

11.22. COMPLIANCE WITH LAWS

The Contractor shall comply with all laws, rules, codes, ordinances, and licensing requirements that are applicable to the conduct of its business, including those of federal, State, and local agencies having jurisdiction and authority. By way of non-exhaustive example, Chapter 287 of the Florida Statutes and Chapter 60A-1 of the Florida Administrative Code govern the Contract. By way of further non-exhaustive example, the Contractor shall comply with section 247A(e) of the Immigration and Nationalization Act, the Americans with Disabilities Act, and all prohibitions against discrimination on the basis of race, religion, sex, creed, national origin, handicap, marital status, or veteran's status. Contractors submitting responses to this solicitation must also provide electronic and information technology resources in complete compliance with the accessibility standards provided in Rule 60-8.002, F.A.C.; these standards establish a minimum level of accessibility. Violation of such laws shall be grounds for Contract termination. The Contractor is required to be familiar with all Federal, State and Local laws, ordinances, rules and regulations that in any manner affect the work. The Contractor shall comply with all laws and rules applicable to the Contractor(s) that shall provide the required commodities or services to the Commission. Ignorance on the part of the Contractor will in no way relieve him from responsibility.

11.23. NO THIRD-PARTY RIGHTS. The parties hereto do not intend nor shall this Contract be construed to grant any rights, privileges or interest to any person not a party to this Contract.

11.24. MODIFICATION OR AMENDMENT OF CONTRACT: No waiver, or modification or amendment of this CONTRACT or of any covenant, condition, or limitation herein contained shall be valid unless in writing and lawfully executed by the party to be charged therewith. It is the

FWC Contract 18124

intention of the COMMISSION and the CONTRACTOR that no evidence of any waiver, or modification or amendment shall be offered or received in evidence in any proceeding or litigation between the parties arising out of or affecting this CONTRACT unless such waiver, or modification or amendment is in writing and executed as aforesaid. The provisions of this section shall not be waived without compliance with said writing and execution requirements.

- 11.25. **ENTIRE AGREEMENT:** This Contract with all incorporated attachments and exhibits represents the entire Contract of the parties. Any alterations, variations, changes, modifications or waivers of provisions of this Contract shall only be valid when they have been reduced to writing, and duly signed by each of the parties hereto, unless otherwise provided herein. In the event of conflict, the following order of precedence shall prevail: this contract and its attachments, the terms of the solicitation and the contractor's response to the solicitation.

REMAINDER OF PAGE INTENTIONALLY LEFT BLANK

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed through their duly authorized signatories on the day and year last written below.

CONTRACTOR

Bobby J.
Name

Managing Owner
Title

9-11-18
Date

**FLORIDA FISH AND WILDLIFE
CONSERVATION COMMISSION**

Thomas H. En
Eric Sutton, Executive Director

9/28/18
Date

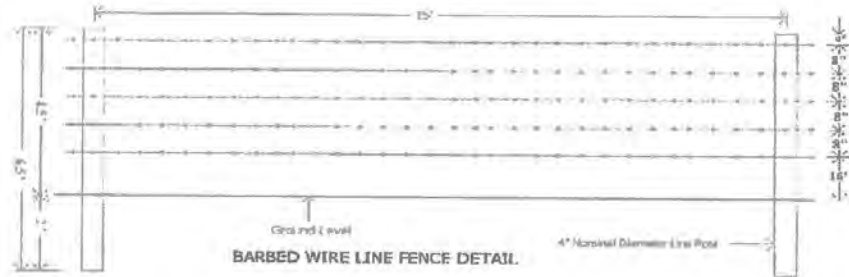
Approved as to form and legality:

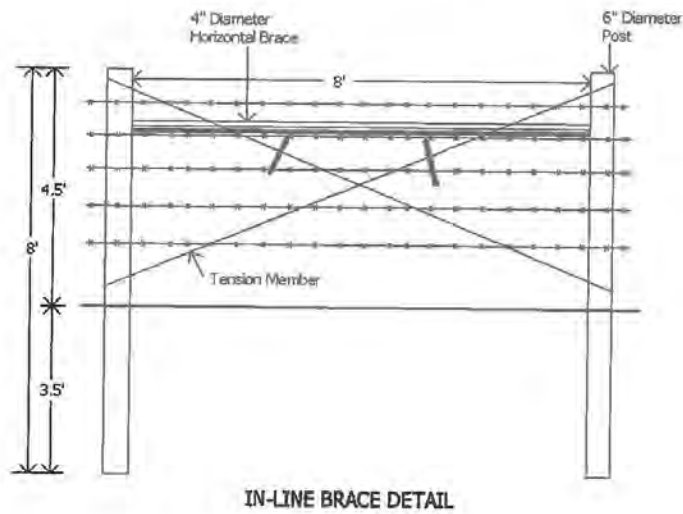
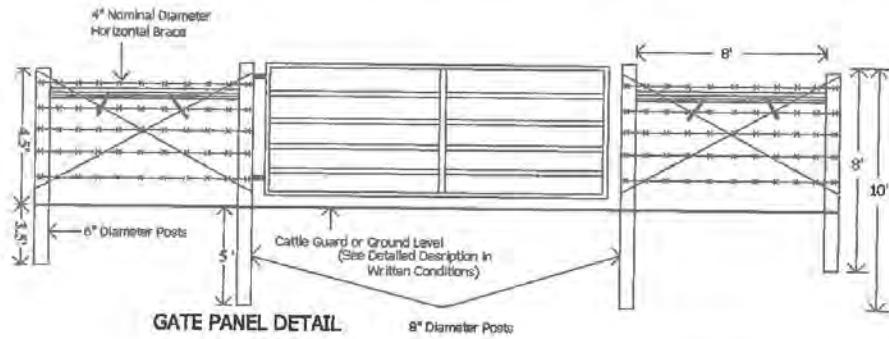
William P. Pugh
COMMISSION Attorney

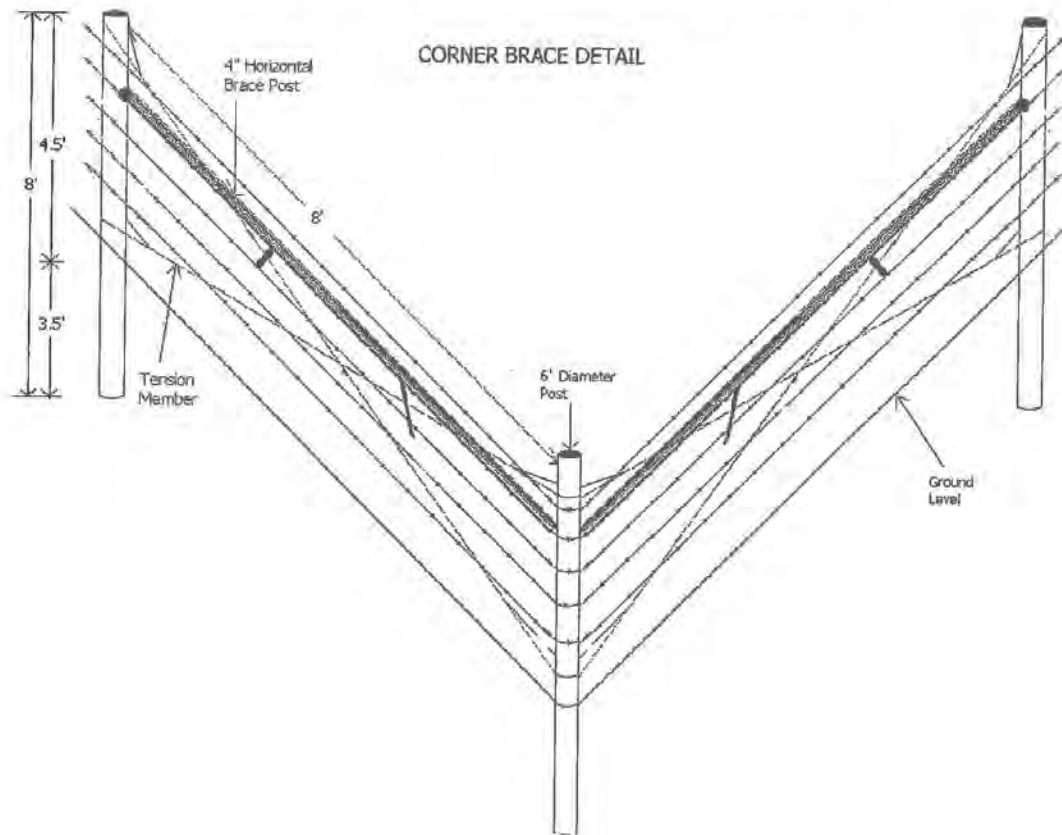
Attachments in this Contract include the following:

- | | |
|-------------|---|
| Exhibit I | Specifications for Fence Construction |
| Exhibit II | SS AGR-77, Tropical Soda Apple Information Bulletin |
| Exhibit III | Three Lakes WMA Grazing Map |

EXHIBIT I – Specifications for Fence Construction (page 1 of 3)







Tropical Soda Apple: A Noxious Weed in Florida¹

J. Jeffrey Mullaley, Jason Ferrell, and Brent Sellers²

Tropical soda apple (*Solanum viarum* Dunal) is a perennial weed that creates serious problems in many perennial grass pastures and native areas of Florida (Figure 1). This noxious weed, having foliage unpalatable to livestock and highly viable seed, can infest a pasture or native area within 1 to 2 years, resulting in lower stocking rates (animals per acre). The incidence of this plant has been highest in Florida, though the weed is present in Georgia, Alabama, Mississippi, South Carolina, Tennessee, Louisiana, and Pennsylvania. Within Florida, the incidence of this plant has been highest in the south, although it is now distributed throughout the entire state.

Plant Description

At maturity, TSA is 3 to 6 feet tall and the entire plant, including stems and leaves, has thorn-like prickles approximately 0.5 to 1 inch long (Figure 2). Leaves are pubescent (hairy), measure 6 to 8 inches long and 3 to 6 inches wide, and are lobed (Figure 3). The flowers are white with yellow stamens. The globose fruit, approximately 1 inch in diameter, is



Figure 1. Tropical soda apple in a typical south Florida bahiagrass pasture.

yellow when mature (Figure 4). Each mature fruit contains about 400 light red-brown seeds with diameters of approximately 0.10 inch. Seeds are only moderately flattened and are found in a mucilaginous layer containing a glycoalkaloid called solanodine. TSA fruit collected in south Florida averaged 1 inch in diameter, with an average of 413 seeds per fruit.

1. This document is SS-AGR-77, one of a series of the Agronomy Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Published October 1991 as WEC-7. Revised August 2006. Reviewed November 2006. Visit the EDIS Web Site at <http://edis.ufl.edu>.

2. J. Jeffrey Mullaley, professor and center director, West Florida Research and Education Center—Milton, FL; Jason Ferrell, assistant professor, Agronomy Department; Brent Sellers, assistant professor, Knappe Cattle Research and Education Center—Ocala, FL; Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL.

The use of trade names in this publication is solely for the purpose of providing specific information. UF/IFAS does not guarantee or warranty the products named, and references to them in this publication does not signify our approval or the exclusion of other products of suitable composition. All chemicals should be used in accordance with directions on the manufacturer's label.

The Institute of Food and Agricultural Sciences (IFAS) is an Equal Opportunity Institution authorized to provide research, educational information and other services only to individuals and institutions that function with non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, marital status, national origin, political opinions or affiliations. U.S. Department of Agriculture, Cooperative Extension Service, University of Florida, IFAS, Florida A. & M. University Cooperative Extension Program, and Boards of County Commissioners Cooperating. Larry Arrington, Director.

Tropical Soda Apple: A Noxious Weed in Florida

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Figure 2. Thorn-like prickles on a tropical soda apple leaf.



Figure 3. Mature tropical soda apple plant.

Weed Biology

Although TSA flowers throughout the year, flowering is concentrated from September through May. Fruit production occurs throughout the year (primarily from September through May), ensuring large numbers of viable seeds (from 40,000 to 50,000 per plant at 75% germination) for seed dispersal. Seed in the top 1 to 2 inches of the soil surface is more



Figure 4. Tropical soda apple fruit. Top row: immature fruit. Bottom row: mature fruit.

likely to germinate than seed on the soil surface or seed placed at a depth greater than 3 inches. White (immature) seed is not viable, regardless of fruit color. Livestock and wildlife such as feral hogs, deer, and raccoons eat the fruit and disperse the seed via feces, spreading the plant to other land areas.

Seedling emergence has been observed primarily during the dry season (October through May). New plants can emerge either from seeds or from roots of existing plants, whose buds regenerate new shoots. The root system can be extensive, with feeder roots a few inches below ground measuring 0.25 to 1.0 inch in diameter and extending 3 to 6 feet horizontally from the crown of the plant.

Weed Ecology

TSA has been observed as a weed in pastures, ditch banks, sod fields, citrus groves, sugar cane fields, vegetable fields, roadsides, rangeland, and nature preserves. It is a common weed in South America, India, the West Indies, Honduras, and Mexico. Native to Argentina and central Brazil, TSA has been introduced in Africa, much of India, and Nepal and can be expected to occur in other subtropical areas. How TSA was introduced into Florida is not known. In Florida, it is an obligate weed mainly associated with human activities.

Tropical soda apple is less productive, or may actually die, in the summer, when water accumulates in fields. *Solanum* spp. were first reported by ranchers in south Florida in the early 1960s. According to these initial reports, however, the fruit color was

cherry red, not yellow. Apparently, ranchers were observing *Solanum capsicaoides*, not TSA. For the past 10 years in south Florida, TSA has been the more prevalent of the two species. Although the reasons for TSA's rapid increase are not well understood, its seed is spread by animals, contaminated hay, and grass seed (e.g., that of bahiagrass).

Weed Control

Dense Infestations

Milestone and Forefront are the most effective herbicides for controlling dense stands of TSA. These herbicides possess postemergence control of existing plants and preemergence control of germinating seeds. Our research has shown that Milestone and Forefront will control germinating seedlings for over 6 months after application.

The application rate for Milestone is 5 to 7 oz/A while Forefront is 2 to 2.6 pt/A. Although the lower application rates are highly effective on existing plants, the higher rates will provide more soil activity and are suggested if large amounts of TSA seed are present in the soil. Although mowing prior to herbicide application is not required, it is important to add a non-ionic surfactant (0.25% v/v) and apply in at least 20 gallons of water per acre.

Another option is to use Remedy herbicide. When using Remedy, mow plants to a 3-inch stubble height as soon as possible to keep plants from producing fruit and seed. Repeat mowing when plants reach the flowering stage (50-60 days) through April. Fifty to 60 days after the April mowing, when plant regrowth is at the first flower stage (late May - June), spray Remedy at 1 qt/A + 0.25% nonionic surfactant in 40 gal/A of water.

Remedy does not possess soil residual and follow up applications to control escaped or new seedlings will be necessary.

Regardless which herbicide is used, regular scouting after treatment is necessary. TSA can produce fruit at almost any time during the growing season and give rise to hundreds of additional plants. It is important to monitor the fields to ensure that no plants are allowed to reestablish and produce fruit.

Sparse infestations

Areas with low TSA infestations should be targeted and each plant sprayed individually. Recommended herbicides for 95 to 100% control are as follows:

Spot Application

Milestone at 0.5 to 0.8 oz per 2.5 gal (15 to 20 ml per 2.5 gal.) + 0.25% nonionic surfactant + color marker. (Use a colored marker with the herbicide solution to avoid spraying the same plant twice, or not spraying a plant at all.)

Forefront or Remedy at 0.5% solution (50 ml per 2.5 gal.) + 0.25% nonionic surfactant + color marker.

Cover the entire TSA plant with spray to ensure herbicide uptake and maximum control. Allow herbicides to dry on plants 3-4 hours before rainfall. Monitor sprayed areas monthly and treat new TSA seedlings. Do not allow plants to produce fruit.

TSA control can also be achieved using dicamba at 1% + 0.25% nonionic surfactant in 20 - 30 gallons of water. Dicamba (Banvel, Clarity or Vanquish) is effective at controlling TSA, but the 2 quart rate is more expensive than other options. Be sure and follow the guidelines for spraying volatile herbicides such as dicamba and Remedy (see EDIS publication SS-AGR-12 *Florida's Organo-Acetic Herbicide Rule* [<http://edis.ifas.ufl.edu/WG051>] for more information).

Shipping Cattle

Ship cattle from an area that does not have TSA or is TSA fruit free. Mowing a TSA infested pasture prior to shipping will eliminate the fruit and the consumption of TSA seed by the cattle. The TSA seed can remain viable in the digestive tract for up to six days. Therefore, when you buy cattle, hold them in one area for up to six days to avoid the spread of TSA to other areas on your ranch. For more information, see EDIS publication SS-AGR-78 *Shipping Cattle, Not Tropical Soda Apple Seed* (<http://edis.ifas.ufl.edu/UW187>).

IFAS is researching methods to control TSA. Efforts to identify effective methods are focused on

Tropical Soda Apple: A Noxious Weed in Florida

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herbicide evaluations, herbicide rates, and biological control measures (insects and pathogens). IFAS is also conducting an aggressive TSA educational outreach program to educate ranchers and landowners. Individuals requiring additional information should contact their county Extension offices.

South Florida

(
<http://tsa.ifas.ufl.edu/00Slides/SouthFlorida/index.html>)

Further information

EDIS publications:

SS-AGR-50 Tropical Soda Apple (*Solanum viarum*, Dunal) in Florida
<http://edis.ifas.ufl.edu/WG201>)

SS-AGR-78 Shipping Cattle, Not Tropical Soda Apple Seed (<http://edis.ifas.ufl.edu/UW187>)

SS-AGR-129 Tropical Soda Apple Control—Sorting Through the Options
<http://edis.ifas.ufl.edu/AG261>)

SS-AGR-130 Management Practices to Control Tropical Soda Apple
<http://edis.ifas.ufl.edu/UW188>)

SS-AGR-131 Tropical Soda Apple Making a Comeback (<http://edis.ifas.ufl.edu/UW189>)

ENY-826 Biology of *Grotiana boliviana*, the First Biocontrol Agent Released to Control Tropical Soda Apple in the USA
<http://edis.ifas.ufl.edu/TN487>)

ENY-824 Classical Biological Control of Tropical Soda Apple in the USA
<http://edis.ifas.ufl.edu/TN457>)

West Florida Research and Education Center:

Tropical Soda Apple (<http://tsa.ifas.ufl.edu/>)

Tropical Soda Apple Best Management Practices—

North Florida

(
<http://tsa.ifas.ufl.edu/00Slides/NorthFlorida/index.html>)



Three Lakes WMA Cattle Lease Area

Miles
0 0.5 1 2 3 4
Shayna Jacques, Bio III

12.3 Well Monitoring License Agreement

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

WELL MONITORING LICENSE AGREEMENT

THIS LICENSE AGREEMENT is hereby made and entered into this 9th day of April, 2007, by the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, hereinafter referred to as "LICENSOR," and the SOUTH FLORIDA WATER MANAGEMENT DISTRICT, a public body existing under Chapter 373, Florida Statutes, hereinafter referred to as "LICENSEE".

WITNESSETH:

WHEREAS, LICENSOR is the fee simple owner of certain real property located in Osceola County, Florida, as more particularly identified in Exhibit A, attached hereto and by reference made a part hereof; and

WHEREAS, LICENSEE desires to utilize LICENSOR'S property only for the purpose of constructing, operating and maintaining scientific equipment to be used for collecting hydrological and other scientific data; and

WHEREAS, LICENSOR is desirous of granting to LICENSEE a license for the aforementioned purpose.

NOW THEREFORE, for and in consideration of the terms, conditions, and mutual covenants hereinafter contained, LICENSOR and LICENSEE, both intending to be legally bound, hereby agree as follows:

1. LICENSOR hereby grants to LICENSEE, its agents, representative and employees the right, privilege, permission and license to utilize the property described in Exhibit "A," hereinafter referred to as "License Area," to locate, construct, install, operate, inspect, alter, improve, maintain, repair, remove, and rebuild scientific equipment, for research and scientific purposes on, upon and across

2. This License is granted for a term of thirty years from the date written above unless or until sooner terminated by LICENSOR or LICENSEE giving sixty days written notice to the other party of intention so to terminate.
3. LICENSOR retains the right to use the License Area in any manner not inconsistent with the rights granted to LICENSEE.
4. LICENSEE agrees that it does not and shall not claim at any time any interest or estate of any kind or extent whatsoever in the License Area, by virtue of this License Agreement or its occupancy or use hereunder.
5. LICENSEE represents that it is self-funded for Worker's Compensation and liability insurance covering bodily injury, personal injury and property damage, with such protection being applicable to the LICENSEE, its officers, employees, servants and agents while acting within the scope of their employment during performance under this License Agreement.
6. LICENSEE shall contact the Florida Geological Survey prior to drilling and shall submit well cuttings for the state repository if requested.
7. LICENSEE shall not allow the general public to access, utilize or go upon the License Area.
8. Clearing vegetation during installation or removal of the monitoring equipment without the consent and supervision of the managing agency is prohibited.
9. Upon termination of this License Agreement, LICENSEE shall, at LICENSEE'S sole cost and expense, remove all equipment, accessories, and material owned by LICENSEE from the License Area. Upon abandonment, each well will become a fixture on the well site which the LICENSEE will plug pursuant to Rule 40C-3.531, F.A.C., and LICENSEE will restore said License Area to as good a condition as it

removal, plugging, and restoration within sixty days of the date upon which LICENSEE ceases its operations on the License Area.

10. Should LICENSOR elect to maintain one or more wells for its own use upon abandonment of any well by LICENSEE, the well(s) will remain unplugged and LICENSOR thereafter agrees to assume full responsibility for same.

11. The installation and removal of the monitoring well materials as well as restoration of the sites will be done under the supervision of the managing agency. Prior to installation of the well(s), LICENSEE shall obtain the written consent of the State of Florida Department of State, Division of Historical Resources.

12. The license herein granted is subject to revocation by the LICENSOR if the License Area is not utilized for the purpose specified in this License Agreement or if there is a change in ownership of the License Area.

13. This License Agreement is personal to LICENSEE and may not be assigned or transferred, without prior written approval of LICENSOR.

14. This License Agreement embodies the entire understanding of the parties and there are no further agreements or understandings, written or oral, in effect between the parties, relating to the subject matter hereof. This instrument may be amended or modified by an instrument of equal formality signed by the respective parties.

15. For purposes of this License Agreement, all notification shall be provided as follows:

State of Florida Department of
Environmental Protection
Division of State Lands, M. S. 130
Bureau of Public Land Administration
3800 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

16. The following special conditions shall apply to this License Agreement:

b. Well construction per well will not exceed twenty-one days without the written consent of the State of Florida Department of Environmental Protection, Division of State Lands.

c. If fencing is needed, LICENSEE shall install and maintain fencing at LICENSEE'S sole cost and expense. Fencing shall not exceed eight feet in height. LICENSEE shall provide to LICENSOR a set of keys to all fence gates.

d. LICENSOR shall not physically disturb the well casings or covers (water meter boxes) in any way without prior approval from LICENSEE.

e. The Florida Fish and Wildlife Conservation Commission (FFWCC), managing agency of the License Area where these monitoring wells are to be placed, must be included in all phases of planning, installation/removal and monitoring. FFWCC'S area biologist and district biologist must be consulted and have granted their approval prior to all activities.

f. Wells are not to draw out any water except that which is needed for sampling purposes.

g. LICENSEE is solely responsible for its drilling and monitoring equipment.

h. FFWCC must grant approval of the location of the well and monitoring equipment.

i. LICENSEE shall notify FFWCC of any activity taken place at any of the locations of the monitoring wells such as drilling or water discharges.

j. LICENSEE agrees that drilling, monitoring or other water management activities shall be conducted during reasonable hours and approved by FFWCC.

k. LICENSEE acknowledges its liability for torts to the extent provided and allowed under Section 768.28 F.S. Nothing contained

waive its sovereign immunity. Nothing contained herein shall be construed as indemnification by LICENSEE of any party whatsoever. Nothing contained herein shall be construed as consent to be sued by third parties in any matter arising out of any contract.

IN WITNESSETH WHEREOF, the parties have caused this License Agreement to be executed on the day and year first above written.

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

Judy Woodard
Witness
Judy Woodard
Print/Type Name
Athena Barber
Witness
Athena Barber
Print/Type Name

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

"LICENSOR"

STATE OF FLORIDA
COUNTY OF LEON

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

Diane C. Rogowski
Notary Public, State of Florida
Commission  Diane C. Rogowski
Commission # DD539673
Expires May 24, 2010
Commission Expires Notary Public Insurance, Inc. 800-365-7019

Approved as to Form and Legality
By: [Signature]
DEP Attorney

SOUTH FLORIDA WATER MANAGEMENT
DISTRICT

Reagan Walker

Witness

Reagan Walker

Print or type name

Lea M. Tucker

Witness

Lea M. Tucker

Print or type name

By: Carol Ann Wehle (SEAL)
Executive Director

Carol Ann Wehle

Print or type name

ATTEST:

Jacki M'Gorty
Secretary, Governing Board

Jacki M'Gorty
Print or type name

"LICENSEE"

STATE OF FLORIDA
COUNTY OF OSCEOLA



The foregoing instrument was acknowledged before me this 4th day
of APRIL, 2007, by CAROL WEHLE and
CAROL WEHLE, Executive Director of the South Florida
Water Management District, a public body existing under Chapter 373,
Florida Statutes, and Secretary, of the Governing Board of the South
Florida Water Management District, on behalf thereof. They are
personally known to me.

Christine C. Bergeron
Notary Public, State of Florida

Commission Number:

Commission Expires:

NOTARY PUBLIC-STATE OF FLORIDA
 Christine C. Bergeron
Commission # DD549456
My Comm. Expires: 06/21/2010

Approved as to Form and Legality

By: Andy W. W. W.
Office of General Counsel

LEGAL FORM APPROVED
SFWMD OFFICE OF COUNSEL
BY Andy W. W. W. DATE 3-29-07

EXHIBIT "A"



STATION	X	Y	AGENCY	STATUS	STR
TLWMA1	612659.49	1302199.28	SFWMD	Proposed	32 29 32
TLWMA2	612662.68	1296947.93	SFWMD	Proposed	5 30 32
TLWMA3	610932.75	1298363.69	SFWMD	Proposed	5 30 32
TLWMA4	603933.03	1290061.06	SFWMD	Proposed	7 30 32

12.4 Public Hearing Notice, Advertisements, and Press Release

12.4.1 Public Hearing Notice

NOTICE

The Florida Fish and Wildlife Conservation Commission (FWC)
Announces a

PUBLIC HEARING

for the

Three Lakes

Wildlife Management Area

Management Plan

Osceola County, Florida

7:00 P.M. Tuesday, November 5, 2019

Osceola County Administrative Building
1 Courthouse Square, Suite 4700
Kissimmee, FL 34741

PURPOSE: To receive public comment regarding considerations for the FWC ten-year Land Management Plan for the Three Lakes Wildlife Management Area (TLWMA). This hearing is being held **EXCLUSIVELY** for discussion of the **DRAFT** Three Lakes WMA Management Plan. This meeting is not being held to discuss area hunting or fishing regulations. For more information on the process for FWC rule and regulation development go online to:

<http://myfwc.com/about/rules-regulations/>

A Management Overview for the Three Lakes WMA is available upon request. For a copy, please contact Jennifer Paredes, Florida Fish and Wildlife Conservation Commission, Land Conservation and Planning, 620 South Meridian Street, Tallahassee, Florida 32399-1600. Telephone: (850) 487-9588.

Help plan the future of Three Lakes Wildlife Management Area

A 10-year plan for the Three Lakes Wildlife Management Area (WMA) will be presented at a public hearing in Osceola County on Tuesday, November 5th, 2019.

People are invited to the 7 p.m. Public Hearing at the Osceola County Administrative Building, 1 Courthouse Square, Suite 4700, in Kissimmee.

Florida Fish and Wildlife Conservation Commission (FWC) staff will present the DRAFT land management plan for the FWC-managed WMA, and people will be encouraged to comment and ask questions. For more information on the [upcoming local public hearing](#), go to MyFWC.com/Conservation and select “Terrestrial Programs” then “Management Plans.”

The Three Lakes WMA is located adjacent to the three lakes for which it is named, Lake Kissimmee, Lake Jackson and Lake Marian. The area includes a large expanse of the Kissimmee prairie, one of the last sections of dry prairie remaining. It encompasses approximately 65,333 acres within Osceola County, and offers many opportunities for outdoor recreation, including hunting, fishing, wildlife viewing, hiking, biking, horseback riding, paddling on Lake Jackson, scenic driving and camping.

The Florida grasshopper sparrow, red-cockaded woodpecker, Audubon’s crested caracara, snail kite, Eastern indigo snake and American alligator are among the native species living here. The dry prairie, mesic flatwoods, and mosaic of other natural communities in the Three Lakes WMA not only provide wildlife habitat, but also an

important buffer and filter system for run-off between upland areas and the Kissimmee River.

“Three Lakes WMA was purchased to ensure the preservation of fish and wildlife resources, other natural and cultural resources, and for fish- and wildlife-based public outdoor recreation,” said Jennifer Paredes, FWC land conservation planner. “This draft plan will specify how we intend to do that.”

All lands purchased with public funds must have a management plan that ensures the property will be managed in a manner that is consistent with the intended purposes of the purchase.

Hunting and fishing regulations are not included in this plan or meeting; those are addressed through a separate public process.

To obtain a copy of the land management prospectus for Three Lakes WMA, call Jennifer Paredes at 850-487-9588 or email Jennifer.Paredes@MyFWC.com.

For more information and background on [management plans](#) and their goals, visit MyFWC.com/Conservation and select “Terrestrial Conservation Programs” then “Management Plans.”

For more on the Three Lakes WMA, go to MyFWC.com and select “Wildlife Viewing” then “Wildlife Management Areas.”

12.4.3 Newspaper

Kilgore, Diana

From: pbikowicz@osceolanewsgazette.com
Sent: Thursday, October 17, 2019 9:48 AM
To: Kilgore, Diana
Subject: Classified Ad# 29337 Confirmation
Attachments: 29337.pdf

[EXTERNAL SENDER] Use Caution opening links or attachments

Paid Invoice - Thank you

OSCEOLA NEWS-GAZ

108 Church Street, Kissimmee, FL 34

FLORIDA FISH-WILDLIFE CONSERVATI
DIVISION OF HABITAT SPECIES CONSERVATION
620 S. MERIDIAN ST
TALLAHASSEE, FL 32399

Acct#:59267
Ad#:29337
Phone#:850-487-7063
Date:10/17/2019

Salesperson: GLUGO Classification: Legals Ad Size: 1.0 x 4.70

Advertisement Information:

1

Description	Start	Stop	Ins.	Cost/Day	Total
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Comment: Florida Fish and Wildlife, NOTICE OF PUBLIC HEARING

Ad Copy

**NOTICE OF
PUBLIC HEARING**
The Florida Fish and Wildlife
Conservation Commission
(FWC) announces a PUBLIC
HEARING for the FWC Lead
Managed Portions of Three
Lakes Wildlife Management
Area located in Osceola
County, Florida.

7:00 P.M. Tuesday,
November 5, 2019, Osceola
County Administrative
Building, 1 Courthouse
Square, Suite 4700,
Kissimmee, FL 34741

PURPOSE: To receive public
comment regarding
considerations for FWC's
ten-year Management Plan
for the FWC Lead Managed
Portions of Three Lakes
Wildlife Management Area
(TLWMA).

This hearing is being held
EXCLUSIVELY for dis-
cussion of the DRAFT Three
Lakes WMA Management
Plan. This meeting is not
being held to discuss area
hunting or fishing regulations.
For more information on the
process for FWC rule and
regulation development visit
our Proposed Rule Change
page: [http://myfwc.com/about
rules/regulations/changes](http://myfwc.com/about/rules/regulations/changes).

A Management Prospectus
for Three Lakes WMA and
copy of the agenda is
available upon request from
the Florida Fish and Wildlife
Conservation Commission,
Land Conservation and
Planning Group, 620 South
Meadow Street, Tallahassee,
Florida 32399-1600.
Telephone: (850) 487-9588
or by e-mail at
Jennifer.Paredes@myfwc.com
October 24, 2019

Diana Kuen
10/17/19

12.4.4 Florida Administrative Register Ad

FLORIDA DEPARTMENT OF STATE

Laurel M. Lee, Secretary of State

Administrative Code

The Gray Building - 500 S. Bronough Street, Tallahassee, FL 32399-0250

Billed to:

Fish and Wildlife Conservation Commission
Florida Fish & Wildlife Conservation
Commission, Habitat & Species Conservation
620 S Meridian Street
Tallahassee, FL 32399-1600
Attn: Dylan Imlah

Account: 1072

Invoice Date: 11/05/2019

Invoice Number: 101536

	P.O. #	Publication in Florida Administrative Register	#units	\$each	Extension
1	B39203	Vol/No: 45/206, October 22, 2019, Notice ID: 22469679	303	0.14	\$42.42
Invoice # must appear on all checks and correspondence. Please pay balance due: \$42.42 F.E.I.D. number: F 59-3466865 ***Net Due - 15 days - No Discount***					

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Invoice Date: 11/05/2019

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GL: 67100

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Notice of Meeting/Workshop Hearing

FISH AND WILDLIFE CONSERVATION COMMISSION

Freshwater Fish and Wildlife

The Fish and Wildlife Conservation Commission announces a public meeting to which all persons are invited.

DATE AND TIME: November 5, 2019, 7:00 p.m.

PLACE: Osceola County Administrative Building, 1 Courthouse Square, Suite 4700, Kissimmee, FL 34741

GENERAL SUBJECT MATTER TO BE CONSIDERED: The Florida Fish and Wildlife Conservation Commission (FWC) announces a PUBLIC HEARING for the FWC Lead Managed Portions of Three Lakes Wildlife Management Area located in Osceola County, Florida.

7:00 p.m. Tuesday, November 5, 2019, Osceola County Administrative Building, 1 Courthouse Square, suite 4700, Kissimmee, FL 34741

PURPOSE: To receive public comment regarding considerations for FWC's ten-year Management Plan for the FWC Lead Managed Portions of Three Lakes Wildlife Management Area (TLWMA)

This hearing is being held EXCLUSIVELY for discussion of the DRAFT Three Lakes WMA Management Plan. This meeting is not being held to discuss area hunting or fishing regulations. For more information on the process for FWC rule and regulation development visit our Proposed Rule Changes page: <http://myfwc.com/about/rules-regulations/changes/>.

A Management Prospectus for Three Lakes WMA and copy of the agenda is available upon request from the Florida Fish and Wildlife Conservation Commission, Land Conservation and Planning Group, 620 South Meridian Street, Tallahassee, Florida 32399-1600. Telephone: (850)487-9588 or by e-mail at Jennifer.Paredes@MyFWC.com.

A copy of the agenda may be obtained by contacting: Telephone: (850)487-9588 or by e-mail at Jennifer.Paredes@MyFWC.com.

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this workshop/meeting is asked to advise the agency at least 14 days before the workshop/meeting by contacting: Diana.Kilgore@MyFWC.com. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, 1(800)955-8771 (TDD) or 1(800)955-8770 (Voice).

For more information, you may contact: Diana Kilgore, Diana.Kilgore@MyFWC.com, (850)487-7063.

12.5 Public Input

12.5.1 Management Advisory Group Meeting Results

Three Lakes Wildlife Management Area
Management Advisory Group (MAG)
Consensus Meeting Results

September 18, 2019 in Kissimmee, Florida

The intent of convening a consensus meeting is to involve a diverse group of stakeholders in assisting the Florida Fish and Wildlife Conservation Commission (FWC) in development of a rational management concept for lands within the agency's managed area system. FWC does this by asking spokespersons for these stakeholders to participate in a half-day meeting to provide ideas about how FWC-managed lands should be protected and managed.

The MAG consensus meeting was held on the morning of *September 18, 2019*, at the Osceola County Administration Building, in Kissimmee, Florida in Osceola County. The ideas found below were provided by stakeholders for consideration in the 2020 – 2030 Management Plan (MP) with priority determined by vote. These ideas represent a valuable source of information to be used by biologists, planners, administrators, and others during the development of the MP. Upon approval by FWC, the Acquisition and Restoration Council (ARC), and the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees), the MP will guide the activities of FWC personnel over the ten-year duration of the management plan and will help meet agency, state, and federal planning requirements.

Numbers to the left of bold-faced ideas listed below represent the total number of votes and the score of each idea. Rank is first determined by the number of votes (vote cards received for each idea) and then by score. Score is used to break ties when two or more ideas have the same number of votes. A lower score indicates higher importance because each voter's most important idea (recorded on card #1) received a score of 1, and their fifth most important idea (recorded on card #5) received a score of 5. Ideas not receiving any votes are listed, and were considered during the development of the MP, but carry no judgment with regard to priority.

Statements following the bold-faced ideas represent a synopsis of the clarifying discussion of ideas as transcribed and interpreted by the FWC recorder at the meeting. As indicated above, the ideas below are presented in priority order:

<u>Rank</u>	<u># of Votes</u>	<u>Score</u>	<u>Idea</u>
1.	[8]	[17]	12. Describe, develop, fund, and implement the exotic plant control strategy, including working with adjacent land owners. The old management plan was lacking discussion on exotic plant control. Add a new paragraph in the new plan to describe the exotic plant control strategy for the next ten years.
2.	[6]	[10]	1. Continue prescribed fire. Prescribed fire offers major benefits to the natural communities at Three Lakes.
3.	[5]	[18]	24. Continue to monitor for imperiled and locally important plant and wildlife species. FWC monitors for numerous bird species.
4.	[3]	[5]	4. Science-based game management goals with the intent to revisit harvest regulations. Doe hunting was stopped at Three Lakes, but there does not appear to be a survey showing population data. Turkey hunting should not be all day. Before we make a big change in management goals and objectives, we need to look at the data. Get funding to have studies conducted on the area.
5.	[3]	[8]	10. Restore and maintain natural communities. Communities should sustain ecological processes and maintain natural diversity.

Two items of equal rank:

6.	[2]	[8]	15. State specific natural and altered community goals and objectives. Of most of the FNAI communities described, the old management plan does not describe the desired future conditions very well, so that should be improved in the new plan.
	[2]	[8]	18. Protect historical and cultural resources. 25 sites are on the area, and a monitoring program is set up. In the past, there has been vandalism and looting.
8.	[2]	[9]	25. Expand the Wildlife Management Area boundaries where possible.

<u>Rank</u>	<u># of Votes</u>	<u>Score</u>	<u>Idea</u>
9.	[2]	[10]	30. Ensure grazing is not impacting the dry prairie. Self-explanatory.

Three items of equal rank:

10.	[1]	[2]	11. Continue to use cattle grazing as a management tool. Cattle eat excess grass, which can help make it easier to burn.
	[1]	[2]	21. Address check station and Law Enforcement issues. Some of the volunteers at the check station have been distributing faulty information. Also look at expanding check station hours.
	[1]	[2]	32. Update the timber assessment. All state lands over 1,000 acres must have a timber assessment. It is time to update the timber assessment for Three Lakes.

Four items of equal rank:

13.	[1]	[3]	8. Conduct or increase plant surveys on specific imperiled communities. The best time to do this is when the flowers are in bloom, especially spring and fall.
	[1]	[3]	14. Maintain safety for passive recreation. Conflicts with hunters make passive uses unsafe. FWC should find a way to make the hunting schedule more clear.
	[1]	[3]	16. Manage for high quality indicator species. Make sure that any new development does not impact important plant species.
	[1]	[3]	19. Cultivate and maintain good neighbor relationships. Self-explanatory
17.	[1]	[4]	20. Continue cooperation with the Water Management Districts for ground and surface water monitoring. There are monitoring wells on Three Lakes. FWC should continue providing the WMD with access to those sites.

<u>Rank</u>	<u># of Votes</u>	<u>Score</u>	<u>Idea</u>
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Four items of equal rank:

18.	[1]	[5]	5. Encourage conservation easements. Enable ranchers to keep doing what they are doing and conserve nearby land through conservation easements. This will make sure there are not any developments next to the WMA.
	[1]	[5]	6. Management of off-road use. The SUV permits allow use on the fire-breaks. This causes issues for safety and damage to prairie.
	[1]	[5]	7. Manage the Kissimmee River Public Use Area or reassign to another agency. This area seems under-managed. Maybe another agency could take over management of this area.
	[1]	[5]	9. Increase recreational opportunities. Provide some upgrades and continue to maintain recreational opportunities.

The following item received no votes. All ideas represent valuable input, and are considered in development of the management plan, but carry no rank with regard to the priority perceptions of the MAG.

	[]	[]	23. Manage for hydrological function. The management plan did not have a very thorough discussion of hydrological function.
	[]	[]	26. Expand discussion in management plan on resource protection. The management plan needs a better discussion of gates, boundary surveys, law enforcement and other issues.
	[]	[]	29. Expand discussion in management plan of visitor impacts. It is important to monitor visitor impacts on the area, and the management plan should have discussion on this issue.
	[]	[]	31. Initiate a reservation system for camp sites. Initiate a system to know who is on the area.

<u>Rank</u>	<u># of Votes</u>	<u>Score</u>	<u>Idea</u>
	[]	[]	33. Improve litter management. There are numerous issues with littering on Three Lakes.

Three Lake Wildlife Management Area

MAG Meeting Participants

<u>Name</u>	<u>Affiliation</u>
Active Participants	
Shayna Jacques	FWC Area Biologist
Officer Skylar Summers	FWC Law Enforcement
Jim Blush	South Florida Water Management District (SFWMD)
Dan Brockhaus	Osceola County Public Lands
Michael Edwards	Florida Forest Service
Valerie Anderson	Florida Native Plant Society
Kevin Whaley	Adjacent Private Landowner
Champ Barber	Hunting Stakeholder
Larry Rosen	Kissimmee Valley Audubon Society
Supportive Participants	
Tina Hannon	FWC Habitat and Species Conservation (HSC), Regional Biologist
Matt Hortman	FWC HSC Assistant Regional Biologist
Steve Glass	FWC HSC, District Biologist
Katherine Burke	FWC Office of Public Access Services Office (PASO)
Tom M. Matthews	FWC PASO

Jess Rodriguez	FWC Habitat and Species Conservation (HSC), Conservation Biologist
Adriene Landrum	FWC Aquatic Habitat Restoration
Bill McAllister	Sportsman
Jennifer Ryan	Sportsman/Clean-up Organizer
Invited but Unable to Attend	
Jason O'Donoghue	Division of Historical Resources
Dan Hipes	Florida Natural Areas Inventory
Fred Hawkins Jr	Osceola County Commissioner
Abbie Khounevixay	Department of Environmental Protection
David Nicholson	National Wild Turkey Federation (NWTF)
Chuck O'Rourke	National Resources Conservation Service (NRCS)
Kelly Weiner	Florida Trail Association
Mike Wilder	Equestrian Stakeholder
Dan Sardina	Angling Stakeholder
Jon Leech	Angling Stakeholder
Jerrie Lindsey	FWC PASO, Director
Mark Asleson	FWC Landowner Assistance Program (LAP)
Andrea Boliek-Walker	FWC Hunting and Game Management (HGM)
David Telesco	FWC Florida Black Bear
FWC Planning Personnel	
Jennifer Paredes	Land Conservation Planner, Facilitator
Dylan Imlah	Land Conservation Senior Planner, Facilitator
Lance Jacobson	Land Conservation Planner, Recorder

12.5.2 Public Hearing Report

**PUBLIC HEARING REPORT
FOR
THREE LAKES WILDLIFE MANAGEMENT AREA
MANAGEMENT PLAN
HELD BY THE
THREE LAKES WILDLIFE MANAGEMENT AREA MANAGEMENT ADVISORY
GROUP
AND THE
FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION**

NOVEMBER 5, 2019 – OSCEOLA COUNTY, FLORIDA

The following report documents the public input that was received at the Three Lakes Wildlife Management Area (TLWMA) Management Advisory Group's (MAG) public hearing for the update to the Management Plan for TLWMA that was held at 7:00-9:00 PM, on November 5, 2019 at the Osceola County Administrative Building in Kissimmee, Florida.

TLWMA Management Advisory Group Introduction:

The meeting was introduced by Mr. Champ Barber, a TLWMA Management Advisory Group participant, who represented the TLWMA MAG. Mr. Barber indicated that he was one of 18 stakeholders that attended the Florida Fish and Wildlife Conservation Commission (FWC) facilitated TLWMA MAG meeting held on September 18, 2019. Mr. Barber stated that the Draft Management Plan was being presented tonight by FWC staff, and that hardcopies of the draft plan and the TLWMA MAG meeting report were available at the front door for the public's review. Mr. Barber thanked everyone for attending and then introduced Mrs. Jennifer Paredes, Land Conservation Planner, FWC, to facilitate and coordinate the presentation of an overview of TLWMA, FWC's planning process, and the draft components of the TLWMA Draft Management Plan.

Presentation on an Overview of TLWMA and the FWC Planning Process:

FWC land conservation planner, Mrs. Paredes, welcomed everyone and thanked the public for their attendance. She then went over an orientation of the material and explained that the purpose of the public hearing was to solicit public input regarding the Draft Management Plan for TLWMA, and not hunting and fishing regulations, indicating there is

a separate public input process for FWC rule and regulation development. She then described the materials that were available at the door for public review, including the TLWMA Draft Management Plan, the MAG Meeting Report and Accomplishment Report. Mrs. Paredes then presented the agenda for the public hearing and facilitated the introduction of all FWC staff in attendance to the audience. Mrs. Paredes then presented an overview and orientation of TLWMA, including a description of the natural communities, data about TLWMA visitation, revenue and economic benefits generated for the state and region by the area, wildlife species, recreational opportunities found on the area, surrounding conservation lands, surrounding Florida Forever Program Land Acquisition Projects, acquisition history, etc. She also explained FWC's planning process for the management of the public conservation land and asked if there were any questions regarding that process.

Questions, Answers and Discussion on the TLWMA Overview and FWC's Planning Process:

Mrs. Paredes facilitated an informal question and answers session where members of the public in attendance, without necessarily identifying themselves, could ask questions of the FWC staff, and discuss the answers. Mrs. Paredes again emphasized that the exclusive purpose for the public hearing was to collect public input regarding the Draft Management Plan for TLWMA, and not to discuss area hunting, fishing and use regulations since, as was noted earlier, the FWC has a separate process for input on hunting and fishing regulations.

No questions or comments were received at this stage of the TLWMA public hearing meeting.

Presentation of the TLWMA Draft Management Plan:

At this point, Mrs. Paredes began the presentation of the TLWMA Draft Management Plan. Mrs. Paredes then completed and concluded the presentation of the TLWMA Draft Management Plan.

Questions and Comments on the TLWMA Draft Management Plan Presentation:

Mrs. Paredes asked if there were any comments or questions from the public regarding the Draft Management Plan and encouraged everyone to fill out a speaker card for public testimony. She informed them that all comments, questions and public testimony will be duly considered equally by FWC.

No further questions or comments were received at this stage of the TLWMA public hearing meeting.

Public Testimony on the TLWMA Draft Management Plan:

One member of the public audience submitted a speaker card indicating their intention to provide formal public testimony. Mrs. Paredes again emphasized that the public hearing was for taking input regarding the TLWMA Draft Management Plan and called the first speaker to the podium.

Public Testimony #1: Mr. Champ Barber provided the following public testimony:

Again, I want to thank all the guys on staff and the stakeholders that took part. You guys do a great job with limited resources – law enforcement, staffing, everybody. Shane and I were talking a few minutes ago about how one of the main objectives is to keep our prescribed burning. We have less than 1,000 acres of sandhill and scrub on the entire 65,000 acres. We have about 200 acres of sandhill and about 751 acres of scrub. Over the last few years some of these burns have gotten away from the guys, from Forestry and FWC who are doing the burning, and we’ve got some damaged scrub -- we’ve lost a lot, and we’re worried about Scrub Jays. As a matter of fact, I saw some Scrub Jays the other day, and I need to get a picture. I think we need to be a little more careful on the prescribed burns and not let them get too hot because we’ve burned up some sandhill pine, and there’s only a couple tracts on the whole place that I know of that has sandhill, so we’ve got to watch and make sure it doesn’t get too hot.

Second thing, I think you guys are on the right tract – we’ve got exotic plant issues. I think we need to look at the fishing hole right off Williams road near the turnpike, the big one that was used to stock and had a feeder there. My buddy put in over there the other day and I went down there and tried to fish; we got hydrilla within six inches of the surface – six to eighteen inches of surface for the entire pond. So when we’re thinking of exotic plants, let’s just don’t think of about Brazilian pepper, hydrilla is an exotic plant too. Lake Jackson has some issues with it too, and that’s within the boundaries. Let’s look at those barrow pits too because we fish a lot of those lakes and we catch a lot of fish out there. We may want to look at doing something with the exotic plant issues in the lakes; we didn’t address that in the advisory group meetings. Again, I want to say thanks for all you’re doing.

Adjournment:

Mrs. Paredes asked if there were any other members of the public that wished to give public testimony.

No other speakers offered further comments.

Then Mrs. Paredes declared the public hearing adjourned.

12.6 Management Plan Terms

Management Plan Goals and Objectives

Terms and Definitions

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

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

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

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

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

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

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

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

Imperiled species: A species or subspecies that is listed by the U.S. Fish and Wildlife Service as Endangered or Threatened; Florida Fish and Wildlife Conservation Commission (FWC) as Endangered, Threatened, or Special Concern; Florida Department of Agriculture and Consumer Services (FDACS) as Endangered or Threatened; or is tracked by Florida Natural Areas Inventory (FNAI) as globally or state Critically Imperiled or Imperiled. Imperiled Species does NOT refer to species that are on the FDACS list of commercially exploited plants that are not Endangered or Threatened.

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

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

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

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

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

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

Poor, fair, good condition: Evaluating the condition of cultural resources is accomplished using a three-part evaluative scale, expressed as good, fair and poor. These terms describe

the present condition, rather than comparing what exists against the ideal. “Good” describes a condition of structural stability and physical wholeness, where no obvious deterioration other than normal occurs. “Fair” describes a condition in which there is a discernible decline in condition between inspections, and the wholeness or physical integrity is and continues to be threatened by factors other than normal wear. A “fair” assessment is cause for concern. “Poor” describes an unstable condition where there is palpable, accelerating decline, and physical integrity is being compromised quickly. A resource in poor condition suffers obvious declines in physical integrity from year to year. A poor condition suggests immediate action is needed to reestablish physical stability.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

12.7 Soil Series Descriptions

Map Unit Description

Osceola County, Florida

[Minor map unit components are excluded from this report]

Map unit: 1 - Adamsville sand, 0 to 2 percent slopes

Component: Adamsville (92%)

The Adamsville component makes up 92 percent of the map unit. Slopes are 0 to 2 percent. This component is on knolls on flatwoods on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 34 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 1 percent. This component is in the R155XY008FL Upland Hardwood Hammocks ecological site. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 2 - Adamsville variant fine sand, 0 to 5 percent slopes

Component: Adamsville variant (90%)

The Adamsville variant component makes up 90 percent of the map unit. Slopes are 0 to 5 percent. This component is on rises on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 33 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 1 percent. This component is in the R155XY008FL Upland Hardwood Hammocks ecological site. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Map unit: 3 - Ankona fine sand

Component: Ankona (90%)

The Ankona component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits over loamy marine deposits. Depth to a root restrictive layer, orstein, is 32 to 36 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September. Organic matter content in the surface horizon is about 3 percent. This component is in the R155XY003FL South Florida Flatwoods ecological site. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 5 - Basinger fine sand, 0 to 2 percent slopes

Component: Basinger (90%)

The Basinger component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on drainageways on marine terraces. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during July, August. Organic matter content in the surface horizon is about 1 percent. This component is in the R155XY011FL Slough ecological site. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Map unit: 6 - Basinger fine sand, depressional

Component: Basinger, depressional (85%)

The Basinger, depressional component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is very high.

Map Unit Description

Osceola County, Florida

Map unit: 6 - Basinger fine sand, depressional

Component: Basinger, depressional (85%)

Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 1 percent. This component is in the R155XY010FL Freshwater Marshes And Ponds ecological site. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 9 - Cassia fine sand

Component: Cassia (95%)

The Cassia component makes up 95 percent of the map unit. Slopes are 0 to 2 percent. This component is on rises on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 23 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 1 percent. This component is in the R155XY001FL Sand Pine Scrub ecological site. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 10 - Delray loamy fine sand, depressional

Component: Delray, depressional (90%)

The Delray, depressional component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 4 percent. This component is in the R155XY010FL Freshwater Marshes And Ponds ecological site. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 11 - EauGallie fine sand

Component: EauGallie (90%)

The EauGallie component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September. Organic matter content in the surface horizon is about 5 percent. This component is in the R155XY003FL South Florida Flatwoods ecological site. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 12 - Floridana fine sand, depressional

Component: Floridana, depressional (90%)

The Floridana, depressional component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 11 percent. This component is in the R155XY010FL Freshwater Marshes And Ponds ecological site. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.



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Map Unit Description

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Map unit: 13 - Gentry fine sand

Component: Gentry (90%)

The Gentry component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces, coastal plains, drainageways on marine terraces. The parent material consists of loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is occasionally flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 14 - Holopaw fine sand

Component: Holopaw (90%)

The Holopaw component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on drainageways on marine terraces on coastal plains, flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 3 percent. This component is in the R155XY012FL Wetland Hardwood Hammock ecological site. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 15 - Hontoon muck

Component: Hontoon (90%)

The Hontoon component makes up 90 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of herbaceous organic material. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is very high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 80 percent. This component is in the R155XY010FL Freshwater Marshes And Ponds ecological site. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 16 - Immokalee fine sand

Component: Immokalee (90%)

The Immokalee component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September. Organic matter content in the surface horizon is about 2 percent. This component is in the R155XY003FL South Florida Flatwoods ecological site. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 17 - Kaliga muck

Component: Kaliga (90%)

The Kaliga component makes up 90 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of herbaceous organic material over stratified loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is



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Map unit: 17 - Kaliga muck

Component: Kaliga (90%)

frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 64 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 18 - Lokosee fine sand

Component: Lokosee (85%)

The Lokosee component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on drainageways on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September. Organic matter content in the surface horizon is about 1 percent. This component is in the R155XY012FL Wetland Hardwood Hammock ecological site. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 19 - Malabar fine sand

Component: Malabar (90%)

The Malabar component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on drainageways on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 3 percent. This component is in the R155XY011FL Slough ecological site. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 20 - Malabar fine sand, depressional

Component: Malabar, depressional (85%)

The Malabar, depressional component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 3 percent. This component is in the R155XY010FL Freshwater Marshes And Ponds ecological site. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 22 - Myakka fine sand

Component: Myakka (85%)

The Myakka component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September. Organic matter content in the surface horizon is about 5 percent. This component is in the R155XY003FL South Florida Flatwoods ecological site. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map Unit Description

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Map unit: 24 - Narcoossee fine sand

Component: Narcoossee (90%)

The Narcoossee component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on rises on marine terraces on coastal plains, knolls on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 33 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 2 percent. This component is in the R155XY008FL Upland Hardwood Hammocks ecological site. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 25 - Nittaw muck

Component: Nittaw (90%)

The Nittaw component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is high. Shrink-swell potential is high. This soil is occasionally flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 55 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 26 - Oldsmar fine sand

Component: Oldsmar (85%)

The Oldsmar component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September. Organic matter content in the surface horizon is about 2 percent. This component is in the R155XY003FL South Florida Flatwoods ecological site. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 27 - Ona fine sand

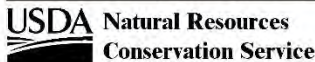
Component: Ona (85%)

The Ona component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September. Organic matter content in the surface horizon is about 3 percent. This component is in the R155XY003FL South Florida Flatwoods ecological site. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 29 - Parkwood loamy fine sand, occasionally flooded

Component: Parkwood, occasionally flooded (90%)

The Parkwood, occasionally flooded component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is occasionally flooded. It is not ponded. A seasonal



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Map Unit Description

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Map unit: 29 - Parkwood loamy fine sand, occasionally flooded

Component: Parkwood, occasionally flooded (90%)

zone of water saturation is at 12 inches during June, July, August, September. Organic matter content in the surface horizon is about 4 percent. This component is in the R155XY012FL Wetland Hardwood Hammock ecological site. Nonirrigated land capability classification is 3w. This soil meets hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 15 percent. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 30 - Pineda fine sand

Component: Pineda (90%)

The Pineda component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 3 percent. This component is in the R155XY012FL Wetland Hardwood Hammock ecological site. Nonirrigated land capability classification is 3w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 31 - Pits

Component: Pits (95%)

Generated brief soil descriptions are created for major soil components. The Pits is a miscellaneous area.

Map unit: 32 - Placid fine sand, depressional

Component: Placid, depressional (85%)

The Placid, depressional component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 3 percent. This component is in the R155XY010FL Freshwater Marshes And Ponds ecological site. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 34 - Pomello fine sand, 0 to 5 percent slopes

Component: Pomello (85%)

The Pomello component makes up 85 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on marine terraces on coastal plains, knolls on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 33 inches during July, August, September, October, November. Organic matter content in the surface horizon is about 1 percent. This component is in the R155XY002FL Longleaf Pine-turkey Oak Hills ecological site. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map Unit Description

Osceola County, Florida

Map unit: 35 - Pomona fine sand

Component: Pomona (88%)

The Pomona component makes up 88 percent of the map unit. Slopes are 0 to 2 percent. This component is on rises on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September. Organic matter content in the surface horizon is about 3 percent. This component is in the R155XY003FL South Florida Flatwoods ecological site. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 36 - Pompano fine sand

Component: Pompano (90%)

The Pompano component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on drainageways on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 3 percent. This component is in the R155XY011FL Slough ecological site. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 37 - Pompano fine sand, depressional

Component: Pompano, depressional (92%)

The Pompano, depressional component makes up 92 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 3 percent. This component is in the R155XY010FL Freshwater Marshes And Ponds ecological site. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 38 - Riviera fine sand

Component: Riviera (90%)

The Riviera component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 1 percent. This component is in the R155XY012FL Wetland Hardwood Hammock ecological site. Nonirrigated land capability classification is 3w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 39 - Riviera fine sand, depressional

Component: Riviera, depressional (90%)

The Riviera, depressional component makes up 90 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is

Map Unit Description

Osceola County, Florida

Map unit: 39 - Riviera fine sand, depressional

Component: Riviera, depressional (90%)

frequently ponded. A seasonal zone of water saturation is at 0 inches during June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 40 - Samsula muck

Component: Samsula (90%)

The Samsula component makes up 90 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of herbaceous organic material over sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 65 percent. This component is in the R155XY010FL Freshwater Marshes And Ponds ecological site. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 41 - Satellite sand

Component: Satellite (85%)

The Satellite component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on rises on marine terraces on coastal plains, knolls on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 22 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 1 percent. This component is in the R155XY002FL Longleaf Pine-turkey Oak Hills ecological site. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 42 - Smyrna fine sand

Component: Smyrna (85%)

The Smyrna component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September. Organic matter content in the surface horizon is about 4 percent. This component is in the R155XY003FL South Florida Flatwoods ecological site. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 43 - St. Lucie fine sand, 0 to 5 percent slopes

Component: St. Lucie (85%)

The St. Lucie component makes up 85 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of eolian or sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. This component is in the R155XY001FL Sand Pine Scrub ecological site. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.



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Map Unit Description

Osceola County, Florida

Map unit: 44 - Tavares fine sand, 0 to 5 percent slopes

Component: Tavares (90%)

The Tavares component makes up 90 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of eolian or sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 57 inches during June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 1 percent. This component is in the R155XY002FL Longleaf Pine-turkey Oak Hills ecological site. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 45 - Wabasso fine sand

Component: Wabasso (88%)

The Wabasso component makes up 88 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September. Organic matter content in the surface horizon is about 6 percent. This component is in the R155XY003FL South Florida Flatwoods ecological site. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 46 - Wauchula fine sand

Component: Wauchula (90%)

The Wauchula component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September. Organic matter content in the surface horizon is about 3 percent. This component is in the R155XY003FL South Florida Flatwoods ecological site. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 47 - Winder loamy fine sand

Component: Winder (90%)

The Winder component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 4 percent. This component is in the R155XY003FL South Florida Flatwoods ecological site. Nonirrigated land capability classification is 3w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 48 - Placid-Riviera-Samsula complex, frequently flooded

Component: Placid, frequently flooded (45%)

The Placid, frequently flooded component makes up 45 percent of the map unit. Slopes are 0 to 1 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of



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Survey Area Version Date: 12/17/2013

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Map Unit Description

Osceola County, Florida

Map unit: 48 - Placid-Riviera-Samsula complex, frequently flooded

Component: Placid, frequently flooded (45%)

water saturation is at 0 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 3 percent. This component is in the R155XY010FL Freshwater Marshes And Ponds ecological site. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Riviera, frequently flooded (28%)

The Riviera, frequently flooded component makes up 28 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 1 percent. This component is in the R155XY012FL Wetland Hardwood Hammock ecological site. Nonirrigated land capability classification is 3w. This soil meets hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 3 percent. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Samsula, frequently flooded (18%)

The Samsula, frequently flooded component makes up 18 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on flood plains on marine terraces on coastal plains. The parent material consists of herbaceous organic material over sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is frequently flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 65 percent. This component is in the R155XY010FL Freshwater Marshes And Ponds ecological site. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 99 - Water

Component: Water (100%)

Generated brief soil descriptions are created for major soil components. The Water is a miscellaneous area.

Map Unit Description

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

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

The Map Unit Description (Brief, Generated) report displays a generated description of the major soils that occur in a map unit. Descriptions of non-soil (miscellaneous areas) and minor map unit components are not included. This description is generated from the underlying soil attribute data.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

12.8 FNAI Element Occurrence Data Usage Letter



1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
850-224-8207
fax 850-681-9364
www.fnai.org

April 11, 2014

David Alden
Land Conservation & Planning
Florida Fish and Wildlife Conservation Commission
Tallahassee, FL

Dear David,

By virtue of this letter we are updating and continuing our agreement that it is unnecessary for your office to request FNAI element occurrence data for each land management plan you prepare, under the following conditions:

- FNAI will continue to provide our Florida Element Occurrence GIS database to FWC on a quarterly update basis;
- The FNAI GIS data will be available to FWC staff for reference and incorporation as required in management plan review and preparation.

Our database manager, Frank Price, currently provides this update via ftp to FWC staff on a quarterly basis. Current FWC contacts for the quarterly update are Beth Stys and Ted Hoehn. We are pleased to continue this beneficial collaboration with the Florida Fish and Wildlife Conservation Commission.

Sincerely,

Gary Knight
Director
Florida Natural Areas Inventory



Florida Resources
and Environmental
Analysis Center

Institute of Science
and Public Affairs

The Florida State University

Tracking Florida's Biodiversity

12.9 FWC Agency Strategic Plan

Florida Fish and Wildlife Conservation Commission Agency Strategic Plan 2014 – 2019

Theme One – Florida’s Fish and Wildlife Populations and Their Habitats

Goal 1: Ensure the sustainability of Florida’s fish and wildlife populations.

Strategies:

1. Manage listed species so they no longer meet Florida’s endangered and threatened listing criteria.
2. Manage species to keep them from meeting Florida’s endangered and threatened listing criteria.
3. Anticipate and address fish and wildlife species’ conservation needs in light of adaptation to long-term environmental changes.
4. Develop, acquire and apply the appropriate biological and sociological science to inform fish and wildlife conservation decisions.
5. Inform and guide partners regarding how their regulations, policies, procedures and other actions affect fish and wildlife conservation.
6. Protect fish and wildlife species through effective outreach and enforcement.

Goal 2: Ensure sufficient habitats exist to support healthy and diverse fish and wildlife populations.

Strategies:

1. Use science to determine quantity, quality and location of the habitats most critical to sustain healthy and diverse fish and wildlife populations.
2. Protect lands and waters critical to sustaining healthy and diverse fish and wildlife populations through diverse incentive programs.
3. Manage habitats to sustain healthy and diverse fish and wildlife populations.

Theme Two – Interactions with Fish and Wildlife, including Fishing, Hunting, Boating and Wildlife Viewing Opportunities

Goal 1: Provide residents and visitors with quality fishing, hunting, boating and wildlife viewing opportunities that meet their needs and expectations while providing for the sustainability of those natural resources.

Strategies:

1. Develop, acquire and use the appropriate biological and sociological science necessary to provide sustainable fishing, hunting, boating and wildlife viewing opportunities that meet the needs and expectations of user groups while providing for the sustainability of those resources.
2. Manage fish and wildlife populations to provide sustainable fishing, hunting, and wildlife viewing opportunities.
3. Develop and maintain widely available, diverse and accessible fishing, hunting, boating and wildlife viewing opportunities that meet the needs and expectations of residents and visitors while providing for the sustainability of those resources and emphasizing partnerships with both public and private landowners.
4. Recruit and manage sustainable levels of resident and visitor participation in fishing, hunting, boating and wildlife viewing.
5. Provide targeted fishing, hunting, boating and wildlife viewing programs for youth, the disabled and veterans.

Goal 2: Enhance the safety and outdoor experience of those who hunt, fish, boat and view wildlife.

Strategies:

1. Provide and promote opportunities for residents, and visitors to learn safety practices for fishing, hunting, boating and wildlife viewing.
2. Enhance the boating safety and waterway experience of residents and visitors through improved access, management, education and enforcement.
3. Promote Florida's outdoor environment as a safe and healthy recreational option for residents and visitors.
4. Address the growing disconnect between people and nature by marketing and providing opportunities and education for diverse age, race, gender, ethnic and other demographic sectors.

Goal 3: Use minimal regulations to manage sustainable fish and wildlife populations, manage access to fish and wildlife resources, and protect public safety.

Strategies:

1. Continually evaluate proposed and existing regulations, based on resource management benefits, public safety concerns, and economic and social impacts, to improve or eliminate regulations as warranted.
2. Coordinate with partners and stakeholders to ensure that appropriate authorities and regulations exist to maintain sustainable fish and wildlife populations.
3. Implement and enforce regulations in an informative, proactive and influential manner to enrich resident and visitors' outdoor experience while safeguarding the natural resources.

Goal 4: Minimize adverse environmental, social, economic and health and safety impacts from fish, wildlife and plants that are known, or have a potential, to cause adverse impacts.

Strategies:

1. Manage species and their habitats, as well as species and human interactions, to eliminate or reduce the adverse environmental, social, economic and health and safety impacts from native and non-native fish, wildlife and plants.
2. Effectively communicate to residents, visitors and businesses how to be safe and act responsibly when interacting with or possessing fish, wildlife and plants.
3. Manage captive and non-native wildlife movement and trade through proactive and responsive enforcement, regulation and education, with an emphasis on species that pose a high risk to our native fish and wildlife.
4. Enhance partnerships to address adverse environmental, social, economic and health and safety impacts from fish, wildlife and plants and ensure a consistent and integrated approach with FWC.

Theme Three – Sharing Responsibility for Fish and Wildlife Conservation and Management with an emphasis on developing conservation values in our youth

Goal 1: Ensure current and future generations support fish and wildlife conservation.

Strategies:

1. Expand and promote the Florida Youth Conservation Centers Network through leveraging FWC programs and staff, and developing public and private partnerships and sponsorships.

2. Develop and deliver standardized youth conservation curricula and fishing, hunting, boating and wildlife viewing outdoor activity programs, and assist with adapting programs and curricula to meet the needs of diverse communities.
3. Foster stewardship and shared responsibility for fish and wildlife conservation through conservation education programs.
4. Expand marketing and outreach to reach diverse audiences and engage all staff in priority outreach initiatives.

Goal 2: Ensure residents, visitors, stakeholders and partners are engaged in the processes of developing and implementing conservation programs.

Strategies:

1. Foster a common vision among partners and the FWC to maintain and enhance fish and wildlife populations and their habitats through interagency coordination, mutually beneficial goals and initiatives.
2. Engage residents, visitors, stakeholders and partners to understand their perspectives, develop and implement conservation programs, and implement fishing, hunting, boating and wildlife viewing management activities.
3. Use citizen science to enhance conservation programs.

Goal 3: Increase opportunities for residents and visitors, especially youth, to actively support and practice fish and wildlife conservation stewardship.

Strategies:

1. Inform residents and visitors about conservation stewardship and encourage their active involvement in achieving conservation of fish and wildlife.
2. Provide and promote opportunities for residents and visitors, especially youth, to participate in conservation stewardship activities, including FWC volunteer opportunities.

Goal 4: Encourage communities to conserve lands and waters critical to sustaining healthy and diverse fish and wildlife populations.

Strategies:

1. Provide communities with the necessary assistance to help them obtain the social and economic benefits of local conservation lands.
2. Provide residents and visitors with relevant information on the social and economic benefits of conservation, fishing, hunting, boating, and wildlife viewing.

3. Support community events and programs that promote fish and wildlife conservation.

Theme Four – Responsive Organization and Quality Operations

Goal 1: Integrate our commitment to benefit the community and enhance the economy through our conservation efforts and public service.

Strategies:

1. Identify and implement ways to support Florida businesses and job growth while managing fish and wildlife.
2. Identify and promote opportunities for staff to benefit local communities through participation in approved activities where FWC resources can be used (for example, the Florida State Employees' Charitable Campaign, the Guardian ad Litem Program, mentoring programs, FWC Disaster Response Teams, and American Red Cross Disaster Services).
3. Provide residents and visitors with reliable and current information on Florida's fish and wildlife.
4. Continue to attract visitors by providing top-quality fishing, hunting, boating and wildlife viewing opportunities.

Goal 2: Provide resources and support for the safety and protection of residents and visitors, our natural and cultural resources, and for emergency responses to critical incidents and environmental disasters.

Strategies:

1. Identify existing and emerging risks to the safety of residents and visitors and foster internal collaboration and external partnerships necessary to effectively manage, reduce or eliminate those risks.
2. Provide immediate and effective disaster response and recovery through mutual-aid efforts with local, state and federal partners.
3. Provide search, rescue, and recovery services in coordination with local, state and federal entities to ensure the safety of residents and visitors.
4. Protect natural and cultural resources through proactive and responsive enforcement efforts.

Goal 3: Ensure the FWC has highly effective and adaptive business practices.

Strategies:

1. Address emerging biological, social and economic trends, anticipate impacts and take advantage of opportunities to accomplish FWC's mission.
2. Expect each employee to be an ambassador for FWC and its mission to Florida's diverse residents and visitors.
3. Provide efficient and effective service to Florida's diverse residents, visitors, and FWC staff.
4. Foster a diverse, accountable, responsive and skilled workforce who effectively serves Florida's residents and visitors.
5. Manage existing and secure additional resources necessary to achieve fish and wildlife conservation and meet residents, visitor and stakeholder needs.
6. Create and maintain an effective business model that supports the FWC's mission by using continuous improvement approaches that foster a collaborative and professional culture.

12.10 FWC Apiary Policy

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

Apiary Policy

Division of Habitat and Species Conservation

Issued by:
Terrestrial Habitat Conservation and Restoration Section
9/1/2010

Enclosed is the HSC/THCR Apiary Policy for all Florida Fish and Wildlife Conservation Commission's Wildlife Management Areas and Wildlife and Environmental Areas.

DIVISION OF HABITAT AND SPECIES CONSERVATION POLICY

Issued September 2010

**SUBJECT: APIARY SITES ON FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION
WILDLIFE MANAGEMENT AREAS AND WILDLIFE AND ENVIRONMENTAL AREAS**

STATEMENT OF PURPOSE: It is the intent of this policy to determine which Florida Fish and Wildlife Conservation Commission (FWC) Wildlife Management Areas or Wildlife and Environmental Areas (WMA/WEA) may have apiary sites, and provides direction on site location, management and administration of said apiaries.

Definitions

Apiary – A place where bees and beehives are kept, especially a place where bees are raised for their honey.

Apiary Site – An area set aside on a WMA/WEA for the purpose of allowing a beekeeper to locate beehives in exchange for a fee as established by contract between the beekeeper and FWC.

Apiary Wait List – An apiary wait list will be maintained by the Terrestrial Habitat Conservation and Restoration (THCR) Section Leader's Office based on applications received from interested beekeepers. Only qualified apiarists will be added to the list. To become qualified the new apiarist must submit an application form and meet the criteria below under the section titled "Apiary Wait List and Apiary Application."

Beekeeper/Apiarist – A person who keeps honey bees for the purposes of securing commodities such as honey, beeswax, pollen; pollinating fruits and vegetables; raising queens and bees for sale to other farmers and/or for purposes satisfying natural scientific curiosity.

Best Management Practices – The Florida Department of Agriculture & Consumer Services (FDACS; Division of Plant Industry (DPI), Apiary Inspection Section, P.O. Box 147100, Gainesville, FL 332614-1416) provides Best Management Practices (BMP) for maintaining European Honey Bee colonies and FWC expects apiarists to follow the BMP.

Hive/Colony – Means any Langstroth-type structure with movable frames intended for the housing of a bee colony. A hive typically consists of a high body hive box with cover, honey frames, brood chambers and a bottom board and may have smaller super hive boxes stacked

on top for the excess honey storage. A hive/colony includes one queen, bees, combs, honey, pollen and brood and may have additional supers stacked on top of a high body hive box.

Establishment of Apiary Sites on WMA/WEA

During the development of an individual WMA/WEA Management Plan, apiaries will be considered under the multiple-use concept as a possible use to be allowed on the area. “Approved” uses are deemed to be in concert with the purposes for state acquisition, with the Conceptual State Lands Management Plan, and with the FWC agency mission, goals, and objectives as expressed in the agency strategic plan and priorities documents. Items to consider when making this determination can also include:

- Were apiaries present on the area prior to acquisition?
- Are there suitable available sites on the WMA/WEA?
- Will the apiary assist in pollination of an onsite FWC or offsite (adjacent landowner) citrus grove or other agricultural operation?

For those WMA/WEAs that have not considered apiaries in their Management Plan, upon approval of this policy Regional Staff will work with the Conservation Acquisition and Planning (CAP) staff and THCR Section leadership to determine if apiaries are an approved use on the area. If apiaries are considered an approved use then a request will be made to the Division of State Lands to allow this use as part of an amended Management Plan. This request will be made through the THCR’s Section Leader’s office and coordinated by the CAP.

Determination of apiary site locations on WMA/WEAs should be done using the following guidelines:

- Apiary sites should be situated so as to be at least one-half mile from WMA/WEA property boundary lines, and at least one mile from any other known apiary site. Exceptions to this requirement must be reviewed by the Area Biologist and presented to the THCR Section Leader for approval.
- Site should be relatively level, fairly dry, and not be prone to flooding when bees would normally be present.
- Site should be accessible by roads which allow reasonable transfer of hives to the site by vehicle.

- If a site is to be located near human activity, such as, an agricultural field, food plot, wildlife opening, campsites, etc., or if the site may be manipulated by machinery at a time when bees would be present, then the apiary site should be located at a minimum of 150 to 200 yards from the edge of that activity. This will ensure minimal disturbance to the bees and minimize incidents with anyone working in the area.
- It is preferable to have apiary sites located adjacent to or off roads whenever possible. If traditional apiary sites were located on roads and the Area Biologist determines that the site will not impact use of the road by visitors then it will be allowed.
- FWC Area Biologist shall select apiary site(s) and the site(s) selected should not require excessive vegetation clearing (numerous large trees, dense shrubs) or ground disturbance (including fill).

WMA/WEA Staff Responsibilities

Area Biologist on WMAs/WEAs with approved apiary sites will forward a GIS shapefile depicting all the apiary site polygon(s), including a name or number with coordinates for each apiary site, to the THCR Contract Manager.

Area Biologist will monitor each apiary site no less than once a year to determine if the beekeeper is abiding by the contract requirements. If violations are noted, staff should bring them to the attention of the beekeeper for correction. If violations continue staff should notify the THCR Contract Manager who will determine if or what additional action is warranted.

Area Biologist will establish and maintain firelines around the apiary site to ensure the apiary site is ready when a planned burn is scheduled.

Area Biologist will advise the beekeeper of burn plans, road work, gate closures, or other site conditions and management activities that may affect the beekeeper's ability to manage or access the apiary site.

Area Biologist is not responsible to ensure access roads are in condition suitable for beekeepers to access their hives with anything other than a four wheeled drive vehicle. (The site of the apiary may be high and dry, but the roads accessing them may be difficult to impossible to get a two wheeled drive vehicle into during extreme weather, e.g., heavy rainfall events.)

Apiary Wait List and Apiary Application

An electronic waiting list for apiary sites will be maintained by the THCR's Contract Manager for each WMA/WEA. To be placed on the waiting list an interested beekeeper must submit an

apiary application form to the contract manager (See Enclosed Application Form). Each applicant will be considered based on the following criteria:

- Proof of a valid registration with the FDACS/DPI.
- Proof of payment of outstanding special inspection fees for existing sites.
- A validated history of being an apiary manager.
- Three references that can attest to the applicant's beekeeping experience.

If an apiary site becomes available on a WMA/WEA and there are beekeepers on the waiting list interested in that particular area, those individuals meeting the criteria above will be given preference. If there is more than one beekeeper meeting the criteria with their name on the list then a random drawing will be held by the THCR Contract Manager to determine who will receive the site. Beekeepers on the waiting list will be notified in writing of the random drawing's date/location and will be invited to attend. The individual's name selected during this drawing will be awarded the contract.

Apiary agreements are non-transferable. Each agreement serves as a contract between a specific individual or company and FWC, and the rights and responsibilities covered by an individual agreement cannot be transferred.

Contracts

Apiary contracts are for five (5) years and renewals are contingent upon a satisfactory performance evaluation by Area Biologist and concurrence of the THCR Section Leader. Approval is based on apiarist performance, adherence to rules and regulations and general cooperation. If an Area Biologist decides an apiarist whose contract is expiring is unacceptable he may recommend not approving the new contract. If this transpires then the wait list process using random selection will be used. If there is no apiarist on a current wait list then the apiarists who are in good standing with existing contracts will be notified to see if any want to be put on the wait list for the drawing. If none are interested then the site will be put on hold pending a valid request.

Pricing of Apiary Site(s)

Cost of each apiary site will be \$40 annually which will include up to 50 beehives. Additional beehives will be charged at the rate of \$40 per 50 beehives.

Pricing examples:

- A beekeeper is leasing 2 apiary sites with up to 100 beehives - the fee per year is \$80.

- A beekeeper is leasing 3 apiary sites with up to 200 beehives - the fee per year is \$160.

Note: The maximum number of hives/colonies allowed on an apiary site will be at the discretion of the apiarist. However, the apiarist is strongly recommended to follow the BMP as recommended by the FDACS/DPI. In addition to providing the BMP, FDACS/DPI's management has recommended 50 hives per site in pineland communities and no more than 100 hives per site in areas with bountiful resources. However, FWC will not dictate the number of hives on a site unless they create land management issues.

Bear Depredation Control at Apiary Site(s)

Beekeepers are required to consult with the WMA/WEA Area Biologist to see if electric fencing is required for their apiary sites. If the Area Biologist requires electric fencing then the Beekeeper shall construct and maintain electric fences for each apiary site. Numerous electric fence designs have been used to varying success and FWC as a courtesy provides an electric fence technical information bulletin with each Agreement. This bulletin is attached in order to assist the Beekeeper and/or provide a design that has been proven to be reasonable effective.

SUBJECT MATTER REFERENCES

Apiary Inspection Law - Chapter 586, Florida Statutes (see <http://www.leg.state.fl.us/Statutes/>), Rule Chapter 5B-54, Florida Administrative Code (see www.flrules.org).

The Board of Trustees of the Internal Improvement Trust Fund – Recommended Apiary Agreement Guidelines For Apiaries & Revisions to an Agreement for Apiary Activities on State Lands on September 23, 1986

S:\HSC\THCR\APIARY.BACKUP.POLICY\dlissupport@dos.state.fl.us 20100903 111446.pdf

Senate Resolution 580, September 21, 2006: http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=109_cong_bills&docid=f:sr580ats.txt.pdf

Attachments

Sample Apiary Agreement W/Attachments (Map Placeholder & Electric Fence Bulletin)

Sample Apiary Site Application Form W/Mission Statement

Best Management Practices for Maintaining European Honey Bee Colonies

Sample of Random Selection Process Procedure

APPROVED:

Division Director or Designee

DATE: _____

APIARY AGREEMENT

AGREEMENT FOR APIARY ACTIVITIES ON STATE LANDS

THIS AGREEMENT is made by and between the Florida Fish and Wildlife Conservation Commission, 620 South Meridian Street, Tallahassee, FL 32399-1600, hereinafter known as “the COMMISSION,” and (Insert Name and Address of Apiarist Here), telephone number (Insert Phone Number of Apiarist Here), hereinafter known as “the USER.”

WITNESSETH

In consideration of the mutual promises to be kept by each and the payments to be made by the USER, the parties agree as follows:

1. TERM: This Agreement will begin (Insert date here) or the date signed by both parties, whichever is later, and will end five (5) years from the date of execution. Issuance of a new five (5) year Agreement is contingent upon satisfactory performance evaluation by the Area Biologist and approval of the THCR Section Leader.
2. The COMMISSION Agrees:
 - a. To provide apiary sites on state lands, which will be identified by the COMMISSION staff and located on the property identified in (4)(f) below.
 - b. To provide technical assistance for bear-proofing, if required by Area Biologist, of sites made available under this Agreement.

- c. To allow the USER to place a total number of (insert number of hive boxes here) hive boxes on the COMMISSION-managed property at the apiary site(s).

3. The USER Agrees:

- a. To pay (Insert Total Dollars Here) on or before the execution date of this Agreement and each year thereafter on or before anniversary date of the original contract execution date, with check or money order payable to the Florida Fish and Wildlife Conservation Commission. All payments shall be remitted to The Florida Fish and Wildlife Conservation Commission, Finance and Budgeting, Accounting Section, PO Box 6150, Tallahassee, FL 32399-6150, and a copy of the check to The Florida Fish and Wildlife Conservation Commission, Terrestrial Habit Conservation and Restoration Section, Attn: Section Leader, 620 South Meridian Street, Tallahassee, Florida 32399-1600.
- b. To have no more than (Insert Number of Hive boxes here) hive boxes on the property at one time.
- c. To comply with the Florida Honey Certification and Honeybee Law, Chapter 586, Florida Statutes, and Rule 5B-54, Florida Administrative Code, and all other applicable federal, state, or local laws, rules or ordinances.
- d. To not damage, cut or remove any trees in the course of preparing for or conducting operations under this Agreement.
- e. To repair within 30 days of occurrence any damage to roads, trails, fences, bridges, ditches, or other public property caused by USER'S operations under this Agreement based on discretion of the COMMISSION to ensure the WMA/WEA management goals are met. All repairs will be coordinated with the Area Biologist to ensure management goals are met. If USER does not comply within the 30 day requirement, then the COMMISSION may use a third party to perform the repairs and charge the USER accordingly.
- f. To report any forest fires observed and to prevent forest fires during the course of operations under this Agreement.
- g. To abide by all WMA/WEA rules and regulations in addition to items in this Agreement.
- h. To notify the Area Biologist within 24 hours when a bear depredation event occurs.

- i. To post their name in an agreed upon location at each site covered by this Agreement or otherwise use an identifying system that is approved by the Area Biologist.
- j. To furnish proof of general liability insurance prior to starting apiary activities on state property or within 30 days of execution of this Agreement, whichever is earlier, and proof of annual renewal of the general liability insurance policy prior to or upon expiration date of the policy. The USER shall maintain continuous general liability insurance throughout the term of this Agreement for no less than \$300,000 for bodily injury and \$100,000 for property damage for each occurrence. Such a policy shall name the COMMISSION as the Certificate Holder. The USER's current certificate of insurance shall contain a provision that the insurance will not be canceled for any reason during the term of this Agreement except after thirty (30) days written notice to the COMMISSION.
- k. To be liable for all damage to persons or property resulting from operations under this Agreement, and to release, acquit, indemnify, save and hold harmless the COMMISSION, its officers, agents, employees and representatives from any and all claims, losses, damages, injuries and liabilities whatsoever, whether for personal injury or otherwise, resulting from, arising out of or in any way connected with activities under this Agreement or activities occurring from any other source not under this Agreement and the USER further agrees to assume all risks of loss and liabilities incidental to any natural or artificial condition occurring on state lands cover by this Agreement.
- l. To construct and maintain electric fences, if required by the Area Biologist at the Area Biologist's discretion, to provide protection of apiaries from black bear depredation consistent with the technical information bulletin attached to this agreement, and, if so required, to maintain an open buffer around the fencing of five (5) feet or more. (See Attachment 1)
- m. To remove all personal property from the site within thirty (30) days of termination or expiration of this Agreement. The USER understands that after this time, all the USER'S personal property remaining on the WMA/WEA shall be deemed abandoned and become the property of the COMMISSION, which will be utilized or disposed of at the sole discretion of the COMMISSION, and that reasonable storage and/or disposal fees and/or costs may be charged to the USER.

4. The parties mutually agree:
- a. This Agreement is not transferable.
 - b. The USER's failure to submit payment by the due date established herein may result in cancellation of the Agreement by the COMMISSION.
 - c. The USER's failure to submit proof of general liability insurance or proof of annual renewal in compliance with (3) (j) above may result in cancellation of this Agreement by the COMMISSION.
 - d. This Agreement shall be in effect for a period of five (5) years and issuance of a new agreement will be contingent upon a satisfactory performance evaluation and approval of the Area Biologist and THCR Section Leader.
 - e. Each apiary site shall be situated so as to be at least one-half (1/2) mile inward from state property lines and there shall be at least one (1) mile separation between sites. Exceptions to this rule must be reviewed by Area Biologist presented to and approved by the Terrestrial Habitat Conservation and Restoration Section Leader.
 - f. The property covered by this Agreement is described as follows: That the property sites (Insert Area Name) Wildlife Management Area are represented by Attachment 2.
 - g. In accordance with Section 287.134, Florida Statutes, an entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid, proposal or reply on a contract to provide goods or services to any public entity; may not submit a bid, proposal or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant with any public entity; and may not transact business with a public entity.
 - h. As part of the consideration of this Agreement, the parties hereby waive trial by jury in action brought by either party pertaining to any matter whatsoever arising out of or in any way connected with this Agreement. Exclusive venue for all judicial actions pertaining to this Agreement is in Leon County, Florida.
 - i. This Agreement may be terminated by the COMMISSION upon thirty (30) days written notice to the USER in the event the continuation of the apiary activities

are found to be incompatible with the COMMISSION’S management plans or for any other reason at the sole discretion of the COMMISSION.

This Area Intentionally Left Blank

IN WITNESS WHEREOF, the parties have executed this Agreement on the day and year last below written.

USER SIGNATURE

Date: _____

Witness

Witness

FLORIDA FISH AND WILDLIFE
CONSERVATION COMMISSION

Mike Brooks, Section Leader
Terrestrial Habitat Conservation and
Restoration

Date: _____

Approved as to form and legality

Commission Attorney

Date: _____

AGREEMENT

ATTACHMENT 1

Use of Electric Fencing to Exclude Bears And Prevent Property Damage

Florida Fish and Wildlife Conservation Commission
Technical Information Bulletin (2001)

Electric fencing has proven effective in deterring bears from entering landfills, apiaries (beehives), livestock pens, gardens, orchards, and other high-value properties. Numerous electrical fence designs have been used with varying degrees of success. Design, quality of construction, and proper maintenance determine the effectiveness of an electric fence. The purpose of this technical bulletin is to assist the property owner in understanding and implementing electrical fencing as a tool to exclude and prevent damage caused by black bears.

Understanding Electric Fencing

Electric fencing provides an electrical shock when an animal comes into contact with the electrically charged wires of the fence. People unfamiliar with electric fencing often are afraid that it will injure, permanently damage, or kill an individual or pet that contacts the fence. **This is not true!** A properly constructed electric fence is safe to people, pets, and bears.

Components of Electric Fencing

An electric fence is composed of four main elements: a charger, fence posts, wire, and the ground rod.

Fence Charger. On a small scale electric fence (like that typically needed for bear exclusion), the largest cost is normally the fence charger. A fence charger's job is to send an electrical pulse into the wire of the fence. Contrary to popular belief, there is not a continuous charge of electricity running through the fence. Instead the charger emits a short pulse or burst of electricity through the fence. The intensity and duration of the electrical pulse varies with the type of charger or controller unit. Chargers with a high-voltage, short duration burst capacity are the best because they are harder to ground out by tall grass and weeds. These types are also the safest, because, even though the voltage is high (5 kilovolts) the duration of the burst is very short (2/10,000 of a second) (FitzGerald, 1984).

Two basic energy sources for chargers are batteries (12-volt automotive type) and household current (110 volt). Battery-type chargers are typically cheaper to purchase but require more maintenance because of the necessity of charging the battery. The advantage of a battery powered charger is that it can be used in a remote location where 110-volt current is not available. Most units that are powered by a fully charged 12-volt deep-cycle batteries can last three weeks before needing a charge. Addition of a solar trickle charger will help prolong the duration of effective charge in 12-volt batteries.

Fence Posts. On small scale fences, the posts are normally the second largest expense involved in construction. Therefore, when planning an electric fence it is a good idea to utilize existing fencing in order to save money. If no existing fence is available, posts will need to be placed around the area needing protection. Posts may be wood, metal, plastic, or fiberglass. Wood and metal posts will need to have plastic insulators attached to them which prevent the electric wire from touching the post causing it to ground out. Plastic and fiberglass posts do not need insulators, the wire may be affixed directly to these posts. Wood and metal posts are typically more expensive and require the added expense of insulators, however, they are more durable and generally require less maintenance.

Wire. Fourteen to seventeen gauge wire is the most common size range used in electric fencing. Heavier wire (a lower gauge number) is more expensive but carries current with less resistance and is more durable (FitzGerald, 1984).

The two most common types of wire are galvanized and aluminum. Galvanized wire is simply a steel wire with a zinc coating to prevent rust, which makes the wire last longer. Some wire is more galvanized than others. The degree or amount of zinc coating that is around the core steel wire is measured in three classes. A class I galvanization means the wire has a thinner coating of zinc than a class II galvanization. Class III galvanized wire has the heaviest zinc coating and will last longer than the class I and class II wire (FitzGerald, 1984). In general, the cost of galvanized wire increases as the class or amount of galvanization increases.

Aluminum wire is typically more expensive than the galvanized wire. Some advantages of aluminum wire are: it will not rust, it conducts electricity four times better, and it weighs one-third less than steel wire.

The Ground Rod. The ground is an often overlooked, but critical part of an electric fence. Without a good ground, electricity will not flow through the wire. When an animal touches a charged wire, the body of the animal completes the electrical circuit

and the animal feels the “shock”. The current must travel from the charger through the wire to the animal and then back through the ground to the charger if the animal is to feel the shock. The soil acts as the return “wire” (ground) in the circuit. However, if a bird was to land on a charged wire without touching the soil the bird would not complete the circuit and would be unaffected (FitzGerald, 1984). Some fence configurations use actual grounded wires within the fence to enhance the grounding system.

The ground may be a commercial ground rod or a copper tube or pipe driven six to eight feet in moist soil. Copper is expensive, so a copper coated steel pipe or any other good conducting metal pipe will work also. Very dry soil can effect the ability to create a good ground and has sometimes been a problem during drought conditions. Pipe may be a better choice than a solid rod during drought conditions, because water may be poured down the ground pipe to improve the ground. Some fence configurations use wires as the grounding system, rather than relying solely on the soil as a ground.

Recommended Electric Fence to Deter Black Bears

Conditions at fence sites will vary and will determine what the most effective fence configuration will be. Commission biologists welcome the opportunity to visit sites and provide custom tailored advice on constructing an effective electric fence. The following recommendation will cover most situations with low to moderate pressure from black bears. Use a five strand aluminum wire fence that is 40 inches high with wire spacing every eight inches apart using the previously mentioned wired grounding system (see Figure 1). The wire closest to the ground level (the lowest wire) should be a charged or “hot” wire. The second wire should be grounded. The third wire should be hot. The fourth wire should be grounded and the fifth wire should be hot. If using metal or wood posts, insulators must be used to keep the hot wires from grounding out. The cost of this type of electric fence utilizing fiberglass posts and a 110 volt fence charger is approximately \$200 for a 40' x 40' area (160 linear feet of fence).

Materials:

- 1 - 1, 312 foot roll (1/4 mile) 14 gauge aluminum electric fence wire
- 1 - 50 foot roll 12 gauge insulated wire
- 20 - 5 foot 5/8 inch dia fiberglass fence posts
- 5 - plastic gate handles
- 1 - 110 volt fence charger
- 1 - 10 foot ground pipe
- 4 - plastic electric fence signs

Installation. These instructions are for a square shape fence exclusion, but the process would be very similar for other applications. Drive 4 corner posts 1-foot deep into ground and stake with guy wires. Clip, rake, and keep clear any vegetation in a

15-inch wide strip under the fence and apply herbicide. Attach and stretch the aluminum wire at 8-inch increments starting 8 inches from ground level. A loop of wire should be left on each wire at the first corner post. Once the wire has been stretched around the outside of all the corner posts back to the first post a plastic gate handle should be attached to each wire and the gate handles should be attached to each corresponding loop on the first corner post. Drive in the remaining 16 posts to the same depth at 8-foot intervals between corner posts. Secure each of the five wires to each of the posts with additional wire. Attach four plastic electric fence signs (one on each side) to the top wire of the fence. Attach a 12-gauge strand of insulated wire to the positive terminal of the fence charger and attach it to the first, third, and fifth wires of the fence. Attach another 12 gauge insulated wire to the negative terminal of the charger and attach this wire to the ground pipe which has been driven into the ground 6 to 8-feet deep. Attach another 12 gauge insulated wire from the negative terminal of the charger to the second and fourth wires on the fence. Plug the charger into a 110 volt power supply and the fence is in operation.

Tips to improve the effectiveness of your electric fence to deter black bears:

1. If using a 12-volt fence charger, ensure that the battery is charged; check every two weeks.
2. Make sure terminals on the charger and battery are free of corrosion.
3. Make sure hot wires are not being grounded out by tall weeds, fallen tree branches, broken insulators, etc.
4. If fence wires have been broken and repaired, make sure wires are corrosion free where they have been spliced together. Also, tighten the fence at each corner post as wires that have been spliced and are loose make poor connections.
5. Be sure to rake vegetation from under and around the outside of the fence as this may act as an insulator.
6. To improve the ground around the perimeter of the fence add a piece of 24 inch chicken wire laying on the ground around the outside of the fence. This should be connected to ground.
7. During periods of drought pour water down the ground pipe and around the ground pipe to improve the ground. Digging a 6 inch deep 6 inch diameter hole around the ground pipe and back filling with rock salt will also improve the ground. Additional ground pipes may also be added to portions of the fence farthest from the charger.
8. To ensure that the bear solidly contacts the charged portion of the fence, a bait like bacon strips, a can of sardines, or tin foil with peanut butter may be attached to one of the top hot wires. Make sure these do not contact the ground, thus shorting out the fence.
9. When protecting a specific structure (like a shed or rabbit hutch), the fence

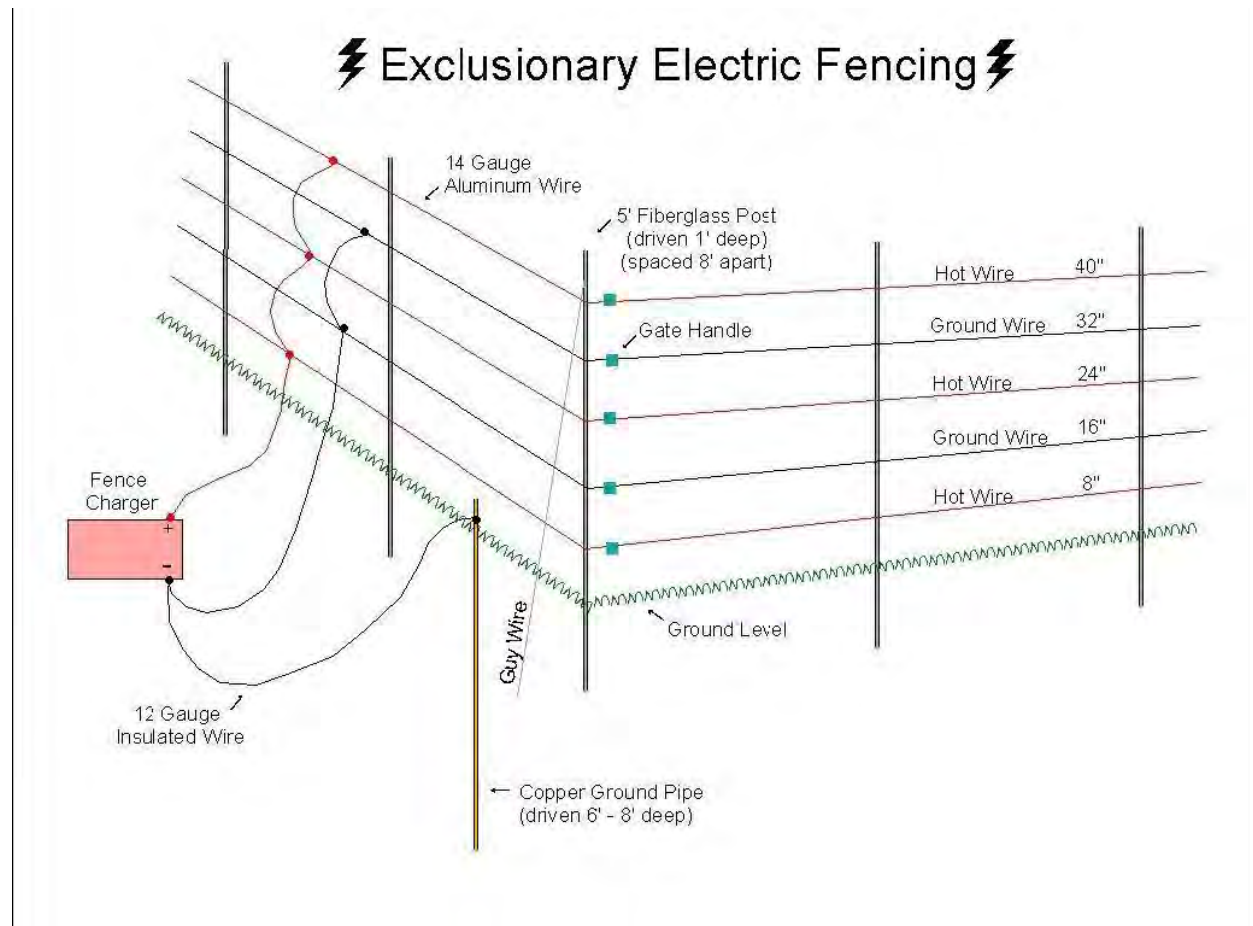
should be placed 3 to 5 feet away from the structure (rather than on it) so that the bear encounters the fence before reaching the attractant.

10. Protect the fence charger from the elements by covering it with a plastic bucket or a wooden box.

11. Place plastic electric fence signs around the perimeter of your fence to improve visibility and to warn other people.

LITERATURE CITED

FitzGerald, James (1984), *The Best Fences*. Storey Publishing Bulletin A-92, Pownal, Vermont. p. 14-16.



AGREEMENT
ATTACHMENT 2

Place Holder for Map

Of

Apiary Locations

At

WMA/WEA

APIARY SITE APPLICATION FORM

Florida Fish and Wildlife Conservation Commission

RETURN TO: The Florida Fish and Wildlife Conservation Commission, 620 South Meridian Street, Tallahassee, FL 32399-1600. Please print or type all information. Attach additional sheets if necessary.

Name _____ Telephone Number _____

Mailing Address _____

City or Town _____ County _____ Zip Code _____

Physical Address (If Different from Mailing Address) _____

Company Name: _____

Email Address _____

Requested Wildlife Management or Wildlife and Environmental Area(s)(see attached list of WMA/WEAs with apiary sites):

WMA/WEA _____ County _____ # of Sites _____

WMA/WEA _____ County _____ # of Sites _____

WMA /WEA _____ County _____ # of Sites _____

WMA /WEA _____ County _____ # of Sites _____

Planned Number of Hives Per Site: _____ Permanent: ____ Seasonal: ____

Member of Beekeepers Association: Yes ____ No ____

Number of Years a Member _____

Name of Beekeepers Association: _____

Are you registered with Florida Department of Agriculture and Consumer Services/Division of Plant Industry (FDACS/DPI): _____ Yes _____ No _____ N/A If yes, please provide proof.

Are you current with any and all special inspection fees: _____ Yes _____ No _____ N/A. If yes, please provide proof.

Do you follow all recommended Best Management Practices from FDACS/DPI?: _____ Yes _____ No

If no, then please explain on a separate piece of paper.

Florida Fish and Wildlife Conservation Commission | Three Lakes WMA Management Plan

Please provide below a chronological history of your beekeeping experience. If you need more space, please provide additional sheets:

References: If a new apiary contractor, please provide on a separate piece of paper at least 3 references who can verify your apiary experience. Provide each reference's name, address, phone number and email address (if applicable). Please attach reference sheet to this document and submit.

MISSION STATEMENT

**Management
Of
Florida Fish and Wildlife Conservation Commission's
Wildlife Management Areas
And
Wildlife and Environmental Areas**

The mission of the Florida Fish and Wildlife Conservation Commission (FWC) is to manage fish and wildlife resources for their long-term well-being and the benefit of the people. To aid in accomplishing this mission, one of FWC's management goals is to manage fire-adapted natural communities on our Wildlife Management and Environmental Areas (WMA/WEA) to support healthy populations of the plants and animal's characteristic of each natural community. In order to achieve this goal various habitat management techniques are used. These include prescribed burning, applications of herbicides and mechanical treatment of vegetation. These management efforts will take place at various times and locations on each of the FWC's WMA/WEAs. Staff on each WMA/WEA will work with and make users aware of these activities when necessary. Users must be aware and accept that these activities are necessary for the proper management of the area.

Note: This document is included as an attachment with each Application and executed Contract.

FDACS/DPI's BMP

Florida Department of Agriculture & Consumer Services

BEST MANAGEMENT PRACTICES FOR

MAINTAINING EUROPEAN HONEY BEE COLONIES

1. Beekeepers will maintain a valid registration with the Florida Department of Agriculture and Consumer Services/Division of Plant Industry (FDACS/DPI), and be current with any and all special inspection fees.
2. A Florida apiary may be deemed as European Honey Bee with a minimum 10% random survey of colonies using the FABIS (Fast African Bee Identification System) and/or the computer-assisted morphometric procedure (i.e., Universal system for the detection of Africanized Honey Bees (AHB) (USDA-ID) or other approved methods by FDACS on a yearly basis or as requested.
3. Honey bee colony divisions or splits should be queened with production queens or queen cells from EHB breeder queens following Florida's Best Management Practices.
4. Florida beekeepers are discouraged from collecting swarms that cannot be immediately re-queened from EHB queen producers.
5. Florida Beekeepers should practice good swarm-prevention techniques to prevent an abundance of virgin queens and their ready mating with available AHB drones that carry the defensive trait.
6. Maintain all EHB colonies in a strong, healthy, populous condition to discourage usurpation (take over) swarms of AHB.
7. Do not allow any weak or empty colonies to exist in an Apiary, as they may be attractive to AHB swarms.
8. Recommend re-queening with European stock every six months unless using marked or clipped queens and having in possession a bill of sale from an EHB Queen Producer.
9. Immediately re-queen with a European Queen if previously installed clipped or marked queen is found missing.
10. Maintain one European drone source colony (250 square inches of drone comb) for every 10 colonies in order to reduce supercedure queens mating with AHB drones.
11. To protect public safety and reduce beekeeping liability, do not site apiaries in proximity of tethered or confined animals, students, the elderly, general public, drivers on public roadways, or visitors where this may have a higher likelihood of occurring.

12. Treat all honey bees with respect.

RANDOM
SELECTION PROCESS
FOR VACANT APIARY SITE

When an apiary site becomes available the following procedure is used to randomly select the next apiarist (beekeeper) for an available apiary site on a WMA or WEA. Only those who have been evaluated and deemed qualified to be an apiarist on a WMA/WEA through the Apiary Application process will be eligible for this selection process. The steps below will be followed by the THCR Contract Manager when a site becomes available to be filled by a qualified apiarist:

1. The THCR Contract Manager will maintain an “Apiary Wait List Folder” on the THCR SharePoint for each WMA/WEA with apiary sites.
2. A wait list is either created or updated when an Apiary Application(s) is received by the THCR Contract Manager from a qualified apiarist.
3. Upon receipt of an apiary site application, the THCR Contract Manager will review the WMA/WEA folder to see if there is an “Apiary Wait List”.
4. If a list exists then the qualified applicant will be added to the list.
5. When an apiary site becomes available if there are more than one qualified apiarist then these apiarists will be contacted by certified letter to determine their interest.
6. The letter will request a response within 10 working days to make them eligible for the random drawing.
7. If there is no response or is negative then that apiarist will not be included in the random drawing and the name will be removed from the waiting list*.
8. If only one apiarist responds positively to the certified letter then the available site will be awarded to that interested apiarist.
9. If there are no apiarists on a wait list or all responses are negative then apiarists who currently have site(s) under Agreement and where not on the waiting list will be

contacted to see if any have interest in the available site. If more than one responds then the random drawing process will be used to determine who will be awarded the site.

10. Steps to be performed by the THCR Contract Manager to execute the random selection for an available apiary site are listed below:

- a. The names of each interested apiarist will be noted on a 1" X 2" piece of paper and folded in half.
- b. The pieces of paper will be inserted into a "black film canister" which has a snap top and placed into a container and stirred up prior to the selection.
- c. A non-biased person will be selected to reach into the bowl (which will be held above the selection person's eyesight) and randomly select one of the canisters.
- d. The canister will be opened by the person performing the selection and the name is read aloud for those in attendance. Everyone in attendance will sign a witness sheet.
- e. The apiarist whose name is selected will be awarded the available site.
- f. A new Agreement will be developed by the THCR Contract Manager.

*A new apiary application must be submitted once requestor's name is removed from a waiting list.

12.11 Apiary Contract

FWC Contract No. 16160

AGREEMENT FOR APIARY ACTIVITIES ON STATE LANDS

THIS AGREEMENT is made by and between the Florida Fish and Wildlife Conservation Commission, 620 South Meridian Street, Tallahassee, FL 32399-1600, hereinafter known as "the COMMISSION," and Glen Struthers, Struthers Honey Inc., 8024 Rose Terrace, Lake Wales, Florida, 33898, telephone number (863) 696-4064, hereinafter known as "the USER."

WITNESSETH

In consideration of the mutual promises to be kept by each and the payments to be made by the USER, the parties agree as follows:

1. TERM: This Agreement will begin upon execution and will end five (5) years from the date of execution.
2. The COMMISSION Agrees:
 - a. To provide apiary sites on state lands, which will be identified by the COMMISSION staff and located on the property identified in (4) (h) below.
 - b. To provide technical assistance for bear-proofing, if required by Area Biologist, of site(s) made available under this Agreement.
 - c. To allow the USER to place a total number of 900 hive boxes on the COMMISSION-managed property at the apiary sites.
3. The USER Agrees:
 - a. To pay \$720 on or before the execution date of this Agreement and each year thereafter on or before the anniversary date of the original contract execution date, with check or money order payable to the Florida Fish and Wildlife Conservation Commission. All payments shall be remitted to The Florida Fish and Wildlife Conservation Commission, Finance and Budgeting, Accounting Section, PO Box 6150, Tallahassee, FL 32399-6150, and a copy of the check to The Florida Fish and Wildlife Conservation Commission, Wildlife and Habitat Management Section, Attn: Section Leader, 620 South Meridian Street, Tallahassee, Florida 32399-1600.
 - b. To have no more than 50 hive boxes on each apiary site property at one time for a total not to exceed 900 hive boxes within Three Lakes WMA.

- c. To comply with the Florida Honey Certification and Honeybee Law, Chapter 586, Florida Statutes, and Rule 5B-19, Florida Administrative Code, and all other applicable federal, state, or local laws, rules or ordinances.
- d. To not damage, cut or remove any trees in the course of preparing for or conducting operations under this Agreement.
- e. To repair within 30 days of occurrence any damage to roads, trails, fences, bridges, ditches, or other public property caused by USER'S operations under this Agreement based on discretion of the COMMISSION to ensure the WMA/WEA management goals are met. All repairs will be coordinated with the Area Biologist to ensure management goals are met. If USER does not comply within the 30 day requirement, then the COMMISSION may use a third party to perform the repairs and charge the USER accordingly.
- f. To report any forest fires observed and to prevent forest fires during the course of operations under this Agreement.
- g. To abide by all WMA/WEA rules and regulations in addition to items in this Agreement.
- h. To notify the Area Biologist within 24 hours when a bear depredation event occurs.
- i. To post their name in an agreed upon location at each site covered by this Agreement or otherwise use an identifying system that is approved by the Area Biologist.
- j. To furnish proof of general liability insurance prior to starting apiary activities on state property or within 30 days of execution of this Agreement, whichever is earlier, and proof of annual renewal of the general liability insurance policy prior to or upon expiration date of the policy. The USER shall maintain continuous general liability insurance throughout the term of this Agreement for no less than \$300,000 for bodily injury and \$100,000 for property damage for each occurrence. Such a policy shall name the COMMISSION as the Certificate Holder. The USER's current certificate of insurance shall contain a provision that the insurance will not be canceled for any reason during the term of this Agreement except after thirty (30) days written notice to the COMMISSION.
- k. To be liable for all damage to persons or property resulting from operations under this Agreement, and to release, acquit, indemnify, save and hold harmless the

COMMISSION, its officers, agents, employees and representatives from any and all claims, losses, damages, injuries and liabilities whatsoever, whether for personal injury or otherwise, resulting from, arising out of or in any way connected with activities under this Agreement or activities occurring from any other source not under this Agreement and the USER further agrees to assume all risks of loss and liabilities incidental to any natural or artificial condition occurring on state lands cover by this Agreement.

- l. To construct and maintain electric fences, if required by the Area Biologist at the Area Biologist's discretion, to provide protection of apiaries from black bear depredation consistent with the technical information bulletin attached to this agreement, and, if so required, to maintain an open buffer around the fencing of five (5) feet or more. (See Attachment A, Florida Fish and Wildlife Conservation Commission (FWC) Technical Information Bulletin, December 2001, Use of Electric Fencing To Exclude Bears and Prevent Property Damage)
- m. To remove all personal property from the site within thirty (30) days of termination or expiration of this Agreement. The USER understands that after this time, all the USER'S personal property remaining on the WMA/WEA shall be deemed abandoned and become the property of the COMMISSION, which will be utilized or disposed of at the sole discretion of the COMMISSION, and that reasonable storage and/or disposal fees and/or costs may be charged to the USER.

4. The parties mutually agree:

- a. This Agreement is not transferable.
- b. The USER's failure to submit payment by the due date established herein may result in cancellation of the Agreement by the COMMISSION.
- c. The USER's failure to submit proof of general liability insurance or proof of annual renewal in compliance with (3) (j) above may result in cancellation of this Agreement by the COMMISSION.
- d. This Agreement shall be in effect for a period of five (5) years and issuance of a new agreement will be contingent upon a satisfactory performance evaluation and approval of the Area Biologist.
- e. Each apiary site shall be situated so as to be at least one-half (1/2) mile inward from state property lines and there shall be at least one (1) mile separation between sites. Exceptions to this rule must be reviewed by the Area Biologist,

presented to and approved by the Wildlife and Habitat Management Section Leader.

- f. The CONTRACTOR shall save, hold harmless and indemnify the State of Florida and the COMMISSION against any and all liability, claims, judgments or costs of whatsoever kind and nature for injury to, or death of any person or persons and for the loss or damage to any property resulting from the use, service, operation or performance of work under the terms of this Contract, resulting from the acts or omissions of the CONTRACTOR, his subcontractor, or any of the employees, agents or representatives of the CONTRACTOR or subcontractor.
- g. This Contract with all incorporated attachments and exhibits represents the entire agreement of the parties. Any alterations, variations, changes, modifications or waivers of provisions of this Contract shall only be valid when they have been reduced to writing, and duly signed by each of the parties hereto, unless otherwise provided herein.
- h. The sites covered by this Agreement are described as being in the vicinity of or at the following latitude and longitude coordinates:
 - “Site RD2”, latitude 27.94997605 and longitude 81.11232424;
 - “Site Cow Pens Bee Box”, latitude 27.86865004 and longitude 81.16712160;
 - “Site Road 18 Bee Box”, latitude 27.88733365 and longitude 81.15388817;
 - “Site Road 5 Bee Box”, latitude 27.94468557 and longitude 81.14691686;
 - “Site Road 8 Bee Box”, latitude 27.87445921 and longitude 81.13492202;
 - “Site BEE X11”, latitude 27.91945738 and longitude 81.14329445;
 - “Site BEE X13”, latitude 27.88453460 and longitude 81.17508768;
 - “Site BEE X15”, latitude 27.86711306 and longitude 81.18199227;
 - “Site BEE X19”, latitude 27.90246475 and longitude 81.09761559;
 - “Site BEE X20”, latitude 27.99937162 and longitude 81.14596308;
 - “Site BEE X3”, latitude 27.98172721 and longitude 81.03634179;

"Site BEE X5", latitude 27.95920512 and longitude 81.05287635;

"Site BEE X6", latitude 27.93302776 and longitude 81.02582601;

"Site BEE X7", latitude 27.95884503 and longitude 81.09150368;

"Site BEE X8", latitude 27.97409188 and longitude 81.10642615;

"Site Road 1 & Road 11", latitude 27.98149408 and longitude 81.07143128;

"Site Road 1", latitude 27.99203091 and longitude 81.09928860;

"Site Road 1 and Williams", latitude 27.98149408 and longitude 81.07143128;

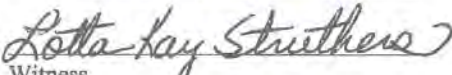
and as represented by the Attachment B map.

- i. In accordance with Section 287.134, Florida Statutes, an entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid, proposal or reply on a contract to provide goods or services to any public entity; may not submit a bid, proposal or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant with any public entity; and may not transact business with a public entity.
- j. As part of the consideration of this Agreement, the parties hereby waive trial by jury in action brought by either party pertaining to any matter whatsoever arising out of or in any way connected with this Agreement. Exclusive venue for all judicial actions pertaining to this Agreement is in Leon County, Florida.
- k. This Agreement may be terminated by the COMMISSION upon thirty (30) days written notice to the USER in the event the continuations of the apiary activities are found to be incompatible with the COMMISSION'S management plans or for any other reason at the sole discretion of the COMMISSION.

IN WITNESS WHEREOF, the parties have executed this Agreement on the day and year last below written.

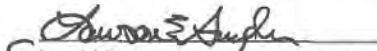

USER SIGNATURE

Date: 11/25/2016


Witness


Witness

FLORIDA FISH AND WILDLIFE
CONSERVATION COMMISSION


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Witness


Witness

Approved as to form and legality



- Attachment A: Florida Fish and Wildlife Conservation Commission (FWC) Technical Information Bulletin, December 2001, Use of Electric Fencing To Exclude Bears and Prevent Property Damage
- Attachment B: Map of Apiary Locations for FWC Apiaries on Three Lakes Wildlife Management Area



December 2001

Florida Fish and Wildlife Conservation Commission
Technical Information Bulletin

Use of Electric Fencing to Exclude Bears and Prevent Property Damage

Electric fencing has proven effective in deterring bears from entering landfills, apiaries (beehives), livestock pens, gardens, orchards, and other high-value properties. Numerous electrical fence designs have been used with varying degrees of success. Design, quality of construction, and proper maintenance determine the effectiveness of an electric fence. The purpose of this technical bulletin is to assist the property owner in understanding and implementing electrical fencing as a tool to exclude and prevent damage caused by black bears.

Understanding Electric Fencing

Electric fencing provides an electrical shock when an animal comes into contact with the electrically charged wires of the fence. People unfamiliar with electric fencing often are afraid that it will injure, permanently damage, or kill an individual or pet that contacts the fence. **This is not true!** A properly constructed electric fence is safe to people, pets, and bears.

Components of Electric Fencing

An electric fence is composed of four main elements: a charger, fence posts, wire, and the ground rod.

Fence Charger. On a small scale electric fence (like that typically needed for bear exclusion), the largest cost is normally the fence charger. A fence charger's job is to send an electrical pulse into the wire of the fence. Contrary to popular belief, there is not a continuous charge of electricity running through the fence. Instead the charger emits a short pulse or burst of electricity through the fence. The intensity and duration of the electrical pulse varies with the type of charger or controller unit. Chargers with a high-voltage, short duration burst capacity are the best because they are harder to ground out by tall grass and weeds. These types are also the safest, because, even though the voltage is high (5 kilovolts) the duration of the burst is very short (2/10,000 of a second) (FitzGerald, 1984).

Two basic energy sources for chargers are batteries (12-volt automotive type) and household current (110 volt). Battery-type chargers are typically cheaper to purchase but require more maintenance because of the necessity of charging the battery. The advantage of a battery powered charger is that it can be used in a remote location where 110-volt current is not available. Most units that are powered by a fully charged 12-volt deep-cycle batteries can last three weeks before needing a charge. Addition of a solar trickle charger will help prolong the duration of effective charge in 12-volt batteries.

Fence Posts. On small scale fences, the posts are normally the second largest expense involved in construction. Therefore, when planning an electric fence it is a good idea to utilize existing fencing in order to save money. If no existing fence is available, posts will need to be placed around the area needing protection. Posts may be wood, metal, plastic, or fiberglass. Wood and metal posts will need to have plastic insulators attached to them which prevent the electric wire from touching the post causing it to ground out. Plastic and fiberglass posts do not need insulators, the wire may be affixed directly to these posts. Wood and metal posts are typically more expensive and require the added expense of insulators, however, they are more durable and generally require less maintenance.

Wire. Fourteen to seventeen gauge wire is the most common size range used in electric fencing. Heavier wire (a lower gauge number) is more expensive but carries current with less resistance and is more durable (FitzGerald, 1984).

The two most common types of wire are galvanized and aluminum. Galvanized wire is simply a steel wire with a zinc coating to prevent rust, which makes the wire last longer. Some wire is more galvanized than others. The degree or amount of zinc coating that is around the core steel wire is measured in three classes. A class I galvanization means the wire has a thinner coating of zinc than a class II galvanization. Class III galvanized wire has the heaviest zinc coating and will last longer than the class I and class II wire (FitzGerald, 1984). In general, the cost of galvanized wire increases as the class or amount of galvanization increases.

Aluminum wire is typically more expensive than the galvanized wire. Some advantages of aluminum wire are: it will not rust, it conducts electricity four times better, and it weighs one-third less than steel wire.

The Ground Rod. The ground is an often overlooked, but critical part of an electric fence. Without a good ground, electricity will not flow through the wire. When an animal touches a charged wire, the body of the animal completes the electrical circuit and the animal feels the "shock". The current must travel from the charger through the wire to the animal and then back through the ground to the charger if the animal is to feel the shock. The soil acts as the return "wire" (ground) in the circuit. However, if a

bird was to land on a charged wire without touching the soil the bird would not complete the circuit and would be unaffected (FitzGerald, 1984). Some fence configurations use actual grounded wires within the fence to enhance the grounding system.

The ground may be a commercial ground rod or a copper tube or pipe driven six to eight feet in moist soil. Copper is expensive, so a copper coated steel pipe or any other good conducting metal pipe will work also. Very dry soil can effect the ability to create a good ground and has sometimes been a problem during drought conditions. Pipe may be a better choice than a solid rod during drought conditions, because water may be poured down the ground pipe to improve the ground. Some fence configurations use wires as the grounding system, rather than relying solely on the soil as a ground.

Recommended Electric Fence to Deter Black Bears

Conditions at fence sites will vary and will determine what the most effective fence configuration will be. Commission biologists welcome the opportunity to visit sites and provide custom tailored advice on constructing an effective electric fence. The following recommendation will cover most situations with low to moderate pressure from black bears. Use a five strand aluminum wire fence that is 40 inches high with wire spacing every eight inches apart using the previously mentioned wired grounding system (see Figure 1). The wire closest to the ground level (the lowest wire) should be a charged or "hot" wire. The second wire should be grounded. The third wire should be hot. The fourth wire should be grounded and the fifth wire should be hot. If using metal or wood posts, insulators must be used to keep the hot wires from grounding out. The cost of this type of electric fence utilizing fiberglass posts and a 110 volt fence charger is approximately \$200 for a 40' x 40' area (160 linear feet of fence).

Materials:

- 1 - 1, 312 foot roll (1/4 mile) 14 gauge aluminum electric fence wire
- 1 - 50 foot roll 12 gauge insulated wire
- 20 - 5 foot 5/8 inch dia fiberglass fence posts
- 5 - plastic gate handles
- 1 - 110 volt fence charger
- 1 - 10 foot ground pipe
- 4 - plastic electric fence signs

Installation. These instructions are for a square shape fence exclusion, but the process would be very similar for other applications. Drive 4 corner posts 1-foot deep into ground and stake with guy wires. Clip, rake, and keep clear any vegetation in a 15-inch wide strip under the fence and apply herbicide. Attach and stretch the aluminum wire at 8-inch increments starting 8 inches from ground level. A loop of wire

should be left on each wire at the first corner post. Once the wire has been stretched around the outside of all the corner posts back to the first post a plastic gate handle should be attached to each wire and the gate handles should be attached to each corresponding loop on the first corner post. Drive in the remaining 16 posts to the same depth at 8-foot intervals between corner posts. Secure each of the five wires to each of the posts with additional wire. Attach four plastic electric fence signs (one on each side) to the top wire of the fence. Attach a 12-gauge strand of insulated wire to the positive terminal of the fence charger and attach it to the first, third, and fifth wires of the fence. Attach another 12 gauge insulated wire to the negative terminal of the charger and attach this wire to the ground pipe which has been driven into the ground 6 to 8-feet deep. Attach another 12 gauge insulated wire from the negative terminal of the charger to the second and fourth wires on the fence. Plug the charger into a 110 volt power supply and the fence is in operation.

Tips to improve the effectiveness of your electric fence to deter black bears:

1. If using a 12-volt fence charger, ensure that the battery is charged; check every two weeks.
2. Make sure terminals on the charger and battery are free of corrosion.
3. Make sure hot wires are not being grounded out by tall weeds, fallen tree branches, broken insulators, etc.
4. If fence wires have been broken and repaired, make sure wires are corrosion free where they have been spliced together. Also, tighten the fence at each corner post as wires that have been spliced and are loose make poor connections.
5. Be sure to rake vegetation from under and around the outside of the fence as this may act as an insulator.
6. To improve the ground around the perimeter of the fence add a piece of 24 inch chicken wire laying on the ground around the outside of the fence. This should be connected to ground.
7. During periods of drought pour water down the ground pipe and around the ground pipe to improve the ground. Digging a 6 inch deep 6 inch diameter hole around the ground pipe and back filling with rock salt will also improve the ground. Additional ground pipes may also be added to portions of the fence farthest from the charger.
8. To ensure that the bear solidly contacts the charged portion of the fence, a bait like bacon strips, a can of sardines, or tin foil with peanut butter may be attached to one of the top hot wires. Make sure these do not contact the ground, thus

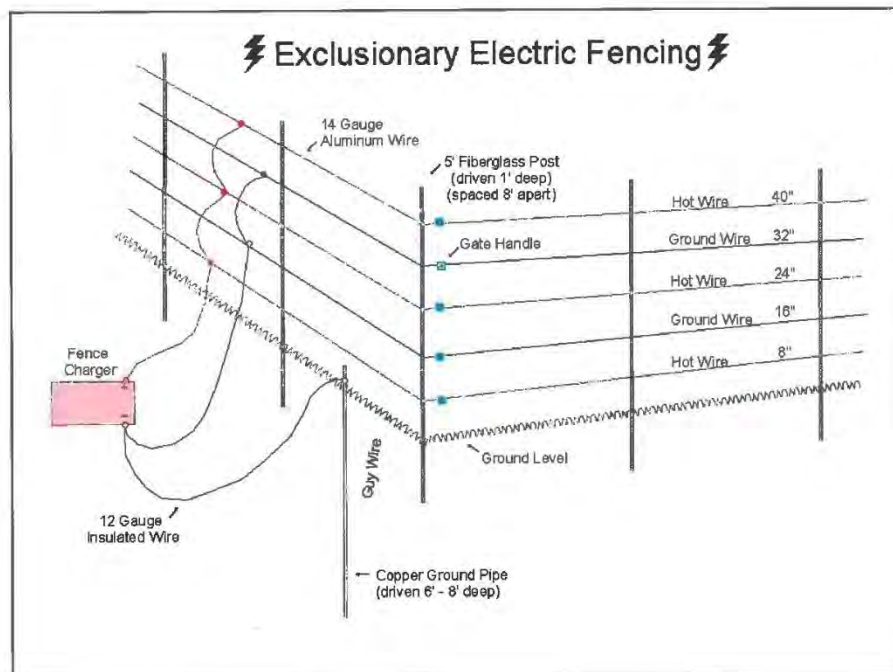
shorting out the fence.

9. When protecting a specific structure (like a shed or rabbit hutch), the fence should be placed 3 to 5 feet away from the structure (rather than on it) so that the bear encounters the fence before reaching the attractant.
10. Protect the fence charger from the elements by covering it with a plastic bucket or a wooden box.
11. Place plastic electric fence signs around the perimeter of your fence to improve visibility and to warn other people.

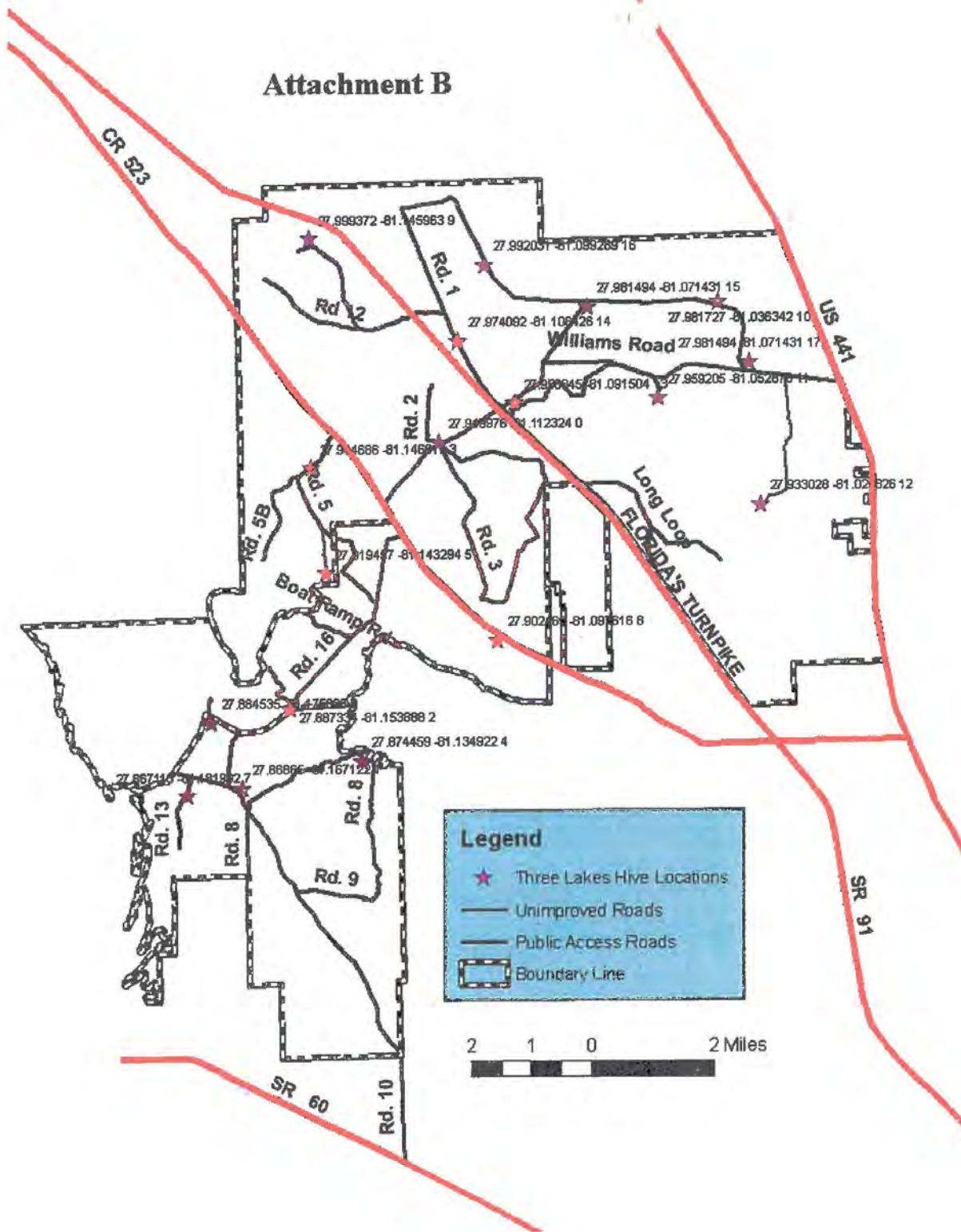
LITERATURE CITED

FitzGerald, James (1984), *The Best Fences*. Storey Publishing Bulletin A-92, Pownal, Vermont. p. 14-16.

Figure 1. Diagram of properly constructed electric fence to exclude bears.



Attachment B



12.12 Prescribed Burn Plan

Three Lakes Wildlife Management Area
Fire Management Plan
April 2020

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INTRODUCTION

Fires, whether naturally occurring or anthropogenic, are an integral part of the ecology of pine flatwoods and prairie regions of Central Florida. Periodic burning has maintained fire-dependent plant communities in the southeast for thousands of years. However, the exclusion of fire or disruption of the natural frequency can lead to a succession of a variety of vegetation types that are not desirable (e.g. hardwood hammock), encourages non-native plants to thrive, causes less nutrient recycling, leads to high fuel loads within the system, and allows a closed canopy system. This closed canopy discourages fire-dependent plant growth and thus has negative effects on fire-dependent wildlife such as the red-cockaded woodpecker (*Picoides borealis*). Overall, dense underbrush, which develops with a lack of fire, is undesirable for many wildlife species as it impedes access and decreases quality of foraging habitat. In addition, as these dense fuels accumulate, wildfire hazard becomes more prevalent and could cause catastrophic fires that pose a risk to natural resources as well as human life and property.

Prescribed burning is used extensively in forestry and wildlife management for fuel reduction, brush control, disease and insect control, site preparation, and wildlife habitat improvement. It is a recommended tool for management of such game animals as white-tailed deer (*Odocoileus virginianus*), northern bobwhite (*Colinus virginianus*), mourning dove (*Zenaida macroura*), and wild turkey (*Meleagris gallopavo*). Prescribed burns stimulate fruit and seed production in plants and can lead to higher yields and increase quality of palatable plants which in turn promotes a large and varied wildlife population. Additionally, prescribed burning helps improve recreational and aesthetic values.

DESCRIPTION OF AREA

The Three Lakes Wildlife Management Area (TLWMA) lies in the southern half of Osceola County, west of U.S. Highway 441 and north of State Road 60. Florida's Turnpike bisects the TLWMA to the north and east of Lakes Kissimmee, Jackson, and Marian. The TLWMA is located approximately one-mile northwest of Kenansville, 8.5 miles south of Holopaw, and 18 miles southeast of St. Cloud. The TLWMA is bordered on the north by privately owned land, primarily ranch and agricultural land. The Whaley Conservation Easement, held by the State of Florida on approximately 3,710 acres of land, within the Big Bend Swamp/Holopaw Ranch Florida Forever Project, lies immediately north of the TLWMA, and is monitored by the Department of Environmental Protection (DEP). The TLWMA is bordered on the west by Lake Kissimmee. Areas to the northwest of the TLWMA boundary are primarily privately-owned ranchland. Other areas to the southwest of the TLWMA are primarily privately-owned agricultural land. To the southeast of the TLWMA lies Lake Marian and beyond that are privately-owned ranchlands.

The TLWMA contains 65,333 acres of vegetative communities, with a mosaic of uplands and wetlands comprised of the following 24 FNAI natural and anthropogenic communities: Basin Marsh, Basin Swamp, Baygall, Blackwater Stream, Depression Marsh, Dome Swamp, Dry Prairie, Floodplain Marsh, Hydric Hammock, Mesic Flatwoods, Mesic Hammock, Sandhill,

Scrub, Scrubby Flatwoods, Wet Flatwoods, Wet Prairie, Xeric Hammock, Pasture – improved, Pasture – semi-improved, Pine Plantation, Ruderal, Prairie/flatwoods Lake, Restoration Dry Prairie, and Successional Hardwood Forest.

The following natural community descriptions were compiled by the Florida Natural Areas Inventory (FNAI) in 2012 for the 2012-2022 management plan for the TLWMA.

Basin marsh (3,000.1 acres)

Basin marsh is an herbaceous or shrub-dominated community usually situated in large, irregularly shaped basins. At the TLWMA, basin marshes are found in two locations: in shallow basins in dry prairies and on flats along the shores of the larger lakes and the drainage-ways connecting them. A small number of larger marshes (>10 acres) occur in the dry prairie matrix community.

Structure and species composition of the lakeshore basin marsh community at the TLWMA is highly variable depending on water depth and perhaps on human manipulation of the lake levels. Zonation along the lakeshores consists of an innermost zone of floating plants, primarily American lotus (*Nelumbo lutea*) and spatterdock (*Nuphar lutea*); a zone of tall, coarse herbs including southern cattail (*Typha domingensis*), sawgrass (*Cladium mariscoides*) and softstem bulrush (*Schoenoplectus tabernaemontani*); and a dense zone of shorter herbs consisting of maidencane (*Panicum hemitomon*), pickerelweed (*Pontederia cordata*), burr marigold (*Bidens laevis*) and bulltongue arrowhead (*Sagittaria lancifolia*). Maidencane dominates the outermost zone at the upland interface, with dotted smartweed (*Polygonum punctatum*), false nettle (*Boehmeria cylindrica*), blue maidencane (*Amphicarpum muhlenbergianum*) and sand cordgrass (*Spartina bakeri*) and scattered woody species such as wax myrtle (*Myrica cerifera*), buttonbush (*Cephalanthus occidentalis*), Carolina willow (*Salix caroliniana*) and Peruvian primrose willow (*Ludwigia peruviana*). In higher areas, dense thickets of wax myrtle may replace the herbaceous species. At the TLWMA, lakeshore basin marshes are found on Delray loamy fine sand, very poorly drained loamy sand with sandy clay loam subsoil.

Basin swamp (4.5 acres)

Basin swamp is an isolated, wetland community forested with hardwood and coniferous trees, occurring in large depressions and drainageways with extended hydroperiods. At the TLWMA, basin swamps occur within a mesic flatwoods matrix. The open canopy is formed by pond cypress (*Taxodium ascendens*) and the subcanopy is usually sparse, consisting of evergreen hardwoods such as dahoon holly (*Ilex cassine*) and sweetbay (*Magnolia virginiana*). Long unburned basin swamps often have denser, more diverse tree canopies, with red maple (*Acer rubrum*), swamp tupelo (*Nyssa sylvatica*) and sweetbay joining pond cypress in the canopy layer. The shrub layer may be sparse or very dense and is usually dominated by shiny fetterbush (*Lyonia lucida*) and wax myrtle. Swamp fern (*Blechnum sp.*) is often abundant in the herbaceous layer.

Open water in the center supports floating bladderwort (*Utricularia inflata*) and floating hearts (*Hydrocotyle ranunculoides*). Pond cypress may support large numbers of airplants (bromeliads) such as cardinal airplant (*Tillandsia fasciculata*) and Spanish moss (*Tillandsia usneoides*). Pond

cypress is resistant to fire and the shrubs can re-sprout after a fire. At the TLWMA, basin swamps are found on placid fine sand, a very poorly drained sandy soil that may have up to 8 inches of organic muck on the surface.

Baygall (812.1 acres)

Baygall is a forested wetland community dominated by bay trees with high moisture levels maintained by seepage or high water tables. At the TLWMA, baygalls are found primarily on the eastern side of the property in depressions, often within or on the edge of cypress-dominated basin swamps. The canopy consists of loblolly bay (*Gordonia lasianthus*), sweetbay or a mixture of both. Slash pine (*Pinus elliotii*) and pond cypress may also be present, occasionally forming an emergent layer over the bays. The subcanopy consists of loblolly bay and sweetbay, plus swamp bay (*Persea palustris*). Loblolly bay may also be present in the shrub layers, which are often so dense as to be impassable. Shrubs are primarily wax myrtle, shiny fetterbush and saw palmetto (*Serenoa repens*), laced together with laurel greenbrier (*Smilax laurifolia*). Virginia chain fern (*Woodwardia virginica*) and sphagnum moss dominate the ground layer. Several baygalls occur on the edges of cypress-dominated basin swamps where the drainage has been altered by ditching which may have caused their development. Baygalls can withstand a moderate fire frequency since the bay trees re-sprout following fire; however, fire during a drought can kill the trees by burning into the organic soils and killing their roots. At the TLWMA, baygalls are found on both sandy (Basinger fine sand, Placid fine sand) and organic (Samsula and Hontoon mucks) soils.

Blackwater Stream (43.4 acres)

Blackwater streams are characterized as perennial or intermittent seasonal watercourses originating deep in sandy lowlands where extensive wetlands with organic soils function as reservoirs, collecting rainfall and discharging it slowly to the stream. At the Kissimmee River Public Use Area (KRP UA) BOT parcels the historic course of the Kissimmee River is still present, although heavily altered since most water flow is directed into a large canal.

Vegetation in blackwater streams of the KRP UA BOT parcels occurs along edges and on floating mats, and includes water hemlock (*Cicuta maculate*), flatsedge (*Cyperus sp.*), floating marshpennywort, denseflower knotweed (*Polygonum densiflorum*), dotted smartweed, pickerelweed (*Pontederia sp.*), bulltongue arrowhead, and broadleaf cattail.

Depression marsh (2,284.1 acres)

Depression marsh is an herbaceous wetland community with concentric zones of vegetation found in circular depressions. At the TLWMA, depression marshes occur in dry prairies, mesic flatwoods and mesic hammocks. Depression marsh vegetation is also found in zones surrounding dome and basin swamps in mesic flatwoods.

The outermost (driest) zone is usually composed of a sparse stand of grasses such as longleaf threeawn (*Aristida palustris*), sedges such as southern umbrellasedge (*Fuirena scirpoidea*) and southern beaksedge (*Rhynchospora microcarpa*), ten-angle pipewort (*Eriocaulon decangulare*) and yellow-eyed grasses. Alternatively, the outer zone may be dominated by a relatively dense stand of sand cordgrass. The next zone inward is often dominated by sandweed St. John's-wort

(*Hypericum sp.*), followed by a zone of dense maidencane and, finally, a central zone of pickerelweed. In depression marshes bordering basin or dome swamps, the outer grass/sedge and sandweed St John's-wort- zones are similar, but the inner zones of maidencane and pickerelweed are replaced by young pond cypress bordering the forested portion of the swamp. In depression marshes within mesic hammocks, shrubs such as buttonbush and wax myrtle and deciduous trees such as swamp tupelo and red maple are often found on hummocks within the marsh. The outer zones of depression marshes are sparsely vegetated and subject to alternating inundation and desiccation. Fire in this community kills sandweed St. John's-wort, which can rapidly re-colonize from seed. At the TLWMA, depression marshes occur primarily on poorly drained Basinger fine sand, depressional, which is sandy throughout the soil profile.

Dome swamp (7,908.6 acres)

Dome swamp is an isolated wetland community occurring in shallow basins and forested with conifers and deciduous trees. On the TLWMA, dome swamps are found in depressions within a mesic flatwoods matrix. Trees in the center are taller than those on the edges, giving the stand a dome-shaped profile. At the TLWMA, the open canopy is formed by pond cypress; the subcanopy is usually sparse, consisting of evergreen hardwoods such as dahoon holly and sweetbay. The shrub layer may be sparse or very dense and is usually dominated by shiny fetterbush and wax myrtle. Swamp fern is often abundant in the herbaceous layer. Open water in the center supports floating bladderwort and floating hearts. Pond cypress may support large numbers of bromeliads. At the TLWMA, dome swamps are found on Placid fine sand, a very poorly drained sandy soil that may have up to eight inches of organic muck on the surface.

Dry prairie (16,031.2 acres)

Dry prairie is an upland community of short shrubs and grasses with few or no pines and many of the same species in the shrub and herbaceous layers as are found in mesic flatwoods. The shrubs often are the same height as the grasses and form alternating patches with them, rather than a separate vertical layer. At the TLWMA, dry prairie is the matrix community on the southern half of the property, with mesic flatwoods replacing it as the matrix community on the northern portion. Only larger areas (>20 acres) with few or no trees within the mesic flatwoods portion were mapped as dry prairie.

Longleaf pines (*Pinus palustris*), if present, are widely scattered. Wiregrass and low shrubs, primarily stunted saw palmetto and dwarf live oak (*Quercus minima*), form most of the cover, with taller shrubs such as gallberry and coastalplain staggerbush (*Lyonia fruticose*) being infrequent. Other common dwarf shrubs include dwarf huckleberry (*Gaylussacia dumosa*), shiny blueberry (*Vaccinium myrsinites*), netted pawpaw (*Asimina reticulata*) and coastalplain St. Johns-wort. Scattered among the wiregrass clumps are species of bluestem and low panic-grasses, plus a relatively high diversity of forbs, some of the more common being yellow hatpins (*Syngonanthus flavidulus*), pineland chaffhead (*Carphephorus carnosus*), yellow milkwort (*Polygala rugelii*), short-leaf rosegiant (*Sabatia brevifolia*), and Elliott's yelloweyed grass (*Xyris elliotii*). Several populations of the rare many-flowered grasspink (*Calopogon sp.*) orchid were found in this community following recent burns. Frequent fires may prevent the establishment of longleaf pines or other trees in this community. The dry prairie that lies near the fire shadow of the three major lakes is being invaded by live oaks from the mesic hammocks

ringing the lakes. At the TLWMA, dry prairie occurs on the same poorly drained soil types as mesic flatwoods (Pomona, Smyrna, Immokalee and Myakka fine sand), all of which are sandy throughout their profiles; in addition it occurs on Eau Gallie fine sand, a poorly drained soil with a sandy surface soil and sandy clay loam subsoil.

Floodplain marsh (457.4 Acres)

Floodplain marsh is a wetland community occurring in river floodplains and dominated by herbaceous vegetation and/or shrubs. Most of the KRPUA BOT parcels were primarily a large floodplain marsh through which the Kissimmee River meandered. Once the river was channelized, the marsh became highly disturbed by lowered water levels and reduced seasonal flooding. Much of the historic marsh was converted to pastures, and areas isolated from fire are now dominated by shrubs. Areas dominated by sand cordgrass likely burned periodically, reducing shrub cover in the historic marsh.

Floodplain marsh of the KRPUA BOT parcels is a mainly treeless community dominated by wetland shrub and herb species. Three separate types of floodplain marsh are present at this site. Emergent and aquatic bed plants form a deep water marsh vegetation subtype often containing water hemlock, floating marshpennywort, denseflower knotweed, dotted smartweed, pickerelweed, bulltongue arrowhead, yellow pondlily (*Nuphar advena*), water-lettuce (*Pistia stratiotes*), and Para grass (*Urochloa mutica*). The second type of floodplain marsh, located on higher elevation areas of the floodplain, were likely historically dominated by sand cordgrass. This floodplain marsh sub-type is currently only present in small areas that have not been completely converted in pasture. Only one location of intact sand cordgrass was documented. The third type of floodplain marsh present at the KRPUA BOT parcels is a shrub dominated community. These areas typically were not converted into pasture and many occur as isolated islands. Typical shrub species in these areas include groundsel tree (*Baccharis halimifolia*), common buttonbush, wax myrtle, and coastalplain willow (*Salix caroliniana*). Herbs are typically lacking due to the dense shrub cover.

Hydric hammock (138.6 acres)

Hydric hammock is a forested wetland community with a canopy of hardwoods, usually including swamp laurel oak (*Quercus laurifolia*) and cabbage palm (*Sabal palmetto*). At the TLWMA, hydric hammock occupies a small total acreage and occurs along drainageways or as an included community in the mesic hammocks around the lakeshores. Other canopy species include red maple, bald cypress (*Taxodium distichum*) and pond cypress; the subcanopy and tall shrub strata include dahoon holly, swamp red bay and cabbage palm. The ground layer is patchy to sparse and may include redbud panicgrass (*Panicum rigidulum*), savannah panicum (*Phanopyrum gymnocarpon*) and lizard-tail (*Saururus cernuus*), with occasional denser patches of interrupted maidenfern. At the TLWMA, hydric hammocks are found on Basinger fine sand, depressional soils, a very poorly drained type that is sandy throughout the profile.

Mesic flatwoods (15,975.9 acres)

Mesic flatwoods is an upland forest community with an open pine canopy and understory composed of varying mixtures of shrubs and grasses. At the TLWMA, this matrix community occurs on the northern half of the property with dry prairie replacing it as the matrix community

on the southern half. Much of this community has an open, savannah-like aspect, formed by an open canopy of longleaf pines of varying density and an understory of wiregrass and low shrubs such as saw palmetto, gallberry, shiny fetterbush and coastalplain staggerbush. Common dwarf shrubs include dwarf live oak, dwarf huckleberry, shiny blueberry, dwarf wax myrtle and coastalplain St. Johns-wort. Besides the dominant wiregrass, other common grasses are species of bluestem, low panicgrasses, bottlebrush threeawn (*Aristida spiciformis*), pineywoods dropseed (*Sporobolus junceus*), and Florida threeawn (*Aristida rhizomophora*). Bracken fern (*Pteridium sp.*) is common in the ground cover at a few sites. This community supports a high diversity of herbs, some of the more common being yellow hatpins, pineland chaffhead, yellow milkwort (*Polygala rugelii*), Queen's delight (*Stillingia sylvatica*) and flattop goldenrod (*Euthamia sp.*). Around the edges of swamps, mesic flatwoods may develop a denser pine canopy and a dense layer of tall shrubs composed primarily of saw palmetto with little to no herbaceous layer. At the TLWMA, mesic flatwoods are found on Pomona fine sand and Smyrna fine sand west of the Florida turnpike and on Immokalee fine sand and Myakka fine sand east of the turnpike. All four types are very similar, poorly drained soils that are sandy throughout their profiles, with weakly cemented subsoils.

Mesic hammock (3,175.8 acres)

Mesic hammock is an upland forest community of evergreen broadleaved trees dominated by live oak (*Quercus virginiana*) in the canopy and cabbage palm in the subcanopy, occurring in naturally fire-protected areas. At the TLWMA, this community occurs around the major lakes and on the borders of dome swamps and depression marshes. The understory is often very open with the shrub layer consisting of scattered clumps of tall saw palmetto and grasses, such as redtop panicum forming clumps in the sparse ground layer. In better developed sites, cabbage palms form relatively dense cover in the subcanopy, tall shrub and short shrub layers and epiphytes are abundant, including resurrection fern (*Pleopeltis polypodioides*), golden polypody (*Phlebodium aureum*) and southern needleleaf (*Tillandsia setacea*); butterfly orchid was found in several stands near Lake Kissimmee. Dense patches of woodsgrass and panicgrass occur in canopy gaps in the better developed sites. On wetter sites, lizard-tail may be common in the understory. Along the lower portion of the lakeshores, live oaks become widely scattered in large grassy openings that support bluestems, blue maidencane (*Amphicarpum muhlenbergianum*), big carpetgrass (*Axonopus furcatus*), yellow hatpins, yellow-eyed grasses and beaksedge (*Rhynchospora sp.*). The shady canopy and dry ground make mesic hammocks a favorite spot for humans and cattle to shelter from the sun and this disturbance may account for the open understory at many sites. At a few sites the exotic bahiagrass (*Paspalum notatum*) has been planted in the ground layer. Closed canopy mesic hammocks are found on the somewhat poorly drained Adamsville fine sand that has patches of loamy sand in the subsoil and on the poorly drained Lokosee fine sand that has a sandy clay loam subsoil; hammocks with large grassy openings occur on the poorly drained Pompano fine sand, that is sandy throughout the soil profile.

Sandhill (208.4 acres)

Sandhill is an upland forested community characterized by a sparse canopy of longleaf pine, a subcanopy of turkey oak (*Quercus laevis*) and ground layer of wiregrass. This community occupies a very limited area at the TLWMA, usually adjacent to scrub on the eastern portion of

the property. Other species found in the subcanopy include bluejack oak (*Quercus incana*) and sand live oak (*Quercus geminata*). The generally sparse shrub layer contains saw palmetto and Chapman's oak (*Quercus chapmanii*). In addition to wiregrass, gopher apple (*Geobalanus oblongifolius*) and beaksedge are found in the herbaceous layer, which is also sparse, with much bare sand exposed. Sandhills naturally have a frequent fire regime and when this is interrupted the oak canopy shades out the wiregrass which is the case in several of the stands at the TLWMA. Sandhill communities occur on the moderately well-drained Pomello and Tavares fine sands, which are sandy throughout the soil profile.

Scrub (834.8 acres)

Scrub is a xeric upland community on dry sands dominated by scrub oaks and other shrubs, with or without a pine canopy. At the TLWMA, this community occurs as isolated small stands on higher knolls within mesic flatwoods or dry prairies and is concentrated mostly on the eastern portion of the property. It consists of the three common scrub oaks, myrtle oak, sand live oak and Chapman's oak, which dominate the tall and short shrub layers. Saw palmetto and fetterbushes are also common. Two characteristic scrub species, Florida rosemary (*Ceratiola ericoides*) and Carolina holly (*Ilex ambigua*), are present in one or two stands. The canopy may be absent or consist of widely scattered longleaf pines or of a denser stand of sand pine. The herbaceous layer is sparse and commonly includes wiregrass, species of lichen and October flower (*Polygonum polygamum*).

The largest scrub (approximately 100 acres) is near Lake Marion. This scrub is 9 miles distant from most of the other scrub patches on the eastern border of the property. At the TLWMA, scrub occurs on the moderately well-drained Pomello and Tavares fine sands, which are sandy throughout the soil profile.

Scrubby flatwoods (1,223.1 acres)

Scrubby flatwoods is an upland community similar to mesic flatwoods in structure and species composition, with the addition of scattered clumps of scrub oaks in the tall and short shrub layers. At the TLWMA, it occurs in the ecotone between mesic flatwoods and scrub communities and on slight rises within the mesic flatwoods and dry prairies. It is most commonly encountered along the eastern edge of the property near U.S. Highway 441.

Beneath a sparse canopy of longleaf pine, clumps of scrub oaks, including Chapman's oak, sand live oak and myrtle oak, are scattered in an understory of typical mesic flatwoods vegetation consisting of saw palmetto, wiregrass and dwarf live oak. Some of the scrub oaks appear to be hybrids, possibly between myrtle oak and either runner oak (*Quercus pumila*) or bluejack oak. Herbaceous species found more often in this community than in mesic flatwoods are fragrant eryngo (*Eryngium aromaticum*), scrubland goldenaster and wild pennyroyal (*Piloblephis rigida*). At the TLWMA, scrubby flatwoods occur primarily on Pomello fine sand, a moderately well-drained soil that is sandy throughout its profile.

Wet flatwoods (208.4 acres)

Wet flatwoods is a wetland forest community usually with a slash pine canopy and an understory that often includes species characteristic of baygalls and dome swamps. At the TLWMA, it

makes up a small percentage of the total acreage and is usually found in the ecotone between mesic flatwoods and basin swamps. The closed canopy consists of slash pine, often intermingled with pond cypress. The subcanopy and tall shrub layers are composed of cabbage palm, dahoon holly, wax myrtle and swamp red bay; a variety of ferns such as Virginia chain fern (*Woodwardia virginica*), cinnamon fern and swamp fern, are often found in the herbaceous layer. Several stands are associated with ditching in the adjacent basin swamps suggesting that the slash pines may have come in following hydrological disturbance to the swamps or to the adjacent depression marshes and wet prairies. At the TLWMA, wet flatwoods occur primarily on poorly drained Malabar fine sand, which has a sandy clay loam subsoil or Basinger fine sand, which is sandy throughout the soil profile.

Wet prairie (6,820.2 acres)

Wet prairie is a wetland herbaceous community characterized by a seasonally high water table and frequent fire with dense stands of grass species intermingled with wetland herbs. At the TLWMA, wet prairie borders dome swamps and depression marshes. It may also form irregular patches, sometimes quite large, within the mesic flatwoods and dry prairie communities.

Typically, wet prairie on the TLWMA contains few or no longleaf pines. Individual clumps of saw palmettos are rare but some wet prairies may have large, rounded “islands” of saw palmetto scattered throughout. At some sites, often those where the drainage has been disturbed by ditching, wiregrass may be replaced as the dominant species by blue maidencane. In addition to the grasses, a large number of herbs are found in wet prairies. Some of the more characteristic herbs are yellow hatpins, rayless goldenrod (*Bigelovia sp.*), soft pipewort (*Eriocaulon sp.*), sunbonnets (*Chaptalia sp.*), bog white violet (*Viola lanceolata*), early whitetop fleabane (*Erigeron vernus*) and low pinebarren milkwort (*Polygala ramosa*). Graminoid species present include plumed beaksedge (*Rhynchospora plumosa*) and toothache grass (*Ctenium sp.*). Carnivorous species found in this community include the butterworts (*Pinguicula sp.*) and hooded pitcher plant (*Sarracenia minor*), which is often found on the border between wet prairies and depression marshes. Dwarf shrubs such as dwarf live oak and St. John’s-worts may also occur in wet prairies.

In the absence of fire, wet prairies are readily invaded by wax myrtle and the height and cover of the latter is a sensitive indicator of past fire history in any given stand. At the TLWMA, wet prairies, like wet flatwoods, occur primarily on poorly drained Malabar fine sand, which has a sandy clay loam subsoil or Basinger fine sand, which is sandy throughout the soil profile.

Xeric hammock (92.4 acres)

Xeric hammock is an upland forest with a canopy of scrub oaks reaching tree stature (>20 feet), usually developing from scrub or sandhill in the absence of fire. At the TLWMA, this community occupies a small total acreage and is found at scattered locations on the eastern side of the property. The canopy is dominated by sand live oak with an understory of saw palmetto. Herbaceous species are sparse, consisting primarily of wiregrass. Xeric hammock usually develops where scrub oaks are protected from fire. Two of the stands at the TLWMA are classic examples of “oak domes” i.e., situations in which the clonal structure of sand live oak is obvious even after it has reached tree size. At the TLWMA, xeric hammocks are found on moderately

well-drained Pomello fine sand, a moderately well-drained soil that is sandy throughout its profile.

Pasture – Improve and Semi-improved (2,541.7 acres)

Improved pastures have been stripped of almost all native vegetation and replaced with pasture grasses. There is no overstory and apart from wax myrtle and dogfennel (*Eupatorium capillifolium*) there is little to no native vegetation present.

Semi-improved pasture is defined as an area that has been stripped of most of its native vegetation and planted in pasture grasses but still retains some natural structure. Semi-improved pasture may have some live oak and sand live oak in the overstory with a shrub layer of sour orange saw palmetto, Chapman's oak), sand live oak (*Quercus geminata*), and cabbage palm.

Pine Plantation (1,102.9 acres)

Pine plantation is defined as densely planted pine trees occurring in rows and lacking a significant or diverse assemblage of groundcover and herbaceous species.

The overstory of the plantations at the TLWMA is slash pine and there is no subcanopy or tall shrub layer. Short shrubs are sparse to moderately dense and include gallberry, fetterbush, saw palmetto, and sparkleberry. The herbaceous layer is very sparse and lacks diversity, consisting primarily of bluestem slender flattop goldenrod crowngrass, bracken fern, blackroot (*Pterocaulon* sp.), and queen's delight (*Stillingia sylvatica*)

Ruderal (1,112.1 acres)

Ruderal communities are those where the natural community has been overwhelmingly altered due to human activity. At the TLWMA old agricultural fields, borrow pits, homesites, campgrounds, and the office/shop area are classified as ruderal. Much of the ruderal acreage is in the cattle lease portion of the property and doesn't burn well due to year-round grazing.

BURN OBJECTIVES

Prescribed burning will be used on the TLWMA as a habitat management tool exclusively or in conjunction with other management techniques to accomplish a variety of objectives. The primary objective for using prescribed fire on the TLWMA is to restore and maintain fire-dependent native plant communities, which will result in preserving natural communities including restoration of native groundcover while simultaneously improving wildlife habitat. Creating a "checkerboard", or mosaic, of different units by altering burn frequency and season is crucial in enhancing wildlife/plant diversity and abundance. It provides areas with differing habitat conditions for cover, brooding, and foraging throughout the year. Other objectives for the use of prescribed burning include controlling fire intensity for a more complete or "clean" burn, providing a mosaic burn when needed, and encouraging different age classes of trees throughout the unit. If time and conditions allow, staff will conduct smaller burns for management responsive species such as northern bobwhite, especially on the eastern part of the property in the Quail Enhancement Area. Smaller burns will promote a variety of habitat in a single area that northern bobwhite can use for every part of their life cycle.

Different levels of fire intensity are needed for achieving the objectives for a particular burn unit and may vary depending on current conditions. For example, creeks and swamps can be used as soft firelines with low intensity fires, while at other times they may be included in the prescription to allow high intensity fire along the edges to discourage hardwood encroachment into the flatwoods. Reducing intensity can lead to a mosaic burn, leaving burned/unburned areas which tend to maximize the “edge effect”, which is preferred by many game and nongame species. Scrubby flatwoods units would most likely display this mosaic pattern, depending on time since last fire and fuel buildup. It is important to control the intensity of the burn as much as possible to achieve the desired results and to promote diversity/abundance among flora and fauna. The maintenance of early successional ecotypes and overstory timber in some burn units is important as many species found on the TLWMA rely on those varying habitats. Maintaining different age classes of trees allows all types of wildlife to utilize them each according to their needs.

The primary long-term goal of prescribed burning on the TLWMA is the preservation and enhancement of native plant communities on the area. Other goals/objectives will be achieved by the implementation of the prescribed fire plan on the TLWMA including:

- 1) Improve and maintain habitat for wildlife, emphasizing quality habitat for threatened and endangered species, by increasing the production of grasses and forbs, increasing the quality of browse, and maintaining openings for foraging and travel lanes.
- 2) Improve and maintain habitat for management responsive locally important species as outlined in the Wildlife Conservation, Prioritization and Recovery Program (WCPR) Species Management Strategy; including, but not limited to red-cockaded woodpecker, northern bobwhite, Bachman’s sparrow (*Peucaea aestivalis*), Florida grasshopper sparrow (*Ammodramus savannarum floridanus*), and brown-headed nuthatch (*Sitta pusilla*).
- 3) Increase diversity of flora and fauna.
- 4) Reduce hazardous fuel loads, which will help to prevent or mitigate effects of catastrophic wildfires.
- 5) Enhance aesthetics by controlling undesirable vegetation.
- 6) Control exotic plant species.
- 7) Improve public access for outdoor recreational opportunities.
- 8) Increase success of longleaf pine regeneration.
- 9) Control disease and insects.
- 10) Promote nutrient cycling.

PREScribed BURNING PROGRAM

A. Firelines

Natural features (e.g. drains, creeks, lakes and swamps) and existing public access and service roads are used as firelines whenever possible. Some of the less used roads, however, have re-vegetated, and occasional disking is required to maintain them as functional firelines. Every Fall and Winter, firelines for the units that will be burned that year will be disked to mineral soil. Periodically, trees along firelines will be trimmed so the firelines can be maintained with a tractor and disk.

B. Size and Arrangement of Units

The TLWMA has approximately 106 burn units (Figure 1) although the units often can change depending on local conditions (e.g. moisture in wetlands, wind forecast). There are 48,242 acres of fire maintained natural communities at the TLWMA and the goal is to burn on average at least 20,000 acres per year. Ideally, burns should be conducted at 2-3-year intervals although the dry prairie units in the southern part of the WMA are burned on a 1-2 year rotation as much as possible. Units comprised mostly of hardwood flooded forests will have a longer fire-return interval and every effort will be made, when burning, to introduce fire to the flatwoods areas within these units. The current conditions and desired future conditions of the communities in a particular burn unit will be one of the main factors in determining burn rotation. The burning achievements in the preceding year will dictate priorities for the following year, and this depends on several factors that cannot be controlled such as weather, staffing, or other unforeseen impediments.

C. Type of Burn

Ground ignition will be used for all units and a test fire will be set first to allow the certified burn manager to initially evaluate the fire behavior. If conditions are favorable, a backfire will be used to secure the baseline, followed by flanking fires, spot fires set within the unit, and a head fire if needed. Each, or a combination of these methods, will be implemented to achieve burn objectives. All these methods and usage of them are dependent on weather factors, fuels, and topography in order to prevent damaging any forest resources. The proper techniques to use can change as these factors change.

D. Season and Time of Day

Over half of the prescribed burning of the TLWMA will be conducted during the growing season (April-August) with the rest of the planned burns conducted during the dormant season (December-March). Burning will be conducted primarily during daylight hours. Preferably, the test fire will begin by 1000 hours and the day of burn operations will be completed by 1500 hours. Night burning may be conducted when favorable weather and atmospheric conditions exist and

are within smoke management guidelines. Growing season burns will promote more plant diversity and abundance while dormant season burns will be used for areas that may have longer return intervals and/or areas that would otherwise be underwater typically (e.g. creek and swamp edges) in the growing season.

E. Optimal Weather Conditions

Three major highways cut through or are adjacent to the TLWMA. Units adjacent and/or close to these highways require a specific wind direction to divert smoke away from motorists. The rest of the units within the TLWMA can use most wind directions with little or no risk of smoke management issues. Ideal relative humidity (RH) should be between 35%-55% during the growing season or dormant season. However, burns can be conducted in the 25% - 35% range with caution, and careful consideration of current conditions. Surface winds of 5 – 10 mph are ideal for either season, but any wind below 15 mph is acceptable. Transport winds for either season should be greater than or equal to 5 mph and most directions are acceptable. Chances of precipitation are unpredictable during the growing season due to sea breezes and the formation of afternoon thunderstorms. Being able to secure the burn in case of bad weather approaching (e.g. erratic winds from a thunderstorm) is crucial to a successful burn. However, a good burn can be attained even when rain chances are very high. Getting the burn completed in a timely manner increases the chance for rain to assist in the mop-up process.

Burning requires careful planning and should include an early start as soon as on the ground conditions permit especially during higher precipitation days. Fortunately, once rainfall passes it can create optimal burning conditions for several days with as little as 1 inch of rain during the growing season. In the dormant season good burning conditions can also exist for several days after the passage of a cold front that has brought .25 inches to .75 inches of rain, assuming winds and RH conditions are appropriate. Conditions are much more persistent during that time of year with typical clear sunny days. Regardless, either season requires enough rainfall to produce ideal burning conditions. For units that utilize wetlands as firebreaks, sufficient moisture levels will need to be present and may require an on the ground check within a few days of the burn to make sure the unit will hold. The dispersion index (DI) during daylight in either season should be in the 15-75 range. Anything above this range becomes unpredictable as the atmosphere becomes unstable and below 15 the atmospheric conditions are stagnant and could lead to smoke management issues. At night, the DI should be ≥ 1 . The mixing height should be at least 1700 feet during either season; however, during the growing season typical conditions have a mixing height of 4-6 thousand feet and the dormant season will have a mixing height of 2-4 thousand feet. The Keetch/Byram Drought Index (KBDI) ranges from 0-800 and ideal conditions are between 150-500. However, if all other conditions are within acceptable ranges, burning can occur above or below that range. If burning during times of higher KBDI values, additional monitoring after the burn will be

necessary to ensure no long-term negative effects (e.g. ignition of duff/muck layers, or 100 and 1000-hour fuels near firelines). Fine fuel moisture should be greater than 6% but no more than 12%.

F. Smoke Management

In addition to controlling the burn, smoke management may be considered the most critical element during a prescribed fire. Direction, volume, and dissipation of smoke from prescribed burning on the TLWMA is of primary concern due to the proximity of smoke-sensitive areas. Areas that may be affected by smoke (or particulates carried by smoke) under optimum burning conditions are U.S. Highway 441, County Road 523 (Canoe Creek Road), the Florida Turnpike, State Road 60, and residents that live in the surrounding area of Kenansville.

To minimize smoke problems, burning should be conducted when the atmosphere is slightly unstable, with a minimum mixing height of 1,700 feet and transport wind speed of 9 mph or more. Due to their low fuel loads and long distance from smoke sensitive areas, many units on the TLWMA can be burned when mixing height and transport wind speed are below these values. Residual smoke problems, such as stumps, snags, or logs, will be promptly mopped-up and monitored to minimize smoke hazards on every burn. Overall, atmospheric conditions cannot be controlled but the smoke effects of prescribed burning must be controlled.

G. Personnel

At current staffing levels, all burning can be safely accomplished using personnel from the TLWMA, the Triple N Ranch Wildlife Management Area (TNRWMA), the T.M. Goodwin Waterfowl Management Area (TMGWMA), and the Herky Huffman/Bull Creek Management Area (HHBCWMA). If a future need arises, personnel from other state agencies such as the Florida Forest Service (FFS), the Florida Park Service (FPS), South Florida Water Management District (SFWMD), and St. Johns River Water Management District (SJRWMD) may be used. Under ideal conditions, burning can be conducted with a crew of 4 to 7. Smaller or larger crews will be needed depending on the size and complexity of a burn unit, fuel loads in the unit, burn history of adjacent units, proximity to smoke sensitive areas or the WMA boundary, mop-up requirements, and weather conditions.

H. Equipment

Equipment will be utilized from the TLWMA, the HHBCWMA, and the TNRWMA. The type and quantity of fire equipment necessary will be determined by the certified burn manager. All personnel will have proper PPE, hand-held radios, and access to fire flaps, fire rakes, shovels, drip torches, burn fuel, chainsaws, ATVs with water tanks, trucks with water tanks, and Type VI brush trucks with these various tools available to them.

Specifically, the TLWMA has two Type VI brush trucks with 500 gallon water tanks equipped with foam and the ability to draft, portable slip in units for pickup trucks, and a dozer with a fire plow can be on stand-by and if necessary. The TLWMA personnel each has an ATV with 1-2 drip torches, a fire shelter, and a 15-25 gallon water tank. Smoke caution signs for U.S. Highway 441, State Road 60, and County Road 523 will be deployed as necessary and the Florida Department of Transportation (FL DOT) and the Florida Highway Patrol (FHP) will be notified when burning along the Florida Turnpike, or if smoke may negatively impact other public roadways. Staff will coordinate with FLDOT and/or their contractor to have smoke signs placed along the Florida Turnpike if needed.

I. Permits and Notifications

A permit will be obtained from the FFS on the morning of the burn. Notification of burning will be given to personnel at the TNRWMA, the TMGWMA, the HHBCWMA, and the FWC Northeast Region Office. When burning adjacent to private or other agency property, efforts will be made to notify landowners or the other managing agency. The FFS can notify other agencies of the burn if necessary (Osceola Co. Sheriff Dept., Osceola Co. Fire Dept.). The FHP and FL DOT will be notified if burning near the Florida Turnpike and whenever smoke may impact a roadway.

J. Evaluation of Burn

The certified burn manager will note fire behavior, flame length, fire intensity, and smoke dispersion. Initial evaluation of the fire will be conducted with special consideration of these observations when determining if the burn met outlined objectives. Based on the burn evaluation, modifications to techniques and acceptable conditions will be adjusted for future burns if needed. During the ignition and burnout phases of each burn, weather parameters and fire behavior will be continually observed for compliance with the prescribed parameters. A contingency plan will be a part of every burn plan that will inform decision making and actions should weather conditions or fire behavior become out of prescription during the burn. Post burn monitoring will involve evaluating the results of the burn to determine if the measurable burn objectives were met, and then comparing these results against the prescribed parameters. Vegetation monitoring via Objective Based Vegetation Monitoring (OBVM) will provide long term data to inform the area manager of the natural communities' condition compared to the Desired Future condition (DFC). These data also will allow the manager to adjust the burn regime so that the DFC can be met or maintained. Various wildlife surveys will determine whether WCPR locally important species are using the area and their response to management activities. These surveys include, but are not limited to, breeding bird point counts, Northern bobwhite fall

covey counts, red-cockaded woodpecker nesting/reproductive surveys, Florida grasshopper sparrow point counts, and opportunistic observations.

K. Special Considerations

Attention will be given to the safety of private landowners and their property. Firelines will be maintained in those areas and fire behavior will be monitored closely as burns are conducted around their vicinities. Wind direction that sends smoke away from private landowners will be preferred. Units along the WMA boundary need to be evaluated several months in advance of a burn to assess where and to what extent mechanical treatments are needed prior to the burn to reduce the risk of a spot-over outside the WMA boundary. Units with red-cockaded woodpecker trees and eagle nests will receive special attention (e.g. burning around the tree prior to headfire) during the burn to prevent tree scorching. Lastly, all infrastructure (e.g. kiosks, residences, power lines, etc.) within and adjacent to burn units will be protected.

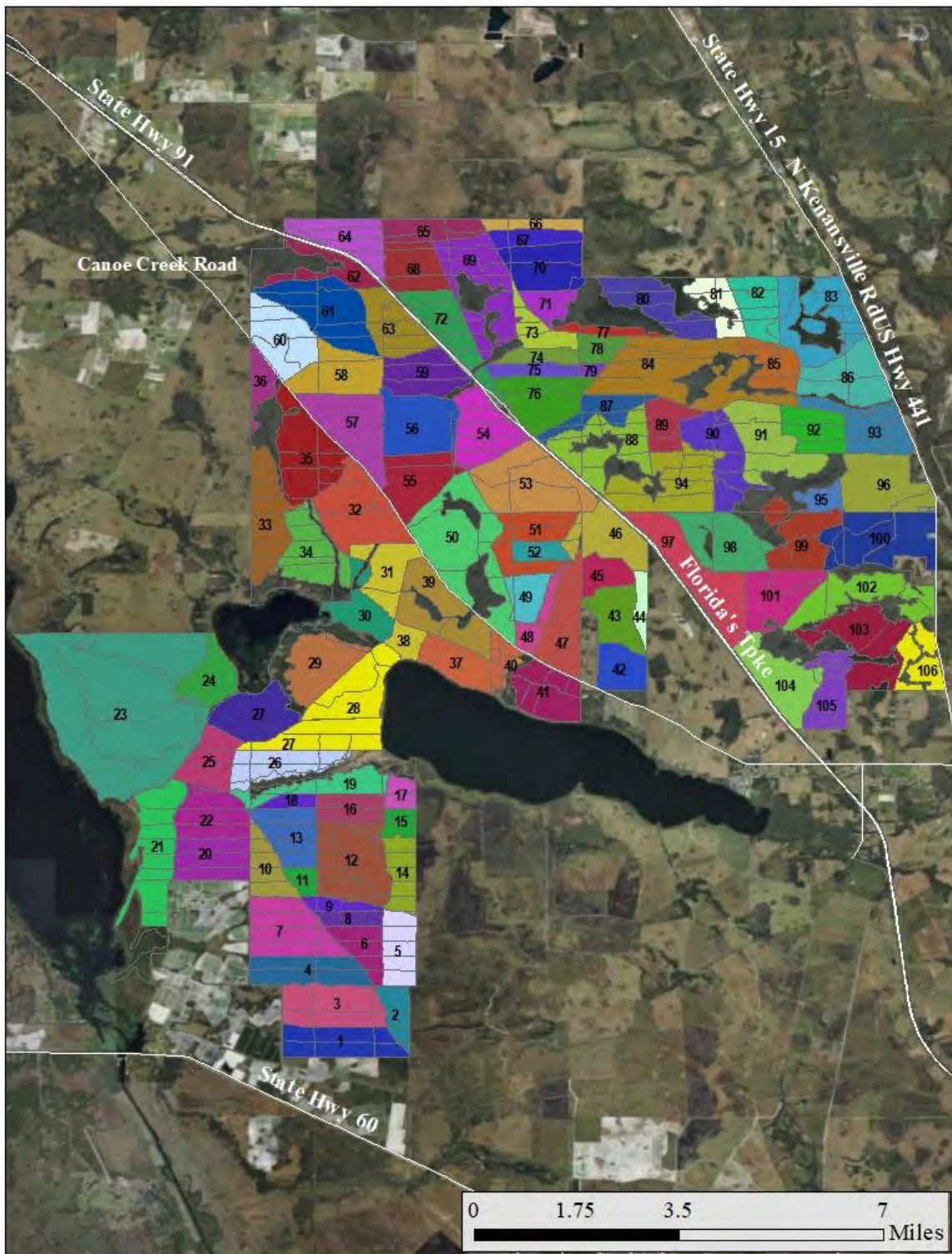


Figure 1. The map depicts the 106 burn units on the TLWMA. Units do not have specific names and are numbered only for ease of delineating units and totaling

**12.13 Wildlife Conservation and Prioritization and Recovery
Program Strategy (WCPR)**

**Three Lakes Wildlife Management Area
Species Management Strategy**

October 2014

Florida Fish and Wildlife Conservation Commission
Division of Habitat and Species Conservation
Wildlife and Habitat Management Section

A product of the Wildlife Conservation
Prioritization and Recovery Program



Executive Summary

The Florida Fish and Wildlife Conservation Commission's (FWC) Wildlife and Habitat Management section (WHM) takes a proactive, science-based approach to species management on lands in the Wildlife Management Area system (WMA/WEA). This approach uses information from statewide models, in conjunction with input from species experts and people knowledgeable about the area, to create site-specific assessments of a number of focal species. Staff combines these assessments with management considerations to develop a wildlife management strategy for the area. The FWC intends for this Strategy to: 1) provide land managers with information on actions that should be taken provided the necessary resources are available, 2) promote the presence of and ensure the persistence of focal wildlife species on the area, and 3) provide measurable species objectives that can be used to evaluate the success of wildlife management on the area.

This document presents the results of a science-based process for evaluating focal species needs using an ecosystem management approach on Three Lakes Wildlife Management Area (TLWMA). Natural community management designed for a set of focal species benefits a host of species reliant upon the same natural communities. Monitoring select species verifies whether natural community management is having the desired effect on wildlife. To maximize the potential wildlife conservation benefit, staff considers the role of the WMA in regional and statewide conservation initiatives throughout the process.

[Section 1](#) informs the reader about the process used to generate this document.

[Section 2](#) describes the historic and ongoing management actions on the property.

[Section 3](#) provides a list of the focal and listed species on the area, and an assessment of each species' level of opportunity and need. This includes species-specific objectives for the gopher tortoise, Bachman's sparrow, brown-headed nuthatch, burrowing owl, Florida grasshopper sparrow, Florida scrub-jay, northern bobwhite, red-cockaded woodpecker, southern bald eagle, Florida mouse, and rare plants.

[Section 4](#) describes specific land management actions recommended for focal species. Workshop participants identified the need for a Strategic Management Area (SMA) for the Florida grasshopper sparrow. The intent of the SMA is to delineate important habitat and ensure staff document beneficial management practices. This section also discusses management considerations necessary to ensure continued persistence of focal species.

[Section 5](#) describes species-specific management and monitoring for the area, and identifies any research that would be necessary to guide future management efforts. For this area, we discuss species management actions for red-cockaded woodpeckers and southeastern American kestrels. We recommended monitoring for the gopher frog, gopher tortoise, Bachman's sparrow, brown-headed nuthatch, Florida grasshopper sparrow, Florida scrub-jay, northern bobwhite, red-cockaded woodpecker, and Florida mouse. We also recommend documentation of opportunistic encounters with other focal species.

[Section 6](#) identifies coordination that will assist in conserving these focal species. We identify coordination with 8 other units in FWC and inter-agency coordination with 6 other entities.

[Section 7](#) describes efforts that should occur "beyond the area's boundaries" to ensure conservation of the species on the area.

Continuation of current resource levels would be required to provide for most of the land management recommended in this document. Some of the monitoring recommendations may require additional resources, while FWC can accomplish others with continuation of existing resources.

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Acronym List

AC	Active Cluster
AHREs	Aquatic Habitat Restoration / Enhancement Subsection
APAFR	Avon Park Air Force Range
ARCI	Avian Research and Conservation Institute
BMU	Bear Management Unit
CPS	Conservation Planning Services (office)
DEP	Florida Department of Environmental Protection (formerly Florida Department of Natural Resources)
DFC(s)	Desired Future Condition(s)
FFS	Florida Forest Service
FNAI	Florida Natural Areas Inventory
FWC	Florida Fish and Wildlife Conservation Commission (formerly Florida Game and Freshwater Fish Commission)
FWLI	Florida's Wildlife Legacy Initiative
FWRI	Fish and Wildlife Research Institute
HGM	Hunting and Game Management (section)
HH/BCWMA	Herky Huffman/Bull Creek Wildlife Management Area
IPM	Imperiled Plant Management (section)
ISMP	Imperiled Species Management Plan
KPPSP	Kissimmee Prairie Preserve State Park
KRPUA	Kissimmee River Public Use Area
MUs	Management Unit(s)
NC	Natural Community
OBVM	Objective-Based Vegetation Management
PBG	Potential Breeding Group
PLCP	Public Lands Conservation Planning (project)
PVA	Population Viability Analysis
SaMP	Survey and Monitoring Protocol database
SAP	Species Action Plan
SCP	Species Conservation Planning (section)
SFWMD	South Florida Water Management District
SGCN	Species of Greatest Conservation Need
SHCA	Strategic Habitat Conservation Area
SMA	Strategic Management Area
SSC	Species of Special Concern
TLWMA	Three Lakes Wildlife Management Area
TNRWMA	Triple N Ranch Wildlife Management Area
UERP	Upland Ecosystem Restoration Project
USFWS	United States Fish and Wildlife Service
WCPR	Wildlife Conservation Prioritization and Recovery
WHCNinFL	Wildlife Habitat Conservation Needs in Florida (document)
WHM	Wildlife and Habitat Management (section)
WMA	Wildlife Management Area

Statewide Species Prioritization Parameters

This table provides the values for the 6 prioritization parameters for the focal species. Parameters that are “triggered” (exceed the threshold) are in **bold**. Typically, the more parameters a species triggers, the higher the statewide prioritization.

Species Common Name	Millsap et al ¹		State Wildlife Action Plan ²		Population Viability Analysis (PVA) on managed lands	
	Biological Score ³	Supplemental Score ⁴	Population Status ⁵	Population Trends ⁶	Probability of a 50% decline ⁷	Populations persisting (to 80 or 100 years) ⁸
Gopher Frog	24.6	12	medium	decline	0	9% (to 80)
Eastern Indigo Snake	24.7	16	low	decline	N/A	N/A
Florida Pine Snake	23.7	15	medium	decline	0	31% (to 80)
Gopher Tortoise	27.3	17	medium	decline	0	55% (to 100)
Bachman's Sparrow	16.0	12	medium	decline	0	49% (to 80)
Brown-Headed Nuthatch	17.0	13	medium	decline	0	25% (to 80)
Burrowing Owl	15.3	15	medium	unknown	>90%	6% (to 100)
Cooper's Hawk	15.0	12	not a SGCN ⁹	not a SGCN ⁹	96%	100% (to 100)
Crested Caracara	37.7	17	low	unknown	0	100% (to 100)
Florida Grasshopper Sparrow	39.7	18	low	decline	100%	12% (to 100)
Florida Mottled Duck	17.3	18	medium	decline	1%	100% (to 100)
Florida Sandhill Crane	27.0	16	medium	decline	0	33 % (to 80)
Florida Scrub-Jay	36.6	19	low	decline	30%	2% (to 80)
Limpkin	24.3	14	medium	unknown	0	100% (to 100)
Northern Bobwhite	11.0	14	low	decline	0	100% (to 100)
Red-Cockaded Woodpecker	27.6	14	low	decline	0	45% (to 100)
Short-Tailed Hawk	30.6	15	low	unknown	61%	50% (to 100)
Snail Kite	50.0	17	low	decline	0	100% (to 100)
Southeastern American Kestrel	28.0	14	low	decline	0	67% (to 100)
Southern Bald Eagle	21.3	10	medium	increase	0	100% (to 100)

Species Common Name	Millsap et al ¹		State Wildlife Action Plan ²		Population Viability Analysis (PVA) on managed lands	
	Biological Score ³	Supplemental Score ⁴	Population Status ⁵	Population Trends ⁶	Probability of a 50% decline ⁷	Populations persisting (to 80 or 100 years) ⁸
Swallow-Tailed Kite	25.7	13	low	unknown	20%	50% (to 100)
Wading Birds	23.7	13	n/a	n/a	0	100% (to 100)
Florida Black Bear	32.7	13	medium	stable	5%	100% (to 100)
Florida Mouse	22.0	19	medium	decline	17% (in 83 yrs)	17% (65)
Florida Panther	40.3	15	low	unknown	0	100% (to 100)
Sherman's Fox Squirrel	24.0	17	low	decline	0	28% (to 80)

¹ scores derived from Millsap et al (1990), "Setting priorities for the conservation of fish and wildlife species in Florida", as updated by staff of the FWC. We use the most recent updates to these scores.

² [Florida's State Wildlife Action Plan](#)

³ Species trigger this parameter if the score is ≥ 25.9

⁴ Species trigger this parameter if the score is ≥ 15

⁵ Species trigger this parameter if the score is low or unknown

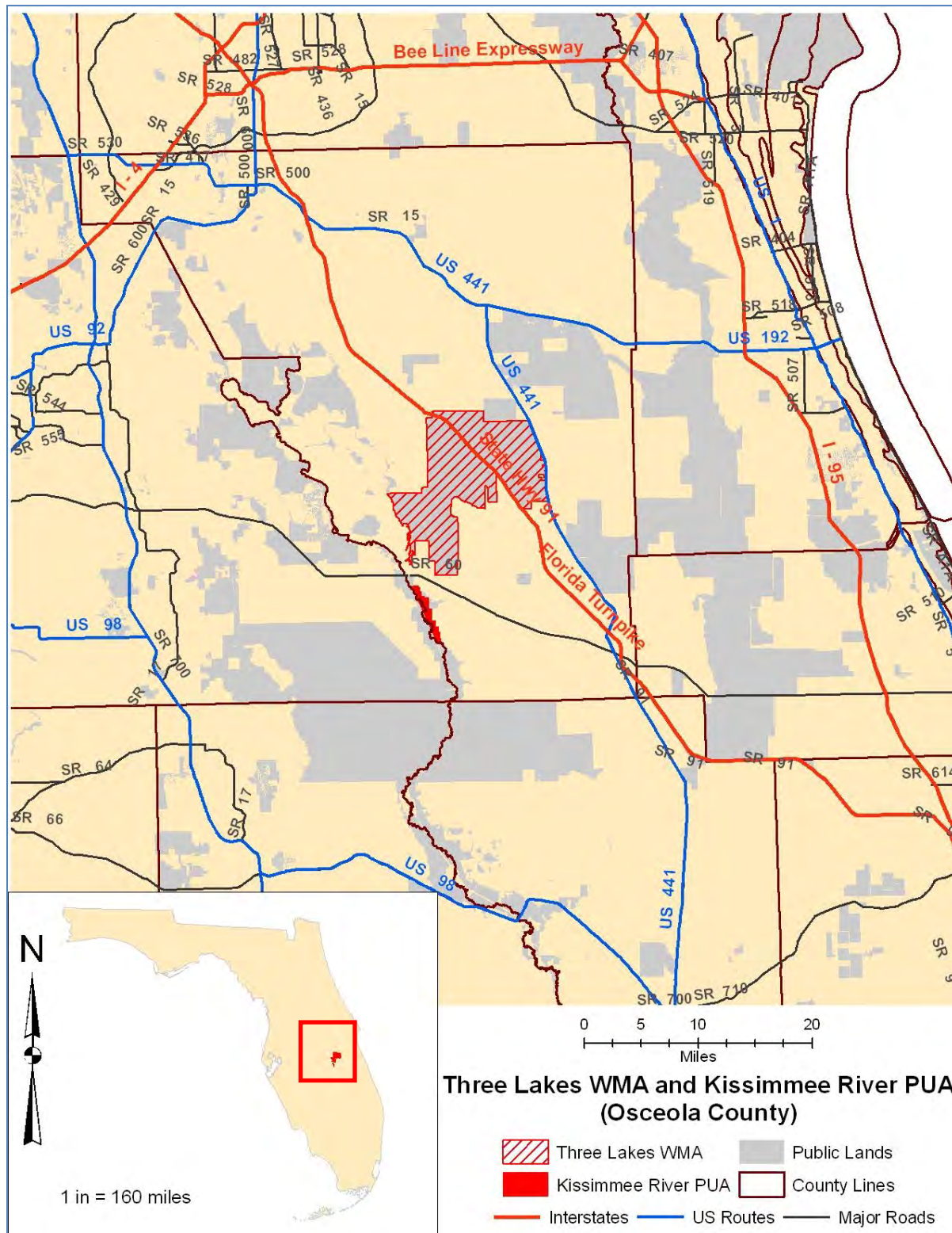
⁶ Species trigger this parameter if the score is declining or unknown

⁷ Species trigger this parameter if the score is > 0

⁸ Species trigger this parameter if the score is $\leq 75\%$

⁹ SGCN = species of greatest conservation need

Locator Map



Section 1: Introduction

The FWC manages the lands in the Wildlife Management Area system using a proactive approach, which includes an understanding of natural communities of plants and animals. As applied by FWC, natural community management starts by classifying lands into distinct natural communities that we then manage in a way that maintains or enhances the communities' unique structure and function. Natural community management that has a positive influence on the natural community condition benefits the wildlife living in these habitats.

Another important aspect of FWC's management approach is ensuring that it is science-informed and meets the needs of Florida's wildlife. The agency's Wildlife Conservation, Prioritization, and Recovery Program (WCPR) created this Species Management Strategy for TLWMA to inform and guide management on the area, and to verify that area management is meeting the needs of wildlife. The FWC intends for this Strategy to: 1) provide land managers with information on management actions that should be taken provided the necessary resources are available; 2) promote the presence and facilitate the persistence of wildlife species on the area; and 3) provide measurable objectives that can be used to evaluate the success of wildlife management on the area.

When developing a Strategy, WCPR staff utilizes concepts that facilitate the analysis and evaluation of an area's opportunities to manage for wildlife. The [focal species](#) concept is an approach to identify the needs of wildlife collectively by strategically focusing on a subset of wildlife species. The subset of species FWC selected as focal species includes umbrella species, keystone species, habitat specialist species, and indicator species. Other concepts in a Strategy include Objective Based Vegetation Management and Strategic Management Areas. [Objective Based Vegetation Management](#) (OBVM) is a method used to assess if vegetation management within natural communities is achieving the desired conditions. A [Strategic Management Area](#) (SMA) is a specially designated piece of land where additional management actions are required to address a particular species' needs.

In addition to the concepts discussed above, WCPR staff uses specific definitions in a Strategy. *Goals* are broad statements of a condition or accomplishment to be achieved; goals may be unattainable, but provide direction and inspiration. *Objectives* are measurable, time-specific statements of results responding to pre-established goals. *Imperiled Species* refers to any plant or animal federally listed under the Endangered Species Act, or state-listed by the Florida Fish and Wildlife Conservation Commission or the Department of Agriculture and Consumer Services.

Creating the TLWMA Strategy involved a number of steps. First, WCPR staff assessed the results of species-specific habitat models and statewide potential habitat maps for focal species to determine which focal species had potential habitat on TLWMA. WCPR staff then used staff knowledge, species-expert opinions, and area-specific natural community maps to modify the statewide models to create area-specific potential habitat maps for each focal species on the area. Next, WCPR staff conducted a workshop at which area managers, species experts, and section leaders discussed and evaluated TLWMA's potential role in the conservation of focal species. For each species, workshop participants determined the status of the species on the area; evaluated the opportunities for management on the area; specified appropriate monitoring and research actions; and identified beneficial coordination and 'beyond the boundary' considerations. Using the information from the workshop, staff drafted the Strategy document and sent it to species experts and other professionals for review. Following the review, the Strategy was finalized and staff initiated implementation of actions in the Strategy.

FWC staff considered the goals and objectives in TLWMA's Management Plan (formerly known as Conceptual Management Plan) when discussing and assessing the species; therefore, this Strategy supports the goals of the Management Plan. Management plans are on a 10-year revision cycle. During the next revision of the Management Plan, staff will incorporate the objectives in this Strategy into the Management Plan, and append this Strategy to the revised Management Plan.

While this Strategy focuses on TLWMA, it considers the role of the area within the larger state or regional context. This Strategy also discusses the role of the Kissimmee River Public Use Area (KRPUA), which is a non-contiguous parcel included in the TLWMA lease, but is not managed to the same degree as the main area. While the Strategy has species-specific objectives and actions, it does not endorse single-species management. Natural community management is the core of FWC's ecological management approach, and by paying special attention to the needs of focal and imperiled species, we verify that our management actions are having the desired effect. By implementing the actions in the Strategy, FWC believes that management will keep common species common, aid in the recovery of imperiled species, and benefit the largest suite of native wildlife.

Section 2: Historic, Current, and Planned Management on Three Lakes Wildlife Management Area

2.1: Location, Acquisition, and Influences on Current Condition

The Three Lakes Wildlife Management Area (TLWMA) comprises approximately 65,272 acres in southern Osceola County west of US Highway 441, north of State Road 60, and is bisected by Florida's Turnpike. TLWMA is located approximately one mile northwest of Kenansville, 8.5 miles south of Holopaw, and 18 miles southeast of St. Cloud. Privately-owned cattle ranches and agriculture makes up the majority of land that borders TLWMA. The 3 large bodies of water surrounding TLWMA include Lake Kissimmee on the western border, Lake Marion on the southeast border, and Lake Jackson located within TLWMA. The Kissimmee River Public Use Area (KRPUA) lies south of Lake Kissimmee along the east side of the Kissimmee River. A portion of this area is included in the TLWMA lease and this strategy addresses that parcel.

Conservation lands within the vicinity of TLWMA are within both public and private ownership. Along the Lake Kissimmee shoreline to the northwest of TLWMA is the Kissimmee Chain of Lakes, which is managed by the South Florida Water Management District (SFWMD). The Escape Ranch Conservation Easement is located approximately 2.5 miles southeast of TLWMA and is held by the St. Johns River Water Management District. Triple N Ranch WMA (TNRWMA) and the Herky Huffman/Bull Creek WMA (HH/BCWMA) are both located within 4 miles of TLWMA to the northeast.

In 1974, the Department of State Lands purchased 51,485 acres from Three Lakes Ranch Inc. under the Environmentally Endangered Lands project. The project provided management objectives to improve water quality through managed wetland communities, to protect endangered plant communities, to conserve the wildlife associated with these communities, and to maintain biological productivity in the natural flood storage area. One of the endangered plant communities is the Kissimmee dry prairie, which once extended from TLWMA south, and comprised the areas that are currently Avon Park Air Force Base (APAFR) and Kissimmee Prairie Preserve State Park (KPPSP). Wildlife communities that historically used the dry prairie include the federally Endangered Florida grasshopper sparrow (*Ammodramus* *savannarum floridanus*), the burrowing owl (*Athene cunicularia floridana*), and the crested caracara

(*Caracara cheriway*). Other protected species that use the wetland or flatwoods communities on the original property include the federally Threatened wood stork (*Mycteria americana*) and the federally Endangered red-cockaded woodpecker (*Picoides borealis*).

Of the original 51,485 acres of Three Lakes Ranch, Inc., 43,282 acres were leased to the Florida Game and Freshwater Fish Commission (now FWC) as the TLWMA and 8,203 acres were leased to the Department of Natural Resources (now Department of Environmental Protection; DEP) as the Prairie Lakes State Preserve. Prairie Lakes State Preserve became the Prairie Lakes Unit of TLWMA after it was leased to FWC in 1989. Preservation 2000 funded the purchase of 767 acres in 1992 and 5,286 acres of the Lucky L Ranch in 1993. Florida Forever funded the purchase of the 2,087-acre U.S. Justice tract in 1999 and an additional 1,650 acres of Lucky L Ranch in 2008. The Conservation and Recreation Lands and P-2000 funds added several smaller properties to TLWMA between 1993 and 2000. The KRPUA parcel is comprised of 1,785 acres along the Kissimmee River purchased as part of the initial 51,485-acre TLWMA acquisition. This parcel is only a portion of the 30,804-acre Public Use Area. For purposes of this strategy, KRPUA refers to only the 1,785-acre FWC managed portion ([Locator Map](#)).

Historical settlement of the Three Lakes area is similar to other settlement patterns throughout the central portion of the state. Three Lakes remained part of the historic open range ranching until 1949 when the Florida legislature enacted the Fence Law, requiring all cattle to be fenced. Cattlemen conducted prescribed burns during February and March to kill pine saplings, oaks, and palmetto, and to encourage the growth of grasses. In the early 20th century, timber, turpentine, and naval store industries were the primary land-use practices in the Three Lakes area. Researchers have documented evidence of historical land uses at 25 archeological sites on TLWMA.

TLWMA is surrounded by agricultural lands comprised of cattle ranches, citrus groves, and sod farms. Timber harvesting and cypress mulching are also common in the area. Large, private land holdings comprise most of the property on the surrounding boundaries of TLWMA, with the remainder comprised of significant undeveloped tracts. There is only sparse residential development in the immediate vicinity of TLWMA, but this development has increased in the surrounding areas, including the cities of Kissimmee, St. Cloud, and Lake Wales.

2.2: Management and Monitoring Since State Acquisition

Management activities on TLWMA focus on managing for native habitat, emphasizing maintenance of high-quality natural communities, and the restoration of disturbed areas. Prescribed fire is the most cost-effective management tool on the TLWMA and the tool most used by staff to enhance and maintain natural communities. TLWMA has approximately 56,139 acres of fire-dependent communities ([Table 1](#)). Staff burn an average of 19,208 acres annually over the last 10 years. In addition to prescribed fire, mechanical treatments such as roller-chopping and mowing are used to reduce palmetto cover and midstory height. Roller-chopping and mowing are usually contracted out to private entities. To date, staff and contractors have roller-chopped and mowed over 10,350 acres on TLWMA. Contractors mulch oaks and cabbage palms on the dry and wet prairies to remove trees that have encroached onto the landscape due to past fire suppression and changes in hydrology. Mulching has occurred on 4,461 acres of dry and wet prairies across TLWMA.

The Florida Natural Areas Inventory (FNAI) completed plant community mapping at the TLWMA as part of the FWC's Objective-Based Vegetation Monitoring (OBVM) program in 2009. Through the OBVM workshop process, staff delineated management units (MUs) and defined the desired

future conditions (DFCs) for the actively managed natural communities ([Table 1](#)). A large portion of TLWMA has remained unaltered and has not received historic natural community mapping, except for 3,347 acres of the recently-acquired Lucky L Ranch tract along the southeastern border. Prior to acquisition by the State, some portions of TLWMA were converted to improved and semi-improved pasture, clearings, and agricultural fields; and these areas remained in this condition upon acquisition by the State. Restoration of these areas to native flatwoods communities began in 2005. To date, staff have planted 202 acres in native groundcover and 50 acres are being prepped for planting in December 2014. A timber assessment was completed for the flatwoods communities on TLWMA in 2004, and tree removal is ongoing.

Cattle grazing occurs on the eastern portion of TLWMA, between US 441 and the Florida Turnpike. This comprises approximately 25,168 acres of mostly native range, primarily consisting of mesic flatwoods along with some scrub, scrubby flatwoods, and pasture. The current grazing contract allows for up to 275 cattle grazing units on the designated area, and all cattle must be quarantined for 6 days prior to being released onto TLWMA to prevent the spread of exotic plant species, such as tropical soda apple (*Solanum viarum*). Exotic non-native plants are sparse on the majority of the property; however many do occur in low densities throughout TLWMA. Staff aggressively treat tropical soda apple, cogon grass (*Imperata cylindrica*), old-world climbing fern (*Lygodium microphyllum*), and Brazilian pepper (*Schinus terebinthifolius*). Current staff levels for TLWMA include a Fisheries and Wildlife Biological Scientist III, 2 Fisheries and Wildlife Biological Scientist IIs, and 4 Fish and Wildlife Technicians.

Table 1. Mapped acreage of current plant communities on TLWMA, including management status and number of focal species that use the community.

Community Type	Estimated Current Acres	# of Focal Species That Use the NC
Basin marsh	3,000	6
Basin swamp	4	8
Baygall	812	2
Blackwater stream	43	1
Depression marsh	2,284	5
Dome swamp	7,908	8
Dry prairie ¹	16,031	12
Floodplain marsh	457	3
Hydric hammock	138	5
Mesic flatwoods ¹	15,976	13
Mesic hammock	3,175	6
Pasture - improved	2,171	12
Pasture - semi-improved	370	12
Pine plantation	1,102	9
Prairie/flatwoods lake	1,093	4
Restoration dry prairie	210	N/A

Ruderal	1,112	16
Sandhill	208	14
Scrub ¹	834	8
Scrubby flatwoods ¹	1,223	12
Successional hardwood forest	34	4
Wet flatwoods	208	8
Wet prairie ¹	6,820	7
Xeric hammock	92	9
TOTAL ACRES ²	65,305	

¹Communities that are actively managed and monitored via the OBVM process; other communities are managed, but will not be monitored via OBVM.

²The total acres identified in the lease differs from the total acres identified during the mapping effort. This is possibly due to a combination of digitizing error and complications in determining actual boundaries.

Recreational opportunities on TLWMA include hiking, horseback riding, camping, wildlife viewing, fishing, and hunting. Hunts on TLWMA occur during all of FWC's major hunting seasons and access to the property remains open to the public at all times. Primitive hunter campgrounds on TLWMA are located at the 3 vehicle-accessible entrances. The public is only allowed to camp at these campgrounds during the hunting seasons. The Prairie Lakes Unit contains 6 primitive campsites, which are available by reservation year-round. The Florida Trail runs through the center of the property, and 2 primitive campsites are located along this trail for hikers passing through the area. The Sunset Ranch Interpretive Trail was established to increase recreational opportunities on TLWMA.

Staff actively monitor various species of wildlife on TLWMA. FWC biologists are currently monitoring the populations of the red-cockaded woodpecker and the Florida grasshopper sparrow. While the red-cockaded woodpecker population has remained relatively stable over the last decade (See [Section 3.2.16](#) for more information), the federally Endangered Florida grasshopper sparrow population appeared to be declining over a 4-year period. In response to the decline, the Florida Wildlife Research Institute (FWRI) initiated an intensive demographic study in spring 2013 to understand the influence of prescribed burning and predation on grasshopper sparrow reproduction and survival ([Section 3.2.10](#)). Staff annually monitor nest boxes for eastern bluebird (*Sialia sialis*), wood duck (*Aix sponsa*), and southeastern American kestrel (*Falco sparverius paulus*). A large community bat house was erected in summer 2013 and 4 smaller bat boxes are monitored annually.

Staff conduct annual northern bobwhite (*Colinus virginianus*) surveys throughout TLWMA to track population trends. Staff initiated fall covey counts in 2006 to compare bobwhite population levels on the Upland Ecosystem Restoration Project (UERP) areas to the remaining mesic flatwoods on TLWMA ([Section 3.2.15](#)). The UERP is a multi-agency project designed to increase habitat suitability for bobwhites on selected public lands ([Figure 1](#)). Surveyors added additional survey points on the dry prairie in 2010 to look at bobwhite population trends relative to the Florida grasshopper sparrow population. Biologists also survey scrub patches annually for Florida scrub-jays (*Aphelocoma coerulescens*). The population has remained between 2-3 individuals in one family group for over a decade ([Section 3.2.12](#)). Researchers from the University of Florida monitor the snail kite population and nesting activity on Lake Jackson. The kites began nesting on Lake Jackson in 2009 and nest observations have increased yearly.

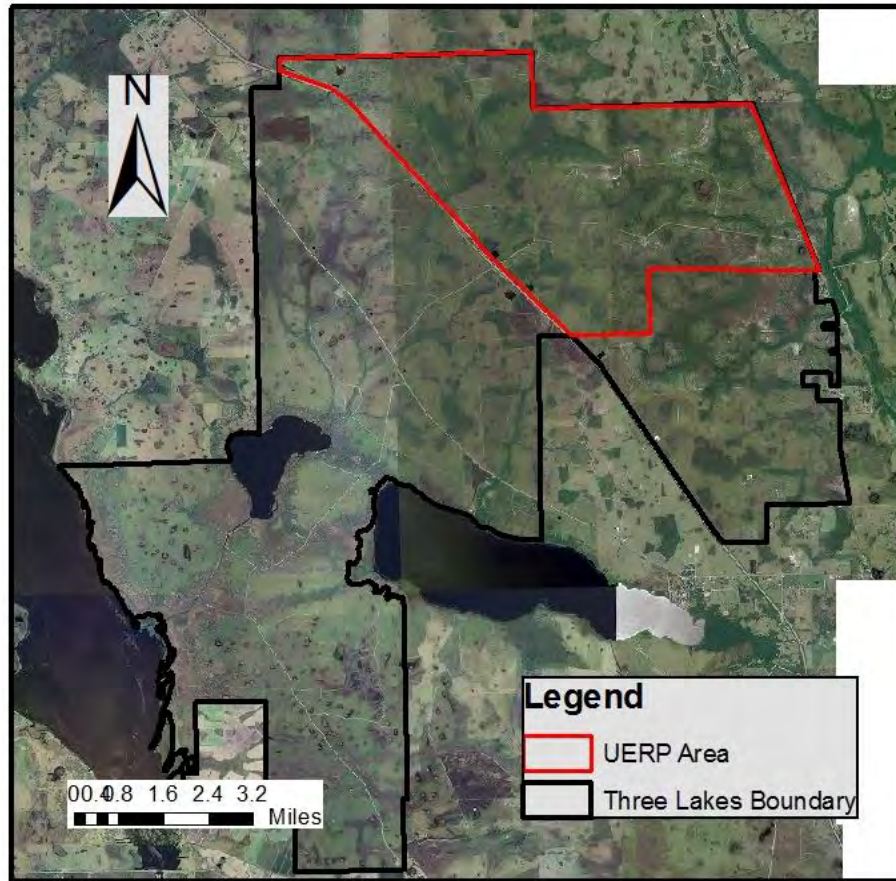


Figure 1. Location of the Upland Ecosystem Restoration Program area on TLWMA.

Section 3: Focal Species

The FWC's management approach focuses on maintaining and restoring the ecological form and function of natural communities. However, in some instances, it is important to consider the needs of specific wildlife species and to monitor the influences of natural community management on these species. To achieve a science-informed approach to species management, FWC uses the focal species concept embraced by the [Wildlife Habitat Conservation Needs in Florida](#) (WHCNinFL) project. This concept allows FWC to identify the needs of wildlife collectively by strategically focusing on a subset of wildlife species. The subset of species selected includes umbrella species, keystone species, habitat specialist species, and indicator species.

The Public Lands Conservation Planning (PLCP) project, an expansion of the WHCNinFL project, added a few species and provided potential habitat modeling on public lands. For the PLCP, the FWC selected 60 focal species (including 1 group of species, the wading birds) for which potential habitat models were created to generate statewide potential habitat maps for each focal species. The FWC's 2003 landcover data served as the base layer for all potential habitat models, and staff selected additional layers considering the particular natural history of each species (e.g., species' range, known occurrence records); as such, each model is species specific. Once statewide potential habitat maps were completed, a Population Viability Analysis (PVA) was conducted for each focal species.

The statewide landcover-based habitat models identified 24 of the 60 focal species to have potential habitat on TLWMA ([Section 3.1](#)). Two species, the southeastern American kestrel and short-tailed hawk, were not identified by the PLCP to have potential habitat on TLWMA, but have been documented on or near TLWMA. For all focal species modeled to have potential habitat on the WMA, staff created more accurate area-specific potential habitat maps by using the same statewide models but replacing the landcover data with area-specific natural community data. The resulting area-specific potential habitat maps were then refined based on the input of local managers and species experts.

The WCPR Workshop for TLWMA was held December 11-12, 2013 and brought decision makers together to assess species' opportunities and needs, identify measurable objectives, outline necessary coordination efforts, and determine required actions such as monitoring. To facilitate informed discussion of the species, WCPR staff compiled a workbook that contained information on the focal species. Participants at the workshop discussed the "level of opportunity and need" for each species. This included considering the number of statewide prioritizations the species triggered ([Statewide Species Prioritization Table](#)), the species' listing status, and the long-term security of the species (i.e., examining PVA results). Other factors considered were the species' use of actively managed communities ([Table 1](#)), species' response to management, and any local overriding factors (e.g., status of species in the region, local declines or extirpations). A brief summary of the opportunity and need assessments for each focal species is available in [Section 3.2](#).

3.1: Three Lakes Wildlife Management Area Focal Species List

Workshop participants assessed 26 species for their level of opportunity or need on TLWMA. In the following species list, we use a ¹ to denote species for which a measurable objective is identified, a ² for species for which some level of monitoring is recommended, a ³ for species for which a SMA is recommended, and a ⁴ for species for which species management is recommended. Occasionally, statewide models indicate a species has potential habitat on the area, but the local assessment indicates there is little opportunity to manage for these species. These [limited opportunity species](#) are denoted with an *. Except for those species identified with a superscript number, workshop participants and expert reviewers determined that ongoing management would meet the needs of the species on the area. For species with no numerical superscripts, participants and reviewers agreed there is no need for measureable objectives, monitoring, SMAs, or species-specific management.

Gopher frog (*Lithobates capito*)

Eastern indigo snake (*Drymarchon couperi*)

Florida pine snake (*Pituophis melanoleucus mugitus*)

Gopher tortoise (*Gopherus polyphemus*) ^{1,2}

Bachman's sparrow (*Peucaea [Aimophila] aestivalis*) ^{1,2}

Brown-headed nuthatch (*Sitta pusilla*) ^{1,2}

Burrowing owl (*Athene cunicularia floridana*) ¹

Cooper's hawk (*Accipiter cooperii*)

Crested caracara (*Caracara cheriway*)

Florida grasshopper sparrow (*Ammodramus savannarum floridanus*) ^{1,2,3}

Florida mottled duck (*Anas fulvigula*)
 Florida sandhill crane (*Grus canadensis pratensis*)
 Florida scrub-jay (*Aphelocoma coerulescens*)^{1, 2}
 Limpkin (*Aramus guarauna*)
 Northern bobwhite (*Colinus virginianus*)^{1, 2}
 Red-cockaded woodpecker (*Picoides borealis*)^{1, 2, 4}
 Short-tailed hawk (*Buteo brachyurus*)
 Snail kite (*Rostrhamus sociabilis plumbeus*)
 Southeastern American kestrel (*Falco sparverius paulus*)⁴
 Southern bald eagle (*Haliaeetus leucocephalus*)¹
 Swallow-tailed kite (*Elanoides forficatus*)
 Wading birds (multiple spp.)

Florida black bear (*Ursus americanus floridanus*)
 Florida mouse (*Peromyscus floridanus*)^{1, 2}
 Florida panther (*Puma concolor coryi*)
 Sherman's fox squirrel (*Sciurus niger shermani*)

3.2: Focal Species Opportunity/Needs Assessment

This section provides an assessment of the opportunities for management, and the needs of each of the focal species. The assessment considers a number of attributes, including the status of a species, the number of prioritization parameters it triggers, the species' response to management, and the amount and spatial arrangement of species' potential habitat available on the area. Because all species listed by the United States Fish and Wildlife Service (USFWS) are State listed, we will provide only the federal listing status for federally listed species. When a species is not federally listed but is State listed, we will provide the FWC listing status. The FWC is currently in the process of developing an Imperiled Species Management Plan (ISMP) for FWC-listed species. The FWC has management plans for FWC-listed species in the form of Species Action Plans (SAPs). Staff have reviewed these plans and incorporated the recommended conservation actions into the Strategy.

Unless otherwise noted, all reported acres of potential habitat are the result of using the area-specific natural community data in the species' potential habitat model. These estimates include all the area mapped in a natural community identified as potential habitat including patches that may not be contiguous with other suitable habitat. For some focal species, no potential habitat was modeled to occur on KRPWA. For these species, KRPWA is not mentioned in the assessment. During the workshop, participants considered the spatial arrangement and habitat patch size when assessing the potential role TLWMA plays in the conservation of each species. For species that require larger habitat patches, we considered the continuity and condition of habitat on lands adjacent to the WMA.

3.2.1: Gopher Frog

Gopher frogs occur on TLWMA and breeding has been documented on the area. During multiple dip-net surveys, tadpoles were documented in depression marshes in dry prairies on the southern portion

of the area and those located along the eastern portion of TLWMA. Gopher frogs likely inhabit large portions of the remaining unsurveyed areas of TLWMA as well. Gopher frogs breed in seasonally flooded grassy ponds that lack predatory fish. After breeding, frogs move into uplands and often occupy gopher tortoise burrows. Gopher frogs can also occupy rodent and crayfish burrows, stump holes, and hollow logs, but are rarely found >1 mile from breeding habitat.

The gopher frog triggers 2 of 6 statewide prioritization parameters ([Priorities Table](#)). The FWC currently lists the gopher frog as a Species of Special Concern (SSC) that will be delisted pending the approval of the ISMP. Conservation actions from the gopher frog [SAP](#) include the objectives to maintain and increase the amount of suitable habitat for gopher frogs in the state, as well as determine and monitor the status of the statewide population. Models estimate 42,642 acres of potential habitat on TLWMA and 833 acres of potential habitat on KRPUA for gopher frogs. While little is known about the species' home range size, the extent of mesic and xeric communities surrounding ephemeral ponds on TLWMA should support a viable population of gopher frogs. Gopher frogs can move >1 mile into xeric habitat from their breeding ponds, and will benefit from well-maintained gopher tortoise habitat. The amount and condition of upland and wetland communities suggest that TLWMA can support a viable population of gopher frogs. KRPUA is less likely to support a viable population, as all the potential habitat is pasture.

Gopher frogs are a management-responsive species that benefit from the continued use of prescribed fire in mesic flatwoods, scrubby flatwoods, dry prairie, scrub, and isolated wetlands, that occur within this matrix of uplands. Due to their reliance on gopher tortoise burrows, any management that potentially increases the tortoise population will be a benefit to gopher frogs. The frequent use of prescribed fire in the xeric communities will therefore meet the needs of this species on TLWMA. Additional land management recommendations for gopher frogs can be found in [Section 4.3.1](#).

The purpose of gopher frog monitoring is to identify and track the use of breeding ponds over time. An auditory monitoring protocol with a call-back element is commonly implemented to detect the presence of gopher frogs, however, the narrow weather requirements for this monitoring and the unpredictable calling of gopher frogs limit the effectiveness of this protocol. The gopher frog [SAP](#) calls for initiating a statewide monitoring program to monitor population trends. Methods include call surveys, dip-netting, automated recording devices, traps at burrows, and the use of burrow cameras during gopher tortoise surveys. Efforts to determine the distribution of gopher frogs on TLWMA can be combined with any additional monitoring efforts conducted within the vicinity of TLWMA. Due to higher priorities for monitoring other species on TLWMA, no measurable objectives are recommended for this species.

Researchers recently documented striped newts (*Notophthalmus perstriatus*) during dip-net surveys on nearby TNRWMA, indicating that TLWMA may also have the potential to support striped newts. Data collected on the location and abundance of this species should be shared with FWRI ([Section 6.1.3](#)), in addition to any observations of striped newt larva documented during gopher frog surveys. If striped newts are documented on TLWMA, the Strategy will be updated to include a species-specific assessment for the area.

The area goal is to support a viable population of gopher frogs on TLWMA. Ongoing actions to enhance and maintain the structure of xeric upland and their associated wetlands through frequent prescribed fire should meet the needs of gopher frogs on TLWMA. By maintaining upland and wetland habitats in a suitable condition through ongoing management actions, TLWMA will continue to fulfill its role for this species.

3.2.2: Eastern Indigo Snake

Eastern indigo snakes occur on TLWMA, but are rarely observed by staff. Commonly associated with scrub, sandhill, and scrubby flatwoods; indigo snakes also use mesic flatwoods, dry prairie, hardwood hammocks, marsh edges, and agricultural fields. Gopher tortoise burrows are important refuge sites for indigo snakes and provide protection from cold and desiccation. Indigo snakes also use hispid cotton rat (*Sigmodon hispidus*) burrows, hollowed tree stumps, ground litter, trash piles, and rock piles for refuge.

The eastern indigo snake was added to the focal species list for TLWMA because it is a federally Threatened species and triggers 3 of the 4 prioritization parameters (not included in the PLCP analysis; [Priorities Table](#)). Models estimate 45,935 acres of potential habitat for the eastern indigo snake, nearly all of which is in a suitable condition. Literature suggests at least 7,400-9,880 acres (3,000-4,000 ha) of habitat is required to support a viable population. With the large amount of habitat in a suitable condition, TLWMA has the ability to support a viable population of indigo snakes.

Management that maintains or enhances habitat for this species includes prescribed fire and mechanical actions that aid in restoring natural community structure and function. Stumps and other coarse woody debris should be retained during land management activities as potential refuge sites. Additional management considerations can be found in [Section 4.3.2](#).

Staff should document any opportunistic observations of indigo snakes on the area ([Section 5.2.8](#)) and this information should be shared with FWRI ([Section 6.1.3](#)). While drift-fence surveys do not provide population level information on this species, future drift-fence surveys conducted on the area should include the use of large upland snake traps to ensure adequate detection of large snakes. Due to the amount of available habitat on adjacent private lands, we recommend coordination with FWC's Conservation Planning Services (CPS) ([Section 6.1.4](#)) to ensure landowners are able to identify indigo snakes, and aware of the habitat and conservation needs of indigo snakes.

The goal for TLWMA is to maintain suitable habitat to support a viable population of indigo snakes. Due to the large amount of potential habitat, TLWMA has a high likelihood of supporting eastern indigo snakes within the region. By providing habitat in a suitable condition and retaining natural refuges for indigo snakes, TLWMA will meet the needs for this species.

3.2.3: Florida Pine Snake

Florida pine snakes are rarely seen on TLWMA. One individual was captured on TLWMA in dry prairie during a 2009-2010 survey. There are no documented occurrences of pine snakes in the surrounding area. Pine snakes are typically associated with upland pine and sandhill communities and prefer areas with sandy soil for burrowing. They also utilize abandoned fields and other longleaf pine communities. This species occurs throughout the state, except for the Florida Keys, the Everglades, extreme southwestern Florida, and immediately north of Lake Okeechobee. TLWMA does not have pocket gophers (*Geomys pinetis*), a major food source of pine snakes. The presence of pocket gophers on an area increases the likelihood of pine snake occurrence; however, the absence of pocket gophers does not directly correlate to an absence of pine snakes on a given area.

The Florida pine snake triggers 3 of 6 prioritization parameters ([Priorities Table](#)) and is currently a state-listed SSC. Upon completion of the ISMP, this species will be reclassified as a state Threatened species. On TLWMA, there are currently 37,295 acres of potential habitat. Models indicate KRPWA contains 1,138 acres of potential habitat, all of which are pasture. This pasture is formerly river

floodplain that is periodically inundated, therefore, it is not considered suitable for pine snakes. Pine snakes require at least 9,880 acres (4,000 ha) of suitable habitat to support a viable population. A significant portion (16,000 acres) of potential pine snake habitat on TLWMA is mesic flatwoods, which is not considered primary pine snake habitat. If optimal habitat for this species is restricted to more xeric communities like scrub, sandhill, scrubby flatwoods, and dry prairie, the opportunity for a viable population of pine snakes on TLWMA is reduced. However, due to the large home ranges of Florida pine snakes, xeric communities that are contained within a larger mosaic of mesic upland habitat can support pine snake populations. With the amount and condition of xeric natural communities, TLWMA can support a population of pine snakes.

Management actions that maintain or enhance habitat for this species include prescribed fire and mechanical treatments that aid in restoring natural community structure and function. Stumps and other coarse woody debris should be retained during land management activities as potential refuge sites. Additional management considerations can be found in [Section 4.3.3](#).

Staff should document any observations of pine snakes on the area ([Section 5.2.8](#)). While drift-fence surveys will not provide population level information on pine snakes, any future drift-fence surveys conducted on these areas should include the use of large upland snake traps to ensure adequate detection of large snakes. Additionally, proposed surveys of gopher tortoise burrows using scope-cameras will provide incidental detections of pine snakes on the area ([Section 5.2.1](#)).

The goal for TLWMA is to maintain the suitability of habitat to support pine snakes. The continued presence of this species on the area may be dependent on conditions that influence the regional population. However, maintaining habitat in suitable condition and providing natural snake refuges will ensure that TLWMA continues to support Florida pine snakes.

3.2.4: Gopher Tortoise

Staff commonly observe gopher tortoises and their burrows on TLWMA in low densities throughout mesic flatwoods and dry prairie with well-drained soils. Pockets of scrub and scrubby flatwoods on the northeast portion of TLWMA appear to have a higher density of burrows than mesic flatwoods. The status of gopher tortoises on KRPWA is currently unknown. No area-wide baseline assessment into the status or distribution of tortoises has been completed on either TLWMA or KRPWA.

This state-listed Threatened species triggers 4 of 6 prioritization parameters ([Priorities Table](#)), making it a high priority species statewide. The gopher tortoise is also a candidate for federal listing in the eastern portion of its range and a Candidate Conservation Agreement has been drafted for this species. The gopher tortoise is considered a keystone species because many other species use tortoise burrows, including focal species such as the Florida mouse and gopher frog. The FWC revised its [Gopher Tortoise Management Plan](#) in 2012, which places an emphasis on increasing the number of tortoises on public lands.

There are currently 37,274 acres of potential habitat for gopher tortoises on TLWMA and 1,139 acres of potential habitat modeled to occur on KRPWA, although most of this is classified as pasture. The literature suggests that 250 acres is the minimum acreage required to support a viable population of gopher tortoises, provided the habitat is suitable. Using this assessment, TLWMA has enough potential habitat to support a viable population. While KRPWA has enough acreage to support a population of gopher tortoises, the pasture is likely too wet for burrows and therefore unsuitable.

The gopher tortoise is a management-responsive species that can serve as an indicator of properly managed upland pine or grassland communities. There is a high level of opportunity for management to impact gopher tortoises on TLWMA. Much of the potential habitat within mesic flatwoods is currently in good to excellent condition and is subject to frequent prescribed fire. Ongoing efforts to maintain natural community structure and function in these flatwoods with prescribed fire will continue to benefit the gopher tortoise. Area staff should occasionally use mechanical treatment in advance of prescribed fire in the scrub and scrubby flatwoods to reduce vegetative heights, promote open ground, and promote herbaceous cover. However, these actions should take place in winter when tortoises are dormant and less likely to be harmed by heavy machinery. Additional land management recommendations are found in [Section 4.3.4](#).

Monitoring for this species includes estimating a baseline of gopher tortoises on TLWMA and tracking populations through time with survey repetitions. At first, surveys should be conducted every 5 years to establish a baseline estimate of the gopher tortoise population on TLWMA. Following the third repetition, the survey interval can be extended to every 10 years to establish a trend analysis method for tracking the population through time. The FWC has recently adopted a Line Transect Distance Sampling approach to surveying gopher tortoise populations on WMAs, using potential habitat maps and burrow-scope cameras to determine gopher tortoise abundance and density. Due to the extensive effort and time that is required to conduct a full Line Transect Distance Sampling survey on TLWMA, managers may need to seek outside resources or consider using a different survey technique. Further monitoring recommendations can be found in [Section 5.2.1](#).

The area goal is to maintain habitat in suitable conditions to allow for a viable population of gopher tortoises. Ongoing management to maintain open natural communities will benefit a viable population of gopher tortoises on TLWMA. Area staff would benefit from a baseline estimate of the gopher tortoise population to determine if long-term management on TLWMA is having a positive effect on the population. The following objectives have been identified:

1. Complete a gopher tortoise population survey on TLWMA by 2018, pending available resources.
2. Repeat survey every 5 years to establish a baseline population estimate, then adjust survey interval to every 10 years thereafter.

3.2.5: Bachman's Sparrow

Bachman's sparrows are commonly heard throughout TLWMA, and nesting has been documented in the frequently-burned mesic flatwoods and dry prairies. Bachman's sparrows have been documented on other conservation areas nearby and are common 4 miles north of TLWMA on TNRWMA and HH/BCWMA. Bachman's sparrows prefer mature open pine forests, dry prairies, or old-field communities with healthy herbaceous groundcover.

The Bachman's sparrow triggers 2 of 6 prioritization parameters ([Priorities Table](#)) and is currently experiencing range-wide population declines. On TLWMA, there are currently 32,216 acres of potential habitat. Literature suggests a viable population can be maintained on around 520 acres, which suggests the area has enough potential habitat to support a local population of Bachman's sparrows.

Ongoing efforts to maintain natural community structure and function on TLWMA should maintain or enhance the current habitat suitability for Bachman's sparrows. Research suggests Bachman's sparrows prefer fire return intervals of 18 months to 2 years. Bachman's sparrows have been found to leave an area that has been excluded from fire for >3 years. The majority of mesic flatwoods

and dry prairie on TLWMA are in a suitable condition for Bachman's sparrows. Additional land management recommendations for Bachman's sparrow can be found in [Section 4.3.5](#).

Monitoring to determine the spatial distribution or relative abundance of Bachman's sparrows has not occurred on TLWMA. We recommend some level of monitoring for sparrows as a way to track the continued impact of prescribed fire and other management actions on the area's wildlife species. Currently, experts recommend combining Bachman's sparrow monitoring with that for brown-headed nuthatches due to their similar habitat needs. Monitoring can occur infrequently (e.g., every 3 years) to verify their continued presence on-site, as this species is already common and responds well to current management practices. The FWC recently standardized a combined [monitoring protocol](#) for grassland bird species that uses call-back recordings, and this protocol should be applied within a representative subset of suitable habitat on TLWMA. Further monitoring recommendations can be found in [Section 5.2.2](#).

The area goal is to maintain a viable population of Bachman's sparrows on TLWMA. Ongoing management that maintains a regular fire interval and open natural communities will meet the conservation needs of this species on TLWMA. A baseline population estimate would benefit Bachman's sparrows on the area. The measurable objectives are to:

1. Conduct a baseline survey for Bachman's sparrows on TLWMA by 2016.
2. Repeat Bachman's sparrow surveys on at least a 3-to-5 year repetition.

3.2.6: Brown-Headed Nuthatch

Brown-headed nuthatches are commonly seen and heard throughout the mesic flatwoods of TLWMA, and it is very likely they are breeding on the area. State agencies have recently documented nuthatches on other conservation areas nearby, and this species is on TNRWMA and HH/BCWMA. Brown-headed nuthatches are dependent on open stands of mature pine interspersed with snags for excavating nesting cavities. Older pine forests (>35 years for longleaf-slash pine) and stands with basal area between 35-50 ft²/acre are preferred, although nuthatches can use pine stands with younger trees and higher basal areas.

The brown-headed nuthatch triggers 2 of 6 prioritization parameters ([Priorities Table](#)) and is currently experiencing range-wide declines due to habitat loss and degradation. Models estimate 18,719 acres of potential habitat on TLWMA for brown-headed nuthatches, with only 17 acres available on KRPUA. Literature suggests 1,000 acres of habitat is necessary to support a viable population. TLWMA could support a viable population of brown-headed nuthatches within mature pine communities that contain suitable nesting cavities.

Management actions that benefit this species include frequent application of prescribed fire, which is ongoing throughout the mesic flatwoods. A timber assessment on TLWMA indicated that basal area in the flatwoods ranged from 10-120 ft²/ac with much variation among areas. This indicates that some areas modeled as potential habitat are not currently suitable for nuthatches. Ongoing timber management will reduce the basal area in the more dense flatwoods, while basal areas in the sparse areas likely will increase with time and should enhance the suitability for nuthatches. Efforts to protect and allow for the creation of snags during land management activities will further improve habitat suitability for brown-headed nuthatches ([Section 4.3.6](#)).

Area staff has not conducted monitoring of brown-headed nuthatches on TLWMA. As with Bachman's sparrows, we recommend some level of monitoring for nuthatches as a way to track the continued impact of prescribed fire and other management actions on the area's wildlife species.

Monitoring can occur infrequently (e.g., every 3 years) to verify their continued presence on-site, as this species is already common and responds well to current management practices. The FWC recently standardized a combined [monitoring protocol](#) for grassland bird species that uses call-back recordings, and this protocol should be applied within a representative subset of suitable habitat on TLWMA. Further monitoring recommendations can be found in [Section 5.2.2](#).

The goal for TLWMA is to maintain habitat in a condition that will support a viable population of brown-headed nuthatches. Ongoing management to maintain a regular fire interval and retain potential-cavity snags during timber management will meet the conservation needs of this species on TLWMA. The measurable objectives are:

1. Conduct a baseline survey for brown-headed nuthatches on TLWMA by 2016.
2. Repeat brown-headed nuthatches surveys on at least a 3-to-5 year repetition.

3.2.7: Burrowing Owl

Burrowing owls are infrequently observed in dry prairie on TLWMA, although no survey has attempted to document their distribution on the area. Burrowing owls require open, treeless areas with low groundcover and sandy soils for excavating burrows. Historically, burrowing owls predominately use dry prairie habitat. Most modern burrowing owl populations use non-native habitats and altered landscape features, such as berms or canal banks. This species uses underground burrows extensively, particularly during the spring for nesting and in the winter for protection from predators. Optimal habitat for this species includes soils that remain dry during times of peak burrow use. Burrowing owls often occupy private lands and urban areas in danger of development; therefore, maintaining populations on public land is important to protecting this species from habitat degradation on private lands.

The burrowing owl is currently a state-listed SSC, and upon approval of the ISMP, will be reclassified as state Threatened. Conservation objectives from the burrowing owl [SAP](#) include maintaining a stable or increasing population trend, and to protect and manage burrowing owl habitat to ensure long-term population viability. This species triggers 4 of the 6 statewide prioritization parameters ([Priorities Table](#)), and models indicate 16,031 acres of potential habitat on TLWMA. Models estimate approximately 1,261 acres of potential habitat on KRPWA, a majority of which is mapped as improved and semi-improved pasture. The literature suggests that areas with at least 30 pairs have the potential to persist. This species is loosely colonial with reported densities of 0.44 pairs per acre (0.18 pairs/ha).

Much of the dry prairie on TLWMA is in excellent condition, with only some portions less suitable due to hardwood encroachment. Continued restoration of these areas to remove encroaching oaks will benefit burrowing owls. Using reported density estimates for burrowing owls, TLWMA could support a large population on dry prairie communities alone. Due to the large amount of improved-pasture on ranches in the area, much of current burrowing owl habitat occurs in private and urban areas that are prone to future development. Therefore, any populations on public land are important to the regional persistence of this species.

Maintaining natural community structure and function of the dry prairie for Florida grasshopper sparrows will also provide suitable habitat for burrowing owls. The continued use of frequent prescribed fire in dry prairie communities will maintain the treeless canopy and low groundcover preferred by this species. Heavy equipment should not be used near known burrows to avoid damaging them. Staff should document opportunistic observations of burrowing owls on TLWMA ([Section 5.2.8](#)). Due to the lack of an appropriate survey protocol, no further monitoring is recommended at this time. The burrowing owl [SAP](#) calls for statewide surveys using a yet to be developed protocol involving line or point transects.

Staff should ensure that when this protocol is developed, TLWMA is included in any future surveys.

The area goal is to continue to maintain potential habitat in a suitable condition for burrowing owls. Management that improves dry prairie communities for Florida grasshopper sparrows will also benefit burrowing owls on TLWMA and meet the needs for conservation of this species. The large amount of native habitat makes TLWMA unique and important in the conservation of burrowing owls. Although burrowing owls are relatively uncommon on TLWMA, the quantity and quality of suitable habitat on the area may present a larger role for supporting this species in the future should surrounding communities become degraded or altered. The measurable objective is:

1. Within the life of this Strategy, use the developed protocol to implement monitoring for burrowing owls on TLWMA.

3.2.8: *Cooper's Hawk*

Cooper's hawks can be found on TLWMA throughout the year. Staff have not documented nesting on TLWMA, although it is likely to occur. Cooper's hawks will nest in a variety of habitats including swamps, floodplain and bottomland forests, sand pine scrub, and baygalls. Nests are often found near the crown of a tree and close to an edge in dense stands of oaks. Cooper's hawks primarily feed on other birds, so nests are located in proximity to suitable hunting areas.

The Cooper's hawk triggers 1 of 6 prioritization parameters ([Priorities Table](#)). Models identified 12,538 acres of potential habitat for Cooper's hawks on TLWMA, however, the generalist nature of this species suggest that more habitat is available to them. Cooper's hawks are not typically considered management-dependent, and the opportunity to impact this species at the management-unit level is low. However, ongoing efforts to maintain the WMA's overall natural community structure and function will benefit the Cooper's hawk. Cooper's hawks will also benefit from maintaining populations of upland bird species, such as northern bobwhite or mourning dove (*Zenaida macroura*). Management actions that maintain or enhance habitat for prey species include prescribed fire and mechanical treatments. Additionally, known nests should be protected from disturbance during the nesting season.

Local monitoring is not recommended for Cooper's hawks because this species naturally occurs in relatively low densities and nests are difficult to locate. However, staff should document opportunistic observations of Cooper's hawks and their nests ([Section 5.2.8](#)). During the nesting season (April-July), the Cooper's hawk is secretive and sensitive to human disturbance near the nest site. No attempt will be made to actively search for nests, but if staff observe individuals exhibiting nesting behavior (carrying nesting material to/from an area, acting aggressively), the location should be noted and the area should be protected from disturbance above normal levels.

The area goal is to provide suitable foraging and nesting habitat that will allow Cooper's hawks using TLWMA to function as part of a regional population. By avoiding direct disturbance to nests and maintaining populations of prey species, management at TLWMA will meet the conservation needs of this species. Ongoing efforts to manage natural communities for Cooper's hawks will allow TLWMA to support the regional population.

3.2.9: *Crested Caracara*

Crested caracara are occasionally seen on TLWMA and are known to breed in the vicinity. Caracaras prefer to forage in open areas with low ground and shrub cover, and currently much of the State's caracara population utilizes open pasture on private lands. Caracaras typically build their nests in

cabbage palms (*Sabal palmetto*) in an open area with scattered trees. Caracaras have high nest site fidelity; therefore, protection of known nest sites is important to caracaras continuing to use the area.

The crested caracara is federally listed as Threatened and triggers 4 of 6 prioritization parameters ([Priorities Table](#)), making it a high statewide priority. A majority of the crested caracara population in Florida occurs on private lands, further contributing to threats of habitat loss and degradation. Models estimate 37,050 acres of potential habitat on TLWMA and 1,261 acres of potential habitat on KRPWA. Given that caracaras have relatively large home range sizes (average of 3,000 acres), TLWMA could potentially support up to 12 breeding pairs. Additionally, the proximity to private ranchlands and other conservation lands increases the likelihood that TLWMA can help support a regional population of caracaras utilizing both public and private lands.

Caracaras forage in newly mowed or burned areas and prefer low groundcover in foraging areas. In the historic Kissimmee dry prairie portion of TLWMA, area staff maintain the community to benefit Florida grasshopper sparrows; including the removal of some palms and hardwoods. Caracaras often build nests in tall, solitary trees usually within well-managed, frequently-burned prairies and pastures, and when those trees are documented, they will be protected from removal. Caracaras will also benefit from ongoing efforts to restore and maintain the areas' plant community structure and function through prescribed fire and roller-chopping where palmetto is too tall or too thick. Prescribed fire, mowing, roller-chopping, and grazing are management tools that maintain habitat in a suitable condition for caracaras. These activities can occur year-round within home ranges but may need to be limited near nest sites to minimize disturbance ([Section 4.3.9](#)).

Since caracaras naturally occur in relatively low densities and nests are often hard to locate, monitoring for this species is difficult. FWC has standardized a monitoring protocol to track caracara breeding territory activity, which would also identify active nest trees. Provided future resources are available, this protocol can be implemented on TLWMA to identify and track active breeding territories. Due to the mosaic of pasture and dry prairie communities in the surrounding landscape, TLWMA has a role in supporting nesting caracara and should be included in any region-wide effort to track breeding activity. Until that time, staff should document opportunistic observations of caracara nests or nesting activity, including the presence of juveniles ([Section 5.2.8](#)).

The area goal is to maintain habitat in a condition suitable for use by crested caracaras. Since much of the State's caracara population utilizes private lands, working with CPS ([Section 6.1.4](#)) to coordinate with private landowners will be necessary to ensure persistence on TLWMA. Ongoing management to maintain prairies in an open condition with frequent fire will meet the conservation needs of this species on the area.

3.2.10: Florida Grasshopper Sparrow

TLWMA is currently host to the largest remnant population of breeding Florida grasshopper sparrows and is only 1 of 3 public lands where this species can currently be found. TLWMA is located on the northern boundary of the Florida grasshopper sparrow range that once encompassed the historic Kissimmee dry prairie. Other conservation lands that occur in the historic Kissimmee dry prairie include APAFR, KPPSP, and the National Audubon Society's Ordway-Whittell Kissimmee Prairie Sanctuary. Small, isolated populations may occur on private lands in the species' historic range. Florida grasshopper sparrows occupy dry prairie communities dominated by grasses, dwarf oaks, small clumps of palmettos, and open ground. This species avoids areas where tree densities are >1 tree per acre. Grasshopper

sparrows may be partially colonial, with individuals tending to remain in loose aggregations or family groups.

The Florida grasshopper sparrow triggers 6 of 6 prioritization parameters ([Priorities Table](#)) and is a high priority species. Florida grasshopper sparrows are a federally Endangered species, and are susceptible to loss and degradation of dry prairies. The USFWS has developed a [Florida Grasshopper Sparrow Recovery Plan](#), which includes an action to “maintain and enhance Florida grasshopper sparrow habitat on acquired lands or lands under conservation easement or agreement.”

Models estimate 16,031 acres of potential habitat for Florida grasshopper sparrows on TLWMA. The sparrows are found in the southern portion of TLWMA where the majority of contiguous dry prairie habitat is located. This area of approximately 10,000 acres consists of dry prairie interspersed with wet prairie and depression marshes. Most of this dry prairie is in excellent condition; however, some portions have hardwood encroachment due to past fire exclusion or fire shadows, and changes in hydrology. Literature suggests a minimum of 50 breeding pairs are needed for a viable population. Other sources state that a viable population requires a contiguous patch of dry prairie between 590–3300 acres in size. Still other literature suggests that large patches of >4,000 acres are required to sustain a viable population. Evidence suggests that Florida grasshopper sparrows are less likely to occupy habitat within 400 meters from habitat edges, this further increases the size of the habitat needed to support a viable population. Based upon these metrics, TLWMA has enough potential habitat to support a population of Florida grasshopper sparrows.

Staff monitor Florida grasshopper sparrows on TLWMA each spring using passive-listening point count surveys. Monitoring on TLWMA takes place over 240 points covering 9,900 acres of habitat, including the occupied area and the dry prairie area known as the “island” north of Lake Jackson. These surveys have been fundamental to tracking population trends. Since 2008, there has been a decline in this already rare species on TLWMA. Area staff documented a total of 60 males in 2012 on TLWMA, down from 142 in 2008. The decline may have leveled-off in 2013 with 68 males observed on TLWMA. Of the individuals detected in 2013, area staff banded 42 males along with 5 females and 10 fledglings. The Florida Grasshopper Sparrow Working Group has speculated about what caused the sharp declines across all populations and identified habitat loss, habitat management, nest predations (including possible fire ant predation), disease, and altered hydrology as possible causes.

FWRI, in cooperation with TLWMA biologists and the USFWS, are investigating potential causes of decline of the Three Lakes population by conducting extensive mark-recapture survival and movement analyses of color-banded adults and juveniles. FWRI is also conducting nest survival and predation research to better identify habitat and management features that are important for territory establishment and successful reproduction. In 2014, a nest camera study was initiated to monitor the causes of predation for the surrogate ground nesting species, Bachman’s sparrow and eastern meadowlark (*Sturnella magna*). The information gathered on predation of sparrow nests will inform future management efforts. If populations continue to decline, USFWS is prepared to initiate a captive breeding program as a last-resort measure. TLWMA biologists and FWRI researchers participate in the working group subcommittee for the captive breeding effort and provide the group with timely research status updates to best inform the decision making process. Additional monitoring considerations are in [Section 5.2.3](#).

Growing season burns help to promote the herbaceous component of the dry prairie community and may reduce palmetto height and density. Management of the dry prairie on TLWMA has successfully maintained a fire return interval of close to 24 months in the grasshopper sparrow habitat.

However, oak encroachment into dry prairie from adjoining hammocks may degrade the suitability of sparrow habitat. Due to the extremely small population size and the importance of TLWMA in the species' conservation, a SMA is proposed for the management units (MUs) that occur in the historic Kissimmee prairie ([Section 4.1.1](#)). Additional management considerations can be found in [Section 4.3.10](#). Staff will continue to participate in the Florida Grasshopper Sparrow Working Group to coordinate management and monitoring actions ([Section 6.7](#)).

The goal for the area is to support and expand the breeding population of Florida grasshopper sparrows. Ongoing management actions that include burning on a short burn rotation and the removal of encroaching oaks will benefit this species. Further management actions, such as roller-chopping, may be needed to maintain crucial habitat to the Florida grasshopper sparrow. In addition to actions outlined in the SMA, the measurable objective is:

1. Continue to monitor the Florida grasshopper sparrow population in cooperation with FWRI and USFWS.

3.2.11: Florida Mottled Duck

Florida mottled ducks forage and nest on TLWMA. Mottled ducks prefer to nest in upland areas near wetlands including dry prairie, pine flatwoods, citrus groves, and urban tracts. The species tends to avoid wet prairies, shrub and forested wetlands, open water, and deeply flooded areas for nesting. This species prefers shallow wetlands with water <10 inches deep that is interspersed with emergent vegetation.

The mottled duck is not state or federally listed, but is a game species in the state. This species triggers 2 of the 6 statewide prioritization parameters ([Priorities Table](#)), making it a medium priority statewide. On TLWMA, there are 29,356 acres of potential habitat modeled, while KRPUA contains only 23 acres of potential habitat. The T.M. Goodwin Waterfowl Management Area, located approximately 15 miles east of TLWMA, supports mottled ducks and has also had an annual harvest of several hundred mottled ducks since the early 2000's. Mottled ducks also occur and nest on the Three Forks Conservation Area and the marshes associated with the Upper St. Johns River. On TLWMA, the interspersed wetland and larger upland communities presents a moderate opportunity for management to influence the regional population of mottled ducks.

Management activities that promote a mosaic of shallow open water and emergent vegetation within the wetland basin can enhance foraging and brood-rearing habitat. In uplands adjacent to suitable wetlands, management practices that provide cover, such as dense grass with a minimal shrub component, will enhance nesting suitability for mottled ducks. While basin marshes and depression marshes are not considered managed natural communities, properly-timed prescribed fires that burn into or across marshes can reduce hardwood encroachment and promote emergent wetland plants. Current use of prescribed fires in the uplands adjacent to wetlands benefits mottled ducks by keeping wetlands open enough to allow for efficient foraging and brood movement. As such, no additional management actions are recommended for mottled duck. Although no formal monitoring of mottled ducks on TLWMA is recommended, opportunistic observations of mottled duck nests or ducklings should be recorded ([Section 5.2.8](#)).

The goal for TLWMA is to maintain a mosaic of wetland and upland habitats that will support mottled ducks at a level that contributes to the persistence of the regional mottled duck population. Ongoing natural community management benefits the mottled duck population on TLWMA and

regionally. By supporting a population of mottled ducks with suitable habitat conditions, TLWMA will meet the needs of this species.

3.2.12: Florida Sandhill Crane

The Florida sandhill crane is common on TLWMA and nests on the area. This species uses a combination of shallow wetlands and open upland habitats with a majority of the vegetative cover ≤ 20 inches in height. Florida sandhill cranes use a mosaic of emergent palustrine wetlands and open uplands such as pasture, prairie, and open pinelands. Standing water is an important component of nesting habitat for Florida sandhill cranes. Nests consist of herbaceous plant material mounded in shallow water or marshy areas. Florida sandhill cranes frequently nest and forage on ranches and private lands that are at a high risk of development, making potential habitat on public lands a high priority for conservation of this species.

The Florida sandhill crane is a state Threatened species that triggers 4 of 6 prioritization parameters ([Priorities Table](#)), making it a moderate to high statewide priority. Models estimate 46,136 acres of potential habitat for sandhill cranes on TLWMA and 1,238 acres on KRPWA. Home ranges for adult pairs range from 300-600 acres and at least 1,200 acres of suitable habitat can support 6 pairs. The proximity to private ranchlands and other conservation lands increases the likelihood that TLWMA can help support a regional population of sandhill cranes. Florida sandhill cranes will use the same territory for many years, and typically only move as a result of unfavorable environmental conditions (e.g. drought) or deteriorating habitat. TLWMA may have an important role in maintaining this species, particularly due to the large amount of potential habitat and the close proximity to other conservation lands.

Management actions that will benefit Florida sandhill cranes include prescribed fire and mechanical treatments to maintain upland habitat in an open condition. Shrub encroachment into wetlands can reduce the suitability of nesting habitat for Florida sandhill cranes and management actions that reduce the height and density of shrubs around wetlands should be continued. Further management considerations can be found in [Section 4.3.11](#). FWRI is investigating nesting habitat throughout Florida with TLWMA and the surrounding private lands a part of a study on nesting conditions and recruitment. The purpose of this study is to determine whether crane nest density and success varies between dry prairie and improve pasture, particular where vegetation structure around wetlands is overgrown. FWRI will coordinate with TLWMA to conduct woody vegetation treatments in late 2014 and early 2015, followed by data collection in 2015-2016 ([Section 6.1.3](#)). Due to the large home range and wide distribution of this species, we do not recommend individual monitoring efforts for sandhill cranes on TLWMA. However, staff should record any opportunistic observations of nests and preflight young to document potential breeding wetlands on the area ([Section 5.2.8](#)).

The goal for TLWMA is to maintain appropriate natural communities in a condition suitable to support a viable population of Florida sandhill cranes. By maintaining foraging habitat with frequent fire and minimizing disturbance to nests, TLWMA will meet the conservation needs for this species and help support the regional population.

3.2.13: Florida Scrub-Jay

The Florida scrub-jay occurs on TLWMA in very limited numbers. Currently, there is a family group consisting of 2-3 individuals on the area. TLWMA lies between the APAFR and the Atlantic

coastal ridge scrub-jay populations, which are genetically distinct from each other. The distance from TLWMA to either of these populations is farther than the typical dispersal distance for Florida scrub-jays and it is unclear as to which genetic unit the TLWMA scrub-jays belong or if they are a separate population.

The Florida scrub-jay is listed as Threatened at the federal level, and triggers all 6 prioritization parameters ([Priorities Table](#)). Models estimate 2,052 acres of potential habitat for scrub-jays on TLWMA. In optimal habitat, an average of 25 acres is needed to support a family group. Literature suggests that isolated populations of <10 family groups are highly vulnerable to local extinction, whereas areas that support 10-40 families are marginally-to-adequately secure. The patchy distribution of suitable habitat on TLWMA indicates that the area will likely not support a population large enough to have a low vulnerability to extinction. Although the Florida scrub-jay is a high priority species statewide, it is considered a moderate priority on TLWMA due to the small population size and its isolation from other occupied areas. In all cases, interaction with other populations enhances the chance of persistence.

Scrub-jays have not been detected on the eastern portions of TLWMA in >10 years, where the majority of potential habitat occurs. Due to the distance to the nearest populations, it is unlikely that outside immigration will colonize this habitat at a rate that will sustain a viable population. Based on the above habitat requirements, there should be enough habitat to support a stable population of Florida scrub-jays. However, nearly two-thirds of the habitat patches are <20 acres and surrounded by mesic flatwoods. These patches are unsuitable due to their small size and the surrounding canopy cover, therefore the amount of habitat projected by the models may be an overestimate.

Translocation of family groups of scrub-jays has recently been used as a method of stabilizing small populations throughout the state of Florida. Translocation could be an option on TLWMA in the future; however, the potential of TLWMA as a recipient site is unknown. Staff should coordinate with the statewide Florida Scrub-Jay Coordinator to assess the opportunity for scrub-jays on TLWMA ([Section 6.1.1](#)). Based upon this assessment, area staff can work with the Coordinator to determine whether translocation is a realistic management approach for TLWMA in the near future, if the area is determined to have a role in scrub-jay recovery.

Area staff manage scrub and scrubby flatwoods at TLWMA primarily through the application of prescribed fire and periodic mechanical treatments. Since patches of scrub on TLWMA are interspersed within mesic flatwoods, staff will burn these areas on a 2-3 year fire interval. However, fire does not burn into the scrub every time these flatwoods are burned. Fire will only penetrate into the interior of the scrub when fuels levels are high enough and weather conditions promote hotter burns. This method is more a natural approach for management of scrubby patches, as periodic burns provides a mosaic of shrub heights and maintains the scrub within a suitable condition for scrub-jays. Other land management considerations are listed in [Section 4.3.12](#).

Area staff uses the Jay Watch protocol annually to monitor Florida scrub-jays at TLWMA ([Section 5.2.4](#)), which employs a vocalization playback to illicit a response from the resident scrub-jays. Surveys should include patches known to be occupied by scrub-jays, as well as larger, unoccupied patches with suitable shrub heights. As the Florida scrub-jay recovery plan is updated, area staff will work with the Florida Scrub Jay Coordinator to assess the overall role of TLWMA in the statewide population ([Section 6.1.1](#)). Should monitoring detect increasing numbers on TLWMA, this assessment may need to be updated to accommodate the area's role in supporting scrub-jay family groups.

The goal for the area is to provide suitable habitat for Florida scrub-jays. Due to the small amount of potential habitat and the distance to the nearest known populations, there is limited opportunity

that TLWMA will retain a stable population of Florida scrub-jays. Despite this limited opportunity, suitable habitat will continue to be maintained in a good condition to meet the needs of this and other scrub-dependent species on TLWMA. Translocation may be a potential future management tool, as additional family groups could influence the long-term persistence of the population on the area. The measurable objective is to:

1. Continue annual monitoring of Florida scrub-jays with the Jay Watch monitoring protocol.

3.2.14: Limpkin

Limpkins are frequently observed on TLWMA and nesting occurs on the area. Limpkins typically inhabit freshwater sloughs and marshes, wooded swamps, springs and spring runs, edges of rivers and ponds, and human-created impoundments and canals. Natural communities on TLWMA where limpkin are found include dome swamps, blackwater streams, and the prairies/flatwoods around Lake Jackson. Limpkins are highly mobile and influenced by regional water levels and the availability of prey items, primarily apple snails (*Pomacea* spp).

Limpkins are currently FWC-listed as a SSC and trigger 1 of 6 prioritization parameters ([Priorities Table](#)). An upcoming management plan will recommend removing the SSC designation for the limpkin. On TLWMA, there are currently 9,151 acres of potential habitat. On KRPUA, there are currently 502 acres of potential habitat. Limpkin are a wide-ranging, mobile species, and while TLWMA may not have enough habitat to support an independent population of limpkins, it can help support the regional limpkin population. Limpkins are not considered management dependent at the area-level, and actions that influence water levels and hydroperiod could have a positive impact on potential habitat. Management that supports emergent vegetation and a healthy population of apple snails will also benefit the limpkin on TLWMA. The [SAP](#) for the limpkin recommends additional research into the habitat conditions that are most favorable to apple snail populations.

Nesting is unlikely to occur in actively managed areas of TLWMA; however, area staff will make an effort to avoid disturbance to limpkin nests in areas where they are found. Due to the limpkin's significant dispersal capabilities, monitoring at the local level is not recommended. Staff should initially document all opportunistic observations in order to establish occupied habitat, then later only juveniles or nesting activity should be recorded ([Section 5.2.8](#)). The limpkin [SAP](#) calls for the creation of a monitoring protocol to track limpkin occurrence on conservation areas. Upon completion of this protocol, staff should consider implementing limpkin monitoring at TLWMA.

The area's goal is to maintain and enhance natural communities to provide high quality wetlands that allow limpkins utilizing TLWMA to function as a part of the regional population. As limpkin will benefit from regional conditions such as water quality and the availability of apple snails in the lakes, ongoing protection of conservation lands around TLWMA should help the area meet the conservation needs for this species.

3.2.15: Northern Bobwhite

Northern bobwhites are commonly seen on TLWMA and are a popular game species on the area. Northern bobwhites are typically associated with open canopy forests and grassland communities dominated by warm-season grasses, legumes, and patchy bare ground. Bobwhite prefer a mosaic of different cover types and succession levels, and they often use areas with dense herbaceous cover for

brooding and foraging. Bobwhite also use shrubs or other thickets as roosting habitat or escape cover.

The northern bobwhite triggers 2 of 6 prioritization parameters ([Priorities Table](#)). Bobwhite have experienced significant range-wide population declines since the 1980s. FWC has drafted a [Strategic Plan for Northern Bobwhite Restoration in Florida](#). One initiative included in the plan is the Upland Ecosystem Restoration Project (UERP). The UERP is a multi-agency cooperative effort to increase populations of northern bobwhite and other declining fire-dependent wildlife species on public lands throughout Florida. Within TLWMA there is a UERP area where northern bobwhite are closely monitored and harvest is controlled. Models estimate 40,653 acres of potential habitat on TLWMA. A viable population requires 2,000-4,000 acres of habitat and TLWMA meets this requirement.

Most of the potential bobwhite habitat on the area is currently in good to excellent condition. The focus on using frequent fire in mesic flatwoods and dry prairie has produced an interspersed cover types suitable for northern bobwhites. Vegetation within the UERP area is maintained in excellent condition for northern bobwhite and other upland species. In addition, staff manage the majority of TLWMA with frequent prescribed fire, which will also benefit northern bobwhite. Areas with higher than desired palmetto cover are often roller-chopped in advance of fire, which will further improve habitat conditions for northern bobwhite on TLWMA. Additional management considerations can be found in [Section 4.3.13](#).

Northern bobwhite monitoring on TLWMA has been ongoing since 1984, and staff uses both spring call counts and fall covey counts. Fall covey counts began in 2006 and occur on 3 distinct areas; the approximately 15,552 acres that are enrolled in UERP, an 11,218-acre control area, and 7,792 acres of dry prairie that was added to the survey in 2011. The 2013 surveys estimated an average of 0.34 bobwhite/acre in both the control and UERP areas, and 0.37 bobwhite/acre in the dry prairie. Maintaining 3-5 year average densities around 0.34 bobwhite/acre provides quality hunting opportunities while ensuring the population on TLWMA is secure. Hunting pressure is regulated in the UERP area to achieve a goal of harvesting <15% of the estimated population. Spring surveys can be lessened in the future, as fall surveys tend to provide better population estimates. Staff will continue to monitor bobwhite populations throughout TLWMA using fall covey counts ([Section 5.2.5](#)).

The area goal is to maintain a viable population of northern bobwhite on TLWMA. Continued management to maintain a harvestable population of bobwhite on TLWMA will meet the conservation needs of this species on the area. The measurable objectives are:

1. Maintain a 3-5 year average density of 0.34 bobwhite/acre (approximately 1 per 3 acres) on TLWMA indefinitely.

3.2.16: Red-Cockaded Woodpecker

Red-cockaded woodpeckers on TLWMA occur in the mesic flatwoods on the eastern side of the property and are the focus of numerous management and monitoring actions. The red-cockaded woodpecker population on TLWMA is a part of the Three Lakes Metapopulation as defined by the [FWC Red-Cockaded Woodpecker Management Plan](#). This metapopulation includes birds occurring on TNRWMA, HH/BCWMA and the Escape Ranch Conservation Easement. Biologists have documented red-cockaded woodpeckers moving between TLWMA and the Disney Wilderness Preserve (8 miles to the northwest).

According to the [Federal RCW Recovery Plan](#), the TLWMA identified as a support population is located within the South/Central Florida Recovery Unit. This large unit included many conservation lands including Big Cypress National Preserve in the south to Camp Blanding in the north. The goal for

this unit in the plan is for 400 PBGs. Each support population has a goal of at least 40-100 PBG to minimize inbreeding and increase the probability of persisting in the long term.

The red-cockaded woodpecker requires open, mature pine woodlands that have a diversity of grass, forbs, and shrub species and a reduced midstory. Optimal foraging and nesting habitat for the species includes a reduced hardwood component and limited mid-story height. As cavity nesters, red-cockaded woodpeckers excavate cavities in older, living pine trees. Suitable cavities and potential cavity trees are often the limiting factor for this species. Artificial cavities have been effective in increasing local populations when combined with appropriate habitat management. On TLWMA, staff installs artificial cavities to replace degraded or destroyed cavities, or to create recruitment clusters. Since 2003, staff have installed 162 artificial cavities. This species is management-responsive and can be an indicator of properly managed pine stands.

Red-cockaded woodpeckers are listed as federally Endangered and this species triggers 4 of 6 prioritization parameters ([Priorities Table](#)). This species is a moderate to high priority statewide. Models estimate 18,719 acres of potential habitat on TLWMA. Literature suggests that red-cockaded woodpecker home range is between 100-400 acres, which indicates that TLWMA could potentially sustain 46-180 active territories.

The statewide FWC Red-Cockaded Woodpecker Management Plan calls for the Three Lakes Metapopulation to have 72 active clusters (ACs) with 58 potential breeding groups (PBGs) by 2020. As of 2013, the metapopulation had 61 PBGs, meeting the minimum state recovery goal to sustain the metapopulation. While the statewide Management Plan does not indicate how many PBGs TLWMA could support on its own, the area-specific [Red-Cockaded Woodpecker Management Plan](#), written in 2010, has a conservation goal of 65 PBGs.

The TLWMA red-cockaded woodpecker population has been actively monitored since 2000, when there were originally 50 AC, all of which were considered potential breeding groups. As of 2013, there were 54 ACs, 9 of which are single bird groups or have been captured by neighboring cluster. This results in a total of 45 PBGs within TLWMA. There are currently 15 recruitment clusters considered suitable for colonization on TLWMA. Some active clusters appear to be geographically isolated, and additional recruitment clusters can be created to facilitate movement of woodpeckers within TLWMA and increase demographic connectivity. Area staff can create recruitment clusters in strategic locations to help achieve the desired spatial distribution of PBGs within TLWMA. Additional species management actions include the translocation of individuals to single bird groups within TLWMA, the continued maintenance of existing clusters, and the use of artificial cavity inserts to maintain 4 suitable cavities per cluster and to create recruitment clusters ([Section 4.3.14](#)).

Monitoring for red-cockaded woodpeckers on TLWMA includes cluster status checks, tree activity checks, and collecting data on cavity use, group size, reproduction, and survival ([Section 5.2.6](#)). One dedicated red-cockaded woodpecker FWC staff member conducts a majority of monitoring on TLWMA, along with help from other staff. FWC will benefit from an update to the area-specific Red-Cockaded Woodpecker Management Plan for red-cockaded woodpeckers. A revised area-specific plan for TLWMA should include the current number of ACs and PBGs, as well as address the placement of recruitment clusters and the potential for translocating birds to single bird groups. The revised area-specific plan should also identify long-term conservation goals and strategies for TLWMA with respect to the red-cockaded woodpecker subpopulation.

The goal for TLWMA is to maintain a stable, healthy population in support of the regional metapopulation. The extensive work to monitor and manage for red-cockaded woodpeckers in the

flatwoods communities of TLWMA will continue to meet the conservation need of this species, provided that Recovery Plan conditions are met and interagency coordination is maintained. One measurable objective was identified:

1. Update the TLWMA Red-Cockaded Woodpecker Management Plan by the end of 2015.

3.2.17: Short-Tailed Hawk

Short-tailed hawks have been observed on TLWMA, and researchers with the Avian Research and Conservation Institute (ARCI) indicate that TLWMA has the potential to support foraging and possibly nesting. The short-tailed hawk is an elusive species that breeds in dense or open woodland stands in wetlands, cypress swamps, and bayheads. Vegetation surrounding nest trees is often very dense, making it difficult to locate and assess nests from the ground. This species exhibits high nest-site fidelity, emphasizing the need to locate and preserve historic nest sites. Foraging habitat includes prairies and open areas adjacent to breeding sites. Transitional zones and ecotones may be important components of foraging habitat for this species.

The short-tailed hawk triggers 6 of 6 prioritization parameters ([Priorities Table](#)), making it a high priority. On TLWMA, models estimate there are 37,593 acres of potential habitat. The best potential nesting habitat for short-tailed hawks occurs within the larger cypress strands and the floodplain swamps surrounding the lakes. Ecotones in these areas quickly transition from thick shrubs to the more open flatwoods where short-tailed hawks can actively forage. On TLWMA, most of the potential habitat is maintained in an open condition that is suitable for short-tailed hawks to hunt prey.

Short-tailed hawks are not considered management-dependent and the opportunity to influence this species at the management-unit level on TLWMA is low. However, ongoing efforts to maintain the WMA's natural community structure and function will benefit short-tailed hawks by improving the suitability of foraging habitat. Management actions that maintain or enhance foraging habitat for this species include prescribed fire, removal of exotic vegetation, and mechanical actions that aid in restoring natural community structure.

Monitoring for this species will be through opportunistic observations ([Section 5.2.8](#)), and should include season and color phase; observations of this species should be shared with ARCI ([Section 6.3](#)). If a nest is located, staff should limit (but not exclude) land management practices around the nest site, and monitor breeding adults for any behavioral changes caused by the disturbance.

The area goal is to provide suitable foraging and nesting habitat for the short-tailed hawk that will allow individuals using TLWMA to function as part of a regional population. However, the presence of short-tailed hawks on TLWMA is dependent on conditions that influence the larger statewide population. Ongoing management to maintain open natural communities on TLWMA should meet the nesting and foraging needs of this species.

3.2.18: Snail Kite

Snail kites frequently use TLWMA for both nesting and foraging. Nesting occurs on Lake Jackson and nearby Lake Kissimmee, with Lake Marion utilized as additional foraging habitat. Snail kites prefer large, contiguous patches of wetland habitat that are interspersed with vegetation and open water. This species is dependent upon apple snails as its primary food source, and will frequently forage over open water for snails.

The snail kite is federally Endangered and triggers 4 of 6 prioritization parameters ([Priorities](#)

[Table](#)). Due to the status and prioritization parameters, this species is a high statewide priority for conservation. Models estimate 1,242 acres of potential habitat for snail kites on TLWMA, which is mainly composed of Lake Jackson and the edges of Lakes Kissimmee and Lake Marian.

Snail kites have become more common on Lake Jackson after the invasion of exotic snails. During the non-breeding season and colder months, snail kites will concentrate over sections of Lake Jackson where hydrilla (*Hydrilla verticillata*) is abundant. These areas will typically support 15-25 kites during the winter months, and 0-15 nests during the breeding season. Snail kites will build their nests in cattail (*Typha* spp.) and bulrush (*Scirpus* spp.) stands located in deeper portions of the lake. Nests can become vulnerable to predation if they are built in areas where the substrate dries out and there is easy access to the shoreline. A few nests built on the southern end of Lake Jackson remain flooded long enough to support annual nesting.

Due to the limited amount of nesting substrates and summer foraging on Lake Jackson, area staff focuses management efforts on supporting wintering snail kites as opposed to increasing nesting habitat. Hydrilla control on Lake Jackson during the early nesting season (February-March) can increase apple snails later in the year and will likely have a greater impact on snail kite populations than management during the fall to improve nesting habitat. By reducing invasive aquatic plants in Lake Jackson, area staff will provide quality foraging habitat for snail kites coming from nearby nesting areas on Lake Kissimmee.

Hydrilla levels greatly affect both wildlife and recreation on Lake Jackson, with waterfowl hunters preferring more hydrilla and anglers preferring less. Currently, hydrilla treatments on Lake Jackson are coordinated with an informal group of stakeholders and experts that includes the Aquatic Habitat Restoration and Enhancement Subsection (AHREs; [Section 6.1.6](#)), Hunting and Game Management Section (HGM; [Section 6.1.2](#)), the FWC Snail Kite coordinator ([Section 6.1.1](#)), FWC's Invasive Plant Management section (IPM; [Section 6.1.7](#)), and local hunters and anglers. This group ensures the needs of recreation and wildlife are met when planning hydrilla management for the year. FWC will continue to participate in this group in order to maintain outreach to local and regional stakeholders.

Due to the high mobility of the snail kite, local monitoring on the area is not recommended. The University of Florida participates in ongoing efforts to monitor snail kites statewide. Area staff should document opportunistic observations of kite nests, though no additional monitoring is recommended at this time ([Section 5.2.8](#)).

The area goal is to provide suitable wetland ecosystems that allow snail kites on TLWMA to function as a part of the regional population. Aquatic plant management on Lake Jackson will continue to provide suitable foraging habitat that allows snail kites to use TLWMA. By providing a stable population of apple snails and suitable nesting sites, TLWMA will help support the regional population of this species.

3.2.19: Southeastern American Kestrel

The southeastern American kestrel has not been observed breeding on TLWMA. The nearest known breeding population is on the Lake Wales Ridge, approximately 25 miles to the west of TLWMA. Southeastern American kestrels utilize upland habitats, including sandhills and longleaf savannas, pastures, sand pine scrub, and prairies. As a secondary cavity nesting species, southeastern American kestrels use previously excavated cavities in large snags and artificial cavities when placed in suitable habitat. In 2010, staff installed 8 kestrel nest boxes in open, mesic flatwoods on TLWMA, which staff

monitor and maintain annually. In 2013, a single individual was observed on the area during the breeding season.

The FWC lists the southeastern American kestrel as Threatened, and the species triggers 4 of 6 prioritization parameters ([priorities table](#)). Models estimate 21,228 acres of potential habitat for southeastern American kestrels on TLWMA. Despite the large amount of potential habitat, nesting kestrels have not been documented on TLWMA, making kestrels a moderate opportunity for the area. Models estimate 1,183 acres on KRPUA. Average breeding territory size is at least 125 acres or more if the habitat quality is marginally suitable.

Management actions that maintain or enhance open, mature, stands of longleaf pine habitat for kestrels include prescribed fire and natural community restoration. Kestrels require adequate perch sites, low ground cover (<1 ft), and an open canopy (<20%) within foraging areas. Snags should be retained during timber management to allow for the creation of perches and cavities. Ongoing efforts to maintain TLWMA's natural community structure and function will maintain the habitat suitability for kestrels.

Nest boxes were installed to provide additional nesting opportunities and supplement natural cavities ([Section 5.1.2](#)). Staff will continue to monitor these nest boxes annually to detect nesting activity by kestrels. From May to August, staff should document any opportunistic observations of kestrels and all nesting/brooding activity ([Section 5.2.8](#)).

The goal for TLWMA is to provide suitable habitat for southeastern American kestrels that allows individuals using the area to function as part of the regional population. By managing upland communities in an open condition and maintaining nest boxes, TLWMA will meet the conservation needs for this species.

3.2.20: Southern Bald Eagle

Southern bald eagles are common on TLWMA, with >20 active eagle territories currently encompassing TLWMA. An additional 35 active bald eagle nests have been identified within a 5-mile radius of TLWMA. Although bald eagles are habitat generalists, they most commonly utilize areas close to rivers, lakes, and coastal waters or bays that provide ample food sources. The Kissimmee Chain of Lakes (managed by the SFWMD) provides abundant opportunities for foraging, and the lands surrounding TLWMA and KRPUA are considered a core nesting area in the FWC [Bald Eagle Management Plan](#).

While the bald eagle does not trigger any prioritization parameters, this species is protected by specific legal rules and requirements under the Bald and Golden Eagle Protection Act. The FWC [Bald Eagle Management Plan](#), approved in 2008, provides recommendations for the continued recovery of this species by placing protections on bald eagle nesting territories. Models indicate 22,389 acres of potential habitat on TLWMA, with 1,262 acres of potential habitat available on KRPUA. Due to the proximity to large lakes, TLWMA has a high opportunity to provide nesting, loafing, and foraging habitat for southern bald eagles.

Bald eagles are not typically considered management-dependent and the opportunity to influence the species at the management area level is low. However, this species will benefit from ongoing efforts to maintain the area's natural community structure and function, as well as the protections afforded to lakes due to surrounding conservation lands. Nests are typically located in tall living pine trees in close proximity to these water bodies. Management actions that maintain or enhance perches, foraging, and nesting habitat include managing for mature pine stands, prescribed fire and mechanical actions that aid in

restoring natural community structure.

Staff will continue monitoring active eagle nests and report the location of newly-identified eagle nests on TLWMA and KRPUA to the FWC Bald Eagle Coordinator ([Section 6.1.1](#)). Staff also will follow management guidelines outlined in the FWC Bald Eagle Management Plan. With the long nesting season and the number of nests on TLWMA, attempting to apply management while following these guidelines can be problematic. Maintaining habitat in suitable conditions will benefit the bald eagle population in the long-run by providing a natural structure to foraging and nesting communities. Common land management practices, such as low-intensity prescribed fires, have not yet caused eagles on TLWMA to abandon the nests. Therefore, area staff should coordinate with bald eagle permitting staff to receive the legal assurance while allowing for the application of essential management near nests. Staff and the FWC Bald Eagle Coordinator should work with USFWS to develop management considerations or exemptions around nests during the nesting season of October through May ([Section 6.1.1](#); [Section 6.6](#)).

The area goal is to provide suitable loafing, foraging, and nesting habitat that will allow individuals using TLWMA to function as part of a regional population. TLWMA and the surrounding conservation lands are within a Core Nesting Area, and therefore an important area for the regional bald eagle population. By protecting active nests from disturbance, and by continuing natural community management, TLWMA will continue to meet the conservation need for this species. One objective was identified:

1. By 2016, work with USFWS and the FWC Bald Eagle Coordinator to develop flexible guidelines for managing natural communities surrounding active bald eagle nests on TLWMA during the eagle nesting season (1 October – 15 May).

3.2.21: Swallow-Tailed Kite

Swallow-tailed kites are frequently seen on TLWMA. Although there are no documented nesting attempts on the property, area staff will occasionally observe groups of kites foraging or loafing during the breeding season. Swallow-tailed kites are habitat generalists and utilize a variety of natural communities on TLWMA for foraging.

Lake Hell ‘n Blazes is one of the largest pre-migratory roosts for swallow-tailed kites in the southeast and is located approximately 12 miles east of TLWMA. ARCI estimates 1,000–2,000 kites use this roost from late June to early August in advance of the fall migration. Researchers with ARCI have suggested that there is some potential for nesting to occur on TLWMA, as kites will use mature cypress strands or pinelands for nest trees. TLWMA may have a larger role for providing foraging habitat to kites that are moving through the landscape than for providing nesting habitat.

Swallow-tailed kites trigger 4 of 6 statewide prioritization parameters ([Priorities Table](#)), making them a moderate statewide priority. On TLWMA, there are currently 27,188 acres of potential habitat modeled to occur. Models estimate an additional 1,261 acres of potential habitat on KRPUA. The mesic flatwoods and dome swamps comprise the majority of potential habitat on TLWMA and are in excellent condition. Pasture edges on KRPUA also provide open habitat for foraging kites. Dome swamps likely provide the best potential nest trees for swallow-tailed kites on TLWMA. Tall pine and cypress trees near hydric forests are an important component of nesting habitat, and open flatwoods and prairie areas are used for foraging.

Swallow-tailed kites are not typically considered management-dependent and the opportunity to affect this species at the MU-level is low. However, ongoing efforts to maintain natural community

structure and function will benefit kites using the area. Management actions that maintain or enhance habitat for this species include prescribed fire and mechanical actions that aid in restoring natural community structure. Swallow-tailed kites tend to prefer trees that are dominant or taller than surrounding trees for nesting. Shrub height and density tends to be higher around nest sites. Swallow-tailed kites exhibit high nest site fidelity and it is important to maintain the suitability of nesting areas when documented. Riparian areas and cypress strands are potential breeding sites, and are best managed by avoiding actions that may disrupt or damage the sites. Further land management considerations can be found in [Section 4.3.17](#).

Because this species naturally occurs in relatively low densities and nests are difficult to detect, local monitoring would be unlikely to detect a change in the kite population. Staff are encouraged to continue cooperation with ARCI for future monitoring efforts to further define the role of TLWMA for this species. Nests or evidence of nesting activity should be documented ([Section 5.2.8](#)) and reported to ARCI ([Section 6.3](#)).

The area goal is to provide suitable foraging and nesting habitat for the swallow-tailed kite that will allow kites on TLWMA and KRPUA to function as part of a regional population. Maintaining open natural communities for foraging and protecting potential nest sites will continue to meet the needs of this species on TLWMA.

3.2.22: Wading Birds

Of the 8 focal species of wading birds, 6 are commonly seen on TLWMA; white ibis (*Eudocimus albus*), wood stork (*Mycteria americana*), great egret (*Ardea alba*), snowy egret (*Egretta thula*), tricolored heron (*Egretta tricolor*), and little blue heron (*Egretta caerulea*). The roseate spoonbill (*Platalea ajaja*) is rarely seen and the reddish egret (*Egretta rufescens*) is not typically found on TLWMA. Nesting colonies have not been documented on TLWMA.

Statewide, this group of species is a moderate priority. Several species are currently FWC-listed SSC and the wood stork is federally listed as Threatened. Pending the approval of the ISMP, the SSC status of the white ibis and snowy egret will be removed, while the status of the little blue heron, tricolored heron, roseate spoonbill, and reddish egret will be changed to state-Threatened. The Millsap biological scores for the reddish egret, little blue heron, and wood stork are high. Populations of the snowy egret, little blue heron, and roseate spoonbill are believed to be declining, while the tricolored heron and white ibis have unknown trends.

Models estimate 22,249 acres of potential habitat on TLWMA and 479 acres of potential habitat on KRPUA. Prescribed fire and exotic plant removal in and around wetlands, wet prairies, and wet flatwoods are the main management actions that will enhance and maintain natural communities in good condition for wading birds. However, wading bird populations are highly influenced by regional conditions such as water levels. Due to the large amount of hydrologic control ongoing in the surrounding Kissimmee Chain of Lakes, there is low opportunity to impact these species on TLWMA beyond ongoing natural community management. When nesting colonies or roosts are documented, area staff should avoid direct destruction of the community or plant structures.

Due to the region-wide efforts to monitor wading bird populations, we do not recommend area-specific monitoring actions on TLWMA or KRPUA. However, staff would benefit from a baseline list of birds and the areas in which they occur. Area staff should record all opportunistic observations of wading birds in the short-term to develop a baseline record for the distribution of wading birds on the area.

([Section 5.2.8](#)). Once this baseline distribution has been established, opportunistic monitoring can be reduced to just documenting roosts and colonies.

The area goal is to maintain the suitability of habitat for the species to allow the wading birds using the area to function as part of a regional population. By maintaining suitable foraging and potential nesting habitat, the area can fulfill its role in the conservation of these species. Wading birds are largely influenced by habitat conditions at the regional level, and the long-term persistence of these species on TLWMA will be influenced by the condition of surrounding land and beyond the control of area staff.

3.2.23: Florida Black Bear

Florida black bear or their sign are rarely observed on TLWMA. As identified by the FWC [Black Bear Management Plan](#), TLWMA and KRPUA are not within either the primary or secondary range of any of the State's major bear subpopulations. The secondary range of the Glades/Highlands subpopulation is <20 miles away from TLWMA. The management plan is intended to guide continued recovery of this species by dividing the state into geographic areas referred to as Bear Management Units (BMUs). TLWMA and KRPUA are located within the South Central BMU. Bears occurring on TLWMA are most likely males moving through the landscape in search of mates or new territories. The FWC bear management group has indicated that TLWMA and KRPUA are not critical for the conservation of this species.

This species triggers 2 of 6 prioritization parameters ([Priorities Table](#)). In 2012, the FWC approved a [Black Bear Management Plan](#) and removed the species from the Threatened species list. The habitat models estimate 38,597 acres of potential habitat on TLWMA. While this is not enough habitat to support an independent population, it is adequate for providing foraging habitat for bears moving through the landscape. Given its distance from known bear populations, TLWMA has a low probability to significantly impact bear populations in the state. The role of TLWMA is to support this species by providing travel corridors and foraging habitat.

Current management in most natural communities promotes an open canopy with low ground cover. However, the extent and interspersions of natural communities on TLWMA should provide enough space and cover for individual bears moving through the landscape. Areas with thick understory and mast-producing shrubs will benefit bears by providing adequate forage and denning cover. When dens are located or suspected, area staff will give special consideration to avoid actively destroying the vegetation or disturbing any denning bears ([Section 4.3.19](#)).

Due to the wide-ranging nature of this species, monitoring of state's bear population is best accomplished at the landscape level by FWC's Bear Management Program ([Section 6.1.8](#)). Any confirmed observations of bear sightings and sign should be recorded and shared with the Bear Management Program ([Section 5.2.8](#)), especially if sows or cubs are documented on the area. Area staff will continue to cooperate with the FWC's Bear Management Program if the status of bears on TLWMA or any of the surrounding communities is updated in the future.

The goal for TLWMA for black bears is to provide suitable foraging habitat and travel corridors. Given the low chance for frequent use of TLWMA by bears, there is a limited opportunity to support bears on the area beyond providing suitable habitat for occasional use. Current management actions should be sufficient to maintain dispersal and foraging habitat for black bears on TLWMA.

3.2.24: Florida Mouse

Florida mice have not been documented on TLWMA, although no efforts have been made to survey for them the area. TLWMA is within the known range of this species and Florida mice have been documented 13 miles southwest on APAFR and on the west side of the Kissimmee River. This species is commonly found in fire-maintained, xeric uplands that have well-drained, sandy soils. Florida mice are most abundant in areas supporting early succession vegetation; populations decline as natural communities become more densely vegetated, more heavily shaded, and more mesic. The Florida mouse is an obligate commensal of the gopher tortoise, and may not be able to persist long-term on sites where tortoises are absent.

The Florida mouse is currently state-listed as a SSC, and the species triggers 4 of the 6 statewide prioritization parameters ([Priorities Table](#)). A recent biological status review determined that the Florida mouse does not warrant listing, and the FWC will remove the SSC status from the species. Some conservation objectives from the Florida mouse [SAP](#) include maintaining a stable or increasing statewide population, and identifying characteristics of high-quality Florida mouse habitat. Models indicate 2,322 acres of potential habitat scattered across TLWMA. Florida mice require 75-200 acres of suitable habitat to support a viable population so there is enough habitat on TLWMA to support an independent population. Habitat management on TLWMA for gopher tortoises may have a positive effect on Florida mice if they are present. The Florida mouse remains a low priority on the area due to the lack of information on its status, and TLWMA has a limited role in fulfilling objectives identified in the SAP.

The Florida mouse is responsive to management and there is a moderate opportunity for management on TLWMA to have a significant effect on the mouse population, should the species exist on the area. Ongoing management in TLWMA's scrub, scrubby flatwoods, and sandhill communities will provide habitat benefits to Florida mice. Due to the limited knowledge of the species' status on the area, we do not recommend specific land or species management actions for Florida mice at this time.

The Florida mouse [SAP](#) includes recommendations to survey all suitable conservation lands to document the species' statewide distribution, and to complete genetic sampling throughout the species' range. FWC has developed a monitoring protocol to assess the status and distribution of Florida mice on WMAs across the state. To determine the status of Florida mice on TLWMA, this protocol will be used to survey suitable habitat by 2016 ([Section 5.2.7](#)). If Florida mice are not detected after the initial effort, surveys can be repeated within the next 5 years. After 2 unsuccessful survey attempts, staff can discontinue efforts to determine their status on the area. In addition, if any are captured during surveys a genetic sample should be taken to help accomplish the SAP genetics objective. Once these surveys are complete and the status of Florida mice on TLWMA has been assessed, area staff will use the information to make future management decisions regarding Florida mice.

The goal for TLWMA is to maintain scrub, scrubby flatwoods, and sandhill in suitable condition to support a viable Florida mouse population. Ongoing management for the gopher tortoise will help meet the habitat needs for this species, should they occur on TLWMA. The measureable objectives are:

1. By 2016, complete a baseline survey to determine the presence and distribution of Florida mice on TLWMA.

3.2.25: Florida Panther

Florida panthers and their sign are rarely observed on TLWMA. The USFWS has documented radio-collared panthers on private lands adjacent to TLWMA, and it is likely that panthers move through

the area. TLWMA lies outside any primary, secondary, or dispersal zones for this species as identified by the [USFWS Panther Recovery Plan](#). Florida panthers use a variety of habitats consisting of forested uplands and wetlands interspersed with more open habitats such as freshwater wetlands, dry prairie, old fields, pasture, and agricultural land. Several studies found a proportionally higher use of forested habitat types. However, non-forested habitats are important for hunting and maintaining prey species, and serve as travel corridors between resting sites.

The Florida panther is federally Endangered, triggers 4 of the 6 statewide prioritization parameters ([Priorities Table](#)), and is a high statewide priority. On TLWMA, models estimate 17,809 acres of potential habitat for the Florida panther. Combined, TLWMA, TNRWMA, and HH/BCWMA provide a potential habitat patch containing >320km² of potential habitat. Based upon the USFWS report for the region, TLWMA has good connectivity with the >1,558 km² of potential panther habitat located on the APAFR.

While not part of the primary or secondary zones for Florida panthers, the USFWS determined the network of conservation lands that includes TLWMA, TNRWMA, and HH/BCWMA has the potential to expand the panther's range north of the Caloosahatchee River. The [USFWS Florida Panther Recovery Plan](#) used GIS modeling techniques to identify large areas of potential habitat north of the Caloosahatchee based on known habitat associations of panthers within their primary and secondary zones. This river defines the current northern boundary of the Florida panther breeding range. Establishing a population on or near TLWMA is unlikely, as it would require species management actions to bring panthers from areas where they currently breed. TLWMA has the opportunity to support the occasional panther that disperses from a primary or secondary zone.

Land management for Florida panthers includes creating a mosaic of habitats with patches of dense vegetation for resting, interspersed with open areas for stalking prey. Panthers also benefit from a diversity of vegetation that will produce greater forage for prey, such as white-tailed deer and feral hogs. On TLWMA, cypress strands, bayheads, and other ecotones provide sufficient cover to function as travel corridors for the occasional male panther dispersing through the landscape. Ongoing management activities aimed at restoring and maintaining the structure and function of the WMA's natural communities through prescribed fire will provide these open areas should panthers move through the site. Area staff should avoid forcing fire into natural fire shadows to provide panthers an herbaceous component in the landscape for denning. Ongoing natural community management is not entirely conducive to all habitat requirements for panthers, but by supporting prey species and providing occasional denning cover, TLWMA will meet the needs of Florida panthers, should they occur on the area.

FWC's panther management team closely monitors the panther population, and additional systematic monitoring by local staff is unnecessary. Opportunistic monitoring is recommended for this species, including sign, prints, and game camera photos ([Section 5.2.8](#)). TLWMA staff should share any opportunistic observations with the FWC panther team ([Section 6.1.8](#)) and USFWS biologists ([Section 6.6](#)).

The area goal is to provide suitable foraging habitat and travel corridors for panthers. Given the low opportunity for panther use on TLWMA, natural community management on the area will have a limited influence on the Florida panther population. Ongoing management to provide open hunting habitat and suitable denning conditions, where appropriate, will meet the needs of this species on the area.

3.2.26: Sherman's Fox Squirrel

Sherman's fox squirrels are occasionally seen on TLWMA. Area staff have also documented fox squirrel breeding on TLWMA, and there are occurrence records from the nearby Escape Ranch. Fox squirrels also have been documented on TNRWMA, Lake Kissimmee State Park, Lake Lizzie Nature Preserve (Osceola County), and adjacent private lands. Suitable habitat for Sherman's fox squirrel includes longleaf pine sandhills or flatwoods with a mixture of pines and oaks and a sparse to moderate shrub layer, such as along the edges of longleaf pine savannas and live oak forests. Fox squirrels often use large oaks for nest sites and mature, seed-bearing longleaf pines as an important food source.

This state SSC triggers 4 of 6 prioritization parameters ([Priorities Table](#)). Upon approval of the ISMP, Sherman's fox squirrel will be retained as a SSC, with recommendations for further research on the population's genetic range. The [SAP](#) for the Sherman's fox squirrel calls for research into habitat parameters and beneficial management practices. The fox squirrel requires 2,000-9,000 acres of suitable habitat to support a viable population. On TLWMA, models estimate 21,901 acres of potential habitat, therefore, TLWMA contains enough potential habitat to support a local population of fox squirrels. Due to their large home ranges and low densities, fox squirrels will benefit from the retention of suitable habitat across the larger regional landscape. Natural community management for Sherman's fox squirrels should maintain a mosaic of habitat conditions and mast-producing trees that ensure a year-round supply of food items.

Management actions that maintain or enhance habitat for fox squirrels include prescribed fire and mechanical actions that aid in restoring natural community structure and timber management that results in open, mature pine forests ([Section 4.3.20](#)). Once recommended research outlines management practices that will benefit Sherman's fox squirrels, area staff should incorporate these practices into ongoing management in order to enhance fox squirrel habitat on TLWMA.

Sherman's fox squirrels naturally occur at low densities and can be difficult to detect, therefore, we do not recommend any area-specific monitoring actions. The [SAP](#) calls for the development of a protocol to monitor statewide populations. Once completed, monitoring may be initiated at the TLWMA. Until then, area staff should record any opportunistic observations of fox squirrels and nests ([Section 5.2.8](#)). Due to their large home ranges, CPS should work with willing landowners to identify ways to meet the habitat needs of this species on adjacent private lands ([Section 6.1.4](#)).

The overall goal is to provide suitable habitat for Sherman's fox squirrels in order to support a viable population on TLWMA. Ongoing management that maintains low, open groundcover with a sparse oak component in flatwoods communities will meet the conservation needs of this species on TLWMA and help support the regional population.

3.3 Other Listed and Locally Important Species

While natural community management, considerate of a set of focal species, provides benefits to a host of species reliant upon these natural communities, species that are imperiled sometimes require specific attention. Further, subsection 253.034(5) of the Florida Statutes (F.S.) requires all land management plans to include an analysis of the property to determine if significant natural resources, including listed species, occur on the property. If significant natural resources occur, the plan shall contain management strategies to protect the resources. The Florida Forever Act (s. 259.105, F.S.) adds that all State lands that have imperiled species habitat shall include, as a consideration in the management plan, restoration, enhancement, management, and repopulation of such habitats. In this subsection, we discuss listed or locally important species that are not PLCP focal species.

It is possible other imperiled species occur on TLWMA, and if encountered, staff will document these encounters. Florida's imperiled species are adapted to natural communities and should continue to benefit from FWC's ongoing or planned ecological management that aims to restore natural community structure and function. Under FWC's ecological management, these species have a higher probability of persistence than in the absence of this management.

3.3.1: Other Imperiled Wildlife Species

American alligator – Except for the listed species discussed above, the American alligator (*Alligator mississippiensis*) is the only other listed wildlife species documented on TLWMA and the KRPWA. The alligator is federally listed as Threatened due to similarity of appearance with other crocodilians. Ongoing management to maintain healthy wetlands and freshwater areas should ensure the continued existence of the alligator on TLWMA.

Rare Butterflies - Four rare butterflies are known to occur on TLWMA. The arogos skipper (*Atrytone arogos arogos*), berry's skipper (*Euphyes berryi*), meske's skipper (*Hesperia meskei*), and Florida dusted skipper (*Atrytonopsis hianna*) are classified as S1 by FNAI. This classification indicates they are "Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor." The mesic flatwoods and dry prairie provide both host plants and nectar plants. Continued natural community management benefits these species, however, large intense fires can negatively impact populations. More management considerations are found in [Section 4.3.21](#).

3.3.2: Rare Plants

Although area staff have not conducted a formal rare plant inventory, several imperiled plant species have been documented on TLWMA. The Florida Department of Agriculture and Consumer Services listed the large-flowered rosemary (*Conradina grandiflora*), nodding pinweed (*Lechea cernua*), hooded pitcher plant (*Sarracenia minor*), long-lipped ladies' tresses (*Spiranthes longilabris*), and giant orchid (*Pteroglossaspis [Eulophia] ecristata*) as Threatened. Cutthroat grass (*Panicum abscissum*), plume polypody (*Pechuma [Polypodium] plumula*), and swamp plume polypody (*Pechuma [Polypodium] ptilodon*) are state listed as Endangered. The protections afforded plants by existing protection on conservations lands, in conjunction with management actions that include exotic plant removal and prescribed fire, will continue to maintain habitat for these and other rare plants. As such, these species should persist under current management on TLWMA.

Large-Flowered Rosemary - Large-flowered rosemary occurs in scrub communities of central and south Florida. They are largely at risk due to the loss and degradation of scrub communities throughout Florida. The continued use of prescribed fire to manage scrub should benefit this species.

Nodding Pinweed - Nodding [scrub] pinweed occurs in scrub communities of central and south Florida. They are at risk due to the loss and degradation of scrub communities throughout Florida. The continued management of scrub with an emphasis on prescribed fire should benefit this species.

Hooded Pitcher Plant - Hooded pitcher plants will respond well to current management actions focused on the frequent use of prescribed fire in wet flatwoods, prairies, and other sites in which they occur. Pitcher plants survive fire by re-sprouting from rhizomes. In the absence of fire, shrubby species overgrow and out-compete these plants. The continued use of fire on these natural communities is therefore important to retaining the pitcher plant on TLWMA.

Long-Lipped Ladies' Tresses - The long-lipped ladies' tresses is an orchid typically found in wet prairies and pine flatwoods. Management for this species includes the use of prescribed fire to create sunny openings and reduce competition from woody species. Soil-disturbing activities such as bedding and plowing fire lanes can be destructive to these orchids, as would actions that alter the hydrology of their habitat. The continued use of fire on these natural communities is important to retaining the long-lipped ladies' tresses on TLWMA.

Giant Orchid - Giant orchid is typically found in sandhill, scrub, pine flatwoods, and pine rockland natural communities that are actively managed. Management for this species includes the use of prescribed fire to create sunny openings and reduce competition from woody species. Soil-disturbing activities such as bedding and plowing fire lanes can be destructive to these orchids, and should be avoided near known occurrences. The continued use of fire on these natural communities is important to retaining the giant orchid on TLWMA.

Cutthroat Grass - Cutthroat grass is typically found within flatwoods, wet prairies, and depression marshes. Management for this species includes maintaining natural communities with prescribed fire to maintain open-canopied communities. Removal of exotic groundcover is also beneficial to this species. Timing of prescribed fire in cutthroat grass communities should include burning in the spring or summer to stimulate flowering. Excessive site preparation and soil disturbance should be avoided near known occurrences. The continued use of fire and treatment of exotics on these natural communities is important to retaining cutthroat grass on TLWMA.

Plume Polypody and Swamp Plume Polypody - Plume polypody and swamp plume polypody are ferns typically found on tree branches or exposed limestone within hardwood hammocks, wet flatwoods, or sinkholes. As these species occur in communities that are not actively managed, they will benefit from the protection afforded plants occurring on State conservation lands. Staff will take appropriate steps to ensure chemical and mechanical treatments do not negatively affect specific sites known to support these species.

The goal for rare plants is to provide conditions where each plant will persist on TLWMA. Current management practices will enhance or maintain the populations of these rare plants. As noted earlier this list may not be exhaustive, as no formal survey has been completed. Therefore, the objective is:

1. Complete a rare plant inventory on TLWMA by 2020.

Section 4: Land Management Actions and Considerations

Models identified potential habitat for 24 focal species on TLWMA ([Section 3.1](#)); however, not

all of these species have the same level of management opportunity or need ([Section 3.2](#)). The FWC's natural community-based management, which emphasizes prescribed fire methods that produce a mosaic of burned and unburned areas, will provide the habitat conditions necessary for most of these species without the need for further strategic management actions.

However, we may designate SMAs when actions over and above ongoing natural community management are required ([Section 4.1](#)) in a specific location. In order to ensure natural community management addresses the needs of these focal species, the OBVM DFCs are evaluated ([Section 4.2](#)). Some species have specific protective measures or land management considerations that are necessary to ensure their continued use of the property. [Section 4.3](#) provides these recommendations.

4.1: Strategic Management Areas

The intent on TLWMA is to apply management actions that maintain intact natural communities in good to excellent condition and restore degraded or altered natural communities to a condition that will better suit focal and listed species. However, SMAs focus management actions on MUs with the highest possibility of success, and/or MUs most critical for the conservation of a species on the WMA. Staff designates SMAs to achieve at least one of the following:

- Identify the area in which to apply specific land or species management that creates the highest probability for persistence and conservation of a species or suite of species. These specific actions should aid in restoring, enhancing, or maintaining the habitat or population.
- Identify an area in which to focus specific land or species management actions for the best chance of success, when there is more restoration and enhancement than can be accomplished in short order on the WMA. This might be the first or next step in a sequential series of management actions that will increase the likelihood of occupation and or persistence of a specific species.
- Identify an area that is so critical to the persistence of a species on the WMA that it warrants special designation to ensure protection against negative alteration.
- Identify areas that are critical for research or monitoring.
- Recommend MU-specific natural community DFCs that differ from the DFCs in the natural community area-wide, when this is necessary to benefit a specific species.

Workshop participants agreed on the need for a Florida Grasshopper Sparrow SMA on TLWMA to restore and maintain dry prairie communities within the historic natural footprint of the Kissimmee dry prairie. Staff developed SMA-specific goals and strategies to guide management for the SMA for the benefit of the Florida grasshopper sparrow.

4.1.1: Florida Grasshopper Sparrow SMA

The purpose of this SMA is to identify, maintain, and enhance dry prairie habitat that is crucial for the survival of the Florida grasshopper sparrow on TLWMA. Due to the importance of the Kissimmee dry prairie to the survival of the grasshopper sparrow, it is a higher priority for management than other areas mapped as dry prairie within TLWMA. While dry prairie comprises 16,031 acres on TLWMA, approximately 10,500 acres occurs in the footprint of the historical Kissimmee dry prairie, which is within the Florida grasshopper sparrow's historic range. Some of the dry prairie within the historic Kissimmee footprint is currently degraded by hardwood encroachment. This SMA covers most

of the dry prairie on the southwest portion of TLWMA, including areas where Florida grasshopper sparrows occur, as well as the unoccupied portions that have the potential to support sparrows.

Staff should first identify the degraded dry prairie habitat on TLWMA where intensive prairie management will take place. Due to the sparrows' intolerance of trees and of forested edges, restoration of the historic dry prairie will include hardwood removal and frequent fire. Conservation of the Florida grasshopper sparrow must include restoration and maintenance of expansive, continuous habitat that is in suitable condition for grasshopper sparrows to persist on TLWMA and within the region as a whole.

SMA Goal: Identify, maintain, and enhance crucial habitat for Florida grasshopper sparrows on TLWMA.

SMA Objective 1: Delineate portions of dry prairie habitat on TLWMA within the historic Kissimmee dry prairie that can be restored for the benefit of Florida grasshopper sparrows.

SMA Objective 2: Restore areas within the SMA that do not meet FNAI DFCs for dry prairie.

SMA Strategy:

Dry prairie in the southern half of TLWMA is at risk of degradation due to encroachment from oaks and other hardwoods. While FNAI natural community mapping has documented dry prairie habitat throughout TLWMA, this SMA prioritizes the portions of the historic Kissimmee dry prairie to focus management. Staff used historic community maps and current range maps for the Florida grasshopper sparrow to identify dry prairie where tree removal should occur. This SMA includes all current and historic dry prairie in management units 41, 46, 48, 55, 61, 65, 69, 79, 81, 86, 87, 88, 89, 90, 91, and 93.

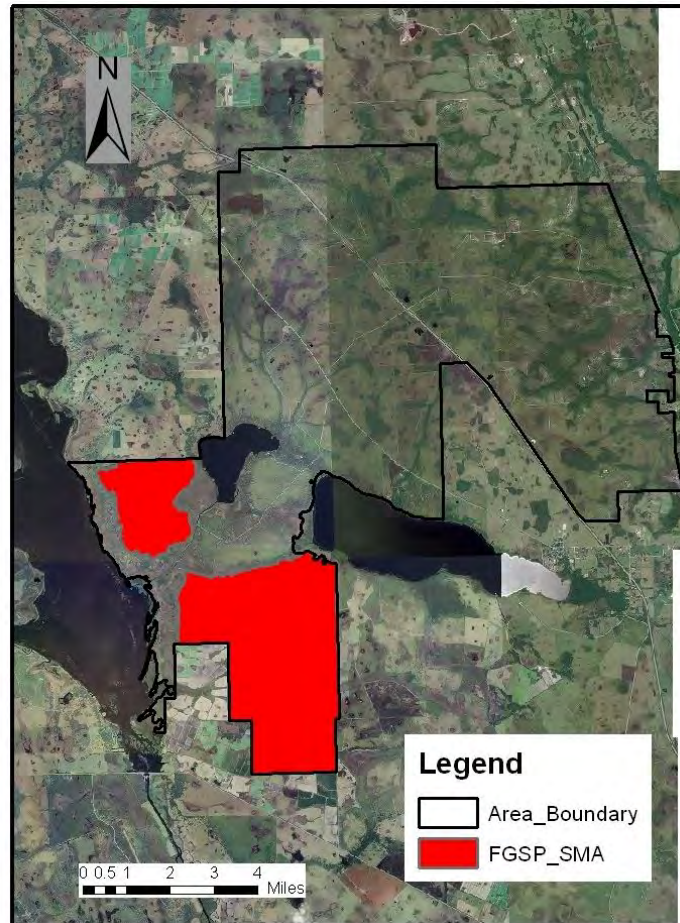


Figure 2. Florida grasshopper sparrow SMA on TLWMA

Staff should burn areas within the SMA with a 1-3 year burn interval with the majority of the area kept at 2 years or less, in order to retain the open conditions preferred by Florida grasshopper sparrows. Fires should be conducted under a variety of conditions and fire intensities to achieve a mosaic of conditions. This approach leaves some unburned or lightly burned areas that may provide short shrubs and perches for singing males, refuges from predators, and reservoirs of insects and other food sources. Additionally, utilizing smaller burn units can provide a mosaic of conditions within a smaller footprint.

Some portions of the SMA may require mechanical treatments to reach the dry prairie DFCs. Tree removal and roller-chopping are tools for bringing stem height and density down to acceptable levels (~0% tree stem density, <2 ft average maximum shrub height, <2 ft average maximum palmetto height). Staff will evaluate the OBVM monitoring data to ensure that area management is meeting the community conditions that will most benefit Florida grasshopper sparrows. Natural community monitoring combined with ongoing sparrow monitoring will ensure that habitat management is having the desired effect on restoration of dry prairie to historic conditions and meeting the needs of the sparrow.

4.2 Objective-Based Vegetation Management (OBVM) Considerations

OBVM is an approach to land management that emphasizes maintaining and restoring natural plant communities towards pre-determined desired conditions. The OBVM DFCs ([Table 2](#)) target a range

in values for various habitat attributes within actively managed communities. However, if a focal species requires a more restricted range in habitat attributes than is reflected in the area-wide DFCs, or depends on an attribute that is not currently monitored on BWWMA, we may recommend adjusting the DFC range or adding the attribute. The workshop gave participants the opportunity to evaluate if the current DFCs meet the needs of focal species and if not, to suggest modifications. The following are common reasons to modify DFCs:

- To obtain maximum habitat suitability for a species that requires a more restricted range of DFC values than the current DFC values.
- To benefit a particular species in specific MUs; typically when we have designated a SMA that requires a change in natural community DFCs only within the SMA and not in the natural community area-wide.
- To add an attribute that was not previously monitored.

For TLWMA, workshop participants agreed that the reference site DFCs were adequate and no additions or modifications were proposed.

Table 2. Desired Future Conditions for specific vegetative attributes in actively-managed natural communities at TLWMA as identified through reference site data.

Three Lakes WMA OBVM Attributes	mesic flatwoods (peninsular Florida)	scrubby flatwoods	dry prairie	wet prairie	scrub
Basal Area of Pine (sq ft per acre)	10-50	20-60	0.0	0	0-20
Non-Pine Stem Density (7 m radius)	0	< 1	0	0	< 1
Subcanopy (2 - 4" DBH)	< 1	< 1	0	< 1	< 1
Shrub Stem Density > 3 ft	< 1	1-5	0	< 1	1-5
Maximum Shrub DBH (in)	< 0.5	< 1	0	< 0.25	< 1
Average Maximum Shrub Height (ft)	< 2	< 3	< 2	< 2	< 5
Shrub Cover (%)	< 25	10-40	10-40	< 5	20-40
Serenoa Petiole Density > 3 ft	0	0	0	0	0
Average Maximum Serenoa Height (ft)	< 3	< 3	< 1.5	< 1	< 3
Serenoa Cover (%)	10-25	5-15	5-20	< 5	0-10
Herb Cover (%)	> 25	1-10	> 10	> 75	< 5

4.3 Further Land Management Considerations

Most generalist or wide-ranging species will benefit from management that restores the structure and function of natural communities they use. However, specific management recommendations and precautions are necessary to ensure continued suitability of the area for some species. The following recommendations should help ensure TLWMA continues to fulfill its role in the conservation of these species.

4.3.1: Gopher Frog

Gopher frogs frequently move between wetland breeding ponds and adjacent uplands. Managers should avoid placing new firebreaks or roads along wetland ecotones, which can alter or destroy the herbaceous component of pond margins preferred by this species and other amphibians. Wet-lining can be an alternative to mineral firebreaks around wetlands if necessary; however, allowing fire to burn through the wetland is preferred. Mechanical treatments may be needed initially, but prescribed fire should be the primary management tool to remove shrubs and other thick vegetation from pond margins in suitable wetlands. Because it is important to maintain potential breeding ponds in good condition, efforts should be made to minimize soil disturbance within 500 yards of potential breeding ponds.

Growing season (April–September) burns are more beneficial to gopher frogs than dormant season (October–March) burns. Growing season burns are more effective at reducing shrub cover and litter in the wetland basin, stimulating the growth of herbaceous emergent vegetation, enhancing the wetland/upland ecotone, and stimulating the reproduction of wiregrass in the surrounding uplands. Burns should occur during the early growing season when the wetland is likely dry, although fire frequency is more important and a dormant season is better than not burning.

4.3.2: Eastern Indigo Snake

Eastern indigo snakes will benefit from actions intended to protect gopher tortoise burrows and natural refugia. Avoid operating heavy equipment at high rates of speed, allowing snakes to move out of the path and avoid areas with high densities of gopher tortoise burrows to prevent collapsing burrows. When possible, leave coarse woody debris and stumps to provide cover. Brush piles can provide refugia when natural cover is sparse, so avoid putting fire on brush piles during prescription burns.

4.3.3: Florida Pine Snake

Florida pine snakes will also benefit from actions intended to protect gopher tortoise burrows and natural refugia. Operate heavy equipment at a rate of speed that allows snakes to move out of the path, and avoid areas with high densities of gopher tortoise burrows to prevent collapsing burrows. When possible, leave coarse woody debris and stumps to provide cover. Brush piles can provide refugia when natural cover is sparse, so avoid putting fire on brush piles during prescription burns.

4.3.4: Gopher Tortoise

Gopher tortoises are generally less active and spend more time in burrows during the winter months. Therefore, area staff should conduct mechanical treatments such as roller-chopping and timber removal in gopher tortoise habitat at this time to prevent crushing or otherwise harming foraging tortoises. In addition, avoid mechanical treatments during September and October because hatchlings are most abundant during these months and they are difficult for equipment operators to see. Managers should consider how the timing of the treatment will affect management results, and conduct the treatment in a way that allows for meeting management objectives while minimizing negative impacts on tortoises. Regardless of timing, staff should take steps to minimize impacts on known burrows (e.g., flagging burrows).

4.3.5: Bachman's Sparrow

Prescribed fire improves habitat quality for Bachman's sparrows, and is the primary land management tool recommended to enhance habitat for Bachman's sparrows. Occupancy rates of Bachman's sparrows begin to decline around 18 months post-fire and they may abandon habitat if fire is excluded for more than 3 years. Staff can create and maintain suitable habitat through frequent use of prescribed fire (≤ 3 year rotation). Area staff should follow mechanical treatments aimed at reducing palmetto density and height with a prescribed burn as soon as possible.

4.3.6: *Brown-Headed Nuthatch*

The brown-headed nuthatch is a cavity nester that is dependent on the presence of snags for suitable nesting habitat. Old short snags with flaking bark and soft wood, and old decaying oaks with a diameter at breast height of <10 inches are important nesting sites. When practical, area staff will attempt to retain these particular types of snags during land management activities.

4.3.7: *Burrowing Owl*

If staff identifies active burrows, management activities should be limited within a 50-foot buffer around the burrow during the nesting season, which occurs from February through July, to minimize nest abandonment or burrow collapse. The Species Conservation Planning (SCP) section regional biologist can be used a resource to identify which actions may be detrimental to burrowing owls ([Section 6.1.1](#)).

4.3.8: *Cooper's Hawk*

During the nesting season (April-July), Cooper's hawks are secretive and intolerant of human disturbance near the nest site. Males show a strong fidelity to nesting territories. Whenever possible, managers should protect known nests and avoid heavy alteration near the nesting location. Whenever signs of Cooper's hawk nesting (e.g., carrying nesting material, aggressive dive bombing) are encountered, the location should be documented and an effort made to locate the nest.

4.3.9: *Crested Caracara*

Crested caracaras have high fidelity to their home ranges and nest sites. Management activities should retain cabbage palms in appropriate natural communities as potential nest sites. Nesting sites will be protected and surrounding habitat maintained in a suitable condition. If nests are detected, efforts to minimize any increased human activity (above current levels) should be considered. Prescribed fire, mowing, roller-chopping, and grazing can maintain the open habitat this species requires. These activities can occur year-round within home ranges but should be limited, not excluded, near nest sites. A significant increase in human activity within the home range or territory can cause caracaras to abandon the area, even outside of the nesting season. Complete management guidelines are available in:

Morrison, J.L. 2001. [Recommended Management Practices and Survey Protocols for Audubon's Crested Caracara \(*Caracara cheriway audubonii*\) in Florida.](#) Florida Fish and Wildlife Conservation Commission, Technical Report No. 18. Tallahassee, FL. 19 pp.

4.3.10: Florida Grasshopper Sparrow

The most important management practice for Florida grasshopper sparrows is frequent prescribed fire. Early growing season fires promote herbaceous growth and appear to benefit sparrows. Occupancy declines have been recorded in areas with a burn frequency of longer than 2 years. Therefore, the preferred fire return interval should be between 1-3 years.

The variables that represent ideal Florida grasshopper sparrow habitat are still being tested and refined. Some heterogeneity in the landscape provides opportunities for foraging and nesting, in addition to perches for singing. This heterogeneity can be generated by either a mosaic of smaller burns, creating a patchwork of conditions, or through conducting fires under conditions where a mosaic of fire intensities will create variety in the landscape. Roller-chopping also alters vegetation by reducing shrub cover, but in order to reduce overall biomass, chopping should be followed soon after with fire. Areas of dry prairie where oak and cabbage palm encroachment occur (due to fire exclusion, changes in hydrology, etc.) will require removal of trees in order to get to a point where prescribed fire can maintain the appropriate structure of dry prairie.

4.3.11: Florida Sandhill Crane

Prescribed fire improves the quality of upland habitat for sandhill cranes, and fire applied prior to nesting near nesting areas may improve brood habitat. Because standing water is a major feature of nesting sites for cranes, upland fires generally do not burn into wetland nest sites. Area staff should attempt to minimize the disturbance to nest areas in order to decrease chances of abandonment. To ensure management is conducive with the needs of this species, follow the management guidelines found at:

Stys, B. 1997. [Ecology of the Florida sandhill crane](#). Florida Game and Fresh Water Fish Commission, Nongame Wildlife Program Technical Report No. 15. Tallahassee, FL. 20 pp.

4.3.12: Florida Scrub-Jay

Scrub and scrubby flatwoods should be managed to create a mosaic of habitat conditions, as described in the [FWC's Scrub Management Guidelines](#). Optimal habitat for Florida scrub-jays is oak-dominated scrub and scrubby flatwoods, with the shrub layer averaging between 4 and 5.5 feet tall. Habitat becomes less suitable when the average shrub height is >6 feet or when all vegetation in a territory is <4 feet tall. Optimal habitat has <2 pines per acre. Pines >6 feet and encroaching forest edges provide cover and perches for predators, and decrease habitat suitability for scrub-jays. Small patches of taller scrub (6-9 feet) cumulatively comprising ≤1 acre per territory provide habitat heterogeneity. Open ground should cover 10–50 % of the territory.

If left unmanaged over time, scrub habitats mature and become thick and unsuitable for scrub-jays. Prescribed fire is used to reduce shrub height and create open areas. A burn that leaves some small, unburned patches will benefit scrub-jays by providing thick clumps of cover in which to nest. If fuel levels support it, fire from adjacent flatwoods and other natural communities should be allowed to burn through scrubby patches. If mechanical treatments are needed, the 'sloppy chop' technique should be used to provide heterogeneity in vegetation structure and create thick, nesting cover.

4.3.13: Northern Bobwhite

Prescribed fire is the primary land management tool for northern bobwhite habitat. Managers should ignite fires using a variety of firing techniques and environmental conditions to achieve a mosaic burn. Mosaic burns result in a patchwork of burned and unburned areas that meet different life history requirements for northern bobwhite. Growing season fires are generally preferred to dormant season fires as they trigger flowering and viable seed production in many native grasses and forbs. Evidence suggests that the frequency of fire in flatwoods communities may be just as important as the seasonality of burn to bobwhite habitat. Therefore, dormant season burns are better than letting the area fall out of rotation.

4.3.14: Red-Cockaded Woodpecker

Land management that includes removal of excess vegetation, removal of exotic vegetation, and prescribed fire on a 2-3 year return interval will maintain and enhance habitat conditions for red-cockaded woodpeckers. During land management activities, staff should protect active and inactive cavity trees as well as large, old pines that are potential cavity trees. Potentially suitable trees include trees with diameters ≥ 13 inches (25.4 cm) density at breast height and flat tops. Since TLWMA has active red-cockaded woodpecker clusters, managers should follow management guidelines found in the [FWC Red-Cockaded Woodpecker Management Plan](#) and [USFWS Red-Cockaded Woodpecker Recovery Plan](#), especially Sections 3 (Management Techniques) and 8 (Management Guidelines).

4.3.15: Short-Tailed Hawk

Short-tailed hawks exhibit high nest site fidelity, and historic nest areas are often used over multiple years. Nests are often located in cypress or other forested wetlands, but are not exclusive to wet sites. If an active nest is located, staff should minimize any management activities within a 330-foot buffer around the nest during the nesting season. Avoid heavy alteration of the nesting location and protect trees near the nest to preserve the integrity of the nest area. Managers should also protect potential future nest trees by retaining the largest, oldest trees on the landscape during land management activities.

4.3.16: Southern Bald Eagle

Current land management practices that benefit bald eagles include decreasing the risk of catastrophic wildfire, maintaining healthy forests, and providing suitable nest trees. These management practices are accomplished through the use of prescribed fire, removal of exotic species, reduction of excess fuel loads, thinning of overstocked stands, replanting with native species (primarily pines), and uneven-aged timber management. Retaining large-diameter native pines will ensure that suitable potential nest trees may be available in the future.

State and federal law requires protection of bald eagles, which includes avoiding disturbance of eagles within 660 feet of their nests during the breeding season (October 1 – May 15). Managers will consider the management guidelines in the [state management plan](#) and follow them when planning activities, unless exemptions are granted. Managers should continue to manage stands in which eagle nests occur, but use proper planning to avoid negative impacts to the eagles, per the guidance of the

management plan. TLWMA staff will work with the FWC Bald Eagle Coordinator ([Section 6.1.2](#)) to develop specific management guidelines around nests in actively-managed MUs.

4.3.17: Swallow-Tailed Kite

Swallow-tailed kites exhibit high nest site fidelity. Managers should protect known nest sites from disturbance and alteration. The tallest pines or cypress in an area should be retained for potential future nests. During the nesting season, managers can reduce the chance of disturbing active kite nests by minimizing activities, above existing management levels, within a 330-foot protective buffer. For more information on habitat requirements see:

Meyer, K. D., and M. W. Collopy. 1995. [Status, distribution, and habitat requirements of the American swallow-tailed kite \(*Elanoides forficatus*\) in Florida](#). Project Report, Florida Game and Fresh Water Fish Commission, Tallahassee.

4.3.18: Wading Birds

It is possible that ongoing actions (e.g., prescribed fire, timber harvest) could have negative impacts on wading birds if the needs of the species are not considered during the planning process. Managers will protect known wading bird habitat by minimizing management activities within 330 feet of the colonies, during nesting season. Managers should also plan aquatic vegetation control activities at a time that avoids disturbance to the colony, and use methods that maintain potential nest sites.

4.3.19: Florida Black Bear

Bears require large areas of dense vegetation for escape and denning cover. They also require a mosaic of dense and edge habitat, in both uplands and wetlands, which creates seasonally abundant forage. Efforts to maintain and restore natural communities on TLWMA will result in a more open landscape with lower shrub density and height. Non-managed communities and the interspersed wetland habitats will ensure adequate escape and denning cover for black bears on TLWMA. If staff document bear dens on TLWMA, managers should limit the use of mechanical and prescribed fire activities within those areas in the dormant season (mid-January through March). To allow bears to move across the area, management should also attempt to preserve cover that increases connectivity between cypress heads and hardwood swamps by not forcing fire into natural fire shadows.

4.3.20: Sherman's Fox Squirrel

Prescribed fire will maintain mature forests in an open condition that will benefit Sherman's fox squirrels. Reducing dense palmetto cover in forest communities will also create open conditions and promote plants preferred by this species, such as runner oak (*Quercus pumila*) and dwarf live oak (*Q. minima*). Managers should retain a diversity of mast-producing trees during natural community restoration as food sources for fox squirrels throughout the year.

4.3.21: Rare Butterflies

Large, uniform fires will temporarily remove all adult and larval host plants from large areas, which is detrimental to butterfly species. Burning smaller units in a mosaic pattern will benefit butterflies by sparing some individuals who can re-colonize the burned areas. In flatwoods, a 30-month interval provides the best balance of plant and population response. By reducing the frequency of roadside mowing, management will promote wildflowers that are important food sources for butterflies.

Section 5: Species Management Opportunities

Land management that considers the needs of a suite of focal species provides direct benefits to many associated species. However, land management actions alone are insufficient to maintain or recover some species. These species need species-specific management ([Section 5.1](#)). Additionally, monitoring ([Section 5.2](#)) is required to verify management is having the desired influence on wildlife. [Section 5.3](#) identifies research necessary to guide future management.

5.1: Species Management

Species management as used here refers to actions other than land management, monitoring, or research, taken for a specific species. Species-specific management actions can include actions such as translocation, restocking, or installing artificial cavities. These actions may be needed for species that are currently present but occur at low densities, have low reproduction potential, or have other limitations that inhibit recovery. Additionally, species that are not present on a site, have limited dispersal capabilities, or are unlikely to occupy a site without reintroduction, may require species-specific management. [Section 2](#) and [Section 4](#) provide information on land management actions, such as prescribed fire or mechanical treatments. [Section 5.2](#) covers monitoring related actions, including banding or tagging. Workshop participants identified species-specific management actions for red-cockaded woodpeckers and southeastern American kestrel on TLWMA.

5.1.1: Red-Cockaded Woodpecker Translocation and Artificial Cavity Installation

The external and internal translocation of first-year red-cockaded woodpeckers has proven to be a successful tool for increasing small populations. Typically, managers will promote breeding by moving an unrelated male and female from a donor population to a suitable recruitment cluster. Internal translocation of hatch year birds (generally females) from natal clusters to single bird groups has been shown to be a successful method for creating a new AC or developing a new PBG. Generally, areas with >30 PBGs are not candidates for external translocation, and the TLWMA population is currently at the point where translocation from outside sources is not warranted. However, internal translocation to single bird groups remains a high-priority option for establishing PGBs in new territories and increasing connectivity between red-cockaded woodpecker groups on TLWMA.

The purpose of the artificial cavity program on TLWMA is to increase the local red-cockaded woodpecker population through supplementation of existing cavities with artificial ones. It takes a considerable amount of time for a group to excavate a single cavity in a longleaf pine without assistance, and red-cockaded woodpeckers tend to colonize new areas very slowly. Staff use artificial cavities, both inserts and drilled starts, to increase the number of suitable cavities within a cluster, or to create recruitment clusters in areas where managers would like to encourage population growth. Artificial

cavities also increase available habitat for resident red-cockaded woodpeckers and provide opportunities for fledged birds to create new active clusters. There are currently 162 inserts installed throughout TLWMA, and some of the inserts are at varying levels of degradation due to age. Area staff will replace these inserts to improve the suitability of cavities for active clusters.

Recruitment clusters are critical to support natural population growth on TLWMA by allowing groups to quickly colonize areas that were previously not suitable due to the lack of cavities. Recruitment clusters usually consist of 4-5 trees containing artificial inserts set up in areas of potential habitat that lack natural cavities. Red-cockaded woodpeckers appear to prefer moving into new areas that abut territories of other red-cockaded woodpeckers. Therefore, the location of new recruitment clusters is critical to promoting growth within the TLWMA population. The upcoming revision to the TLWMA Red-Cockaded Woodpecker Management Plan will address where to place new recruitment clusters. Managers should follow the USFWS species management guidelines ([Section 4.3.14](#)) and FWC guidelines found in the [FWC Red-Cockaded Woodpecker Management Plan](#).

5.1.2: Southeastern American Kestrel Nest Box Program

In 2010, as part of an FWRI project, staff installed 8 southeastern American kestrel nest boxes on TLWMA. This project is a statewide effort to erect and monitor southeastern American kestrel nest boxes and collect data on habitat structure near successful boxes to gain a greater understanding of preferred nesting habitat. To date kestrels have not occupied them. Staff maintain and monitor these boxes using a [standardized protocol](#). If monitoring identifies the need, nest boxes can be moved, removed, or new ones erected.

5.2 Species Monitoring

Monitoring is critical to evaluating the impact of the management actions described in this Strategy. While we are unable to monitor all of the focal species on TLWMA, the recommended monitoring will assess species in all actively managed communities, select wetland dependant species, and include opportunistic monitoring for uncommon or hard to monitor species. Data collected will be reported to the regional conservation biologist or entered directly in the appropriate database developed for the WCPR program. The FWC will make monitoring data available to cooperating agencies and organizations such as FNAI ([Section 6.4](#)).

This section provides the list of monitoring actions recommended for the area, and provides the purpose for the monitoring. The FWC is in the process of standardizing monitoring protocols for a number of these species. Approved protocols are available at [Monitoring Protocol Section of the WCPR SharePoint Site](#). When protocols are finalized, they will be implemented in accordance with the timeframe described in this Strategy.

5.2.1: Gopher Tortoise Monitoring

No assessment of the status and distribution of tortoises has been completed for TLWMA. Therefore, it would be beneficial to conduct an area-wide survey to establish a baseline population level using a standard monitoring protocol. The purpose of gopher tortoise monitoring is to evaluate the population trend over time. Gopher tortoise surveys should be repeated every 5 years until 3 samples are

complete to initially establish a baseline population estimate, then repeated every 10 years thereafter to track the population through time.

The Candidate Conservation Agreement for gopher tortoises includes a Line Transect Distance Sampling protocol that will be implemented on TLWMA. This protocol requires each burrow to be scoped along a given length of transects. The length of transects needed to estimate the gopher tortoise population within a certain level of confidence ($\leq 20\%$ Coefficient of Variation) is determined by conducting pilot study to calculate the encounter rate of gopher tortoise burrows. In order to determine overall sampling effort, staff must first delineate the sampling frame in which to conduct pilot surveys for gopher tortoises. Due to the extensive amount of potential habitat on TLWMA ($>37,000$ acres), this sampling frame can be a representative subset of suitable habitat as determined by area staff. This subset should include high-quality habitat within xeric natural communities that contains well-drained, sandy soils.

One of the benefits of using a burrow scope is the potential to detect commensals, including gopher frogs, Florida mice, eastern indigo snakes, and pine snakes. Due to the large amount of potential habitat on TLWMA, the completion of these surveys is dependent on outside resources (i.e., funding for a contracted survey); without such funding, these surveys cannot be accomplished. Combining a tortoise survey at TLWMA with nearby HH/BCWMA and TNWMA may save on overall contracting costs.

5.2.2: Bachman's Sparrow and Brown-Headed Nuthatch Monitoring

The purpose of monitoring the Bachman's sparrow and brown-headed nuthatch is to establish a baseline measure of relative abundance (% of occupied points) and then to track relative abundance over time. Both species are management responsive, and as such they can be good indicators of a well managed landscape. The callback [survey protocol](#) incorporates spring point counts with the use of callback tapes to maximize detection in portions of suitable habitat. On the dry prairie portion of TLWMA, the nuthatch portion of the survey can be omitted. On TLWMA, these surveys should occur at a minimum every 3-5 years.

5.2.3: Florida Grasshopper Sparrow Monitoring

Monitoring of the Florida grasshopper sparrow is essential to tracking the population trends of this Endangered species. Staff will monitor population trends of Florida grasshopper sparrows through a vocalization survey in the spring. This survey counts singing males only. Area staff monitors 174 points on the main prairie and 57 points on the large section of prairie north of the main prairie on TLWMA. In addition to these points, FWRI has four technicians who monitor additional locations within TLWMA, band all adults and fledglings detected, and monitor nests to assess predation and survival rates. The current monitoring protocol can be found at:

<http://www.fws.gov/verobeach/BirdsPDFs/FloridaGrasshopperSparrowSurveyProtocol.pdf>

5.2.4: Florida Scrub-Jay Monitoring

The purpose of monitoring for this species is to collect census data on 100% of the population by observing all individuals on TLWMA. All potential habitat on TLWMA will be surveyed using a call response method to determine the number of family groups. Annual summaries of the data will be

reported to the FWC Florida scrub-jay coordinator ([Section 6.1.1](#)). Methodologies for scrub-jay monitoring should be adapted from:

J.W. Fitzpatrick, G.E. Woolfenden, and M.T. Kopeny. 1991. [Ecology and development-related habitat requirements of the Florida scrub-jay \(*Aphelocoma coerulescens*\)](#). Florida Game and Fresh Water Fish Commission, Nongame Wildlife Program Technical Report No. 8. Tallahassee, FL. 49pp.
http://research.myfwc.com/publications/publication_info.asp?id=46526

5.2.5: Northern Bobwhite Monitoring

The purpose of monitoring bobwhites on TLWMA is to estimate density in suitable bobwhite habitat and the UERP tract. Fall covey counts are used to estimate northern bobwhite population size prior to the hunting season. As a management-responsive species, monitoring of northern bobwhite will help staff determine the effectiveness of their prescribed fire program and other management activities. Staff also compare harvest data to population data to determine whether harvesting is maintained at levels deemed sustainable. Monitoring results will be shared with FWC's Northern Bobwhite Coordinator ([Section 6.1.2](#)).

5.2.6: Red-Cockaded Woodpecker Monitoring

Ongoing monitoring efforts include pre-nesting season cluster and cavities status checks; nest checks and chick banding; fledge checks; and monitoring of banded birds. The purpose of these monitoring efforts is to document the number of potential breeding groups, active clusters, group size, active trees and cavities, new cavity trees and clusters, nest success, and fledgling success. Staff will continue monitoring in accordance with USFWS guidelines ([USFWS Red-Cockaded Woodpecker Recovery Plan](#), especially sections 3A and 8 C & D).

5.2.7: Florida Mouse Monitoring

The Florida mouse has not been documented on TLWMA. The purpose of Florida mouse monitoring is to determine the status and distribution of the species on TLWMA. Area staff will survey scrub, scrubby flatwoods, and sandhill using the [Florida mouse survey protocol](#). Staff can conduct follow-up surveys to track changes in distribution and occupancy every 5 years. If Florida mice are not detected in the first and second sampling effort, no further surveys are warranted, and we will presume the species does not occur on TLWMA. The recommended monitoring effort is intended to provide information on the general distribution of the species and presence on TLWMA. Should the species be documented during these efforts, capture rate (Florida mouse capture per trap effort) can also be used as an index of relative population abundance as surveys are repeated overtime.

5.2.8: Opportunistic Monitoring

The purpose of opportunistic monitoring is to document the presence of specific species. Opportunistic monitoring is the process of recording important information as it is encountered. By following the [Opportunistic Observations for Wildlife](#) protocol, staff ensures their data are compatible

with other opportunistic observation. Documentation of opportunistic sightings including information on species, date of the observation, observer, approximate lat/long or appropriate MU, number of individuals, behavior, and habitat type should be entered into the Survey and Monitoring Protocol (SaMP) database. Monitoring data will be made available to cooperating agencies, and organizations such as FNAI ([Section 6.4](#)). Record encounters with, or sign of, the following focal species:

- Gopher frogs
- Burrowing owl
- Cooper's hawk (nesting activity only)
- Crested caracara (juveniles, nesting activity and banded individuals only)
- Florida grasshopper sparrow (particularly outside of historic Kissimmee prairie)
- Florida sandhill crane (juveniles and nesting activity only)
- Florida mottled duck (juveniles and nesting activity only)
- Limpkin (juveniles and nesting activity only)
- Short-tailed hawk (individuals and nesting activity)
- Snail kite (nesting activity only)
- Southern bald eagle (nesting activity only)
- Swallow-tailed kite (aggregations of 3 or more birds on regular basis in one area during spring, and any nesting activity)
- Florida black bear (sightings or sign)
- Florida panther (sightings or sign)
- Sherman's fox squirrel
- Wading birds (nesting activity only)
- Any listed species that does not have a monitoring protocol in this section

5.3: Species Research Needs

Species management recommendations in other sections of this document are based on the most current information available for a given species. Cases may arise where little or no information is available to guide management, and research is needed. However, workshop participants did not identify any species research needs on TLWMA.

Section 6: Intra/Inter Agency Coordination

The WCPR process identified many recommendations regarding possible management actions for focal species. WHM staff can handle most proposed management actions and monitoring; however, coordination with other sections in FWC or with other agencies sometimes is necessary or more efficient. This section describes coordination that is necessary outside of the WHM section, identifies the entity to coordinate with, and provides position contacts for these entities. We attempt to provide the name, position, and contact information for the people holding the position when the Strategy was drafted. As positions experience turnover, when in doubt, contact the current Section Leader or supervisor to determine the appropriate person now holding the position.

6.1: Florida Fish and Wildlife Conservation Commission

6.1.1: Species Conservation Planning Section (SCP)

Monitoring animal populations on a WMA/WEA gives managers a way to gauge animal response to management. If this information is not shared with others, valuable data that can be used to assess statewide conservation efforts is often lost. Managers will share monitoring data with the appropriate taxa coordinator and with program coordinators for species that are part of conservation initiatives or other management programs. The regional SCP biologist is a good source of information on the regional status of non-game species. FWC staff is authorized to handle federally listed species as long as actions are consistent with the requirements of the agency's Endangered Species Act Section 6 Cooperative Agreement. To meet these requirements, staff will provide reporting as outlined in the Agreement to the agency's Endangered Species Coordinator. Please note some contacts will also be covered under [Section 6.1.3; FWRI](#), and [Section 6.1.5; Florida's Wildlife Legacy Initiative](#).

Contacts:

Brad Gruver, Section Leader and Endangered Species Coordinator: (850) 617-9502
Craig Faulhaber, Avian Taxa Coordinator: (352) 620-7346
Terry Doonan, Mammalian Taxa Coordinator: (386) 754-1662
Brooke Talley, Herpetofauna Taxa Coordinator: (850) 921-1143
David Cook, Invertebrate Taxa Coordinator: (850) 921-1143
Deborah Burr, Gopher Tortoise Program Coordinator: (850) 921-1019
Michelle van Deventer, Bald Eagle Management Plan Coordinator: (941) 894-6675
Alex Kropp, Northeast Regional SCP Biologist: (352) 620-7350
Vacant, Snail Kite Coordinator: (352) 266-6139
Angela Tringali, Florida Scrub-Jay Coordinator: (352) 620-7346

6.1.2: Division of Hunting and Game Management (HGM)

As the FWC has a [statewide quail strategy](#), we recommend coordination with HGM if issues regarding northern bobwhite or Florida mottled duck arise on TLWMA. Mourning dove banding activities are reported to HGM.

Contacts:

Paul Schulz, Section Leader: (850) 617-9539
Greg Hagan, Northern Bobwhite Coordinator: (850) 893-4153
Jamie Feddersen, Waterfowl Coordinator: (850) 488-5878

6.1.3: Fish and Wildlife Research Institute (FWRI)

Area staff will cooperate with FWRI staff conducting monitoring and research for bald eagles by reporting new eagle nests to baldeagle@myfwc.com. Area staff will cooperate with Kevin Enge on herpetofauna monitoring and report documentation of these species to FWRI. Report handling of migratory birds covered by the permit to the avian research scientist in January of each year.

Contacts:

Robin Boughton, Section Leader: (352) 427-7306
Anna Farmer, Biological Administrator (herps): (352) 334-4216
Jeff Gore, Biological Administrator (mammals): (850) 767-3624
Karl Miller, Biological Administrator (avian): (352) 334-4215

Andrew Cox, Research Administrator (migratory birds): (352) 334-4241
Janell Brush, Associate Research Scientist (avian): (352) 334-4202
Kevin Enge, Associate Research Scientist (herps): (352) 334-4209
Erin Ragheb, Assistant Research Scientist (avian): (352) 334-4208
Walt McCown, Research Program Coordinator (bears): (352) 334-4214

6.1.4: Conservation Planning Services (CPS)

CPS works with private landowners and may be able to assist in making contacts or providing incentives for management activities on neighboring private lands. Additionally, CPS staff administers FWC's environmental commenting process, which may help with commenting on environmental use permits. Maintaining communication regarding current and future projects will be critical.

Contacts:

Scott Sanders, CPS Section Leader: (850) 617-9548
Mark Asleson, Regional CPS Coordinator: (352) 620-7355
McLin Thurman, CPS Biologist: (352) 620-7354

6.1.5: Florida's Wildlife Legacy Initiative (FWLI)

FWLI is an FWC program developed to generate and coordinate cooperative conservation projects that address high priority issues identified in [Florida's State Wildlife Action Plan](#). FWLI can assist in identifying potential partners and with collaborative efforts for monitoring and management of focal species. The FWLI is a potential source of project funding via [Florida's State Wildlife Grants program](#). Regular communication with this section will be valuable.

Contacts:

Brian Branciforte, State Wildlife Action Plan Coordinator: (850) 617-9476
Heather Hitt, Wildlife Legacy Biologist: (772) 469-4267

6.1.6: Aquatic Habitat Restoration/Enhancement Subsection (AHREs)

Several focal and imperiled species depend on aquatic ecosystems to meet their life requirements. Area staff should maintain contact with AHREs when conducting any hydrological assessments.

Contacts:

Steve Rockwood, Section Leader: (850) 617-9471

6.1.7: Invasive Plant Management Section (IPM)

The Invasive Plant Management Section (IPM) provides technical and financial assistance in the control of upland and aquatic invasive exotic plants. Additionally, staff from IPM assist with assessing and treating hydrilla on Lake Jackson.

Contacts:

Bill Caton, Section Leader: (850) 617-9428

Linda King, Subsection Leader: (850) 617-9428
Ed Harris, Biological Administrator: (407) 858-6170

6.1.8: Imperiled Species Management Section (ISM)

The Imperiled Species Management Section is responsible for the implementation and evaluation of imperiled species management and recovery plans, and have staff dedicated to management of the Florida panther and the Florida black bear. Staff can coordinate with these individuals on issues related to these species.

Contacts:

Carol Knox, Section Leader: (850) 922-4330
Darrell Land, Panther Team Leader: (239) 417-6352
Dave Telesco, Biological Administrator (bears): (850) 922-4330
Mike Orlando, Biological Scientist (bears): (386) 965-2464

6.2: Florida Forest Service (FFS)

The FFS provides authorizations for prescribed burning, assists in controlling escaped fires, and periodically conducts wildfire mitigation activities. The FFS can provide assistance with timber management including administration of contracts for thinning operations. The TLWMA staff should continue to coordinate prescribed fire and timber management activities with FFS.

Contacts:

Tom Donohoe, Forest Area Supervisor, (407) 892-3024

6.3: Avian Research and Conservation Institute (ARCI)

The ARCI surveys and keeps information on American swallow-tailed kite and short-tailed hawk populations. Location information on the swallow-tailed kite and short-tailed hawk, particularly nests or nesting behavior, should be shared with ARCI.

Contacts:

Dr. Ken Meyer, Avian Researcher: (352) 335-4151; meyer@arcinst.org
Gina Kent, Research Ecologist and Coordinator: (352) 514-5607; ginakent@arcinst.org

6.4: Florida Natural Areas Inventory (FNAI)

The FNAI collects, interprets, and disseminates ecological information critical to the conservation of Florida's biological diversity. The FNAI's database and expertise facilitate environmentally sound planning and natural resource management to protect the plants, animals, and communities that represent Florida's natural heritage. The FNAI maintains a database of rare and listed species that is often used for planning purposes. By entering data into the SaMP, staff ensures their data are available to FNAI. FWC also has a contract with FNAI for plant and animal surveys, if the need exists and resources are available.

Contacts:

Dan Hipes, Chief Scientist: (850) 224-8207

Kim Gulledge, Senior Ecologist (850) 224-8207

6.5: South Florida Water Management District (SFWMD)

The SFWMD is responsible for water manipulation practices that affect Lake Marion and Lake Jackson. The SFWMD is also responsible for permitting hydrologic activities as needed.

Contacts:

Steve Sentes, (239)-338-2828 ext 7754

Phil Flood, Jr., Intergovernmental and Outreach Representative:
(239) 338-2929 ext 7768

6.6: United States Fish and Wildlife Service (USFWS)

The USFWS is the federal agency that works to protect and assist with the recovery of Threatened and Endangered species, including the Florida grasshopper sparrow. Other federally listed species modeled to have potential habitat on TLWMA include the Florida panther and wood stork. FWC should continue to partner with the USFWS on projects relating to any federally-listed species, including red-cockaded woodpecker monitoring and management.

Contacts:

Sandra Sneckenberger, Endangered Species Recovery Biologist; (772) 469-4321

Will McDearman, RCW Recovery Coordinator; (601) 321-1124

Ulgonda Kirkpatrick, Southeast Region Eagle Biologist; (321) 972-9089

6.7: Florida Grasshopper Sparrow Working Group

The Florida Grasshopper Sparrow Working Group is a multi-agency team that meets to discuss monitoring and management practices for grasshopper sparrows in the region. The working group includes the area and district biologist for TLWMA, as well as representatives from FWRI, USFWS, DEP, and the U.S. Air Force.

Contacts:

Karl Miller, FWRI Associate Research Scientist (avian): 352-334-4215

Tina Hannon, FWC Three Lakes WMA Biologist III: (407) 436-1009

Section 7: Beyond the Boundaries Considerations

With appropriate management, there is enough potential habitat to support many of TLWMA's focal species. TLWMA can currently support a viable population of many of the focal species listed in this Strategy. Some of TLWMA focal species are highly mobile outside of the nesting season (e.g., southern bald eagle, swallow-tailed kite, short-tailed hawk, and wading birds) and will likely continue to occur on the area. Therefore, their long-term persistence on the area is dependent on regional conditions. The surrounding network of conservation lands and ranch lands will help ensure the persistence of many of the wide-ranging focal species.

Although KRPUA is included in the lease for TLWMA lease, the area has a limited conservation role for focal and imperiled species. Models indicate that KRPUA contains mostly improved and semi-improved pasture, however, this habitat may not be in a suitable condition for certain species. KRPUA is adjacent to the Kissimmee River and is considered too wet to support viable populations of gopher tortoises, burrowing owls, and grasshopper sparrows. Species that occur on KRPUA (such as bald eagles, wading birds, and sandhill cranes) are wide-ranging and are more influenced by regional conditions than local-area management. Site accessibility makes it difficult to manage KRPUA, as TLWMA staff have limited access to the property from major roads. When there are opportunities to conduct species management on altered communities (such as installation of kestrel nest boxes), area staff can consider the role KRPUA will have in conservation of regional populations. However, it is unlikely that KRPUA can independently support a viable population of focal or imperiled species.

The current management boundaries identified for TLWMA do not include all important habitat for focal species, such as the lands identified as Strategic Habitat Conservation Areas (SHCAs) for many focal species. The FWC originally identified SHCAs in the Closing the Gaps in Florida's Wildlife Habitat Conservation System report (Cox et al. 1994; available at [Closing the Gaps Report, 1994](#)). The goal of SHCAs is to identify the minimum amount of land needed in Florida to ensure long-term survival of key components to Florida's biological diversity. The SHCAs identify important remaining habitat conservation needs on private lands. New SHCAs have been identified in a recent FWC update to the Closing the Gaps entitled "[Wildlife Habitat Conservation Needs in Florida: Updated Recommendations for Strategic Habitat Conservation Areas](#)". The Cooper's Hawk, Florida grasshopper sparrow, burrowing owl, Florida scrub-jay, snail kite, short-tailed hawk, and swallow-tailed kite, are species for which an SHCA was identified within 3 miles of TLWMA. Although it is unlikely Florida will acquire all property identified in SHCAs, property acquisition, and land use and management that is compatible with the needs of TLWMA's focal species, should be a priority.

Some of TLWMA's species are dependent on the availability of suitable habitat on adjacent private and public lands. Even though TLWMA is a relatively large tract, the actions of adjacent landowners will determine if some of these focal species will persist on TLWMA. Many adjacent parcels are in public ownership or in conservation easements and provide some stability for many focal species.

Much of the private land in the area is currently in some form of agricultural or silvicultural land use, but some of these lands have potential to be converted to residential development. The CPS staff assists private landowners by providing technical assistance, financial incentives, and workshops to educate and inform private land managers. The workshops also provide a forum where landowners can interact with staff from public conservation lands and establish communication. Staff should continue to coordinate with CPS to ensure private landowners are informed about incentive programs that encourage conservation-based management, and that they receive the proper technical assistance to affect this management. CPS should ensure environmental commenting includes recommendations for compatible use of lands adjacent to TLWMA.

As many of TLWMA's focal species also occur on neighboring public lands, staff should maintain communication with DEP and USFWS staff. Collaboration with neighboring conservation managers for land and species management activities will further benefit focal species found in the region. Conservation partnerships are critical to the long-term persistence of many species and should be encouraged.

Document Map

Species	Species Assessment	Strategic Management Areas	Land Management Actions	Species Management	Species Monitoring
Gopher Frog	Section 3.2.1		Section 4.3.1		Section 5.2.8
Eastern Indigo Snake	Section 3.2.2		Section 4.3.2		Section 5.2.8
Florida Pine Snake	Section 3.2.3		Section 4.3.3		Section 5.2.8
Gopher Tortoise	Section 3.2.4		Section 4.3.4		Section 5.2.1
Bachman's Sparrow	Section 3.2.5		Section 4.3.5		Section 5.2.2
Brown-Headed Nuthatch	Section 3.2.6		Section 4.3.6		Section 5.2.2
Burrowing Owl	Section 3.2.7		Section 4.3.7		Section 5.2.8
Cooper's Hawk	Section 3.2.8		Section 4.3.8		Section 5.2.8
Crested Caracara	Section 3.2.9		Section 4.3.9		Section 5.2.8
Florida Grasshopper Sparrow	Section 3.2.10	Section 4.1.1	Section 4.3.10		Section 5.2.3
Florida Mottled Duck	Section 3.2.11				Section 5.2.8
Florida Sandhill Crane	Section 3.2.12		Section 4.3.11		Section 5.2.8
Florida Scrub-Jay	Section 3.2.13		Section 4.3.12		Section 5.2.4
Limpkin	Section 3.2.14				Section 5.2.8
Northern Bobwhite	Section 3.2.15		Section 4.3.13		Section 5.2.5
Red-Cockaded Woodpecker	Section 3.2.16		Section 4.3.14	Section 5.1.1	Section 5.2.6
Short-Tailed Hawk	Section 3.2.17		Section 4.3.15		Section 5.2.8
Snail Kite	Section 3.2.18				Section 5.2.8
Southeastern American Kestrel	Section 3.2.19			Section 5.1.2	Section 5.2.8
Southern Bald Eagle	Section 3.2.20		Section 4.3.16		Section 5.2.8
Swallow-Tailed Kite	Section 3.2.21		Section 4.3.17		Section 5.2.8
Wading Birds	Section 3.2.22		Section 4.3.18		Section 5.2.8
Florida Black Bear	Section 3.2.23		Section 4.3.19		Section 5.2.8
Florida Mouse	Section 3.2.24				Section 5.2.7
Florida Panther	Section 3.2.25				Section 5.2.8
Sherman's Fox Squirrel	Section 3.2.26		Section 4.3.20		Section 5.2.8
Rare Butterflies	Section 3.3		Section 4.3.21		Section 5.2.8

12.14 Timber Assessment

THREE LAKES WILDLIFE MANAGEMENT AREA Timber Management Assessment

Prepared by:
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I. General Information

The parcel of land now known as the Three Lakes Wildlife Management Area is currently managed by the Florida Fish and Wildlife Conservation Commission (FFWCC). This land was purchased in 1974 by the State of Florida under the Environmentally Endangered Lands program and was divided into two units. The larger unit, Three Lakes, was managed by the Game and Fresh Water Fish Commission, (now the Florida Fish and Wildlife Conservation Commission), as a Wildlife Management Area (WMA). The smaller Prairie Lakes Unit was managed by the Department of Natural Resources, (now the Department of Environmental Protection), as a state preserve. In 1989 the Game and Fresh Water Fish Commission began managing the Prairie Lakes Unit as a part of the Three Lakes WMA. For the purpose of this report, any future reference to Three Lakes WMA, unless otherwise noted, will refer to both the Three Lakes WMA and the Prairie Lakes Unit. Three Lakes WMA is located in the southern half of Ocala County approximately 25 miles southeast of the town of St. Cloud. The present total acreage of Three Lakes WMA is 59,490 acres.

II. Natural History

Like most of the land in Florida, Three Lakes WMA has a long history of use. Records indicate the area was logged heavily during the 1920's and 1930's providing timber to a mill located in Holopaw, FL. The original 1979 operation plan for Three Lakes WMA estimated approximately 60% of the area was virgin longleaf pine prior to the logging in the 1920's and 1930's.

Cattle ranching was another prominent use that has taken place on and around the area. When the state purchased the land in 1974, grazing continued through cattle leases until the early 1980's. Farming and naval stores collection are other uses that have taken place on Three Lakes WMA. The area has also been drained via ditches and canals. There is a good chance catastrophic fires have at one time or another left their mark. The combined result of these activities and policies has been to alter this landscape from what it was prior to European settlement.

Prescribed fire has been used as the primary management tool since the area was bought in 1974. Cattle ranchers began prescribe burning in 1974 on a two year cycle as part of their lease agreement. It is unknown if the previous owners burned regularly but it can be assumed they did. Many ranchers in the state recognized the importance of fire as a tool to increase forage production. The Fish and Wildlife Conservation Commission in cooperation with the Division of Forestry has been prescribe burning since the cattle leases were discontinued in the 1980's. There is also an abundance of wiregrass found throughout the area indicating repeated burning.

III. Current Ecological Conditions and Trends

Much of Three Lakes WMA is currently in a non-forested condition. Current estimates show dry prairie comprising approximately 27% of the total acreage, wet prairie 8%, longleaf/South Florida slash pineland 30%, and open water, grass and barren 10%. The remaining 25% is divided

between cypress swamp, scrub/brush, and miscellaneous hardwood. Starting in 1979, the Division of Forestry began planting both slash and longleaf pine throughout Three Lakes WMA (Map 1). To date, approximately 2,585 acres have been planted comprising approximately 4.3% of the WMA. These plantations are generally doing well but will eventually need to be thinned as they mature (See Section VI, Timber Management Options). These plantations are scattered throughout Three Lakes WMA (See Map 1). Portions of the dry prairie have scattered natural longleaf pine at stocking levels of less than 10 sq. ft. basal area per acre. These areas have been classified as prairie but are gradually being regenerated naturally. It is unknown whether these trees are remnants from past timber harvests, catastrophic fires or are naturally scattered. Because records indicate extensive logging earlier in the century and the presence of pine regeneration, it is reasonable to assume these areas were once forested, and will eventually succeed to a longleaf pine forest if fire is kept in the system. There is, however, no consensus on this issue. Other possibilities are that fire historically occurred more frequently in the dry prairie and actually reduced seedling survival or that the hydrologic regime has changed due to drainage efforts making the soils more conducive to longleaf pine regeneration.

There are also approximately 17,785 acres of natural longleaf pine stands growing in a classic uneven-aged mosaic. These stands generally have relatively low basal areas, although they range from less than 10 to 120 sq. ft. per acre. They are extremely variable in structure and age class distribution. These stands support a thriving red-cockaded woodpecker (RCW) population. It is assumed that logging took place in these stands sometime in the past.

Natural South Florida slash pine can also be found within the Three Lakes WMA in three separate stands totaling 40 acres. These stands are located on the fringe of sloughs and wetter areas and appear to be expanding in acreage through natural regeneration. The existence of these stands raise the possibility that South Florida slash pine may have, at one time, been more abundant in and around the Three Lakes area.

Three small stands of sand pine occur on Three Lakes WMA totaling 102 acres. One stand of 16 acres is mature while the others are younger. These stands in their current condition have, for the most part, succeeded past prime scrub jay habitat.

IV. Current Management Objectives as Related to Timber Management

The following are five objectives as spelled out in the 1997 Conceptual Management Plan (CMP) for the Three Lakes WMA that relate directly to timber management. Other objectives found in the CMP relate specifically to hunting and recreational opportunities and are not listed here.

Objective 1: Restore a more natural hydrologic regime.

Objective 2: Use fire to maintain and encourage plant communities, especially the dry prairie and longleaf and slash pine flatwoods.

Objective 3: Provide special protection of critical habitat for rare, endangered, and special-concern wildlife species.

Objective 4: Protect and restore historic plant and animal communities.

Objective 5: Manage all renewable resources on an optimal sustained-use basis, consistent with protection and maintenance of ecosystems.

V. Current Timber Resources

The following description of the timber resource on the Three Lakes WMA has been generalized due to time and manpower constraints. The reader should be aware that all acreage figures are "best estimates" using aerial photos and GIS software. Density estimates are based on a very small number of sample points and do not hold up under statistical scrutiny. A more intensive survey is needed to more accurately portray the timber resource for long range planning purposes.

This timber assessment intentionally omits any discussion concerning the management of cypress, bay, and hardwood swamp ecosystems, and does not address the hardwood hammock forest type. The emphasis of this assessment will be on the pine flatwoods composed of both natural and planted longleaf and South Florida slash pines as well as portions of the dry prairie which may have potential for timber management. The southwest portion of the Three Lakes WMA is almost entirely dry prairie and is not considered in this analysis (Map 2).

Planted Longleaf Pine Stands

There have been a total of 851.48 acres of longleaf pine planted at Three Lakes WMA beginning in 1983. These plantations appear to have adequate stocking levels. Please refer to Table 2 for a summary of these plantations.

Table 2. Planted Longleaf Pine on Three Lakes WMA.

<u>Year planted</u>	<u>Acres</u>	<u>Condition</u>	<u>DBH Range</u>	<u>Avg DBH</u>	<u>Basal Area</u>
1983	66.92	Healthy	4" – 7"	5"	30
1984	242.31	Healthy	4" – 7"	5"	30
1986	42.69	Healthy	3' – 7"	4"	20
1987	62.65	Healthy	0" – 4"	(RP)***	N/A
1990	29.96	Healthy	0" – 3"	(SP)*	N/A
1992	37.25	Healthy	N/A	(SP)*	N/A
1994	136.08	Healthy	N/A	(GS** – SP)*	N/A
1996	96.01	Healthy	N/A	(GS)**	N/A
1997	137.61	Healthy	N/A	(GS)**	N/A
TOTAL	851.48				

* SP = Sapling

** GS = Grass Stage

*** RP = Replanted (Two Age Classes)

Planted South Florida Slash Pine Stands

There have been a total of 1172.35 acres of South Florida slash pine planted at Three Lakes WMA beginning in 1979. These stands appear to have adequate stocking levels. Please refer to Table 3 for a summary of these plantations.

Table 3. Planted South Florida Slash Pine on Three Lakes WMA.

Year planted	Acres	Condition	DBH Range	Avg DBH	Basal Area
?	10.00	Overstocked	6" – 12"	9"	140
1979	63.91	Overstocked	4" – 10"	8"	130
1986	95.04	Healthy	3" – 7"	5"	75
1987	348.02	Healthy	3" – 6"	4"	60
1989	242.07	Healthy	3" – 5"	4"	N/A
1990	75.97	Healthy	N/A	SP*	N/A
1991	290.47	Healthy	N/A	SP*	N/A
1992	19.48	Healthy	N/A	SP*	N/A
1995	28.39	Healthy	N/A	SP*	N/A
TOTAL	1173.35				

* SP = Sapling

Mixed Plantings of South Florida Slash and Longleaf Pine

In addition, there has been 560.71 acres planted in both longleaf and South Florida slash pine in adjacent plantations. The longleaf pine and South Florida Slash pine are not intermixed but do share a common border. Stand maps that were developed from planting records and aerial photographs showed mixed stands although the percentage or acreage of each species was not determined. Therefore, even though the stand maps may show one mixed stand, it will actually be two or more stands if considering the longleaf and South Florida slash pine components separately. Please refer to Table 4 for information on these plantations.

Table 4. Mixed Plantings of South Florida slash and longleaf pines.

Year planted	Acres	Condition	DBH Range	Avg DBH	Basal Area
1987	128.82	Healthy	N/A	SP*	N/A
1989	81.21	Healthy	N/A	SP*	N/A
1990	79.43	Healthy	N/A	SP*	N/A
1992	117.44	Healthy	N/A	GR** - SP*	N/A
1995	153.81	Healthy	N/A	GR** - SP*	N/A
Total	560.71				

* SP = Sapling

** GR = Grass Stage

Natural Pine Stands and Prairie

Approximately 25,465 acres of land currently classified as natural pinelands and prairie could *potentially* be considered for timber production. This acreage includes only the portion of Three Lakes WMA considered in this analysis (Map 2) and excludes all wetlands, scrub and plantations. It is unknown exactly how much of the area is forested and how much is prairie as the two blend together inconspicuously. Another problem is accurately determining if portions of the prairie were once timbered. A best guess estimate using aerial photos is 70% or 17,825 acres exhibit some level of pine stocking.

Longleaf pine occupies the vast majority of the natural stands. As stated earlier, the natural longleaf pine stands are extremely variable with regards to stocking levels, age and size classes, and densities. Basal Areas (BA) range from less than 10 sq. ft per acre to 120 sq. ft per acre. The trend is toward greater stocking levels as the mature trees are naturally seeding in openings and slowly invading non-stocked areas. There is a good mix of age classes found throughout the area ranging from old growth trees to grass stage seedlings. Generally, the younger stands are healthy and growing vigorously but there are some areas where overcrowding is occurring. The older trees found on the WMA support a thriving RCW population.

There are approximately 40 acres of natural South Florida slash pine growing in three separate uneven-aged stands. Basal Areas range from 40 – 60 sq. ft. per acre. Average Diameter at Breast Height (DBH) ranges from 7 – 8 inches.

Approximately 102 acres of sand pine is located on Three Lakes WMA. Sixteen acres of this is stocked with mature trees averaging 70 sq. ft basal area per acre while the remaining 86 acres are fairly young and basal areas range from 10 – 50 sq. ft. per acre. DBH averages are 12 inches and 5 inches, respectively.

VI. Timber Management Options

There are a variety of silvicultural methods available to aid the resource manager in achieving a wide range of goals. This section will provide insight into some of the options that may be utilized to meet some of the objectives as stated in the Three Lakes WMA Conceptual Management Plan (CMP). Again, this dialogue will be generalized and a more detailed on the ground review will be required for decisions on where and when to apply these methods.

Planted Stands

There are approximately 2,585 acres that have been planted in either longleaf or slash pine. This constitutes approximately 4.3 percent of the total area of Three Lakes WMA. Most of the stands are in good health and growing vigorously. There are, however, approximately 74 acres of South Florida slash pine plantation that would benefit from a thinning at this time. As time passes and the trees grow, all of the plantations will eventually need thinning, barring any unforeseen catastrophic event. Decisions must be made as to the purpose of these stands and these decisions will then dictate how to proceed with management. The following are brief discussions on management strategies for various goals.

Timber Management Emphasis – This option will maximize revenue by managing the stand for valuable renewable wood fiber products. These stands will need to be thinned when the live crowns in the majority of the dominant and co-dominant trees have been reduced to approximately 1/3 of their total height. This will help ensure a healthy stand of trees. These stands should be thinned back to 60 – 80 sq. ft. BA again each time they reach 100 sq. ft. BA or more. An added benefit of opening up the canopy is to allow sunlight to reach the forest floor increasing forage production for wildlife. Once the stand has reached maturity, it can be naturally regenerated.

Thinning can be accomplished by one of several methods. One of the most common and economical methods used in plantation thinning is a row thinning with a selective harvest within the leave rows. In this method, every third row is completely removed. Poorly formed, suppressed and diseased trees are chosen for removal from the leave rows to allow the healthiest, most vigorous trees to remain. Other variations on this theme can be utilized as well. The exact thinning method utilized should be determined prior to harvest and should take into account individual stand conditions, economics and management objectives.

Ecosystem Management (Wildlife) Emphasis – This option is similar to the Timber Management Emphasis above. This strategy involves thinning the stand back even further to 40-50 sq. ft. BA per acre. This will allow even more sunlight to reach the forest floor increasing the forage production for wildlife.

Restoration Emphasis – There are instances on Three Lakes WMA where stand conversion may be desired for wildlife or other reasons. Examples of stand conversions would be South Florida slash pine to longleaf pine, even-aged to uneven-aged stands or pine to prairie. It must be noted that even though timber management may not be the main emphasis for converting these stands to other habitat types, revenue from timber can be derived in the short term and long term while still meeting wildlife objectives. The easiest and most economical way to convert from one species to another or from one vegetation type to another is to simply wait until the trees reach merchantable size, clearcut and replant to the desired species.

Prescribed fire can also be used as a tool for converting forest types but is not recommended in this assessment. This method is to simply burn down the trees to be removed. The most obvious disadvantage to this method is economics. A considerable investment was made for the site preparation, purchase and planting of the trees; estimates are anywhere from \$125.00 to 200.00

per acre depending on various factors. In the case of Three Lakes WMA, taxpayer dollars were used to plant these plantations. It must also be realized that these stands will provide a return on investment in the future and help provide a much-needed resource to the American Public. This must be taken into account prior to destroying a young healthy stand of trees.

Conversion to an uneven-aged from an even-aged stand is more complicated, especially when changing species. It is recommended that uneven-aged management be attempted only with longleaf pine, as there is little research in the uneven-aged management of South Florida slash pine. The recommendation of this assessment is to gradually convert over time. This process involves cutting 2 – 5 acre openings in the stand large enough to allow sunlight to reach the ground. Pine seedlings are intolerant to shade and must have direct sunlight to regenerate and grow vigorously. If converting South Florida slash pine to longleaf pine, the openings must be planted. If the stand is already longleaf pine, natural regeneration can be used. For natural regeneration, the openings must be of a size and configuration whereby adjoining seed trees can readily seed the area. It must be recognized that natural regeneration is more uncertain as good seed crops occur irregularly. Timing seed crops with prescribed fire (fall burns) is essential for preparing the seedbed for regeneration. Again, there are variations of this method and the exact technique utilized should be determined prior to harvest and should take into account individual stand conditions, economics and management objectives.

Natural Longleaf Pine Stands

Approximately 17,825 acres or 30 percent of Three Lakes WMA is currently in a natural forest condition. This acreage appears to be expanding. As stated earlier, these stands are highly diverse and play an important role in the ecosystem health of the Three Lakes WMA. It is possible to manage these stands in such a manner as to retain the natural appearance, meet objectives stated in the CMP and produce revenue through timber harvests. In these areas timber production will most likely be a residual benefit to managing for other objectives.

Timber Management Emphasis – There *may* be certain areas within the natural stand communities that could be managed for timber production. This option will be discussed very briefly as managing this vegetation type strictly for timber would compromise the objectives found in the Three Lakes WMA CMP. It is included here only to make the reader aware of the various alternatives available for managing the area. It is not expected or recommended that the natural pine communities be managed in this manner unless on a very small scale.

This option is very similar to the timber management option as described under “Planted Stands” above. The primary objective in this option would be management for wood fiber products. This would be accomplished through scheduled thinnings, harvests and plantings (Natural regeneration can be used as well but is not as predictable).

Ecosystem Management (Wildlife) Emphasis – This method of management is to simulate natural occurrences through the removal of wood fiber products. With careful planning, it is possible to actually restore or improve habitat for various wildlife species while still providing wood products to the American Public. The goal for the natural longleaf pine community would be to retain the uneven-aged character of the stand. This could be accomplished by employing a group selection system of harvesting. This method involves cutting one to five acre openings within the stand to allow for regeneration. Natural regeneration would be used to reestablish trees within the openings. The amount, size and placement of the openings must be determined during sale layout and take into account the objectives of the stand as well as economics. For example, the openings should be much smaller if RCW foraging habitat is a consideration. It must be noted that prescribed burning is an important tool for managing this ecosystem and to ensure successful regeneration. Prescribed burning will be discussed later in this document.

Reestablishment – To date, approximately 2,585 acres have been planted on Three Lakes WMA beginning in 1979 (See Section V). There may be additional acreage where it may be

advantageous to conduct tree plantings as some areas are currently understocked or unstocked. Areas recommended for planting are places that tie longleaf stands together to provide a continuous and long-range habitat for RCWs. Either longleaf or slash pine could be used although longleaf is preferred as it is more tolerant to fire in its early years, has a longer life span, and is preferred by RCWs. Various techniques can be used for site preparation prior to planting but a proven method on Three Lakes WMA in the past has been to tandem rollerchop and burn. If it is determined there are areas that can be established for pine timber production, then the guidelines in Section VI (Timber Management Emphasis) can be followed. Once these stands are established, they then can be converted to a more natural, uneven-aged condition by following the guidelines in Section VI (Restoration Emphasis).

Natural South Florida Slash and Sand Pine Stands

Although these stands constitute a minor portion of the Three Lakes WMA they add to the diversity of the area and can be managed by a variety of options. It must be decided what the long range goals for these stands are and proceed with management prescriptions accordingly.

The 40 acres of natural South Florida slash pine stands could be managed for timber production in the same fashion as managing the South Florida slash pine plantations. Converting these stands to longleaf pine is not recommended as the soils where they occur are wetter, and it is not recommended that any species be planted off-site.

Sand pine is not a preferred timber species in Florida although it has been sold for pulpwood and peeler logs. The 102 acres of sand pine can be left alone or harvested. The accepted method of harvesting sand pine is to clearcut and allow for natural regeneration. Sand pine produces a serotinous cone that requires heat to open. If the slash from the logging operation is left in the woods, the cones will open via prescribed fire and release their seeds. Clearcutting sand pine is a common method used to create or improve scrub jay habitat and should be a consideration when developing objectives for these stands.

VII. Access

Much of Three Lakes WMA is accessible for a customary logging operation during dry periods of the year. There are, however, areas where road work will be required for access. Specifically, these are; Road 2 accessing the northwest corner between the turnpike and SR 523 and the Long Loop Road accessing the southeast corner of the property (Map 2). In addition, there are several spots within the road system that will require work prior to hauling timber on them. Needed road work will involve reconstruction or realignment of some existing roads and the installation of drainage structures. To correct individual spots, the roads will have to be raised and drainage structures installed. One option worth exploring is to construct new roads where access is needed and then reclaim some of the existing roads that are barely functional or non-functional due to location. Road 2 is a good example of this as it is flooded a good portion of the year from drainage from the turnpike. It may be prudent to abandon portions of this road and construct an access road from SR 523. Again, these roads will have to be looked at closely and decisions made keeping in mind the management objectives and economics of the situation. Revenue from timber harvests could be used to pay for any needed road work on Three Lakes WMA.

VIII. Prescribed Fire

As discussed previously, prescribed fire is an important tool for ecosystem management in Florida. Before European settlement, natural fires occurred at regular intervals on an average of 2–5 years. These fires reduced the fuel load, produced a seedbed for pine regeneration and released nutrients back into the soil. Prescribed fire is now used extensively as a method of

restoring natural, fire dependant plant species. Prescribed fire coupled with a well planned timber harvest is the most economical and responsible method for conducting ecosystem management. Managers at Three Lakes WMA have been actively prescribe burning the area since 1974 when it was purchased by the State. Currently the goal is to burn everything on a three year cycle. Since there is already an active burn program in place on Three Lakes WMA, this document will briefly discuss prescribed fire only as it relates to timber management.

The main goal in prescribed burning when considering the timber resource is not to kill the trees. There will often be some mortality from burning but this should be kept to a minimum. Longleaf pine can be burned more liberally than South Florida slash pine especially during the seedling/sapling stages, but can still suffer mortality if the burn is too hot. South Florida slash pine is much more intolerant to fire and burning intervals may need to be adjusted until the trees are big enough to resist a burn. It must be kept in mind that not all fire is good fire. A hot fire may not necessarily kill the trees but it does stress them and increase their susceptibility to insect and disease attack. This is especially true when combined with other stresses, such as drought or flood.

Prescribed fire is also used to prepare seedbeds for both natural and artificial regeneration. Pine seed requires bare mineral soil to successfully germinate and a burn just prior to seed fall aids this process. Site preparation combined with a prescribed burn just prior to planting helps reduce competition during the critical first few years of a seedling's life and will help the tree planter do a quality job.

IX. Economics

It is difficult to predict with any certainty the amount of revenue that can be derived through timber harvests on the Three Lakes WMA. Market conditions, harvest prescriptions, product mix, logging conditions and distance to manufacturing facilities all play a factor in what a timber purchaser will pay for stumpage.

Transportation costs are a significant portion of the overall expense associated with logging and therefore play a major factor in stumpage rates. Three Lakes WMA is located in southern Ocala County and is a good distance from any of the major wood processing facilities in the State, the closest being Georgia-Pacific in Palatka. There are, however, smaller manufacturers located closer to the Three Lakes area that may be interested in timber sold there. A fence post manufacturer in Ona, Florida, for example, has expressed interest in harvesting smaller diameter material for fence posts.

A recent timber sale occurring on the Tosohatchee State Reserve brought \$13.47/ton for pulpwood and \$36.70/ton for chip and saw material. Tosohatchee and Three Lakes are very different areas and trying to make a valid correlation between these two would be nearly impossible considering the many variables involved. These numbers have been included only to show there is a valid monetary interest in timber in this part of the state. Tosohatchee State Reserve is approximately 1 hour 30 minutes north of Three Lakes WMA and the sale had a large volume of timber per acre removed. It can be assumed from this information that timber on Three Lakes WMA will bid lower than timber on Tosohatchee but timber buyers will remain interested.

XI. Summary

Currently, the major management emphasis for this WMA is to maintain and restore natural ecosystems and to protect habitat for rare, endangered, and special-concern species. Managers at Three Lakes WMA are also required to manage all renewable resources on an optimal sustained-use basis, consistent with protection and maintenance of ecosystems. Balancing these objectives

will challenge resource managers at Three Lakes WMA. Decisions must be made on how much of the WMA is to be managed for various objectives. (e.g. 10% of scrub be maintained in prime scrub jay habitat). This is complicated by the fact that different management objectives are not always mutually exclusive and more than one use can co-exist on the same piece of ground. Once the objectives are spelled out, it can then be determined which silvicultural methods can or should be implemented.

Three Lakes WMA currently has 2,585 of timber growing in plantations and approximately 17,825 acres of natural pine timberland. This constitutes a significant amount of land having the potential to produce timber. Most of the plantations and a majority of the natural stands have not yet reached a merchantable size class but will eventually grow into merchantable timber. There is some opportunity to harvest timber at the present time but it is limited. As time passes the potential will increase as more acreage becomes stocked through natural pine regeneration and as densities increase. Silvicultural treatments, prescribed burning or a combination of both are the most useful tools for implementing ecosystem management objectives such as habitat maintenance or restoration. These tools are also useful for maintaining and creating diversity and have the added benefit of generating revenue for the FFWCC while providing a renewable resource to the American Public.

12.15 Recreation Master Plan

**Recreation Master Plan
for
Three Lakes WMA**



Florida Fish and Wildlife Conservation Commission



Office of Public Access and
Wildlife Viewing Services

September 2012

Three Lakes Wildlife Management Area Recreation Master Plan

I. Introduction

Purpose of Plan/Planning Process

This Recreation Master Plan serves as a guide for providing recreational and educational experiences focused on wildlife viewing and nature study on Three Lakes Wildlife Management Area (Three Lakes). This includes the Prairie Lakes Unit (PLU) and Sunset Ranch (SR). The RMP contains specific recommendations for recreational enhancements and educational products and programs. It also provides guidelines for monitoring recreation-related use to ensure resource protection and meaningful visitor experiences. The plan was developed by the Florida Fish and Wildlife Conservation Commission (FWC) Office of Public Access and Wildlife Viewing Services (OPAWVS) in collaboration with Three Lakes Field Staff with input from other FWC divisions and a Technical Advisory Group of recreational stakeholders (Appendix 1). An online survey (Appendix 6) was conducted to provide additional public input to the planning process.

Location

(Figure 1)

Three Lakes protects a total of 54,628 acres of prairies, flatwoods, swamps, and hammocks in southern Osceola County. The property is a key part of a mosaic of public lands that protect the ecology of the region and helps to provide a linkage between the St. Johns River, the Kissimmee River and the Lake Wales Ridge. Three Lakes supports a diversity of wildlife populations that provide opportunities for hunting, fishing and wildlife viewing. A network of roads and trails accommodate bicyclists, hikers, horseback riders, and other recreationists.

II. Resource Inventory

Topography and Hydrology

Three Lakes is relatively flat with a difference in elevation of approximately 30 feet between the higher areas in the north part of the WMA and the lake shores. The drop in elevation is approximately 6 feet/mile with a gradual decrease in elevation from the north part of the WMA to Lake Jackson, Lake Marian and Lake Kissimmee in the south and the Tyson Creek basin in the southeast. The topography is suitable for easy to moderate hiking,

but sandy soils and periodic flooding can make the experience more strenuous. Boating opportunities are available at Lake Jackson via an on-site boat ramp and at Lake Marian via an off-site boat ramp.

Natural Communities

(Figure 2)

Most of the natural communities on Three Lakes are in excellent condition and represent benchmark examples of native central Florida landscapes. They offer excellent opportunities for interpreting natural communities and land management practices.

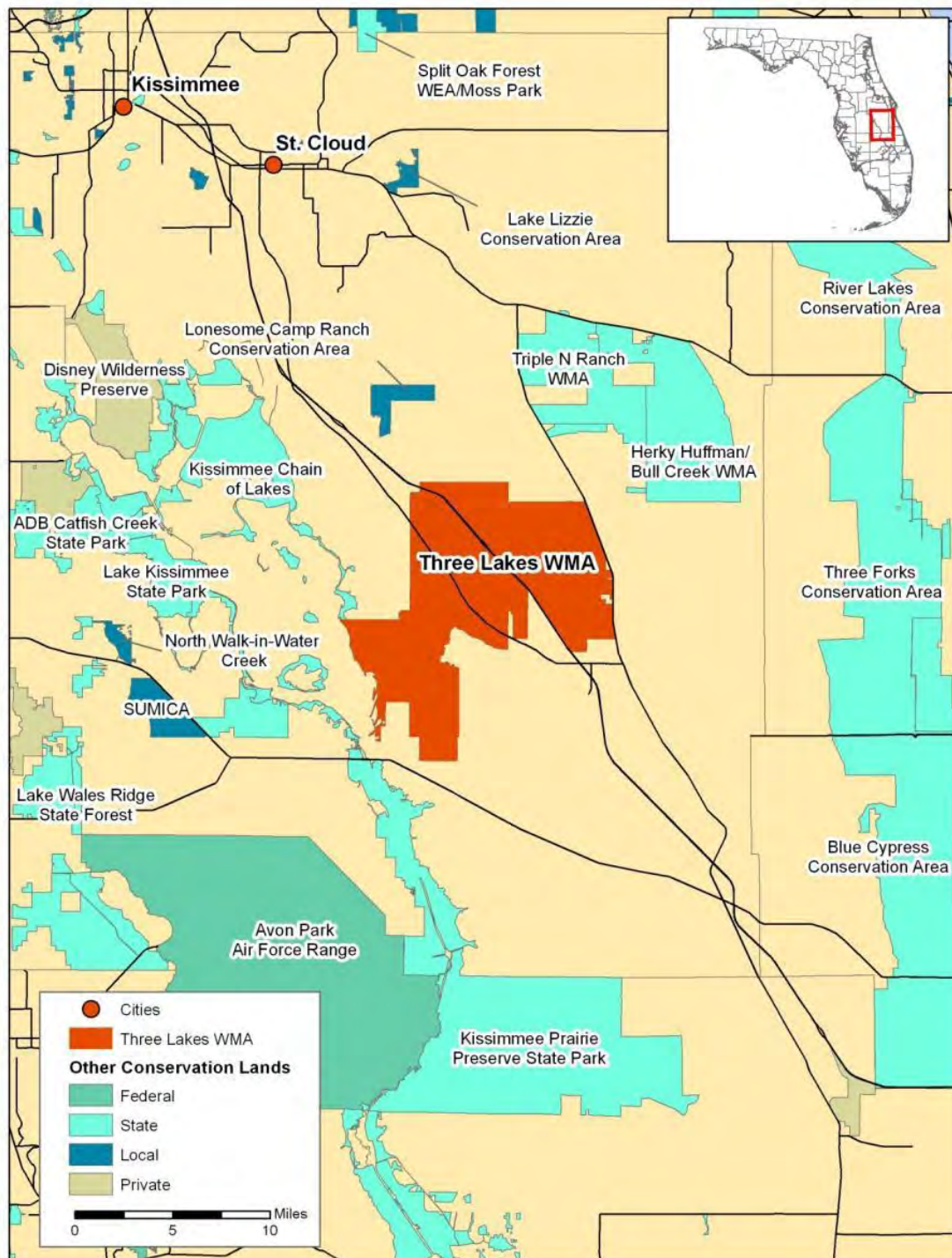


Figure 1: Three Lakes Location Map

Mesic flatwoods and dry prairie are the most prevalent natural communities on Three Lakes, comprising 62% of the WMA (34% and 28% respectively). The part of Three Lakes east of Canoe Creek Road is dominated by mesic flatwoods. Dry prairie dominates areas west of Canoe Creek Road with the exception of the area north of Williams Road, which is primarily mesic flatwoods. Dry prairie is one of the rarest natural communities in Florida and is only found in nine counties in central and southwest Florida. Basin swamp and mesic hammock are the next most common communities and each represents 8% of the WMA. They are followed by wet prairie at 7% and dome swamps (cypress domes) at 5%. Basin swamp is scattered throughout the mesic flatwoods and mesic hammock is found adjacent to dry prairie along the drainages between lakes Kissimmee, Jackson and Marian. Each of the remaining 15 natural communities on the WMA represent 4% or less of the WMA and eight of these represent 1% or less of the area.

Despite their small size, several of these are ecologically significant. Examples include strand swamps (cypress strands), scrubby flatwoods, scrub, hydric hammock and sandhill.

Sensitive Areas

Wetlands on Three Lakes are particularly sensitive to physical disturbance, which may churn up organic soils and displace plants. Access to these areas should be controlled and monitored to avoid damage. Dry prairie, wet prairie and scrub habitats are also vulnerable to disturbance due to their rarity statewide.

Wildlife

Wildlife viewing can be good at almost any spot on the WMA. Within the flatwoods, bird species include the federally endangered red-cockaded woodpecker, which can be seen along with Sherman's fox squirrel and wild turkey. Florida grasshopper sparrow, wild turkey and crested caracara may be seen in the dry prairie. More than 120 bird species are documented to occur on or near the area and nearly half of the "top 40 most sought-after birds" compiled by OPAWVS Wildlife Viewing Section are found on the WMA: Bachman's sparrow, bald eagle, crested caracara, Florida burrowing owl, Florida grasshopper sparrow, Florida scrub-jay, limpkin, mottled duck, red-cockaded woodpecker, roseate spoonbill, sandhill crane, short-tailed hawk, snail kite, swallow-tailed kite, white-tailed kite, whooping crane and wood stork. The area around Three Lakes is home to the highest concentration of bald eagles in the contiguous United States. The area also supports a disjunct population of white-tailed kites, which are normally found in North America in California and Mexico.

Over 60 species of butterflies have been identified in the area including Aaron's skipper, Arogos skipper, Black swallowtail, Cloudless sulphur, Eastern tiger swallowtail, Florida dusted skipper, Meske's skipper, Palatka skipper, Palmetto skipper, Silver-spotted skipper and Zebra heliconian.

Cultural Resources

The Florida Master Site File contains 22 archaeological and historic sites within the boundary of Three Lakes. These range from prehistoric and Belle Glade period middens and mounds to 19th and early 20th century homesteads and cattle dipping vats. There are also three historic structures listed by DHR: one circa 1900 and two circa 1945. The sites and structures are scattered throughout the WMA and some of the sites may have potential for interpretation. They will be evaluated on an individual basis and care will be taken to check the MSF records and coordinate with DHR where necessary.

Scenic Resources

One of the scenic features Three Lakes is most known for is the vista over the well-managed prairies on the WMA. There are also excellent views of Lake Jackson available from the Lake Jackson Viewing Tower and of Lake Marian from two separate viewing platforms.

Resource Management

The FWC's resource management goals for the area include enhancing and maintaining the native upland and wetland communities on the WMA. To accomplish this objective, the FWC is restoring disturbed sites, has instituted a program of prescribed burning, roller-chopping and hardwood removal and is eliminating or controlling nonnative invasive plants through mechanical and chemical treatments. Plants such as old-world climbing fern (*Lygodium microphyllum*), Japanese climbing fern (*Lygodium japonicum*), cogongrass (*Imperata cylindrica*) and Brazilian pepper (*Schinus terebinthifolius*) are problematic on the area. Other management activities include re-establishing hydrologic regimes to benefit fish and wildlife habitats.

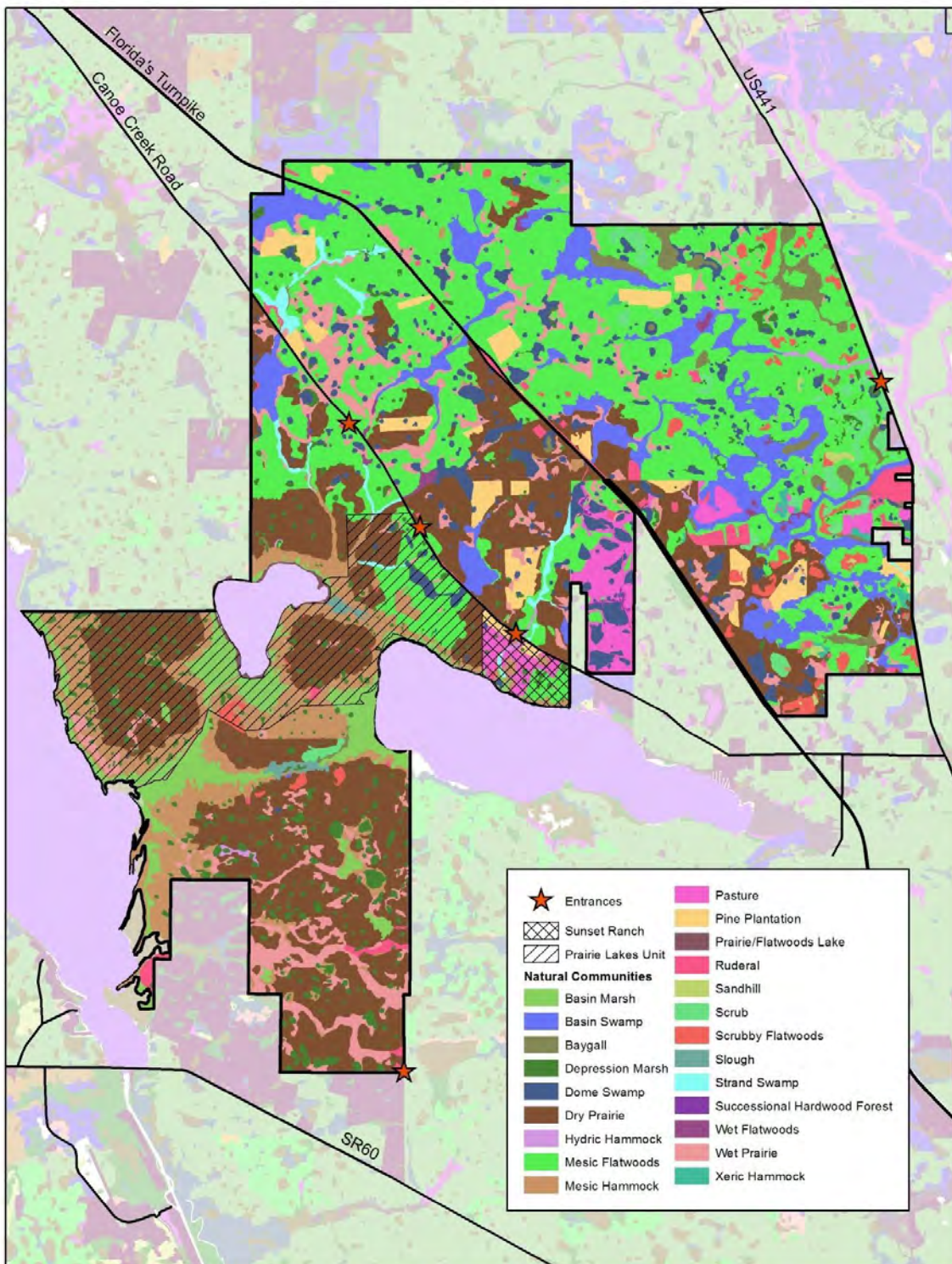


Figure 2: Three Lakes Natural Communities

II. Recreation Planning Context

The 2010 population estimate for Osceola County was 268,685 people with a projected growth to 357,800 (33% increase) in 2020 and 527,500 (96% increase) by 2040 (Enterprise Florida 2011). Hispanic or Latino groups comprise 45% of the county's population (US Census 2010). As with much of Florida, the Hispanic population of Osceola County is projected to grow at a higher rate than other demographic groups. Twenty-nine percent of the county's population identifies itself as non-white, with the largest groups being African American (11%), Other (10%) and multi-racial (4%). These demographic data will be considered in the design of infrastructure and interpretive materials in order to accommodate the full spectrum of potential visitors to the WMA.

	Osceola County		Flori		
Race/Ethnicity	#	%	#	%	Differen
Hispanic or Latino	122146	45.5%	4223806	22.5	23.0%
Non-Hispanic or Latino	146539	54.5%	14577504	77.5	-23.0%
White	190641	71.0%	14109162	75.0	-4.1%
African American	30369	11.3%	2999862	16.0	-4.7%
Asian	7406	2.8%	454821	2.4	0.3%
American Indian/Alaskan	1452	0.5%	71458	0.4	0.2%
Native Hawaiian/Pacific	294	0.1%	12286	0.1	0.0%
Other	27623	10.3%	681144	3.6	6.7%
2 or more	10900	4.1%	472577	2.5	1.5%

Population age distribution is slightly younger than the state distribution with a larger percentage under 18 and a larger percentage of people between the ages of 20 and 49.

	Osceola County		Flori		
Age/Gender	#	%	#	%	Differen
Male	131634	49.0%	9189355	48.9	0.1%
Female	137051	51.0%	9611955	51.1	-0.1%
<18	70416	26.2%	4002091	21.3	4.9%
18+	198269	73.8%	14799219	78.7	-4.9%
20-24	18007	6.7%	1228758	6.5	0.2%
25-34	35301	13.1%	2289545	12.2	1.0%
35-49	60070	22.4%	3832456	20.4	2.0%
50-64	47026	17.5%	3677959	19.6	-2.1%
65+	29656	11.0%	3259602	17.3	-6.3%

As the regional population increases, the public use pressures on the WMA will likely increase. Expectations for connections to trails on lands outside the WMA may also increase. Three Lakes is within 15 miles of several other public recreation areas that offer a variety of recreation opportunities:

Area	Hiking	Biking	Camping	Paddling	Fishing	Horseback	Hunting	Wildlife
Allen David Broussard Catfish	☐	☐	☐	☐	☐	☐	☐	☐
Avon Park Air Force Range	☐		☐	☐	☐	☐	☐	☐
Blue Cypress Conservation Area	☐	☐	☐	☐	☐	☐	☐	☐
Bull Creek WMA	☐	☐	☐	☐	☐	☐	☐	☐
Disney Wilderness	☐	☐	☐	☐	☐	☐	☐	☐
Kissimmee Chain of Lakes (SFWMD)	☐	☐	☐	☐	☐	☐	☐	☐
Kissimmee Prairie Preserve	☐	☐	☐	☐	☐	☐	☐	☐
Kissimmee River	☐	☐	☐	☐	☐	☐	☐	☐
Lake Kissimmee State Park	☐	☐	☐	☐	☐	☐	☐	☐
Lake Lizzie Conservation Area	☐	☐	☐	☐	☐	☐	☐	☐
Lake Wales Ridge State Forest	☐	☐	☐ (Youth Groups)	☐	☐	☐	☐	☐
Lonesome Camp Ranch Conservation Area (Osceola Co.)	☐	☐	☐	☐	☐	☐	☐	☐
North Walk-in-Water Creek (Polk SUMICA (Polk Co.))	☐	☐	☐	☐	☐	☐		☐
Three Forks Conservation Area	☐	☐	☐	☐	☐	☐	☐	☐
Triple N Ranch WMA (FWC)	☐	☐	☐	☐	☐	☐	☐	☐

The Florida Statewide Comprehensive Outdoor Recreation Plan (SCORP) participation levels for various outdoor recreation activities are provided for different regions of Florida and the results for the East Central Region are summarized below. Three Lakes is a particularly important asset for hiking and nature study.

Activit	Resident Participation	Tourist Participation
Paddling	14.7	0.9
Picnicking	47.7	9.3
Hiking	24.3	4.7
Unpaved Bicycle Trails	23.4	0.9

Nature Study	42.1	21.9
Equestrian Activities	6.6	0.9

The East Central Region is at approximately 50% of the statewide average level of service for hiking. At current participation levels, it is projected that over 130 additional miles of trail will be required over the next 10 years to maintain the current level of service; yet trail miles per 1,000 participants is projected to decline slightly over the same time period. Levels of service for the other listed activities are very close to the statewide mean.

The Metropolitan Planning Organization (MPO) established for Osceola County is Metroplan Orlando which includes Orange, Osceola and Seminole counties. There are no planned improvements for any of the roadways near Three Lakes. There is a proposed toll road, the Southport Connector, which would be several miles to the northwest, but there are no anticipated impacts to Three Lakes. The Florida Department of Transportation does not have any of the roads near Three Lakes slated for improvement on their work plans through 2015.

Osceola County has adopted an Urban Growth Boundary (UGB) in its Comprehensive Plan. This boundary limits the expansion of development in the county and preserves the rural character outside of the UGB. Three Lakes is located outside of the UGB and is classified as “Conservation” on the current and future land use maps.

There are two Developments of Regional Impact (DRI) near Three Lakes that have the potential to impact the area and its natural and recreation resources. The first is Green Island DRI, located south of St. Cloud. This is a mixed use development with a maximum of 8,500 single family units and 4,500 multi-family units. A shopping mall, office park, research and industrial areas, school sites and a golf course are also planned. The Green Island DRI has a buildout date of 2030.

The second is the Harmony DRI on US192 east of St. Cloud. This DRI was originally approved in 1992 and has a current buildout date of 2025. The Harmony DRI is a mixed use development with a maximum of 7,200 single and multi-family residential units, commercial space, office space, and light industrial space. Harmony also has an elementary school and a high school.

With an average county household size of 2.93 as of the 2010 census, by the buildout dates, the two DRI's combined could mean an additional 59,186 residents seeking recreation opportunities. This could potentially provide an additional 13,695 hikers or 23,727 birdwatchers/nature enthusiasts seeking recreation resources like those provided at Three Lakes.

IV. Interpretation

In this plan, emphasis is placed on integrating recreation and interpretive planning. Using this approach, the type of recreational experience offered and the location of recreation amenities provided, is strongly influenced by the interpretive goals for the area. Recreation opportunities thus become a means to an end - reaching visitors with important themes and concepts about an area's natural resources, plant communities, wildlife and wildlife management.

Visitor Experience Goals

Three Lakes has the potential to provide visitors with opportunities to see and learn about a variety of natural communities while engaging in recreational activities focused on fish and wildlife resources. Visitor experience goals are those concepts and experiences we want visitors to take away from their time at Three Lakes. These goals guide both interpretive and recreation planning.

At Three Lakes, the FWC will provide opportunities for visitors to:

1. Become oriented to and participate in a range of recreational activities on Three Lakes and adjoining natural areas while:
 - Becoming acquainted with wildlife and natural plant communities, and
 - Understanding Three Lakes' natural, cultural and commercial history, within the context of the state's prehistory and modern history
 - Appreciating Three Lakes as an oasis providing a retreat from the pressures of urban life and an opportunity to connect with the natural world
2. Learn information and stories associated with major interpretive themes, and other related information, through interpretive materials at welcome kiosks, trails and wildlife viewing sites.
3. Have an enjoyable recreational experience without impairing the natural and cultural values of the site. In terms of wildlife viewing, FWC's goal will be to facilitate positive, memorable experiences that keep wildlife disturbances to a minimum.
4. Understand the management goals and activities of the FWC on Three Lakes and their benefits to fish and wildlife.

Interpretive Themes

Interpretive concepts are categorized into themes and subthemes. All interpretive materials revolve around one or two primary themes, which allow visitors to understand and remember important messages. Primary themes also help set visitor experience goals

and priorities and are considered in the design of amenities offered to nature-based recreationists. Subthemes expand upon and support the primary themes. These guide the development of all interpretive products, which may include sign panels, printed materials, electronic media and educational programming. This detailed media prescription will be developed at a later date.

Central Theme: Well-managed, high quality habitats at Three Lakes WMA provide a key link in a regional wildlife and recreation corridor.

Subtheme 1: Diverse plant and animal communities at Three Lakes WMA require a variety of management tools. Biologists use science-based management to fit the needs of individual species and ecosystems.

- A. Prescribed fire is one of the most visible and effective management tools.
- B. The control of nonnative invasive vegetation requires both chemical and mechanical treatments.
- C. Management that benefits one species or habitat type often benefits many others.

Subtheme 2: Restoration benefits wildlife populations, gives visitors a glimpse of the original wild Florida and increases ecosystem resilience.

- A. Restoration takes place on both uplands and wetlands, improving the quality of habitats, water resources and wildlife populations.
- B. Restoration is a long-term solution that may appear destructive in the short-term.
- C. As wildlife populations increase as a result of restoration, recreational opportunities such as hunting, fishing and wildlife viewing will improve.
- D. Restored habitat improves species survival and may increase species' resilience to environmental changes.

Subtheme 3: Three Lakes WMA and its adjacent FWC neighbors - Herky Huffman / Bull Creek WMA and Triple N Ranch WMA – are part of a large regional network of conservation lands in central Florida.

- A. Linkages of wetlands and uplands across WMA boundaries create wildlife corridors and increased opportunities for connected recreation.
- B. The three properties span the divide between the Kissimmee River and St. Johns River watersheds.
- C. The WMA preserves evidence of the historical significance of the region, which included subsistence hunting and fishing, rangeland cattle grazing and timber harvesting.
- D. The value of these conservation lands to recreationists and wildlife will increase as urban boundaries expand.

V. Recreation Assessment

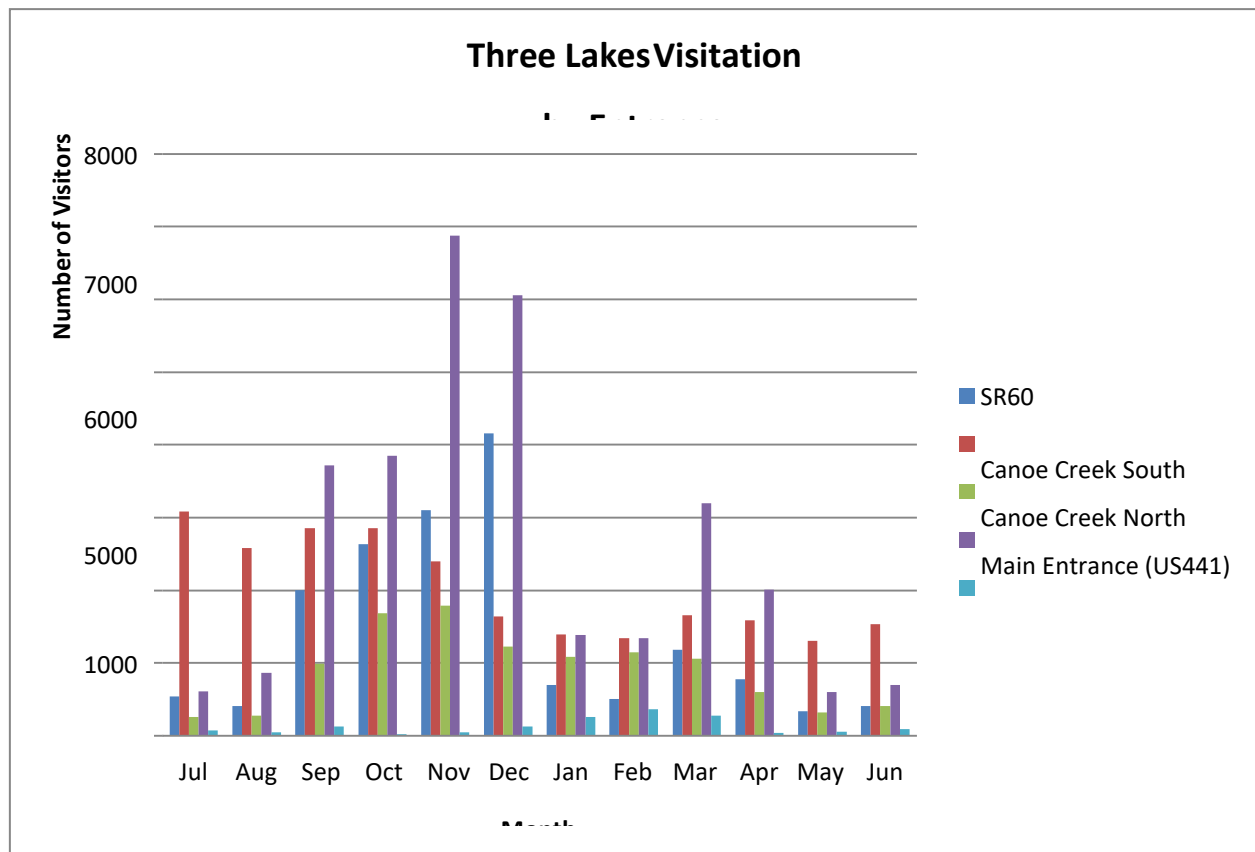
Existing Recreational Use and Facilities

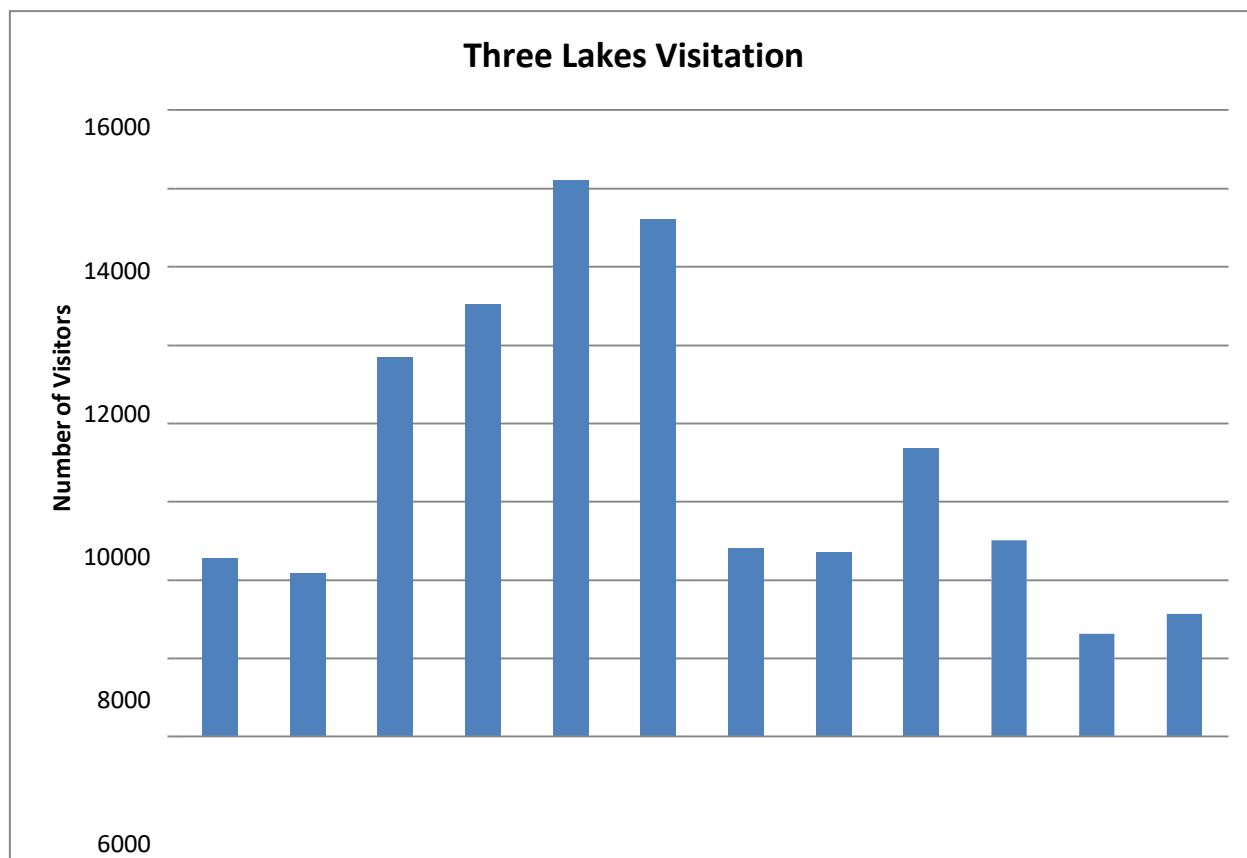
The purpose of this section is to identify and describe the existing recreational uses and facilities on Three Lakes and note their status and condition (Figure 3). This informs recommendations for achieving visitor experience goals and meeting future recreation demands and needs.

Three Lakes offers opportunities for a variety of high quality, wildlife-focused recreation activities. Based on the approved uses and activities as stated in the 2011-2021 Management Plan (MP), the analysis of existing resources and uses, and the interpretive themes developed for the area, the following activities should be continued and enhanced as described in this section.

- ☐ Bicycling (Conditional)
- ☐ Ecotourism (Conditional)
- ☐ Environmental Education
- ☐ Fishing (Conditional)
- ☐ Geocaching (Conditional)
- ☐ Hiking
- ☐ Horseback riding
- ☐ Hunting (Conditional)
- ☐ Primitive Camping (Conditional)
- ☐ Wildlife observation

Visitation, as recorded by 5 separate vehicle and pedestrian counters installed and monitored by FWC, has averaged 236 visitors/day for June 2011 to May 2012. Seasonally, use peaks in the cooler months which coincide with hunting seasons and more comfortable conditions for other recreational uses. The exception to this is the Canoe Creek South Entrance which peaks in the summer and gradually declines through January





Visitor Contact Points and Roads/Vehicle Access - The main entrance for Three Lakes is on US441. At this entrance are a check station, entrance kiosk and toilet. A seasonal campground is located near the entrance. The main entrance for the Prairie Lakes Unit is on Canoe Creek Road where there is an entrance kiosk. Two additional entrances are located on Canoe Creek Road. The north entrance includes a kiosk, seasonal campground, check station and toilet. The Sunset Ranch entrance serves as the Sunset Ranch trailhead and has an informational kiosk. There is also an entrance on the south side of the WMA from SR60 that features a seasonal campground and check station. All entrances have iron rangers for visitors to deposit day use permit fees. Interpretive panels at all entrances except SR60 have been recently replaced and the structures at the entrances are in good condition. The interpretive panel at Sunset Ranch is showing some degradation due to age, weathering, and minor vandalism.

Vehicles are allowed on named and numbered roads and trails. Tracked vehicles, airboats and unlicensed/unregistered motorcycles are prohibited. Airboats may be transported to the Lake Jackson boat ramp. All-terrain vehicles may only be used on roads open to other vehicles.

Most named and numbered roads are well-maintained limerock roads.

There are approach signs for Three Lakes on Canoe Creek Road and SR60 but none on US441.

Hunting - Hunting is an approved use on Three Lakes. The main unit has seasons for archery, muzzleloading gun, general gun mobility-impaired, general gun, general gun-dog, small game, raccoon, quail, spring turkey, and migratory birds. The Prairie Lakes Unit (PLU) provides seasons for archery, muzzleloading gun, general gun, wild hog still hunt, small game, spring turkey, and migratory birds. There are 196 days of hunting each year on Three Lakes (excluding migratory birds): 63 are small game only or small game/raccoon or small game/quail. Thirty-nine days are turkey only, with shooting hours from ½ hour before sunrise to 1:00 pm. From 1 October to 30 April there are hunts on every weekend but one. However, nine of these weekends are small game only or small game/raccoon or small game/quail and eight of these weekends are turkey only. PLU has 55 days of hunting (excluding migratory birds): 23 are small game only and 11 are turkey only. From 1 October to 30 April there are 15 weekends out of 30 with hunting, eight of which are small game or turkey. There are six days of hunting in November, four in January, none in February, seven days in March, and four days in April. Quota permits limit the number of hunters accessing the WMA during most hunting seasons to provide a safe, high-quality- hunting experience. There is no hunting on Sunset Ranch.

Fishing - Fishing is available on all water bodies within and adjacent to the WMA. Lakes Jackson, Marian, and Kissimmee are all FWC Fish Management Areas (FMA) which are a pond, lake or other body of water established for the management of freshwater fish as a cooperative effort with the local county with specific bag limits unique to each FMA. Access to Lake Jackson is through Three Lakes and Lakes Marian and Kissimmee are adjacent to Three Lakes and accessed off-site. There are also fishing opportunities in the canals throughout the WMA and there are two fishing ponds east of the Florida Turnpike which are stocked with catfish. Fishing for largemouth bass is considered excellent on Lake Jackson and Lake Marian has outstanding black crappie fishing; perhaps some of the best in the country. Lake Kissimmee has very good largemouth bass fishing and is known for catches of large bluegill and redear sunfish.

Boating/Paddling - Boating/paddling is available on Lake Kissimmee and Lake Marian via off-site public boat ramps, on Lake Jackson via an on-site public boat ramp, and on ponds within the WMA.

Trail Use – Hiking and bicycling is permitted on all areas of Three Lakes. All named or numbered roads and trails are available for horseback riding except during small game season when horses are not restricted to roads. The Florida National Scenic Trail segment through Three Lakes is classified as “high” use (Stein 2011).

Trail infrastructure

There are 39.2 miles of recreational trails on Three Lakes. The Florida National Scenic Trail (FNST) crosses the area from southwest to northeast, covering 30.8 miles of the WMA (including side trails and loops). The Lake Jackson Tower Trail and Palm Hammock Scenic Trail lead to an observation tower on Lake Jackson. The combined length of the trails is 0.6 miles. The 2.0-mile Sunset Ranch Trail travels from a wildlife viewing blind through hammocks and areas being restored to flatwoods to an observation platform on Lake Marian. There is also a driving tour of 5.9 miles on the Prairie Lakes Unit. There are presently no driving tours or loop trails on the portion of Three Lakes accessed from US 441. There is good potential for a wildlife viewing driving tour from the US 441 entrance as well as a loop trail around one of the fishing ponds located near the potential route.

Wildlife Viewing and Nature Study – Wildlife viewing opportunities are available throughout Three Lakes, with some of the best, most accessible wildlife viewing opportunities located along the various existing trails on the WMA, especially the Driving Tour and Sunset Ranch Trail.

Easily accessed and highly visited areas such as the Lake Jackson boat ramp area are not developed for wildlife viewing and nature study.

Picnicking - There is currently one picnic shelter on the WMA at Parker Hammock Slough. Picnic tables are located at several spots including camping areas and the Sunset Ranch viewing blind. Additional picnic tables/covered picnic tables may be needed at locations along existing and proposed trails and at campgrounds or day use areas.

Camping – Seasonal camping is available at the Canoe Creek, US441 and SR60 campgrounds during hunting periods and is available at designated sites on the FNST and at the Lake Jackson campsites year-round. There is also a group campsite available on Prairie Lakes. Permits for this campground can be downloaded from the FWC website. All campgrounds are primitive. None of the seasonal campgrounds offer reservations or designated sites.

Geocaching – Geocaching is allowed on the area. There are currently no permitted geocaches on Three Lakes although there have been permitted geocaches on the WMA previously.

Approval of new geocaches and disposition of existing geocaches is at the discretion of the site manager and coordinated by FWC's Office of Public Access and Wildlife Viewing Services.

Special Events/Tours – There no regular events at Three Lakes.

Staff/Volunteers- There is currently 1 Biological Scientist III, 2 Biological Scientist II's, 1 Biological Scientist I, 4 Wildlife Technicians, 1 OPS Red-cockaded woodpecker (RCW) Biological Scientist I, 1 OPS Administrative Assistant, 2 seasonal OPS check station operators, 1 seasonal OPS RCW Technician, and 1 OPS UF summer intern.

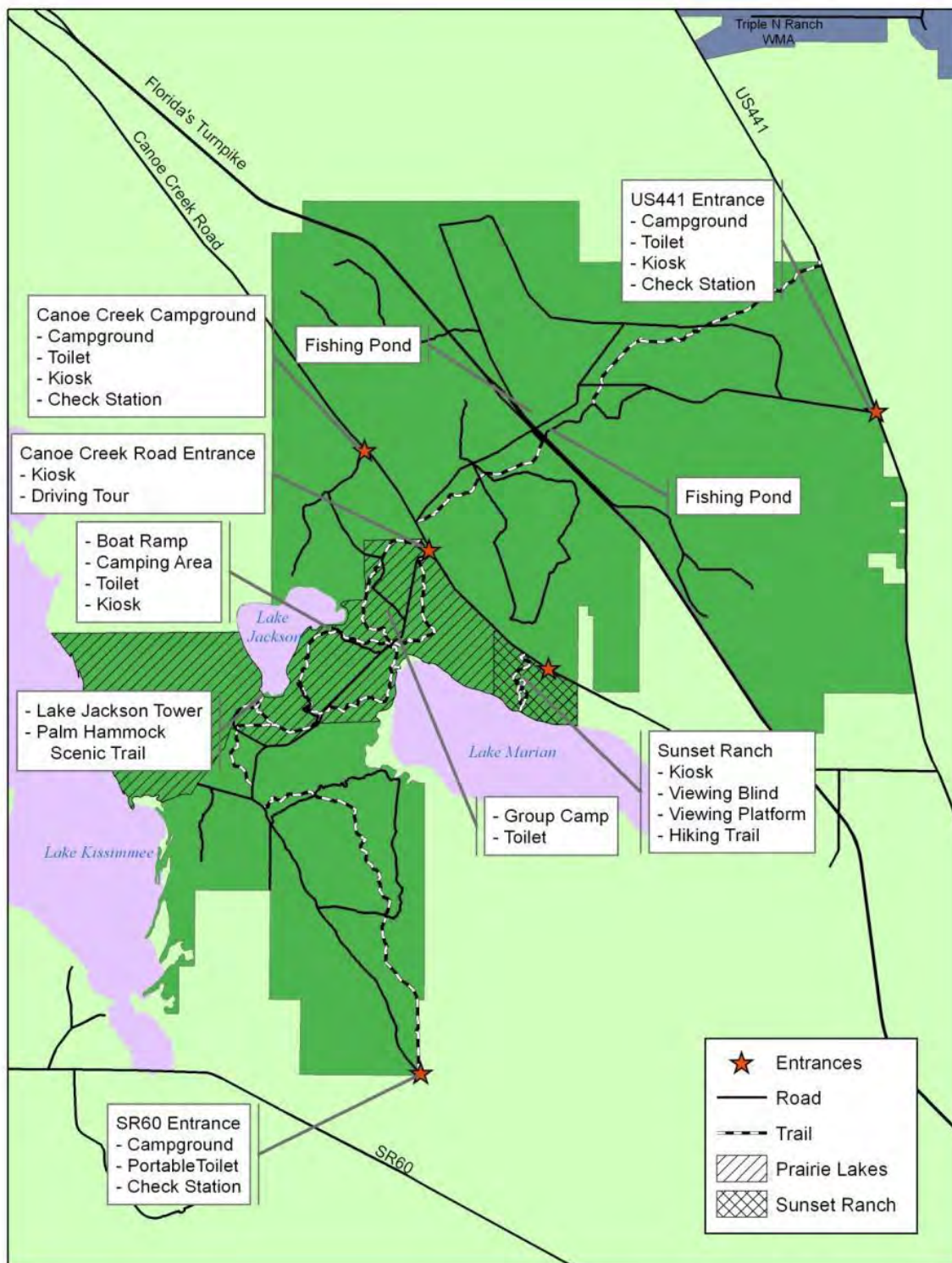


Figure 3: Three Lakes Existing Facilities

Recreation Sensitivity Analysis

(Figure 4)

While there are existing facilities at Three Lakes, it is useful to analyze the WMA in its entirety to determine optimum locations for recreation opportunities. To this end, a Recreation Sensitivity Analysis is developed (Appendix 4) that looks at the entire WMA independent of existing infrastructure and opportunities in order to evaluate the potential to relocate or improve facilities, as well as, help determine locations for new infrastructure. There are currently no facilities at Three Lakes located in areas of high sensitivity although there are some such as the Lake Jackson viewing tower which are near a high sensitivity area and any future expansion of these facilities should be carefully planned. The driving tour passes through a high sensitivity area (primarily due to red-cockaded woodpeckers) but this is on an already established and well-traveled road.

Recreation Zoning

Research of recreational use demonstrates that visitors come to recreate on public lands with many different expectations (NPS, 1997). Providing a variety of settings allows visitors to select the type of experience they desire, simplifies management and reduces conflicts between visitors who are seeking different types of experiences. The zones delineated by the planning team are provided in Figure 4. Each zone is described below in terms of the type of experience it offers, the natural resources related to the experience and the level of management required.

Primitive Zone

This zone offers an experience of solitude deep in a natural landscape with no evidence of human development. This zone can encompass sensitive natural resources. Access is difficult and the number of people should be limited. Only limited recreation and interpretation opportunities should be developed in this zone. A minimal level of management is necessary for resource protection and safety.

Semi-Primitive Non-motorized Zone

The semi-primitive zone provides a sense of being immersed in a natural landscape with opportunities for solitude. Observation structures, boardwalks, interpretative signs and unpaved trails are the types of recreational facilities that are appropriate in this zone. A moderate level of management is provided for resource protection and safety.

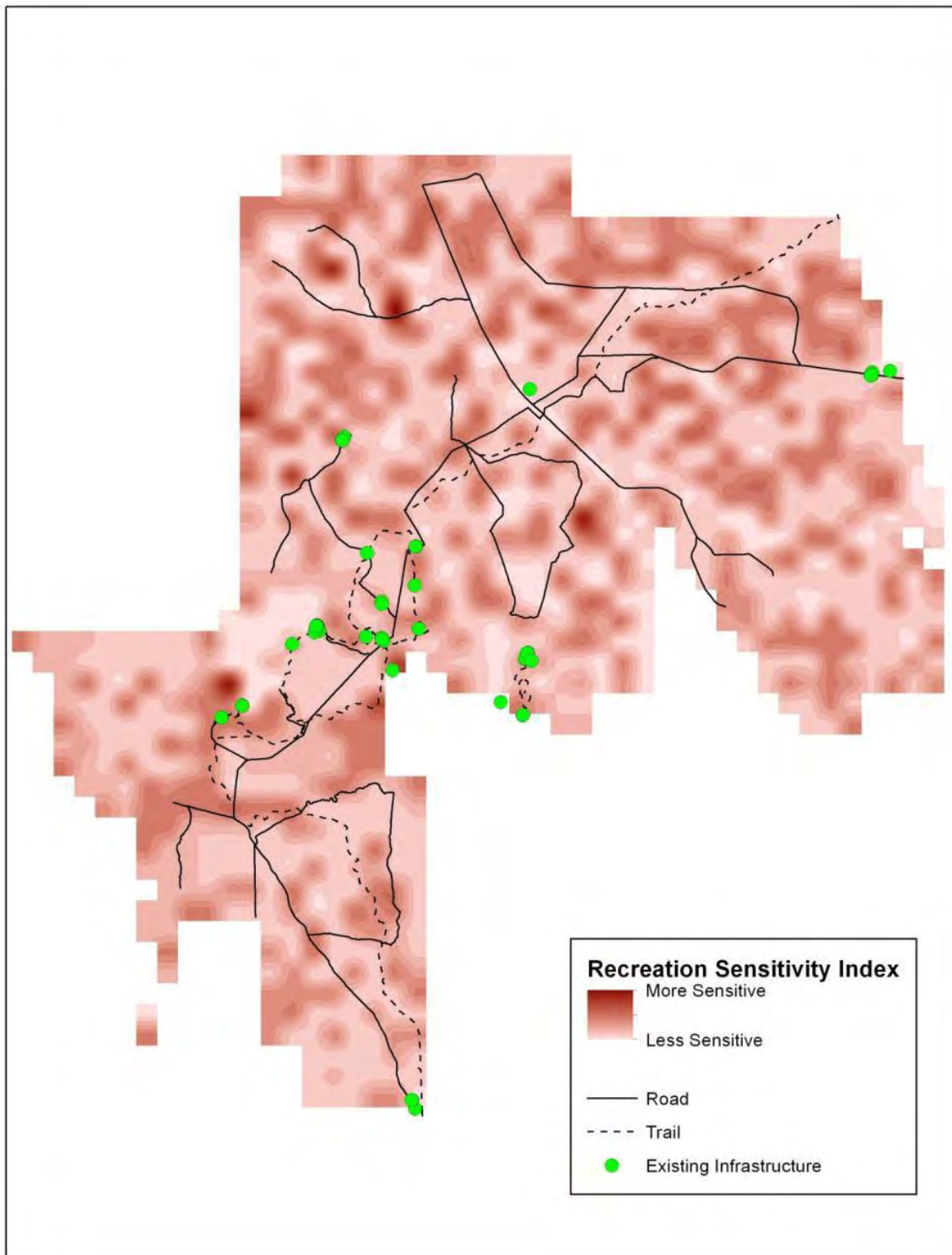


Figure 4: Three Lakes Recreation Sensitivity Index

Semi-Primitive Motorized Zone

The semi-primitive motorized zone provides a sense of being in a natural landscape with minimal human modification and moderate opportunities for solitude. Interpretative signs, wayfinding signs, vehicle pull-offs, unimproved parking locations and unpaved roads are the types of recreational facilities that are appropriate in this zone. Roads are passable by two-wheel drive vehicle. A moderate level of management is provided for resource protection and safety.

Developed Zone

Developed zones are areas with visitor facilities such as parking, picnicking and toilets. The visitor's experience in this zone is highly social. Trails may be paved or hardened for access by people with disabilities. Visitors and facilities are intensively managed in this zone for resource protection and safety purposes. Staff should monitor visitor behavior and attend to maintenance needs. The most intensive interpretation is provided in the developed zone. This is the most appropriate zone for building construction.

Carrying Capacity

In order to minimize disturbance of wildlife and other natural resources and to provide an enjoyable experience for visitors, FWC calculates a carrying capacity for its managed areas (Appendix 4). This carrying capacity takes into consideration natural community sensitivity, known locations of sensitive natural communities, known archaeological and historic sites, existing recreation facilities and wildlife disturbance distances, with a turnover rate that varies with the activity or facility. This capacity is not a visitation goal but rather is a level at which the natural and recreation resources of the area can sustain use without damage. Current capacity for Three Lakes is 1563 people per day (including hunting capacity). If all planned facilities are constructed, this capacity increases to 1843 people per day.

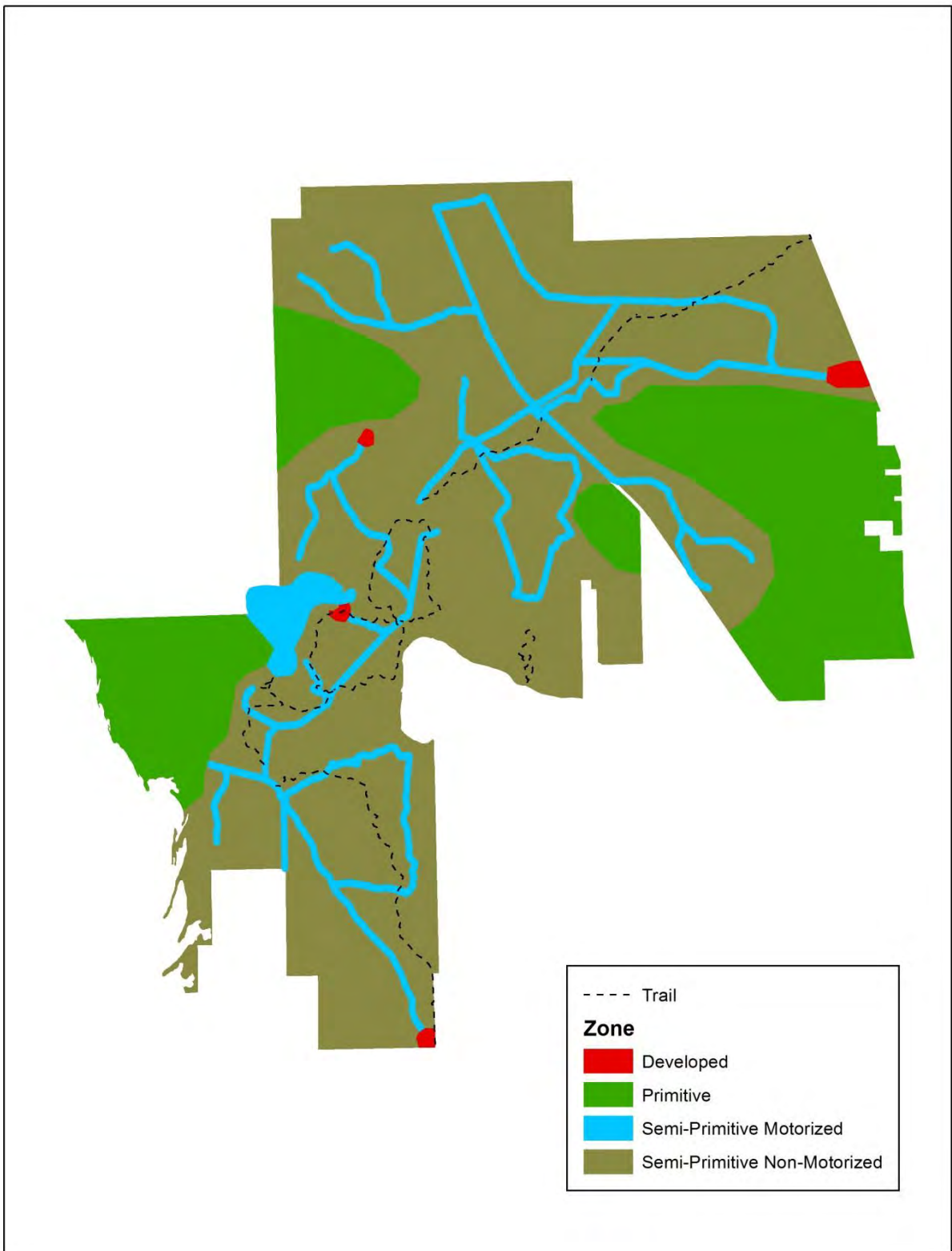


Figure 5: Three Lakes Recreation Zones

VI. Nature-based Recreation Recommendations

Three Lakes WMA Recreation Use Potential

Three Lakes provides an opportunity for visitors to learn about and see examples of natural communities that are rapidly being converted to other uses in central Florida. The following sections of the plan provide for comprehensive interpretation of these communities, common and listed species of interest to visitors, and FWC's management. Recommended recreation enhancements are those that provide a range of enjoyable opportunities to view wildlife without negatively impacting resources.

Goals and Objectives

Careful design and placement of recreational facilities can provide desirable visitor experiences and minimize impacts to the natural and cultural resources of the area. Construction and improvements will not harm wildlife, fragile habitats or historic and cultural sites. All planning and implementation should be done in accordance with guidelines in Appendix 3. A conceptual site plan for proposed recreation facilities is provided in Figure 5.

Goal A. Orient visitors to the area and its recreation opportunities and interpret WMA resources

1. Install approach signs on US441 to the main Three Lakes entrance.
2. Evaluate existing interpretive panels and revise/replace as necessary.
3. Stock recreation guide, regulation summaries and bird list in brochure boxes at the main entrance.
4. Cross-promote Three Lakes with Herky Huffman/Bull Creek WMA and Triple N Ranch WMA. Explore the three WMA's from a regional perspective as well as what makes each WMA unique.
5. Enhance and maintain up-to-date information about the area on the FWC website.

Goal B. Enhance existing trail opportunities

1. Adjust the route of the existing driving tour, if necessary, and revise interpretive materials and guide to provide updated focus on wildlife and resource management.
2. In cooperation with the US Forest Service map and assess the existing route of the Florida National Scenic Trail through Three Lakes.
3. Install standard wayfinding signs where needed.
4. Monitor trail use and demand to determine the need for expanded trail opportunities.

Goal C. Create new trail opportunities

1. Designate a new wildlife viewing driving trail route from the US441 entrance. Provide guide and map downloads via Quick Response (QR) codes at the entrance kiosk and via internet download from the FWC website.
2. Create a short hiking trail around the fishing pond on the north side of Williams Road near the Turnpike.

Goal D. Enhance existing facilities and develop new wildlife viewing facilities

1. Upgrade the efficiency, effectiveness and appearance of the campgrounds and entrances.
2. Evaluate the potential for a covered viewing platform/fishing dock at Lake Jackson.

Goal E. Direct and manage recreational use to minimize negative resource impacts and maximize visitor satisfaction

1. Implement a monitoring strategy to assess resource impacts and institute corrective management actions if indicators begin to approach standards.
2. Collect and evaluate information about visitor use and satisfaction:
 - Number of visitors to the area and patterns of visitation
 - User group conflicts
 - Origin and length of stay
 - Motivations for visiting and preferred experiences
 - What visitors already know about the area and primary interpretive themes

Goal F. Coordinate with local, state and federal agencies and organizations when planning and implementing nature-based recreation opportunities and enhancements

1. Cross-promote Three Lakes with other regional public lands (i.e. Blue Cypress, Three Forks, River Lakes, etc.).

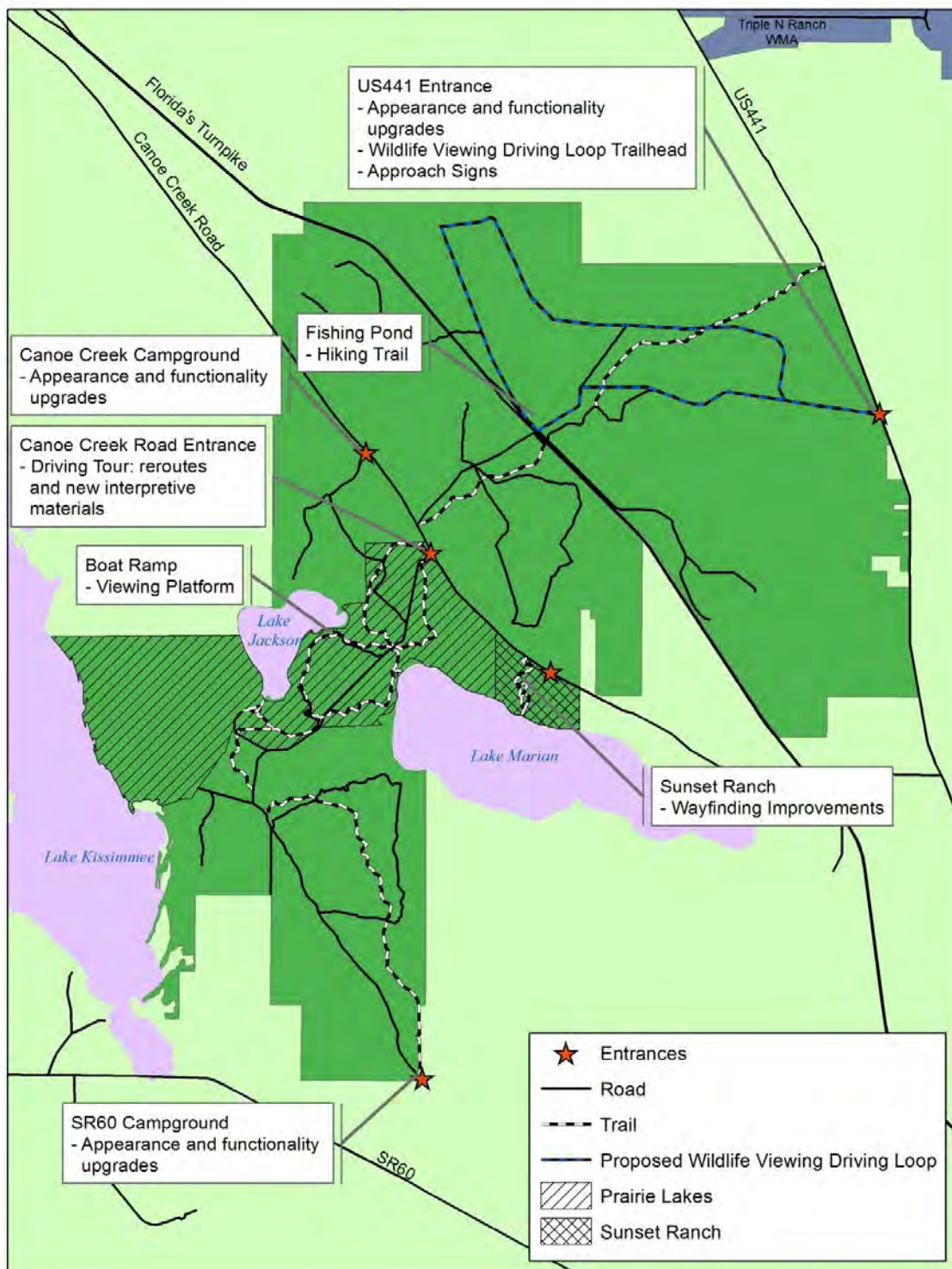


Figure 6: Proposed Three Lakes Recreation Facilities

Challenges and Strategies

There are several challenges facing the effective implementation and management of nature- based recreation opportunities on Three Lakes. Challenges and proposed strategies to address them are discussed in this section.

1. Challenge:

As the population density around Three Lakes continues to increase, recreational use of the area will increase in volume potentially resulting in resource damage, wildlife disturbance and user conflicts.

Strategies:

- Periodically monitor all public use sites for environmental impacts and implement corrective actions when and where necessary.
- Recreational use will be directed away from sensitive environments to the greatest degree possible.
- Environmental protection information will be provided in all interpretive materials.

2. Challenge:

As recreational use increases, conflicts among user groups may occur.

Strategies:

- Provide a range of recreational opportunities in a variety of settings to avoid user conflicts as much as possible.
- Involve stakeholders and user groups during planning.
- Ensure that user groups understand how to contact local staff to resolve problems.
- Provide opportunities for different user groups to volunteer together to maintain public access amenities.
- Display hunting information (days and times) at all entrances to help all users make choices about when to visit.

Work Plans

OPAWVS will work with local staff to prepare annual work plans and budgets to implement the RMP for Three Lakes. OPAWVS will be responsible for 1) developing cost estimates for recreation-related facilities; 2) coordinating design and permitting; and 3) obtaining construction bids and the work of contractors during the construction phase. This includes pre-construction meetings, site visits at construction milestones and final reviews. Generally, the area manager and staff monitor construction sites frequently during the construction process to make sure contractor is not doing damage to the surrounding area.

OPAWVS will design interpretive materials for the areas in consultation with management area staff. Generally, the cost of producing maps and interpretive products and maps comes out of the OPAWVS budget.

Monitoring and Management of Recreation Facilities

OPAWVS will monitor recreation infrastructure on the WMA biannually including trail and structure photopoints. OPAWVS will also create an annual monitoring report at the end of each fiscal year. Any impacts encountered during each monitoring will be brought to the attention of OPAWVS and WMA staff to determine the best course of action for correction and prevention.

Measurable indicators for monitoring key aspects of the visitor's experience and resources at Three Lakes are described in Appendix 5. Indicators should be monitored for each zone, and when necessary, management actions taken to ensure that visitor use and resource impacts remain within the established standards.

References

2030 Long Range Transportation Plan. MetroPlan Orlando (2010).

A Management Plan for Three Lakes Wildlife Management Area 2012 – 2022 (Draft).
Florida Fish and Wildlife Conservation Commission (2012).

Florida National Scenic Trail Annual Report: 2011. University of Florida School of Forest
Resources and Conservation. Taylor Stein, et al. (2011)

Florida Office of Economic and Demographic Research. <http://www.edr.state.fl.us> (2012).

Florida Statewide Comprehensive Outdoor Recreation Plan. Florida
Department of Environmental Protection (2008).

National Park Service. The Visitor Experience and Resource Protection
(VERP) Framework: A Handbook for Planners and Managers (1997).

Osceola County Comprehensive Plan. Osceola County
(2007) US Census 2010. US Census Bureau (2010)

Appendix 1: Three Lakes Stakeholder Meeting Notes

24 August, 2011
Kissimmee IFAS Office

List of stakeholders in attendance:

Sherry Burroughs, Osceola TDC/Equestrian
Mick Karolick, Florida Trail Association
Bob Mindick, Osceola County Land Manager
Steve Monroe, Hunter
Larry Rosen, Florida Audubon Society
Dave Sibley, Florida Trail Association
Doug Voltolina, St. Johns River Water Management District

FWC staff in attendance:

Jerrie Lindsey, Director, Public Access and Wildlife Viewing Services
Rich Noyes, Section Leader, Planning and Design
Tom M. Matthews, Recreation Planner
Ann Morrow, Interpretive Writer
Steve Glass, District Biologist
Tina Hannon, Three Lakes WMA Manager
Jeremy Olson, Triple N Ranch WMA Manager
Brett Walker, Herky Huffman/Bull Creek WMA
Manager Allison Jones, Trail Specialist
Josh Cucinella, Trail Specialist

Meeting Agenda:

Introduction and Overview of Recreation Planning - Jerrie Lindsey

Overview and History of Three Lakes – Tina Hannon

Survey Results - Rich Noyes

Proposed Interpretive Themes - Ann Morrow

Overview of Proposed Recreation Improvements - Tom M. Matthews

Stakeholder Input

Review of Stakeholder Suggestions - Jerrie Lindsey

Responses to stakeholder comments and suggestions:

Trails/Activities

- **Designate equestrian trails.**
 - *Horses may be ridden on named and numbered roads any time and may be ridden cross-country during small game season on the main unit of Three Lakes. Additional trail opportunities will be evaluated.*

Programming/Interpretation

- **Educate the public about management activities.**
 - *This is one of the themes we focus on in our interpretive materials.*
- **Interpret history of the WMA and surrounding area.**
 - *We will include this in our interpretive materials.*

Parking/Road Improvements

- **Equestrian parking.**
 - *There is sufficient parking at the campground entrances and many of the destinations (i.e. Lake Jackson, Lake Jackson Tower). Additional parking will be considered as demand increases.*

Facilities/Structures

- **Do not add more intensive uses at Lake Jackson. Consider impact of new structures.**
 - *We will consider the impact of a new viewing structure at the lake. No other new uses are considered.*

Camping

- **Opportunities for horse camping.**
 - *Camping is currently available during hunting periods at the main campgrounds. Campsites are available on Prairie Lakes year-round. No new camping opportunities are being considered at this time.*

Other

- **Monitor and control airboat use on Lake Jackson.**
 - *FWC staff and law enforcement are aware of the airboat issue and it is being monitored and addressed.*

Appendix 2: Work Plan f or Recreation Enhancements

Based on the prioritization of the goals and objectives listed above, the following list of projects and tasks has been ordered in terms of short and long term completion timeframes.

1. Tasks 2012-13

- Evaluate potential for viewing platform at Lake Jackson.
- Mark birding loop.
- Determine driving tour reroutes.
- Mark fishing pond trail.
- Begin process of installing approach signs on US441.
- Update wayfinding signage at Sunset Ranch.

2. Tasks 2013-14

- Design platform at Lake Jackson.
- Plan entrance/campground improvements.
- Install approach signs on US441.
- Update wayfinding and interpretive signage on driving tour.

3. Long Term Completion and Ongoing Tasks

- Construct viewing platform at Lake Jackson.
- Implement entrance/campground improvements.

Appendix 3: Recreation and Wildlife Viewing Facilities Design Guidelines

☐ **Entrances**

Should welcome visitors to the area, identify the Commission, describe the range of potential experiences on the area, and describe the wildlife viewing experiences by season, time of day or wildlife event.

☐ **Viewing structures**

Structures should include wildlife identification or other interpretive information. The structure should be surrounded by and focused on wildlife and habitat, rather than being the focus itself. For towers, each level should focus visitor attention to a different habitat or feature.

☐ **Trails**

Trails should be described at the trailhead with length or time required. If the focus is wildlife viewing, include best seasons. Interpretive panels or brochure stops should be well-spaced and focused by season.

General considerations in developing facilities:

- ☐ Locate viewing facilities on previously disturbed properties wherever possible.
- ☐ Preserve a sense of solitude and limit impact on natural resources by concentrating recreation uses in small “developed” zones and along existing road/trail corridors.
- ☐ Site facilities and design trails to minimize user conflicts.
- ☐ Avoid sensitive areas such as wetlands and route trails to avoid fragmenting habitat.
- ☐ Consider physical characteristics and the historical and natural character of the location.
- ☐ Adapt parking lots, buildings and other physical developments to existing topography.
- ☐ Retain on-site surface water run-off generated by development.
- ☐ Use porous pavements where surface hardening is required.
- ☐ Consider sewage disposal needs.
- ☐ Use native plants representative of the area for all landscaping.
- ☐ Design and build trails and observation structures to avoid disturbing wildlife and to minimize negative impacts such as erosion.

- ☐ Use elevated boardwalks in wet areas and swamps and walkovers to protect other sensitive areas.
- ☐ Incorporate wildlife viewing ethics into all interpretive materials.
- ☐ Incorporate interpretive themes into all brochures, trail guides and other materials produced to support recreation opportunities.
- ☐ Install interpretive signs and panels as appropriate at all recreation facilities.
- ☐ Route trails to interpret restoration and wildlife management activities.
- ☐ Insure interpretation of highly desired species viewable on the area.

Universal Access

Nature-based recreation facilities and programs must be developed and implemented in compliance with the Americans with Disabilities Act. All facilities in developed zones should be universally accessible. Recreation facilities in semi-primitive or primitive zones should be planned to be accessible to the degree possible except where:

- ☐ compliance will cause harm to cultural, historic or religious sites or significant natural features or characteristics.
- ☐ compliance will substantially alter the nature of the setting or purpose of the facility (or a portion of the facility).
- ☐ compliance would require construction methods or materials prohibited by federal, state or local regulations or statutes, or compliance would not be feasible due to terrain or prevailing construction practices.

Appendix 4: Carrying Capacity Methodology

FWC Recreation Carrying Capacity

Carrying capacities for recreational users on FWC lands are developed using a methodology employing existing spatial data and models, recommended guidelines for spatial and temporal carrying capacity, recommended guidelines for minimizing wildlife disturbance by outdoor recreation, and site-specific characteristics. The intent of this methodology is to provide a realistic carrying capacity which is based on the best science and data available with a focus on minimizing wildlife and habitat disturbance and providing the type of recreation our visitors desire and FWC's managed areas can support. This methodology also provides a means of monitoring visitor impacts and allows for flexibility in responding to these impacts and adjusting the carrying capacity as necessary. The carrying capacities generated through this process are not a visitation goal but are a guideline included in the overall area Management Plan and used as a tool to help plan and develop recreation opportunities.

Sensitivity Analysis

An initial analysis of site sensitivity to recreation impacts is conducted using:

- Integrated Wildlife Habitat Ranking System model results for the site
- Natural community values based on threat rankings developed for the Florida Wildlife Legacy Initiative using the rankings for Roads, Incompatible Recreation Activities, and Conversion to Recreation Areas
- Natural community values based on the sensitivity guidelines published by the Florida Park Service
- Wetlands
- Slope
- Soils
- Known point locations of species-of-interest
- Known locations of sensitive resources
- Division of Historic Resources Master Site File sites
- Density of existing roads, trails and facilities
- Other datasets as available and appropriate

These data layers are converted to grids as necessary and normalized to a scale of 1-100. Then a weighted sum is calculated for all data resulting in a “Sensitivity Index” for the area with higher values being more sensitive to disturbance from recreation.

Recreation Zoning

Once the results of the Site Sensitivity model are obtained, a Recreation Zone Map is developed incorporating these results and any statutory or rule constraints for recreation activities. These Recreation Zone Maps will show the different types of recreation experiences appropriate for each zone of the area. This guides potential trail lengths, trail types, types of facilities and other parameters related to recreation infrastructure.

Carrying Capacity Development

For linear recreation facilities (i.e. trails), a physical carrying capacity is developed based on trail length using a 100-meter buffer on either side of the trails. This buffer distance is consistent with the estimated area of wildlife disturbance along the trail. In addition, an additional 100- meter buffer is used between potential trail users to provide an undisturbed 100-meter area between users. This results in an estimate of 1 user or group every 300 meters along the trail. This estimate is generated using GIS and is adjusted to minimize disturbance “hot spots” such as overlapping disturbance buffers. Point facilities (i.e. observation structures) have a single 100-meter radius buffer. The temporal component of carrying capacity is developed based on the Florida Park Service turnover estimate of two per day on primitive hiking trails or four per day on shorter, improved nature trails. In addition, existing and planned parking and other trailhead limitations are factored into the estimate. If the site already has a Recreation Master Plan (RMP) developed, these estimates will be based on existing and planned facilities as detailed in the RMP. If the area does not have an RMP these estimates are based on potential trail corridors and potential point facility sites derived from the Recreation Zoning and site visits by OPAWVS and area staff. Another product of this estimate is a “Wildlife Habitat Disturbance Index” based on the ratio of potentially impacted habitat to impact-free habitat expressed as a percentage of the area potentially impacted by recreation.

Camping Facility Carrying Capacities

- ☐ Primitive tent camping with no facilities or limited facilities (fire ring, picnic table): 4 people/site with a turnover of once per day.
- ☐ Standard camping site (fire ring, picnic table, improved or paved pad, toilet facilities): 8 people/site with a turnover of once per day.
- ☐ Generally group camping will be 30 people per 5 acres of camping area.

Picnic Areas

- ☐ 8 tables/acre and 4 people/table with a turnover twice a day.

Structures

- ☐ Structures dependent on trails for access will be included in the calculated trail capacity.
- ☐ Structures that can be accessed independently of trails will have a carrying capacity determined on a case-by-case basis based on the type and size of the structure.

Shoreline Fishing Areas

- ☐ Shoreline fishing areas will have a capacity of 1 angler per 25 linear feet.

Seasonal Hunting

- ☐ For those areas with seasonal hunting use carrying capacities range from one hunter per 75 acres to one hunter per 150 acres. The exact density chosen depends on a variety of factors with game management most paramount, but is also influenced by the layout of the area and the chosen hunting framework. Areas with dove fields will have a dove field capacity of one hunter to 1.75 acres of dove fields. This capacity is in addition to the calculated capacity for non-hunting recreation uses. Areas with quota permits will have the hunting capacity established as double the maximum number of permits for any one season to account for guest permits.

As needed, capacities for other uses not listed above will use the carrying capacity guidelines published by the Florida Park Service as a baseline.

Recreation Impact Monitoring

To provide a quantitative measure of recreation impacts, limits will be established as “No impact ranks greater than 1,” as observed during each biannual monitoring conducted by OPAWVS field staff. If any ranking values are greater than 1, the site will be assessed to determine the source of the impact. If impacts are the result of recreation activities (as opposed to facility design or other sources), the carrying capacity will be revisited and corrective measures will be developed by OPAWVS and area staff.

Appendix 5: Management and Monitoring

Recreation Facility Monitoring Protocol

Florida Fish and Wildlife Conservation
Commission Office of Public Access and Wildlife
Viewing Services

Introduction

In order to better plan and manage recreation opportunities on lands managed by the Florida Fish and Wildlife Conservation Commission (FWC), FWC's Office of Recreation Services has developed a monitoring program for recreation-related facilities and infrastructure. Using both qualitative and semi-quantitative methods this program will encompass trails, signs, wildlife viewing structures and other facilities. Data obtained through this program will help FWC better plan, construct, and maintain facilities to provide the recreation experiences that are meaningful, enjoyable, and safe.

Materials

Digital camera

Tripod

Kaidan panoramic photo mount

VRWorx or other software for creating panoramic photos

Monitoring forms

Tape measure

Compass

GPS (loaded with waypoints for monitoring

points) Hand tools for checking structure

hardware

Monitoring Procedures

Photopoints

Photopoints should be recorded with GPS, which can also be used to navigate back to the photopoint location on future monitoring visits. A description of the location should be recorded to ensure maximum accuracy in relocating the photopoint.

Trails

Trails are monitored with a panoramic photopoint at the trailhead and a parallel photopoint (forward and backward along the trail) every mile for trails over 2 miles and every ½ mile for trails 2 miles and less. Additional photopoints may be needed for problem areas encountered on the trail. Photopoints are centered at the trail tread.

Assemble the panoramic photo gear and set the tripod over the photopoint, making sure the panoramic head is level. Standard photopoint height is 60" to the center of the camera lens while mounted on the panoramic mount. This may be modified for some photopoints depending on surrounding vegetation or other considerations, but the new height should be recorded and used each time that photopoint is taken. The easiest way to set the height is to assemble the tripod, panoramic mount, and camera on level ground, adjust the legs to their full length and adjust the center column to achieve the proper lens height. The center column can be marked with a permanent marker, tape, or scored with a small file or engraver and each mark should be labeled with the height and camera model. This will have to be done for each different camera that will be used for photopoints, although it is preferable that the same camera be used for all photopoints.

Cameras should be set to full wide zoom, landscape mode if available, with flash off. All photopoints begin with the detent closest to due north and continue in a clockwise direction. A log should be kept to record the photo numbers and their corresponding photopoint.

After downloading the images they should be processed into a flat panorama (a digital image composed of all of the photos for a particular photopoint). These panoramas along with the component images should be kept in a central location organized by WMA, Photopoint Number, and photopoint date.

Parallel photopoints will not need to be processed but should be organized as above.

Use areas

Use areas have 2 photopoints. One is a panoramic photo taken at the center of the use area which follows the procedure for trailhead photopoints. The other is a single photo taken from the perimeter of the area. The compass bearing of the photo should be recorded and used for all subsequent photos taken at that photopoint.

Structures

Structures have a single photopoint. This is a single photo and the compass bearing of the photo should be recorded and used for all subsequent photos taken at that photopoint. If desired, a panoramic photo can be taken to represent the view from the structure (such as the top of a tower).

Physical inspections

- ☐ Check for presence or absence (smaller amenities such as fire rings and benches)
- ☐ Check for proper location (smaller amenities such as fire rings and benches)
- ☐ Inspect for damage (signs and structures)
- ☐ Check hardware and tighten or replace if necessary (signs and structures)

Trails should be traversed in their entirety, either on foot for shorter trails or by vehicle for longer trails. Trouble spots (erosion, trail braiding, shortcuts, litter, excess vegetation encroachment, etc.) should be recorded by GPS and noted on the monitoring form.

Monitoring Forms and Record Keeping

Monitoring forms are completed in the field. This can be done electronically using the Recon field computer or manually. If done manually they should be transferred to an electronic version by filling out the form on computer. Completed electronic forms are then placed in the appropriate location on the Project Management Site for that WMA along with any relevant GPS data (converted to Shapefile), photographs, photopoints, and other notes.

Any issues that need attention should be sent to the appropriate Recreation Planner via email. The Recreation Planner is responsible for ensuring the issue is brought to the attention of the appropriate personnel both internally and external to FWC and tracking the issue through resolution.

Trail Monitoring Form

Observers: _____ Date: _____ Site: _____

LITTER IMPACTS:

1	None	
2	Very Little	small isolated pieces of litter
3	Some	frequent small pieces or isolated large pieces of litter
4	Extensive	small areas used for trash dumping or multiple areas of high litter
5	Very Extensive	large areas used for trash dumping

Problem area locations/comments:

EROSION PROBLEMS:

1	Very little	mostly natural ground cover distribution, or man-made materials (concrete, aggregate, mulch, etc.)
2	Some	localized patches of bare soil from use or runoff from structures or impervious surfaces; vehicle tracks noticeable; standing water; minor hog
3 ²	Moderate	large areas of bare soil created by use; ruts from vehicles; areas muddied by use; roots partially exposed; heavy hog damage.
4	Extensive	channelization, washout, and/or undercutting banks; roots mostly exposed; deep ruts; trail widening.

Problem area locations/comments:

CORRIDOR CONDITION:

1	Within Standards	minimal vegetation encroachment
2	Exceeds Standards	trail needs some mowing/lopping/ chain-sawing; minor tree fall
3	Unacceptable	trail is generally overgrown and difficult to find. tree fall that impedes passage

If there were problem areas, please describe condition and exact location:

PHOTOPOINT INFORMATION

*All photopoints should be taken with a lens height of 60", the flash set to "off", and no zoom.
All panoramic photopoints start with a photo taken towards north, then continue in a clockwise direction.*

New photopoints taken (photopoint type, coordinates, location description, lens azimuth, image numbers) Existing photopoints taken (Photopoint Number, image numbers)

Use Area Monitoring Form

Observers: _____

Date: _____

Site: _____

LITTER IMPACTS:

Rating	Category	Description
1	None	
2	Very Little	small isolated pieces of litter
3 ²	Some	frequent small pieces or isolated large pieces of litter
4	Extensive	small areas used for trash dumping or multiple areas of high litter
5	Very Extensive	large areas used for trash dumping

Comments:

STRUCTURE DAMAGE (shelters, picnic tables, kiosks, trash cans, grills, benches, etc.):

Rating	Category	Description
1	None	none/ loose bolts on new structures.
2	Very Little	minor graffiti or scratches, dirty, light crazing or oxidation, crooked, minor cracks.
3 ²	Some	minor wood repair; extensive graffiti; cuts or gouges; bullet holes; major cracks, extensive crazing or fading.
4	Extensive	hazardous damage; rotten supports; severe rust; illegible signs;
5	Very Extensive	structure is missing or rendered completely ruined/ useless.

List of use-area structures with rankings:

EROSION PROBLEMS:

1	Very little	mostly natural ground cover distribution, or man-made materials (concrete, aggregate, mulch, etc.)
---	-------------	--

2	Some	localized patches of bare soil from use or runoff from structures or impervious surfaces; vehicle tracks noticeable; standing water; minor hog
3 ²	Moderate	large areas of bare soil created by use; ruts from vehicles; areas muddied by use; roots partially exposed; heavy hog damage.
4	Extensive	channelization, washout, and/or undercutting banks; roots mostly exposed; deep ruts; trail widening.

Problem area locations/Comments:

PHOTOPOINT INFORMATION

All photopoints should be taken with a lens height of 60", the flash set to "off", and no zoom. All panoramic photopoints start with a photo taken towards north, then continue in a clockwise direction.

New photopoints taken (photopoint type, coordinates, location description, lens azimuth, image numbers) Existing photopoints taken (photopoint number, image numbers)

**Structure Damage
Reporting Form**

Observer: _____ Date: _____

Site: _____

Structure name/type: _____

Structure location (written description, coordinates): _____

Please rate and explain the extent of the damage in the following areas, where...

- 1=Minimal (no maintenance needed)
- 2=Moderate (maintenance recommended)
- 3=Severe (maintenance imperative)

TAKE CLOSE-UP PHOTOS OF ALL REPORTED DAMAGE

Cleanliness (graffiti, mildew, debris build-up, odor, etc.)

Structural Integrity (crooked, wobbly, or leaning)

Wood condition (rotten, vandalized)

Hardware (rusty, loose, missing)

Other (please describe)

WMA Visit
Checklist

- ☐ Trail maintenance needs
- ☐ Sign maintenance needs
- ☐ Structure maintenance needs
- ☐ Day-use area condition/maintenance needs
- ☐ Sufficient OPAWVS publications in field office
- ☐ Brochure boxes adequately stocked
- ☐ Hunting calendar posted and up-to-date
- ☐ Users encountered on area (number, activity, address for future surveys)
- ☐ Geocaches inspected
- ☐ Manager concerns
- ☐ New ideas for area enhancement

Appendix 6: Public Survey Results

Herky Huffman/Bull Creek WMA, Three Lakes WMA, Triple N Ranch WMA

Survey Participants

- 146 individuals completed the survey
- 103 individuals had visited Three Lakes.
- Many of the respondents visited more than one of the three WMA's (Bull Creek, Triple N Ranch, and Three Lakes).
- 6 individuals had never visited any of the three WMA's.

Top activities

- Hunting/Scouting 71%
- Wildlife Viewing/Photography 48%
- Hiking 32% (FNST 14%)
- Fishing 26%

Visitor Satisfaction

- All activities were over 80% in the neutral to very satisfied ranges
- Significant dissatisfaction in:
 - o Hunting, Scouting 15.87%
 - o Wildlife Viewing, Photography 7.89%
 - o Fishing 8.33%
 - o Driving Tour 8.33%

Proposed improvements

- More hunting opportunities 45%
- Additional bathrooms 28%
- Trail Maps 24%
- Potable Water 24%
- More hiking trails 13%
- Wildlife viewing blinds, structures 11%

- Improvements in comments
 - o Improve roads
 - o Fishing dock

Other Areas Visited

- Three Lakes: 6
- KICCO: 4
- Lake Tohopekaliga: 3
- Kissimmee PUA: 3
- Deseret Ranch: 2
- Ft. Drum: 2
- 1 each: Shingle Creek, Disney Wilderness Preserve, Forever Florida, Lake Lizzie.

12.16 Land Management Review

2019 Land Management Review Team Report for Three Lakes Wildlife Management Area

1. Introduction

Section 259.036, F.S. requires a periodic on-site review of conservation and recreation lands titled in the name of the Board of Trustees to determine (1) whether the lands are being managed for the purposes for which they were acquired and (2) whether they are being managed in accordance with their land management plan adopted pursuant to s. 259.032, F.S. In cases where the managed areas exceed 1,000 acres in size, such a review must be scheduled at least every five years. In conducting this review, a statutorily constructed review team “shall evaluate the extent to which the existing management plan provides sufficient protection to threatened or endangered species, unique or important natural or physical features, geological or hydrological functions or archaeological features. The review shall also evaluate the extent to which the land is being managed for the purposes for which it was acquired and the degree to which actual management practices, including public access, are in compliance with the adopted management plan.”

The land management review teams are coordinated by the Division of State Lands and consist of representatives from the Division of Recreation and Parks (DEP), the Florida Forest Service (DACS), the Fish and Wildlife Conservation Commission, the local government in which the property is located, the DEP District in which the parcel is located, the local soil and water conservation district or jurisdictional water management district, a conservation organization member, and a local private land manager.

Each Land Management Review Report is divided into three sections. Section 1 provides the details of the property being reviewed as well as the overall results of the report. Section 2 provides details of the Field Review, in which the Review Team inspects the results of management actions on the site. Section 3 provides details of the Land Management Plan Review, in which the team determines the extent to which the Management Plan provides for and documents adequate natural and recreational resource protection.

Finally, each report may also contain an Appendix that lists individual team member comments. This is a compilation of feedback, concerns or other thoughts raised by individual team members, but not necessarily indicative of the final consensus reached by the Land Management Review Team.

1.1. Property Reviewed in this Report

Name of Site: Three Lakes Wildlife Management Area

Managed by: Fish & Wildlife Conservation Commission

Acres: 61,845

Counties: Osceola

Purpose(s) for Acquisition: To acquire endangered or environmentally unique natural lands for use as natural resource preserves and/or recreation areas.

Acquisition Program(s): EEL/CARL/P2000/Florida Forever

Original Acquisition Date: 9/3/74

Area Reviewed: Entire Property

Last Management Plan Approval Date: 4/12/12

Review Date: 8/28/19

Agency Manager and Key Staff Present:

- Shayna Jacques, Manager
- Steve Glass
- Tina Hannon
- Matthew Hortman

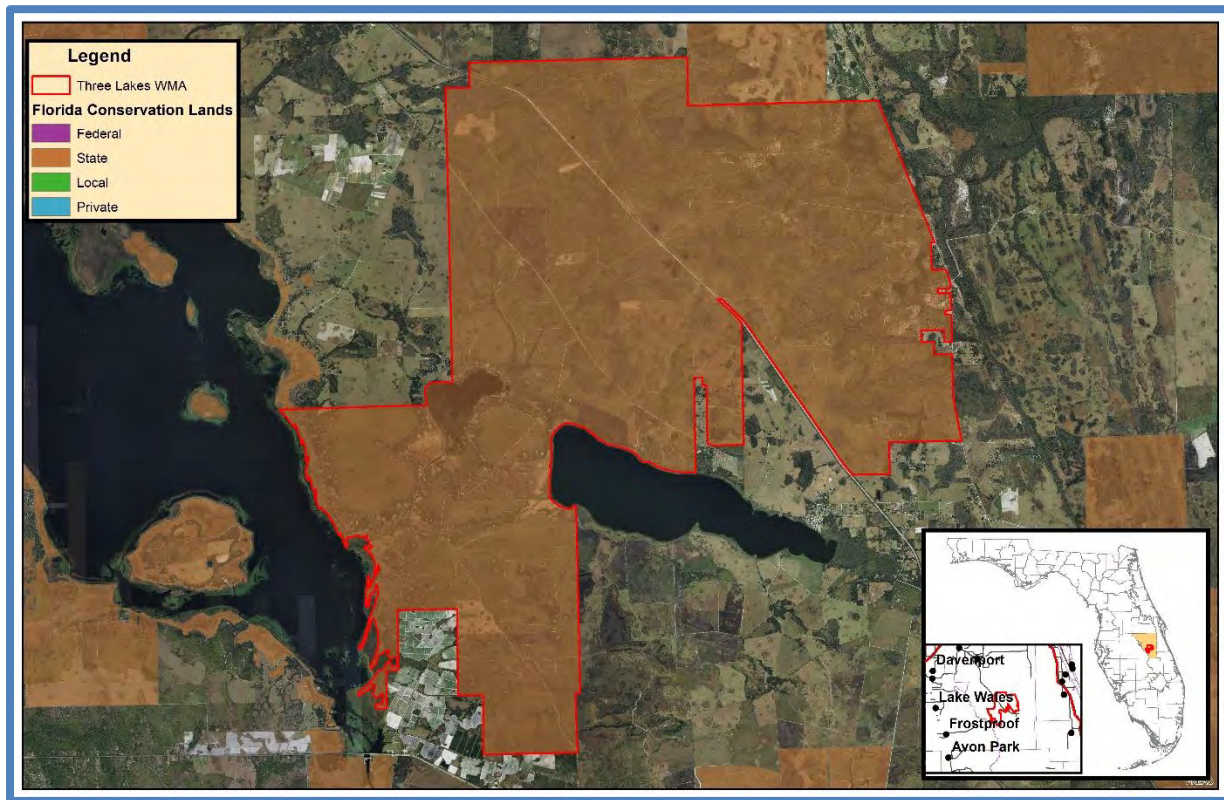
Review Team Members Present (voting)

- Alex Creager, DRP District
- Local Gov't., None
- Jess Rodriguez, FWC
- Abbie Khounexay, DEP District
- Michael Edwards, FFS
- Amy Copeland, SJRWMD
- Vince Lamb, Cons. Organization
- Private Land Manager, None

Other Non-Team Members Present (attending)

- Keith Singleton, DEP/DSL
- Andrew Lawrence, FWC/IPM
- Lance Jacobson, FWC
- Jennifer Paredes, FWC
- Melanie Mancuso, FWC
- Jim Blush, SFWMD

1.2 Property Map



1.3. Overview of Land Management Review Results

Is the property managed for purposes that are compatible with conservation, preservation, or recreation?

Yes = 6, No = 0

Are the management practices, including public access, in compliance with the management plan?

Yes = 6, No = 0

Table 1 shows the average scores received for each applicable category of review. *Field Review* scores refer to the adequacy of management actions in the field, while *Management Plan Review* scores refer to adequacy of discussion of these topics in the management plan. Scores range from 1 to 5 with 5 signifying excellence. For a more detailed key to the scores, please see *Appendix A*.

Table 14: Results at a glance.

Major Land Management Categories	Field Review	Management Plan Review
Natural Communities / Forest Management	4.25	3.99
Prescribed Fire / Habitat Restoration	4.45	4.47
Hydrology	3.87	3.40
Imperiled Species	4.70	4.63
Exotic / Invasive Species	3.75	3.71
Cultural Resources	4.00	3.90
Public Access / Education / Law Enforcement	3.55	3.23
Infrastructure / Equipment / Staffing	3.89	N/A
Color Code (See Appendix A for detail)		
Excellent	Above Average	Below Average
		Poor

1.3.1 Consensus Commendations for the Managing Agency

The following commendations resulted from discussion and vote of the review team members:

1. The team commends the Florida Fish and Wildlife Conservation Commission (FWC) for excellent monitoring of Florida Grasshopper Sparrows and interagency cooperation in their restoration. (6+, 0-)
2. The team commends the FWC for excellent management of their prescribed fire program in regards to the quality, frequency, and quantity of fire used to maintain natural communities. (6+, 0-)
3. The team commends the FWC for outstanding participation in the red cockaded woodpecker recovery program with excellent results on this land. (6+, 0-)
4. The team commends the FWC for outstanding habitat management for listed species (and all wildlife). (6+, 0-)
5. The team commends the FWC for outstanding efforts with natural community habitat restoration. (6+, 0-)
6. The team commends the FWC for good efforts to detect and treat climbing fern infestations; good repetition of survey and treatment. (6+, 0-)

1.3.2. Consensus Recommendations to the Managing Agency

The following recommendations resulted from a discussion and vote of review team members. The next management plan update should include information about how these recommendations have been addressed:

1. The team recommends FWC coordinate with SFWMD for management of the Kissimmee River Public Use Area or get an access easement so the land can be managed. (6+, 0-)

Managing Agency Response: The FWC will continue to work with the SFWMD for the management and access of the Kissimmee River Public Use Area. Additionally, the FWC will work towards determining the efficacy of FWC's continued management of the area during the development of the upcoming management plan update.

2. Field Review Details

2.1 Field Review Checklist Findings

The following items received high scores on the review team checklist, which indicates that management actions exceeded expectations.

1. **Natural communities, specifically basin marsh, basin swamp, baygall, depression marsh, dome swamp, dry prairie, hydric hammock, mesic flatwoods, mesic hammock, prairie/flatwoods lake, sandhill, scrub, scrubby flatwoods, wet flatwoods, wet prairie, and xeric hammock.**
2. **Listed species, animals and plants in general, and specifically Florida grasshopper sparrow, red cockaded woodpecker, and bald eagle.**
3. **Natural resource survey/monitoring resources, specifically sport fish or their habitat monitoring, listed species or their habitat monitoring, other non-game species or their habitat monitoring, fire effects monitoring, other habitat management effects monitoring, and invasive species survey and monitoring.**
4. **Cultural resources, specifically protection and preservation.**
5. **Resource management (prescribed fire), specifically area being burned, frequency, and quality.**
6. **Restoration, specifically groundcover, offsite pine, and hammock to dry prairie.**
7. **Forest management, specifically timber harvesting, and reforestation/afforestation.**
8. **Non-native, invasive, and problem species, specifically prevention and control of plants.**
9. **Hydrologic/geologic function, specifically roads, culverts and dams, reservoirs or other impoundments.**
10. **Surface water monitoring, specifically quality, and quantity.**
11. **Resource protection, specifically gates and fencing.**
12. **Public access, specifically roads.**
13. **Environmental education and outreach, specifically recreational opportunities.**
14. **Management resources, specifically buildings, equipment, staff, and funding.**

2.2. Items Requiring Improvement Actions in the Field

The following items received low scores on the review team checklist, which indicates that management actions noted during the Field Review were not considered sufficient (less than 3.0 score on average). Please note that overall good scores do not preclude specific recommendations by the review team requiring remediation. **The management plan update should include information on how these items have been addressed:**

1. **Public Access & Education, specifically invasive species received below average scores. The review team is asked to evaluate, based on information provided by the managing agency, whether public access & education are sufficient.**

Managing Agency Response: The FWC determines the need for signage and environmental educational outreach through the development of Recreation Master Plans (RMP) for each respective management area. The FWC will assess the need for enhancement of such facilities and programs, specifically those relating to invasive species, as needed and recommended by the RMP. Additionally, the current TLWMA Management Plan includes specific objectives under the Public Access and Recreational Opportunities Goal to continue to participate in and identify partnerships to provide interpretative and educational programs and outreach. The FWC will continue to identify opportunities to provide and/or expand interpretative and educational programs for the area, as feasible. The public can also learn more about FWC's invasive plant management from our website at <https://myfwc.com/wildlifehabitats/habitat/invasive-plants/>.

2.3. Field Review Checklist and Scores

Field Review Item	Reference #	Anonymous Team Members								Average
		1	2	3	4	5	6	7	8	
Natural Communities (I.A)										
Basin Marsh	I.A.1	5	4	4	2	4	5			4.00
Basin Swamp	I.A.2	5	4	4	4	x	5			4.40
Baygall	I.A.3	5	4	4	4	4	5			4.33
Depression Marsh	I.A.4	5	5	4	4	4	5			4.50
Dome Swamp	I.A.5	5	4	4	4	4	5			4.33
Dry Prairie	I.A.6	5	5	5	5	4	5			4.83
Hydric Hammock	I.A.7	5	5	3	4	4	5			4.33
Mesic Flatwoods	I.A.8	5	5	4	5	4	5			4.67
Mesic Hammock	I.A.9	5	5	4	4	4	5			4.50
Prairie/Flatwoods Lake	I.A.10	5	5	4	4	4	5			4.50
Sandhill	I.A.11	4	5	4	4	4	5			4.33
Scrub	I.A.12	5	5	4	4	4	5			4.50
Scrubby Flatwoods	I.A.13	5	5	4	5	4	5			4.67
Wet Flatwoods	I.A.16	5	5	4	5	4	5			4.67
Wet Prairie	I.A.17	5	5	5	5	4	5			4.83
Xeric Hammock	I.A.18	5	5	4	4	4	5			4.50

Natural Communities Average Score										4.49
Listed species: Protection & Preservation (I.B)										
Animals	I.B.1	5	5	5	5	4	5			4.83
Florida Grasshopper Sparrow	I.B.1.a	5	5	5	5	5	5			5.00
Red Cockaded Woodpecker	I.B.1.b	5	5	5	5	5	5			5.00
Bald Eagle	I.B.1.c	5	5	5	5	4	3			4.50
Plants	I.B.2	5	5	4	4	4	3			4.17
Listed Species Average Score										4.70
Natural Resources Survey/Management Resources (I.C)										
Sport fish or their habitat monitoring	I.C.1	5	4	4	4	x	4			4.20
Listed species or their habitat monitoring	I.C.2	5	5	5	5	4	5			4.83
Other non-game species or their habitat monitoring	I.C.3	5	5	4	5	4	5			4.67
Fire effects monitoring	I.C.4	5	5	5	4	4	5			4.67
Other habitat management effects monitoring	I.C.5	5	5	4	4	4	3			4.17
Invasive species survey / monitoring	I.C.6	5	4	4	4	4	5			4.33
Cultural Resources (Archeological & Historic sites) (II.A, II.B)										
Cultural Res. Survey	II.A	4	4	4	4	x	3			3.80
Protection and preservation	II.B	5	4	4	4	x	4			4.20
Cultural Resources Average Score										4.00
Resource Management, Prescribed Fire (III.A)										
Area Being Burned (no. acres)	III.A.1	5	5	5	5	4	5			4.83
Frequency	III.A.2	5	5	5	5	4	5			4.83
Quality	III.A.3	5	5	5	5	4	4			4.67
Resource Management, Prescribed Fire Average Score										4.78
Restoration (III.B)										
Groundcover	III.B.1	4	5	4	4	4	4			4.17
Fodders Stack	III.B.2	4	5	3	4	4	3			3.83
Offsite Pine	III.B.3	4	4	4	5	4	4			4.17
Hammock to dry prairie	III.B.4	4	4	5	5	4	4			4.33
Restoration Average Score										4.13
Forest Management (III.C)										
Timber Inventory	III.C.1	5	4	3	3	4	4			3.83
Timber Harvesting	III.C.2	4	4	4	5	4	3			4.00
Reforestation/Afforestation	III.C.3	3	4	5	5	4	4			4.17
Forest Management Average Score										4.00
Non-Native, Invasive & Problem Species (III.D)										
Prevention										
prevention - plants	III.D.1.a	4	4	4	4	4	4			4.00

prevention - animals	III.D.1.b	3	3	4	3	4	3			3.33
Control										
control - plants	III.D.2.a	5	4	4	4	4	4			4.17
control - animals	III.D.2.b	3	3	4	3	4	4			3.50
Non-Native, Invasive & Problem Species Average Score										3.75
Hydrologic/Geologic function Hydro-Alteration (III.E.1)										
Roads/culverts	III.E.1.a	4	4	4	4	4	4			4.00
Ditches	III.E.1.b	4	3	4	3	4	4			3.67
Hydro-period Alteration	III.E.1.c	4	4	2	3	4	4			3.50
Water Level Alteration	III.E.1.d	4	4	2	3	4	4			3.50
Dams, Reservoirs or other impoundments	III.E.1.e	4	4	4	4	4	4			4.00
Hydrologic/Geologic function, Hydro-Alteration Average Score										3.73
Surface Water Monitoring (III.E.3)										
Surface water quality	III.E.3.a	5	4	4	4	3	4			4.00
Surface water quantity	III.F.3.b	5	4	4	4	3	4			4.00
Surface Water Monitoring Average Score										4.00
Resource Protection (III.F)										
Boundary survey	III.F.1	3	4	4	4	4	4			3.83
Gates & fencing	III.F.2	3	4	5	4	4	5			4.17
Signage	III.F.3	4	4	4	3	3	3			3.50
Law enforcement presence	III.F.4	4	4	3	3	4	4			3.67
Resource Protection Average Score										3.79
Adjacent Property Concerns (III.G)										
Land Use										
Inholdings/additions	III.G.2	4	4	3	4	X	2			3.40
Public Access & Education (IV.1, IV.2, IV.3, IV.4, IV.5)										
Public Access										
Roads	IV.1.a	4	4	5	4	4	4			4.17
Parking	IV.1.b	4	4	3	3	4	3			3.50
Environmental Education & Outreach										
Wildlife	IV.2.a	2	4	3	3	3	3			3.00
Invasive Species	IV.2.b	2	3	2	2	3	2			2.33
Habitat Management Activities	IV.2.c	2	4	4	2	3	3			3.00
Interpretive facilities and signs	IV.3	3	4	3	3	3	3			3.17
Recreational Opportunities	IV.4	5	4	4	4	4	4			4.17
Management of Visitor Impacts	IV.5	3	4	3	3	3	3			3.17
Public Access & Education Average Score										3.31
Management Resources (V.1, V.2, V.3, V.4)										
Maintenance										
Waste disposal	V.1.a	3	4	3	3	4	3			3.33
Sanitary facilities	V.1.b	3	4	4	3	4	3			3.50
Infrastructure										

Buildings	V.2.a	5	4	4	3	4	4			4.00
Equipment	V.2.b	5	4	4	4	4	5			4.33
Staff	V.3	5	5	3	3	4	4			4.00
Funding	V.4	5	4	4	3	4	5			4.17
Management Resources Average Score										3.89
Color Code:		Excellent	Above Average		Below Average		Poor		See Appendix A for detail	
			Missing Vote		Insufficient Information					

3. Land Management Plan Review Details

3.1 Items Requiring Improvements in the Management Plan

The following items received low scores on the review team checklist, which indicates that the text noted in the Management Plan Review does not sufficiently address this issue (less than 3.0 score on average.). Please note that overall good scores do not preclude specific recommendations by the review team requiring remediation. The next management plan update should address the checklist items identified below:

- 1. Natural Resources Survey and Monitoring Resources, specifically sport fish or their habitat monitoring received a below average score. This is an indication that the management plan does not sufficiently address survey or monitoring.***

Managing Agency Response: The FWC notes that the field review checklist findings of this LMR report gave the FWC an excellent rating in regarding to natural resources survey and monitoring resources, specifically sport fish or their habitat monitoring. The habitat monitoring and management activities are discussed in section 2.2 and section 5 of the current management plan, however the FWC will ensure that further language regarding sport fish and their habitat monitoring will be incorporated in the upcoming management plan update.

- 2. Resource Protection, specifically gates & fencing, received a below average score. This is an indication that the management plan does not sufficiently address resource protection..***

Managing Agency Response: The current land management plan for the Three Lakes Wildlife Management Area (TLWMA) discusses a challenge in regards to completing a boundary survey for the area. The FWC will ensure to address continued resource protection on the TLWMA in the upcoming management plan update, and explore further strategies to improve gates and fencing on the area.

- 3. Public Access, Environmental Education & Outreach, specifically management of visitor impacts, received a below average score. This is an indication that the management plan does not sufficiently address public access and education.***

Managing Agency Response: The FWC discusses the assessment of existing and potential future recreational uses and facilities, and establishment of visitor carrying capacities in Section 5.4 of the TLWMA Management Plan and in the TLWMA Recreation Master Plan, which can be viewed in Appendix 13.7 of the management plan. This is to ensure visitation does not negatively impact the area. As stated in the Recreation Master Plan, “Careful design and placement of recreation facilities (and opportunities) can provide desirable visitor experiences and minimize impacts to the natural and cultural resource of the area”. The FWC will continue to assess recreational opportunities during the management plan development, and Recreation Master Plan updates, and continue to utilize tools to ensure minimal visitor impacts occur.

3.2 Management Plan Review Checklist and Scores

Plan Review Item	Reference #	Anonymous Team Members								Average
		1	2	3	4	5	6	7	8	
Natural Communities (I.A)										
Basin Marsh	I.A.1	2	5	4	3	4	3			3.50
Basin Swamp	I.A.2	2	5	3	3		3			3.20
Baygall	I.A.3	2	5	3	3	4	3			3.33
Depression Marsh	I.A.4	2	5	3	3	4	5			3.67
Dome Swamp	I.A.5	2	5	4	3	4	4			3.67
Dry Prairie	I.A.6	2	5	5	5	4	5			4.33
Hydric Hammock	I.A.7	2	5	3	3	4	4			3.50
Mesic Flatwoods	I.A.8	3	5	4	5	4	4			4.17
Mesic Hammock	I.A.9	2	5	4	3	4	4			3.67
Prairie/Flatwoods Lake	I.A.10	2	5	3	4	4	4			3.67
Sandhill	I.A.11	2	4	3	3	4	5			3.50
Scrub	I.A.12	2	5	3	3	4	5			3.67
Scrubby Flatwoods	I.A.13	2	5	3	4	4	4			3.67
Wet Flatwoods	I.A.16	2	5	3	3	4	4			3.50
Wet Prairie	I.A.17	2	5	4	3	4	5			3.83
Xeric Hammock	I.A.18	2	5	3	3	4	3			3.33
Natural Communities Average Score										3.64
Listed species: Protection & Preservation (I.B)										
Animals	I.B.1	5	5	5	5	4	5			4.83
Florida Grasshopper Sparrow	I.B.1.a	5	5	5	5	5	5			5.00
Red Cockaded Woodpecker	I.B.1.b	5	5	5	5	5	5			5.00
Bald Eagle	I.B.1.c	5	5	4	5	4	3			4.33
Plants	I.B.2	5	4	3	4	4	4			4.00
Listed Species Average Score										4.63
Natural Resources Survey/Management Resources (I.C)										

Sport fish or their habitat monitoring	I.C.1	2	4	2	2		1			2.20
Listed species or their habitat monitoring	I.C.2	4	4	5	5	4	4			4.33
Other non-game species or their habitat monitoring	I.C.3	4	4	4	4	4	4			4.00
Fire effects monitoring	I.C.4	2	4	4	4	4	3			3.50
Other habitat management effects monitoring	I.C.5	4	4	3	4	4	3			3.67
Invasive species survey / monitoring	I.C.6	4	4	3	3	4	4			3.67
Cultural Resources (Archeological & Historic sites) (II.A, II.B)										
Cultural Res. Survey	II.A	4	4	4	4	x	4			4.00
Protection and preservation	II.B	4	4	4	4	x	3			3.80
Cultural Resources Average Score										3.90
Resource Management, Prescribed Fire (III.A)										
Area Being Burned (no. acres)	III.A.1	5	5	5	5	4	5			4.83
Frequency	III.A.2	5	5	5	5	4	5			4.83
Quality	III.A.3	5	5	4	5	4	5			4.67
Resource Management, Prescribed Fire Average Score										4.78
Restoration (III.B)										
Groundcover	III.B.1	5	5	4	4	4	4			4.33
Fodders Stack	III.B.2	5	5	3	3	4	3			3.83
Offsite Pine	III.B.3	5	5	4	4	4	3			4.17
Hammock to dry prairie	III.B.4	5	5	4	4	4	4			4.33
Restoration Average Score										4.17
Forest Management (III.C)										
Timber Inventory	III.C.1	5	5	3	4	4	4			4.17
Timber Harvesting	III.C.2	5	5	5	4	4	3			4.33
Reforestation/Afforestation	III.C.3	5	5	5	5	4	3			4.50
Forest Management Average Score										4.33
Non-Native, Invasive & Problem Species (III.D)										
Prevention										
prevention - plants	III.E.1.a	4	4	4	4	4	3			3.83
prevention - animals	III.E.1.b	4	3	3	3	4	3			3.33
Control										
control - plants	III.E.2.a	4	4	4	4	4	4			4.00
control - animals	III.E.2.b	4	3	3	4	4	4			3.67
Non-Native, Invasive & Problem Species Average Score										3.71
Hydrologic/Geologic function, Hydro-Alteration (III.E.1)										
Roads/culverts	III.F.1.a	1	4	4	4	4	4			3.50
Ditches	III.F.1.b	1	4	4	4	4	4			3.50
Hydro-period Alteration	III.F.1.c	2	4	3	4	4	3			3.33

Water Level Alteration	III.F.1.d	2	4	3	4	4	4			3.50
Dams, Reservoirs or other impoundments	III.F.1.e	2	4	4	4	4	4			3.67
Hydrologic/Geologic function, Hydro-Alteration Average Score										3.50
Surface Water Monitoring (III.E.3)										
Surface water quality	III.F.3.a	3	4	3			3			3.25
Surface water quantity	III.F.3.b	3	4	3	4	3	3			3.33
Surface Water Monitoring Average Score										3.29
Resource Protection (III.F)										
Boundary survey	III.G.1	3	4	4	3	4	3			3.50
Gates & fencing	III.G.2	1	4	3	2	4	3			2.83
Signage	III.G.3	1	4	4	3	4	3			3.17
Law enforcement presence	III.G.4	2	4	3	3	4				3.20
Resource Protection Average Score										3.18
Adjacent Property Concerns (III.G)										
Land Use										
Inholdings/additions	III.H.2	4	4	3	3		2			3.20
Discussion of Potential Surplus Land Determination	III.H.3	5	4	3	4	4	4			4.00
Surplus Lands Identified?	III.H.4	5	4	3	4	4	4			4.00
Public Access & Education (IV.1, IV.2, IV.3, IV.4, IV.5)										
Public Access										
Roads	IV.1.a	4	4	4	4	4	3			3.83
Parking	IV.1.b	2	4	3	4	4	3			3.33
Environmental Education & Outreach										
Wildlife	IV.2.a	4	3	3	4	3	2			3.17
Invasive Species	IV.2.b	X	3		4	3	2			3.00
Habitat Management Activities	IV.2.c	X	3	3	4	3	2			3.00
Interpretive facilities and signs	IV.3	4	3	3	3	3	3			3.17
Recreational Opportunities	IV.4	4	4	4	4	4	4			4.00
Management of Visitor Impacts	IV.5	2	3	3	4	3	2			2.83
Public Access & Education Average Score										3.29
Managed Area Uses (VI.A, VI.B)										
Existing Uses										
Apiary Lease	VI.A.1	4	4		3	3	4			3.60
Cattle Grazing	VI.A.2	4	4	4	3	3	4			3.67
Silviculture	VI.A.3	5	4		5	3	2			3.80
Hunting	VI.A.4	4	4	4	5	3	3			3.83
Primitive Camping	VI.A.5	5	5	4	3	4	5			4.33
Fishing	VI.A.6	5	4	3	5	3	4			4.00
Equestrian	VI.A.7	4	3	3	3	4	5			3.67
Nature Appreciation	VI.A.8	5	5	4	4	5	5			4.67
Hiking	VI.A.9	5	4	3	4	5	5			4.33

Color Code:	Excellent	Above Average	Below Average	Poor	See Appendix A for detail
		Missing Vote	Insufficient Information		

Appendix A: Scoring System Detail

Explanation of Consensus Commendations:

Often, the exceptional condition of some of the property's attributes impress review team members. In those instances, team members are encouraged to offer positive feedback to the managing agency in the form of a commendation. The teams develop commendations generally by standard consensus processes or by majority vote if they cannot obtain a true consensus.

Explanation of Consensus Recommendations:

Subsection 259.036(2), F.S., specifically states that the managing entity shall consider the findings and recommendations of the land management review. We ask team members to provide general recommendations for improving the management or public access and use of the property. The teams discuss these recommendations and develop consensus recommendations as described above. We provide these recommendations to the managing agency to consider when finalizing the required ten-year management plan update. We encourage the manager to respond directly to these recommendations and include their responses in the final report when received in a timely manner.

Explanation of Field Review Checklist and Scores, and Management Plan Review Checklist and Scores:

We provide team members with a checklist to fill out during the evaluation workshop phase of the Land Management Review. The checklist is the uniform tool used to evaluate both the management actions and condition of the managed area, and the sufficiency of the management plan elements. During the evaluation workshop, team members individually provide scores on each issue on the checklist, from their individual perspective. Team members also base their evaluations on information provided by the managing agency staff as well as other team member discussions. Staff averages these scores to evaluate the overall conditions on the ground, and how the management plan addresses the issues. Team members must score each management issue 1 to 5: 1 being the management practices are clearly insufficient, and 5 being that the management practices are excellent. Members may choose to abstain if they have inadequate expertise or information to make a cardinal numeric choice, as indicated by an "X" on the checklist scores, or they may not provide a vote for other unknown reasons, as indicated by a blank. If a majority of members failed to vote on any issue, that issue is determined to be irrelevant to management of that property or it was inadequately reviewed by the team to make an intelligent choice. In either case staff eliminated the issue from the report to the manager.

Average scores are interpreted as follows:

Scores 4.0 to 5.0 are *Excellent*

Scores 3.0 to 3.99 are *Above Average*

Scores 2.0 to 2.99 are *Below Average*

Scores 1.0 to 1.99 are considered *Poor*

12.17 Historical Resources

Environmental Resource Analysis

Historical Resources

Boundary Area: 65013.79 acres

Buffer Area: 0 acres

Total Area: 65013.79 acres

Cultural Resources								
Florida Sites								
SITE NAME	SITEID	SITETYPE1	SITETYPE2	SITETYPE3	SITETYPE4	SITETYPE5	SITETYPE6	HUMANREMN
								Total Area (acres)
								Percent of Area
ARNOLD POND	OS01797	Farmstead	Homestead					0.98
ARNOLD POND 2	OS01879	Homestead						21.68
CAMP EASY	OS01884	Other	Turpentine camp					15.52
COWPENS DIP VAT	OS01872	Other						0.34
FODDERSTACK MIDDEN	OS01878	Prehistoric midden(s)						0.86
FODDERSTACK SLOUGH	OS01869	Other						0.18
GODWIN	OS01885	Homestead						34.62
GOODWIN MIDDEN	OS01874	Prehistoric midden(s)						0.83
GROUP CAMP DIP VAT	OS01870	Other						0.47
JACK HAMMOCK	OS01769	Prehistoric mound(s)						1.03
JACK HAMMOCK DIP VAT	OS01871	Other						0.35
KETTLE HAMMOCK	OS01798	Prehistoric midden(s)						0.39
LOOP TRAIL	OS01796	Prehistoric mound(s)						0.43
NITTAW RAILROAD DEPOT	OS01799	Railroad grade segment	Historic refuse / dump					27.28
NORTH OF DEVIL'S ELBOW	OS01880	Homestead						4.22
PARKER HAMMOCK	OS01770	Prehistoric mound(s)						0.39
PARKER HAMMOCK 2	OS01881	Homestead						28.62
SHED MIDDEN	OS01875	Prehistoric midden(s)						0.82
THREE LAKES LOGGING TRAM	OS01882	Other						65.93
TURNPIKE DIP VAT	OS01873	Other						0.39
TYLERS' MOUND	OS01876	Prehistoric mound(s)						0.43
WEST LAKE JACKSON HAMMOCK	OS01877	Prehistoric midden(s)						2.41
TOTAL:								208.16
								0.32 %

Florida Structures				
SITE NAME		SITEID	# Features	
CYPRESS HOUSE		OS01850	1	
RATTLESNAKE RANCH		OS01886	1	
SIMMONS RANCH		OS01883	1	
		TOTAL:	3	
Historical Cemeteries				
No Records Found				
Historic Bridges				
No Records Found				
National Register of Historic Places				
No Records Found				
Resource Groups				
No Records Found				
Field Survey				
SURVEY NUMBER	TITLE		Total Area (acres)	Percent of Area
1152	RECONNAISSANCE SURVEY IN THE UPPER ST. JOHNS RIVER FLOOD CONTROL PROJECT, OSCEOLA, BREVARD AND INDIAN RIVER COUNTIES, FLORIDA.		21.05	0.03 %
7059	ARCHAEOLOGICAL AND HISTORICAL INVESTIGATIONS WITHIN THE THREE LAKES WILDLIFE MANAGEMENT AREA, OSCEOLA COUNTY, FLORIDA		56,148.88	86.36 %
13913	THREE LAKES MONITORING WELLS, THREE LAKES WILDLIFE MANAGEMENT AREA, OSCEOLA COUNTY		0.91	0 %
15393	A CULTURAL RESOURCE ASSESSMENT SURVEY OF THE LUCKY L RANCH TRACT OSCEOLA COUNTY, FLORIDA		19.52	0.03 %
	TOTAL:		56,190.36	86.43 %

12.18 Management Procedures Guidelines - Management of Archaeological and Historical Resources

Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties (revised March 2013)

These procedures apply to state agencies, local governments, and non-profits that manage state-owned properties.

A. General Discussion

Historic resources are both archaeological sites and historic structures. Per Chapter 267, Florida Statutes, *‘Historic property’ or ‘historic resource’ means any prehistoric district, site, building, object, or other real or personal property of historical, architectural, or archaeological value, and folklife resources. These properties or resources may include, but are not limited to, monuments, memorials, Indian habitations, ceremonial sites, abandoned settlements, sunken or abandoned ships, engineering works, treasure trove, artifacts, or other objects with intrinsic historical or archaeological value, or any part thereof, relating to the history, government, and culture of the state.’*

B. Agency Responsibilities

Per State Policy relative to historic properties, state agencies of the executive branch must allow the Division of Historical Resources (Division) the opportunity to comment on any undertakings, whether these undertakings directly involve the state agency, i.e., land management responsibilities, or the state agency has indirect jurisdiction, i.e. permitting authority, grants, etc. No state funds should be expended on the undertaking until the Division has the opportunity to review and comment on the project, permit, grant, etc.

State agencies shall preserve the historic resources which are owned or controlled by the agency.

Regarding proposed demolition or substantial alterations of historic properties, consultation with the Division must occur, and alternatives to demolition must be considered.

State agencies must consult with Division to establish a program to location, inventory and evaluate all historic properties under ownership or controlled by the agency.

C. Statutory Authority

Statutory Authority and more in depth information can be found at:

<http://www.flheritage.com/preservation/compliance/guidelines.cfm>

D. Management Implementation

Even though the Division sits on the Acquisition and Restoration Council and approves land management plans, these plans are conceptual. Specific information regarding individual projects must be submitted to the Division for review and recommendations.

Managers of state lands must coordinate any land clearing or ground disturbing activities with the Division to allow for review and comment on the proposed project. Recommendations may include, but are not limited to: approval of the project as submitted, cultural resource assessment survey by a qualified professional archaeologist, modifications to the proposed project to avoid or mitigate potential adverse effects.

Projects such as additions, exterior alteration, or related new construction regarding historic structures must also be submitted to the Division of Historical Resources for review and comment by the Division's architects. Projects involving structures fifty years of age or older, must be submitted to this agency for a significance determination. In rare cases, structures under fifty years of age may be deemed historically significant. These must be evaluated on a case by case basis.

Adverse impacts to significant sites, either archaeological sites or historic buildings, must be avoided. Furthermore, managers of state property should make preparations for locating and evaluating historic resources, both archaeological sites and historic structures.

E. Minimum Review Documentation Requirements

In order to have a proposed project reviewed by the Division, certain information must be submitted for comments and recommendations. The minimum review documentation requirements can be found at: http://www.flheritage.com/preservation/compliance/docs/minimum_review_documentation_requirements.pdf.

* * *

Questions relating to the treatment of archaeological and historic resources on state lands should be directed to:

Robin Jackson
Division of Historical Resources
Bureau of Historic Preservation
Compliance and Review Section
R. A. Gray Building
500 South Bronough Street Tallahassee, FL 32399-0250
Phone: (850) 245-6496
Toll Free: (800) 847-7278
Fax: (850) 245-6439
Robin.Jackson@DOS.MyFlorida.com

12.19 Land Management Uniform Accounting Council Categories

Land Management Uniform Cost Accounting Council

Uniform Land Management Cost Categories and Subcategories

1. Resource Management

- a. Exotic Species Control. -- Invasive exotic plant and animal removal activities and costs for inventorying, planning, preparing, executing, evaluating, monitoring and reporting. Also includes equipment, chemicals, protective clothing and supplies. Includes nuisance native feral animal and plant control.
- b. Prescribed Burning. -- Prescribed burning activities and costs for assessing, planning, preparing, executing, evaluating and reporting. Also includes equipment, protective clothing and supplies.
- c. Cultural Resource Management. -- Management activities and costs for assessing, planning, executing, evaluating and reporting, and for all maintenance, restoration or monitoring activities for prehistoric and historic sites, features and collection objects.
- d. Timber Management. -- Activities and costs related to the establishment of a stand of potentially merchantable timber, harvest of merchantable timber, and cultural treatments intended primarily to improve the growth and overall health of a stand of merchantable timber. Also includes activities and costs related to the cutting of merchantable timber in natural community and habitat restoration projects.
- e. Hydrological Management. -- Hydrological management and restoration activities and costs for assessing, monitoring, planning, preparing, executing, evaluating and reporting. Includes water level management, repair, removal or back-filling of ditches, canals, berms and dams. Also includes water quality and water quantity monitoring.
- f. Other. -- All other resource management activities and costs not captured in other specific subcategories. Examples include natural community and habitat restoration through other techniques; plant, animal or biological community survey, monitoring and research; listed species management; technical assistance; and evaluating and commenting on resource impacts to parks.

2. Administration

- a. Central Office/Headquarters. -- Headquarters units conducting general administration of land under management by the agency. Includes upper management direction, administration and fiscal, budget, personnel, purchasing and record keeping required for operations oversight and specific programs. Includes all duties unless they specifically relate to other categories or subcategories.
- b. Districts/Regions. -- Sub-state administrative districts or regions conducting general administration of the properties under their management. Includes all duties, unless they specifically relate to other categories or subcategories. General operating costs of district or region administrative facilities are included.
- c. Units/Projects. -- Conducting general administration duties at a specific management unit (state park, state forest, state wildlife management area, etc.). Includes supervisory duties, fiscal and record keeping duties, and any other duties that do not specifically relate to other categories or subcategories. General operating costs for the property, such as utilities, telephones and garbage collection, are included.

3. Support

- a. Land Management Planning. -- Developing land management plans required by Sec. 253.034, F.S. Includes researching and compiling plan information, materials and maps, coordinating planning activities, conducting review activities (internal reviews, public meetings, advisory group meetings, ARC, etc.), and promulgating draft plans and final plans.
- b. Land Management Reviews. -- Planning, organizing and conducting land management reviews by teams created under Sec. 259.036, F.S. Includes preparing and responding to land management review reports. Also includes similar work conducted as part of internal agency land management reviews.
- c. Training/Staff Development. -- Staff training and development costs incurred in any facet of the agency's land management activities.
- d. Vehicle Purchase. -- Acquisition of any vehicle purchased primarily for land management purposes or to support any category of land management activity by the agency.
- e. Vehicle Operation and Maintenance. -- Costs of operating and upkeep of any vehicle used by the agency to support any category of land management activity.
- f. Other. -- Any other support activity or cost not captured by other categories or subcategories.

4. Capital Improvements

- a. New Facility Construction. -- Use of Fixed Capital Outlay (FCO) or other budget authority for all new facility design and construction activities. Includes new roads, parking and all other infrastructure.
- b. Facility Maintenance. -- Use of Fixed Capital Outlay (FCO) or other budget authority for all repairs or renovations to existing facilities, roads or other infrastructure. Also includes ADA accessibility improvements and renovations.

5. Visitor Services/Recreation

- a. Information/Education Programs. -- Interpretive, environmental education and marketing programs that explain or promote the agency's mission or instill in visitors an understanding and appreciation for Florida's natural and cultural resources and their proper use and care. Includes signs, brochures, maps and other public information materials that are produced or disseminated.
- b. Operations. -- Includes the non-administrative and non-support costs involved in providing public access to lands. Includes all actions required to manage visitor activities in a way to ensure safe and enjoyable use by the public. Includes routine maintenance, cleaning and other work required to provide safe and efficient utilization of facilities and resources that support visitor use and recreation. Includes protection activities required by staff to safeguard natural and cultural resources, facilities, material, staff and visitors.

6. Law Enforcement

The provision of all activities for enforcing criminal, conservation and boating laws on land, freshwater and marine environments and all costs associated with these services. Includes the provision of uniform patrol. Includes overt and covert criminal investigations. Includes regulation of commercial wildlife trade. Also includes the direction and administration of all law enforcement programs and activities, and all associated costs.

Land Management Uniform Accounting Council and FWC Activity Code Groupings

Resource Management

Exotic Species Control

- 210 Exotic species control
- 211 Exotic plant control (mechanical)
- 212 Exotic plant control (chemical)

Prescribed Burning

- 205 Prescribed burning
- 206 Prescribed burning C growing season (April 1 to September 30)
- 207 Prescribed burning C dormant season (October 1 to March 31)
- 208 Firebreaks

Cultural Resource Management

- 201 Cultural resource management

Timber Management

- 202 Timber management

Hydrological Management

- 215 Hydrology management
- 216 Dams, dikes, levees
- 217 Canals
- 218 Water level management
- 194 Lake restoration

Other

- 185 GIS
- 186 Biometrics
- 200 RESOURCE MANAGEMENT
- 203 Tree and shrub planting
- 213 Wildlife management
- 214 Listed Species management
- 219 Upland restoration
- 282 Herbaceous seeding
- 283 Clearings
- 289 Native vegetation management (mechanical)
- 290 Native vegetation management (chemical)
- 221 Animal surveys
- 228 Inland aerial surveys
- 235 Vegetation and plant surveys
- 250 MONITORING AND ASSESSMENTS
- 252 Biomedical monitoring
- 253 Ecological monitoring
- 256 Habitat monitoring analysis
- 263 Nest box monitoring
- 264 Population demographics
- 295 Biological data collection, analysis, and reporting

- 275 Permits and authorizations
- 276 Commission rule development and review
- 277 Relocation
- 278 CITES tags
- 281 Other resource management
- 284 Feeding/watering
- 285 Nest structures
- 286 Population control
- 287 Stocking enhancements/population augmentation
- 288 Nuisance animal complaints
- 293 Mortality investigations
- 294 Program coordination and implementation C inter- and intra-agency coordination and program implementation at the section, bureau, or division level
- 296 Habitat protection technical assistance
- 750 URTD assessment
- 789 Site Preparation – GCR
- 790 Irrigation – GCR
- 791 Seed Collection – Hand
- 792 Seed Collection – Mechanical
- 793 Herbicide Maintenance Treatment

Administration

Central Office/Headquarters

- 100 ADMINISTRATION C administrative tasks, including preparation of forms, word processing, photocopying, filing, and other clerical/secretarial duties.
- 104 Budget/purchasing/accounting

Districts/Regions

See Location code

Units/Projects

See Location code

Support

Land Management Planning

- 103 Meetings C includes workshops, conferences, staff, and other meetings.
- 204 Resource planning

Land Management Reviews

- 209 Land Management Reviews
- 101 Project inspection C field inspections of projects.

Training/Staff Development

150 PERSONNEL MANAGEMENT C recruitment, hiring, training, counseling, and supervising.

Vehicle Purchase

- 128 New Vehicle and Equipment Purchase

Vehicle Operation and Maintenance

923	FEM C vehicles/equipment
<u>Other</u>	
140	REPORT WRITING/EDITING/MANUSCRIPT PREPARATION
141	Grant applications
180	SYSTEMS ADMINISTRATION AND MANAGEMENT
182	Data management
184	Metadata development and management
187	IT
188	Web development
721	Geospatial analysis techniques
191	Stamp design coordination
226	Human dimensions surveys

Capital Improvements

New Facility Construction

910	New facility construction C buildings/structures
912	New construction C roads/bridges
913	New construction C trails
914	New construction C fences

Facility Maintenance

920	Facility and equipment maintenance (FEM) C buildings/structures
921	FEM C utilities
922	FEM C custodial functions
925	FEM C boating access
926	FEM C roads/bridges
927	FEM C trails
928	FEM C fences

Visitor Services/Recreation

Information/Education Programs

145	Technical bulletin
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Operations

311	Boundary signs
312	Informational signs
320	Outreach and education C attending or developing educational or informational materials or events for the public
327	Becoming an Outdoor Woman C enhancement
331	Wings Over Florida
339	Range safety operations
341	Public use administration (hunting)
342	Public use administration (non-hunting)
350	Customer service support C disseminating written or verbal information or assistance to the public
700	STUDIES
740	EVALUATIONS AND ASSESSMENTS

Law Enforcement

FWC Activity Code Numeric Listing

- 100 ADMINISTRATION C administrative tasks, including preparation of forms, word processing, photocopying, filing, and other clerical/secretarial duties.
- 101 Project inspection C field inspections of projects.
- 103 Meetings C includes workshops, conferences, staff, and other meetings.
- 104 Budget/purchasing/accounting
- 128 New Vehicle and Equipment Purchase
- 140 REPORT WRITING/EDITING/MANUSCRIPT PREPARATION
- 141 Grant applications
- 145 Technical bulletin
- 150 PERSONNEL MANAGEMENT C recruitment, hiring, training, counseling, and supervising.
- 180 SYSTEMS ADMINISTRATION AND MANAGEMENT
- 182 Data management
- 184 Metadata development and management
- 185 GIS
- 186 Biometrics
- 187 IT
- 188 Web development
- 191 Stamp design coordination
- 194 Lake restoration
- 200 RESOURCE MANAGEMENT
- 201 Cultural resource management
- 202 Timber management
- 203 Tree and shrub planting
- 204 Resource planning
- 205 Prescribed burning
- 206 Prescribed burning C growing season (April 1 to September 30)
- 207 Prescribed burning C dormant season (October 1 to March 31)
- 208 Firebreaks
- 209 Land Management Reviews
- 210 Exotic species control
- 211 Exotic plant control (mechanical)
- 212 Exotic plant control (chemical)
- 213 Wildlife management
- 214 Listed Species management
- 215 Hydrology management
- 216 Dams, dikes, levees
- 217 Canals
- 218 Water level management
- 219 Upland restoration

221	Animal surveys
226	Human dimensions surveys
228	Inland aerial surveys
235	Vegetation and plant surveys
250	MONITORING AND ASSESSMENTS
252	Biomedical monitoring
253	Ecological monitoring
256	Habitat monitoring analysis
263	Nest box monitoring
264	Population demographics
275	Permits and authorizations
276	Commission rule development and review
277	Relocation
278	CITES tags
281	Other resource management
282	Herbaceous seeding
283	Clearings
284	Feeding/watering
285	Nest structures
286	Population control
287	Stocking enhancements/population augmentation
288	Nuisance animal complaints
289	Native vegetation management (mechanical)
290	Native vegetation management (chemical)
293	Mortality investigations
294	Program coordination and implementation C inter- and intra-agency coordination and program implementation at the section, bureau, or division level
295	Biological data collection, analysis, and reporting
296	Habitat protection technical assistance
311	Boundary signs
312	Informational signs
320	Outreach and education C attending or developing educational or informational materials or events for the public
327	Becoming an Outdoor Woman C enhancement
331	Wings Over Florida
339	Range safety operations
341	Public use administration (hunting)
342	Public use administration (non-hunting)
350	Customer service support C disseminating written or verbal information or assistance to the public
700	STUDIES
721	Geospatial analysis techniques
740	EVALUATIONS AND ASSESSMENTS
750	URTD assessment
789	Site Preparation – GCR
790	Irrigation – GCR
791	Seed Collection – Hand

- 792 Seed Collection – Mechanical
- 793 Herbicide Maintenance Treatment
- 910 New facility construction C buildings/structures
- 912 New construction C roads/bridges
- 913 New construction C trails
- 914 New construction C fences
- 920 Facility and equipment maintenance (FEM) C buildings/structures
- 921 FEM C utilities
- 922 FEM C custodial functions
- 923 FEM C vehicles/equipment
- 925 FEM C boating access
- 926 FEM C roads/bridges
- 927 FEM C trails
- 928 FEM C fences

12.20 Operation Plan Fiscal Year 2018-2019

Activity	Description	Man Days	Salary	Fuel Cost	Other	Total
103	Meetings	70.00	\$15258.60	\$595.00	\$1500.00	\$17353.60
104	Budget/purchasing/accounting	30.00	\$6539.40	\$255.00	\$0.00	\$6794.40
128	New Vehicle and Equipment Purchases	0.00	\$0.00	\$0.00	\$393000.00	\$393000.00
140	Report writing/editing/manuscript preparation	15.00	\$3269.70	\$127.50	\$0.00	\$3397.20
150	Personnel management	158.00	\$34440.84	\$1343.00	\$217638.56	\$253422.40
163	Program Supervision	5.00	\$1089.90	\$42.50	\$1000.00	\$2132.40
185	GIS	10.00	\$2179.80	\$85.00	\$0.00	\$2264.80
200	Resource Management	90.00	\$19618.20	\$765.00	\$2500.00	\$22883.20
202	Timber management	10.00	\$2179.80	\$85.00	\$0.00	\$2264.80
203	Tree and shrub planting	10.00	\$2179.80	\$85.00	\$1500.00	\$3764.80
204	Resource planning	15.00	\$3269.70	\$127.50	\$5000.00	\$8397.20
206	Prescribed burning - growing season	135.00	\$29427.30	\$1147.50	\$9000.00	\$39574.80
207	Prescribed burning - dormant season	125.00	\$27247.50	\$1062.50	\$1500.00	\$29810.00
208	Firebreaks	30.00	\$6539.40	\$255.00	\$0.00	\$6794.40
211	Exotic plant control (mechanical)	2.00	\$435.96	\$17.00	\$0.00	\$452.96
212	Exotic plant control (chemical)	95.00	\$20708.10	\$807.50	\$261000.00	\$282515.60
216	Dams, dikes, levees	4.00	\$871.92	\$34.00	\$0.00	\$905.92
218	Water level management	10.00	\$2179.80	\$85.00	\$0.00	\$2264.80
221	Animal surveys	140.00	\$30517.20	\$1190.00	\$0.00	\$31707.20
235	Vegetation and plant surveys	25.00	\$5449.50	\$212.50	\$0.00	\$5662.00
250	Monitoring and assessments	20.00	\$4359.60	\$170.00	\$0.00	\$4529.60
263	Nest box monitoring	10.00	\$2179.80	\$85.00	\$0.00	\$2264.80
275	Permits and authorizations	30.00	\$6539.40	\$255.00	\$0.00	\$6794.40
282	Herbaceous seeding	15.00	\$3269.70	\$127.50	\$2500.00	\$5897.20
283	Clearings	15.00	\$3269.70	\$127.50	\$0.00	\$3397.20
285	Nest structures	5.00	\$1089.90	\$42.50	\$0.00	\$1132.40
289	Native vegetation management (mechanical)	90.00	\$19618.20	\$765.00	\$0.00	\$20383.20
290	Native vegetation management (chemical)	5.00	\$1089.90	\$42.50	\$0.00	\$1132.40

294	Program coordination and implementation	12.00	\$2615.76	\$102.00	\$0.00	\$2717.76
295	Biological data collection, analysis, and reporting	80.00	\$17438.40	\$680.00	\$1500.00	\$19618.40
311	Boundary signs	3.00	\$653.94	\$25.50	\$0.00	\$679.44
312	Informational signs	10.00	\$2179.80	\$85.00	\$1000.00	\$3264.80
320	Outreach and education	5.00	\$1089.90	\$42.50	\$0.00	\$1132.40
341	Public use administration (hunting)	10.00	\$2179.80	\$85.00	\$0.00	\$2264.80
342	Public use administration (non-hunting)	5.00	\$1089.90	\$42.50	\$0.00	\$1132.40
350	Customer service support	10.00	\$2179.80	\$85.00	\$0.00	\$2264.80
789	Site Preparation	10.00	\$2179.80	\$85.00	\$0.00	\$2264.80
793	Herbicide Maintenance Treatment	5.00	\$1089.90	\$42.50	\$0.00	\$1132.40
920	FEM -- buildings/structures	65.00	\$14168.70	\$552.50	\$16000.00	\$30721.20
921	FEM -- utilities	0.00	\$0.00	\$0.00	\$7000.00	\$7000.00
922	FEM -- custodial functions	10.00	\$2179.80	\$85.00	\$2000.00	\$4264.80
923	FEM -- vehicles/equipment	175.00	\$38146.50	\$1487.50	\$36000.00	\$75634.00
926	FEM -- roads/bridges	50.00	\$10899.00	\$425.00	\$145000.00	\$156324.00
927	FEM -- trails	6.00	\$1307.88	\$51.00	\$0.00	\$1358.88
928	FEM -- fences	15.00	\$3269.70	\$127.50	\$1000.00	\$4397.20
		1,640.00	\$357,487.19	\$13,940.00	\$1,105,638.56	\$1,477,065.76

12.21 Conservation Action Strategy



A Conservation Action Strategy Three Lakes Wildlife Management Area

Osceola County, Florida

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



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1 Introduction

Located within an hour's drive of Disney World is the Kissimmee Prairie, which is one of the largest remaining expanses of dry prairie in the United States. A significant portion of the Kissimmee Prairie has been preserved within the Three Lakes Wildlife Management Area (TLWMA). In addition to dry prairie, the TLWMA is a mosaic of wetlands, pine and hardwood uplands, providing quality habitat for numerous wildlife species, including many rare and imperiled species. Named for the three lakes that border the area, Lake Kissimmee, Lake Jackson and Lake Marian, the TLWMA offers ample opportunities for hiking, birding, nature study, hunting, horseback riding, bicycling, and fishing.

The TLWMA is owned by the Board of Trustees of the Internal Improvement Fund (Board of Trustees). The TLWMA is managed by the Florida Fish and Wildlife Conservation Commission (FWC) for the conservation of imperiled and more common wildlife, for fish and wildlife-based public outdoor recreation, and to conserve the important natural communities on site that provide habitat for a wide range of species. The FWC has lead management authority for all resources within the established boundary.

Within the TLWMA, vast low-density canopy tree pine savannahs and dry prairies allow for extensive vistas of this Florida landscape. Other native landscapes include the forested wetlands, as well as the open waterbodies including Lake Marian and Lake Jackson. The natural communities of the TLWMA are regarded as being in excellent condition and represent benchmark examples of Florida native habitat. The TLWMA protects and harbors a rich diversity of natural communities, unique geological features, important archaeological sites, and wildlife habitats.

The area comprising the TLWMA is a part of the Kissimmee Prairie, a geographic region within the Kissimmee River Valley having some of the most ecologically valuable land within Osceola County and central Florida. The dry prairie habitat type comprising the Kissimmee Prairie is home to several rare or endangered plants and animals. Both rare and imperiled wildlife species, and more commonly found species, thrive in the area's mesic flatwoods including the Florida grasshopper sparrow (*Ammodramus* *savannarum floridanus*), red-cocked woodpecker (*Picoides borealis*), and Everglade snail kite (*Rostrhamus sociabilis plumbeus*). Other rare and imperiled species found on the TLWMA include the state threatened southeastern American kestrel (*Falco sparverius paulus*), gopher tortoise (*Gopherus polyphemus*), and little blue heron (*Egretta caerulea*), as well as the federally threatened wood stork (*Mycteria Americana*), and many rare invertebrates and amphibians.

Additionally, the rich diversity of resources on the area also include significant cultural and historical resources. Currently there are 25 identified historical resources on the TLWMA. These sites represent prehistoric mounds and middens, Belle Glade era (700 BC – AD 1700) mounds and middens and nineteenth and twentieth century homesteads. More detailed information about the TLWMA including operational and resource management goals, objectives, and baseline resource data may be found in the TLWMA Management Plan.

The TLWMA Conservation Action Strategy (CAS) has been developed as an integral component of the FWC Land Conservation Work Plan and the TLWMA Management Plan to provide recommended land conservation acquisition and stewardship actions for the TLWMA. As described in the TLWMA

Management Plan, the FWC utilizes a three-tiered approach to land conservation and stewardship analysis and recommended actions that includes identifying, acquiring, or otherwise protecting important conservation lands adjacent to, or in proximity to, existing FWC-managed areas that involves development of an Optimal Resource Boundary (ORB), Optimal Conservation Planning Boundary (OCPB), and a CAS.

The CAS was developed to aid in the recommendation of lands within the TLWMA OCPB for inclusion on the FWC Florida Forever Additions and Inholdings (A&I) Acquisition list; to enhance the ongoing operational and resource management of the TLWMA; sustain the overall conservation of wildlife within and adjacent to the TLWMA; increase wildlife habitat or landscape conservation connectivity on adjacent public and private conservation lands; maintain adequate prescribed burning buffers; aid in landscape conservation connectivity; conserve additional wildlife habitat; and provide more public access opportunities on conservation lands.

Additionally, the CAS also fulfills an objective in the Land Conservation and Stewardship section of the TLWMA Management Plan. Following are other elements of this CAS including more information on the area's location; acquisition purposes and history; adjacent land uses within the vicinity of the TLWMA; the OCPB; and the recommended prioritized conservation actions that have been developed to provide a proactive, comprehensive and long-term strategy for further potential land conservation opportunities within, adjacent to, and surrounding the TLWMA.

2 Location

The TLWMA consists of 65,333 acres located in Osceola County, Florida (Figure 1). The TLWMA lies in the southern half of Osceola County, west of U.S. Highway 441 and north of State Road 60. Florida's Turnpike bisects the TLWMA to the north and west of Lakes Kissimmee, Jackson, and Marian, the three lakes for which the area is named. The TLWMA property comprises multiple sections in Townships 28, 29, and 30 South, in Ranges 31, 32, and 33 East, and in Township 31 South, Range 32 East. The TLWMA is located approximately one mile northwest of Kenansville, 8.5 miles south of Holopaw, and 18 miles southeast of St. Cloud. Other cities near the TLWMA include Lake Wales (22 miles west) in Polk County, Kissimmee (25 miles northwest) in Osceola County, Melbourne (26 miles northeast) in Brevard County, Sebring (27 miles southwest) in Highlands County, and Orlando (39 miles northwest) in Orange County.

Additional Board of Trustees parcels totaling approximately 1,846 acres within the Kissimmee River Public Use Area (KRPUA) (Figure 2), located two miles southwest of the TLWMA. These parcels are also managed by the FWC under management authority pursuant to Lease 2785.

The TLWMA is bordered on the north by privately owned land, primarily ranch and agricultural land. The Whaley Conservation Easement, held by the State of Florida on approximately 3,710 acres of land, within the Big Bend Swamp/Holopaw Ranch Florida Forever project, lies immediately north of the TLWMA, and is monitored by the Department of Environmental Protection (DEP). The TLWMA is bordered on the west by Lake Kissimmee. Extending northward from this area, along the Lake Kissimmee shoreline, is the Kissimmee Chain of Lakes which is managed by the South Florida Water Management District (SFWMD), as well as fish management areas managed by the FWC. Areas to the

northwest of the TLWMA boundary are primarily privately-owned ranchland. Other areas to the southwest of the TLWMA are primarily privately-owned agricultural land. To the southeast of the TLWMA lies Lake Marian and beyond that are privately owned ranchlands.

Approximately 2.5 miles southeast of the TLWMA lies the Escape Ranch Conservation Easement, which is held and monitored by the St. Johns River Water Management District (SJRWMD). Within four miles northeast of the TLWMA lies two FWC-managed areas; the Triple N Ranch WMA and the Herky Huffman/Bull Creek WMA.

3 Purpose for Acquisition

The original tract acquired under the auspices of the Environmentally Endangered Lands (EEL) program was purchased from Three Lakes Ranch, Inc. Through the EEL program, the State acquired endangered or environmentally unique natural lands for use as natural resource preserves and/or recreation areas. Since the majority of the TLWMA was acquired under the EEL program, it is managed in accordance with the original EEL management objectives established for the Prairie Lakes EEL project:

1. To protect and manage the wet prairies and marshes which absorb nutrients and filter pollutants, thereby improving water quality in Three Lakes and in the Kissimmee River system.
2. To protect and manage exceptional or endangered natural plant communities, especially the Kissimmee (dry) prairie and longleaf pine communities.
3. To protect and manage native animals associated with these communities, with emphasis on the bald eagle, osprey, sandhill crane, wood stork, burrowing owl, Florida panther, caracara, and red-cockaded woodpecker.
4. To protect and manage the wildlife values and biological productivity of the property, especially the marshes, and.
5. To provide a natural flood storage area.

The FWC's land management objectives for the TLWMA are consistent with the original EEL objectives and purpose. These objectives are also consistent with the acquisition purpose and management goals set forth under the Preservation 2000 Act and the Florida Forever Act. The purpose, goals, and objectives for all of the lands acquired and managed as the TLWMA are more comprehensively expressed in the TLWMA Management Plan that is reviewed and approved by the land acquisition and management advisory council to the Governor and Cabinet, referred to as the Acquisition and Restoration Council (ARC).

The 100-year Board of Trustees' lease agreement with the FWC directs the agency 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), Florida Statutes." The lease agreement further directs the FWC to "implement applicable Best Management Practices for all activities under this lease in compliance with paragraph 18-2.004(1)(d), Florida Administrative Code, which have been selected, developed, or approved for the protection and enhancement of the leased premises."

4 Acquisition History

The acquisition history of the TLWMA began in 1974 with acquisition of the Three Lakes Ranch, Inc. tract. The original purchase of approximately 51,485 acres was made under the EEL program by the DEP, with 41,697 allocated to the TLWMA. In November 1975, the FWC acquired an additional 40 acres. Between September 1980 and January 1985, the SFWMD leased a total of 359 acres to the FWC. The FWC acquired another 2,021 acres in December 1986.

In 1989, by mutual agreement among the FWC, the Department of Natural Resources, and the Board of Trustees, the 8,182-acre Prairie Lakes portion was leased to the FWC and became the Prairie Lakes Unit of the TLWMA. In 1992, the Board of Trustees acquired 677 acres using funds appropriated under the Preservation 2000 (P-2000) funding. In 1993, also utilizing P-2000 funds, the Board of Trustees acquired an additional 5,286-acre portion of the Lucky L. Ranch. Subsequently, in 1999, the Board of Trustees acquired 2,087 acres as an addition to TLWMA known as the U.S. Justice tract. Between 1993 and 2000, several smaller properties were acquired under the Conservation and Recreation Lands (CARL) and P-2000 acquisition programs. Most recently, an additional 1,650 acres within the Lucky L. Ranch were acquired in 2008 using Florida Forever funds.

In May 1998, several Board of Trustees owned parcels located within the KRPWA were amended to the TLWMA (Lease 2785, Amendment 5) subsequent to these lands having been released from a prior lease to the SFWMD. The SFWMD and the Board of Trustees originally purchased these parcels as part of the original 51,485-acre Three Lakes acquisition.

5 Proximity to Other Public Conservation Lands and Florida Forever Projects

The TLWMA is surrounded by a myriad of conservation lands including Mills Ranch Conservation Easement to the east, the Tiger Lake Ranch Agricultural and Conservation Easement to the northwest, and the Kissimmee Prairie Preserve State Park to the southeast. Conservation lands near the TLWMA are shown in Figure 1.

Most of the public conservation lands on the TLWMA are owned in full fee by a public entity. However, some of these conservation lands are protected by less-than-fee conservation easements consisting primarily of privately owned and managed ranchlands with a public or private entity holding and monitoring a conservation easement. Conservation easements may be held by either public agencies or private entities, while the landowner who sells or otherwise grants the easement retains the remaining title interests. The TLWMA is not located within any Area of Critical State Concern (Chapter 380.05, Florida Statutes).

The TLWMA is part of three Florida Forever projects. These include Big Bend Swamp/Holopaw Ranch, Osceola's Pine Savannas Ranch, and the Ranch Reserve. Big Bend Swamp/Holopaw Ranch includes a total of 52,466 acres, in which approximately 10,594 acres have been acquired, leaving 41,872 remaining acres to be acquired. Osceola's Pine Savannas Ranch includes a total of 46,563 acres, in which approximately 19,063 have been acquired, leaving 27,500 remaining acres to be acquired. Ranch Reserve includes a total of 36,334 acres, with approximately 23,818 acres acquired, leaving 12,516 acres

remaining acres to be acquired. Other Florida Forever projects near the TLWMA include Adams Ranch, Bombing Range Ridge, the Pine Island Slough Ecosystem, and Catfish Creek (Figure 1).

6 Adjacent Land Use

Much of the private rural lands in the regional landscape of TLWMA are composed of working agricultural operations, with cattle ranching, citrus, and sod farming currently being the more common commercial agricultural practices in the vicinity. Others include timber harvesting and cypress mulching operations. Large private land holdings comprise most of the property on the east, west, south, and north boundaries of TLWMA, with significant large undeveloped ownerships remaining. Only sparse residential development has occurred in the immediate vicinity of TLWMA. However, increased residential development has occurred within the region surrounding TLWMA, including the cities of Kissimmee, St. Cloud, Lake Wales, and Melbourne.

The TLWMA is currently zoned for Agriculture. This designation allows for agriculture and silviculture uses and related industries, natural resource conservation/preservation, and low-density residential housing. Residential uses are allowed with a maximum density of one dwelling unit per five acres. The land in the area surrounding the TLWMA also has a zoning designation of Agricultural Development and Conservation. The majority of the TLWMA has a future land use designation of Conservation, which identifies a maximum residential density of one dwelling unit per ten acres.

Based on the location of the property and the current and five-year future zoning ordinances for the TLWMA and surrounding properties, areas surrounding TLWMA could see development impacts and challenges in the future, especially considering the nearby cities noted above that continue to see continued population growth.

7 Florida's Changing Population

More U.S. residents moved to Florida than any other state in 2018, making it one of the fastest growing in the nation. Florida had the nation's fourth-highest growth rate (1.5 percent), the third-highest population (21 million), the second-highest number of total new residents (323,000) and 133,000 people who came from elsewhere in the country between July 1, 2017 and July 1, 2018. This means that, Florida's population is growing by nearly 1,000 people a day; about half of the newcomers are foreign-born immigrants and half are from other U.S. states. In the years to come, Florida's growth rate is expected to stabilize. In 2018, the U.S. Census estimated that there were 352,496 people living Osceola County. The Bureau of Economic Business Research's (BEBR) medium-range population projection for the year 2030 for Osceola County is 500,200. The BEBR's medium-range population projections for the same year of the surrounding counties are as follows: Polk – 807,900; Orange – 1,694,000; Brevard – 656,300; Indian River – 179,400; Okeechobee – 43,00; and Highlands – 110,300.

However, it should be noted that, according to Wildlife 2060, the population of coastal counties is predicted to double from 12.3 million to more than 26 million by 2060 (FWC 2008). The FWC has prepared a report titled, ["Wildlife 2060: What's at Stake for Florida"](#) to relay the changes that may occur

in Florida's fish and wildlife and in our own lifestyles, if the state's population doubles. Recent predictions indicate if that happens, as a study published by [1000 Friends of Florida](#) suggests, about seven million acres of land could be converted from rural and natural to urban uses.

8 TLWMA Optimal Conservation Planning Boundary

Several properties have been identified for inclusion in the OCPB (Figure 3). These properties have been identified to further protect the wildlife and other resources of the property, to lessen conflicts caused by housing development within an area where prescribed burning is required for resource management, to achieve an optimum property boundary, and to provide critical habitat connectivity for the TLWMA and other wildlife habitat. Lands within the OCPB are considered to be important in order to buffer the boundaries of the TLWMA from potential adjacent incompatible developments and to aid the FWC, other state and federal governmental entities, non-governmental organizations, and local governments with their acquisition and planning efforts in order to better manage the area on a landscape level for the benefit and continued conservation of wildlife and other natural resources.

9 Potential Conservation Stewardship Opportunities Adjacent to the TLWMA

The FWC Landowner Assistance Program (LAP) provides many potential opportunities for conservation minded landowners to obtain the assistance and advice of FWC staff and programs for improving land conservation practices on their lands. The LAP routinely conducts workshops for interested landowners to interact with FWC staff and learn how they may participate in the program. In addition, the LAP works with landowner to enroll in the Natural Resources Conservation Service conservation cost-share programs in order to assist with implementation of wildlife friendly practices.

At the time of the plan development, no specific land stewardship workshops had been conducted for landowners adjacent to the TLWMA. The role and development of Land Conservation and Stewardship Partnerships is fully explained in both sections 5.11 and 6.10 of the Management Plan. Private landowners seeking assistance with habitat management will likely find it offered within FWC's 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. The FWC will continue to evaluate the level of interest and efficacy of providing technical assistance to adjacent private landowners on enhancing the conservation management of their lands. More information on FWC's LAP program and online habitat management tools are available online at: <http://myfwc.com/conservation/special-initiatives/lap/>.

10 FWC Florida Forever Additions and Inholdings Acquisition List Conservation Benefits Analysis

Several properties have been identified for recommended acquisition under the auspices of FWC's Florida Forever A&I Acquisition program for the TLWMA (Figure 4-12). The Additions and Inholdings list identifies lands within or adjacent to FWC-managed areas that are important for the conservation of fish and wildlife, serve as a link or corridor to other publicly owned property, enhance the protection or management of the property, would create a more manageable boundary configuration, have a high resource value that would otherwise be unprotected or that could be acquired at substantially less than fair market value. Consistent with Florida Forever program criteria, parcels on the list have been ranked High, Medium, or Low priority based on a score generated by a GIS-based resource evaluation model, along with technical input from FWC staff.

The FWC Florida Forever A&I acquisition list is updated through time, thus staying up to date for land ownerships, County parcel records, land conservation opportunities, and evolving management challenges. The FWC continually analyzes, evaluates, and prioritizes its recommended conservation actions in a systematic, comprehensive, and consistent manner over time.

The FWC continues to recommend acquisition of the remaining lands within the Big Bend Swamp/Holopaw Ranch, Osceola's Pine Savannas Ranch, and the Ranch Reserve Florida Forever projects as essential to the long-term conservation of wildlife and to the optimal resource and operational management of the TLWMA. Parcels on the FWC Florida Forever A&I acquisition list will be acquired if possible, according to their priority ranking for acquisition and landowner willingness to sell their lands. Participation in any FWC acquisition is entirely voluntary and at the sole discretion of willing landowners.

11 Prioritization of Lands on the FWC Florida Forever A&I Acquisition List

Figures 4-12 depicts the results of the FWC's Acquisition Prioritization Model Analysis and the recommended prioritization of acquisition actions of lands on the FWC Florida Forever A&I Acquisition List for the TLWMA. These parcels are prioritized on the accompanying map (Figure 13), into one of three priority categories: High, Medium, and Low. The order of acquisition priority may be changed as necessary based on factors including available funding necessary to complete a particular acquisition project, changing development pressures, landowner willingness, funding partnerships and unique acquisition opportunities like bargain sales (less than 80% of appraised value), and donations.

It should be noted that, only parcels located directly in or adjacent to the subject area can be recommended for acquisition through the FWC Florida Forever A&I Acquisition program. A corresponding list also provides more detailed ownership information. A complete list of all the parcel identification numbers, corresponding prioritization ranking, and acreage are provided in Table 1. If the circumstances with adjacent land uses and conservation opportunities arise, the FWC may recommend adding other parcels to the FWC Florida Forever A&I acquisition list.

12 Acquisition Partnership Opportunities

Opportunities for working with other potential acquisition partners within this project area include SFWMD, Florida Department of Agriculture and Consumer Services (FDACS), Florida Forest Service (FFS), Osceola County, DEP, U.S. Department of Defense (USDOD), Conservation Florida, and other organizations and potential grant program opportunities.

13 Analysis of the Potential and Need for Fee vs. Less-than-Fee Acquisition

At this time, the FWC often recommends full-fee acquisition of the lands on the FWC Florida Forever A&I acquisition list for the TLWMA that are either inholdings, or are located immediately adjacent to the area, to optimize the conservation of fish and wildlife, public access and use, and overall resource and operational management of the area. However, since the TLWMA is located within a rural landscape of working agricultural and silvicultural lands, less-than-fee acquisition of large acreage tracts on the FWC Florida Forever A&I Acquisition List should also be considered as a viable conservation alternative for larger tracts of land. Since, less-than-fee acquisitions in a largely rural, working landscape may often provide many of the same conservation benefits that are derived from full-fee acquisitions, if the landowner has a desire to continue to manage their lands to maintain a working landscape in a manner that will also enhance the conservation benefits provided by their lands. Nevertheless, the FWC continues to recommend full fee acquisition or may pursue less-than-fee acquisition with adjacent landowners within the Big Bend Swamp/Holopaw Ranch, Osceola's Pine Savannas Ranch, and the Ranch Reserve Florida Forever Project in order to optimize the conservation of wildlife and overall resource and operational management of the TLWMA. Though it should be noted that landowner preference is often the key element in determining whether to pursue full fee or less than fee acquisition.

14 Recommendations for Prioritized Land Conservation Actions

Following are the prioritized recommendations of conservation actions for the TLWMA:

1. Acquire parcels on the FWC Florida Forever A&I acquisition list as prioritized and feasible with available funding.
2. Recommend adding parcels within the Big Bend Swamp/Holopaw Ranch, Osceola's Pine Savannas Ranch, and the Ranch Reserve Florida Forever projects and/or parcels that are within the TLWMA OCPB for inclusion on the FWC Florida Forever A&I acquisition list.
3. Continue to assist and support DEP/Board of Trustees with the acquisition of the lands remaining within Big Bend Swamp/Holopaw Ranch, Osceola's Pine Savannas Ranch, and the Ranch Reserve Florida Forever projects within the vicinity of the area.
4. Continue to work with private landowners near the TLWMA to encourage participation in available conservation stewardship programs for private landowners.
5. Recommend landowner assistance workshop(s) for neighboring and surrounding landowners to assist with enhanced conservation of these lands.
6. Continue to cooperate with public and private organizations for conservation of lands within the OCPB.
7. Continue to recommend acquisition of identified land through the FDACS, DEP, USDOD, SFWMD, SJRWMD, and other organizations and potential grant programs.

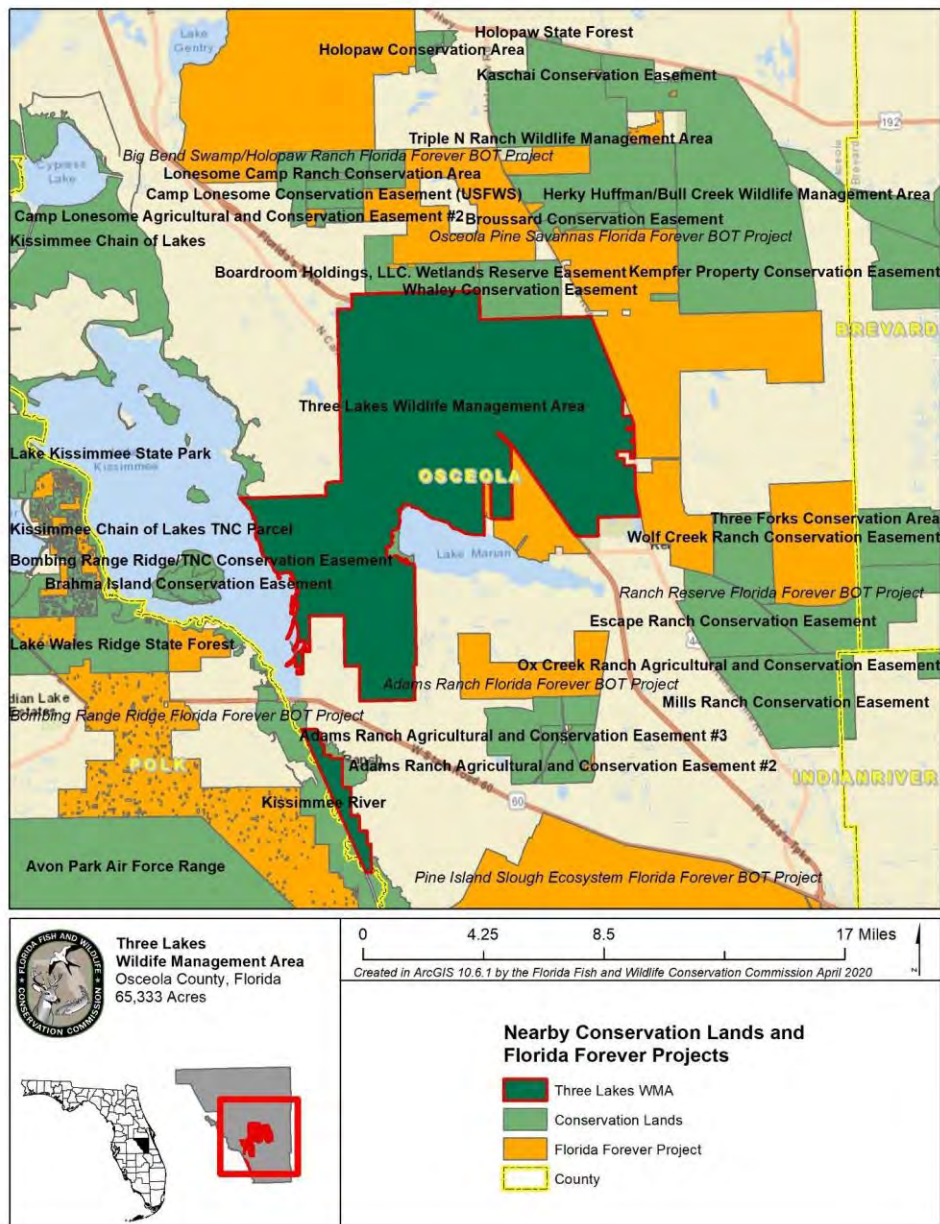


Figure 1. Vicinity Map of the TLWMA



Figure 2. Aerial Imagery

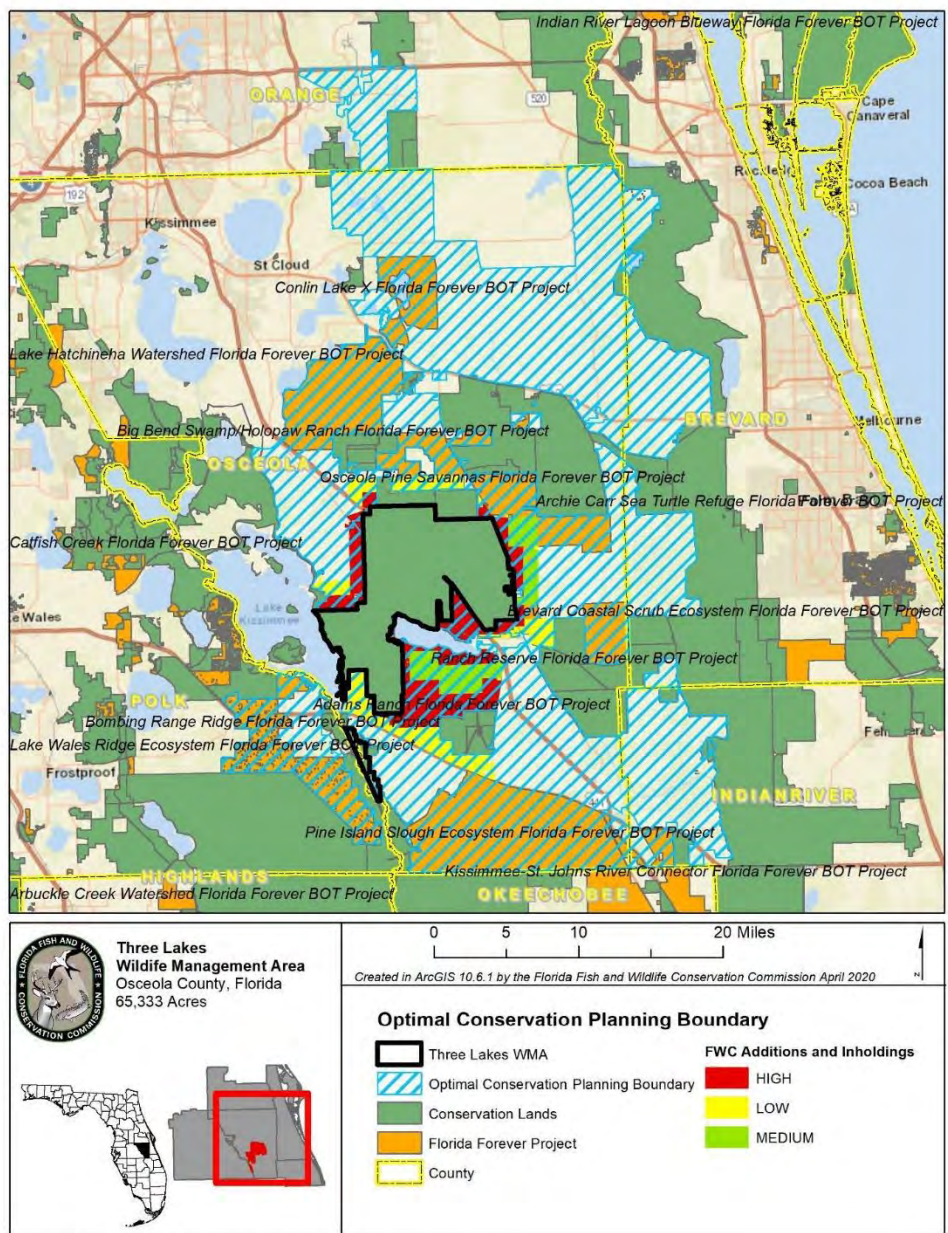


Figure 3. Optimal Conservation Planning Boundary

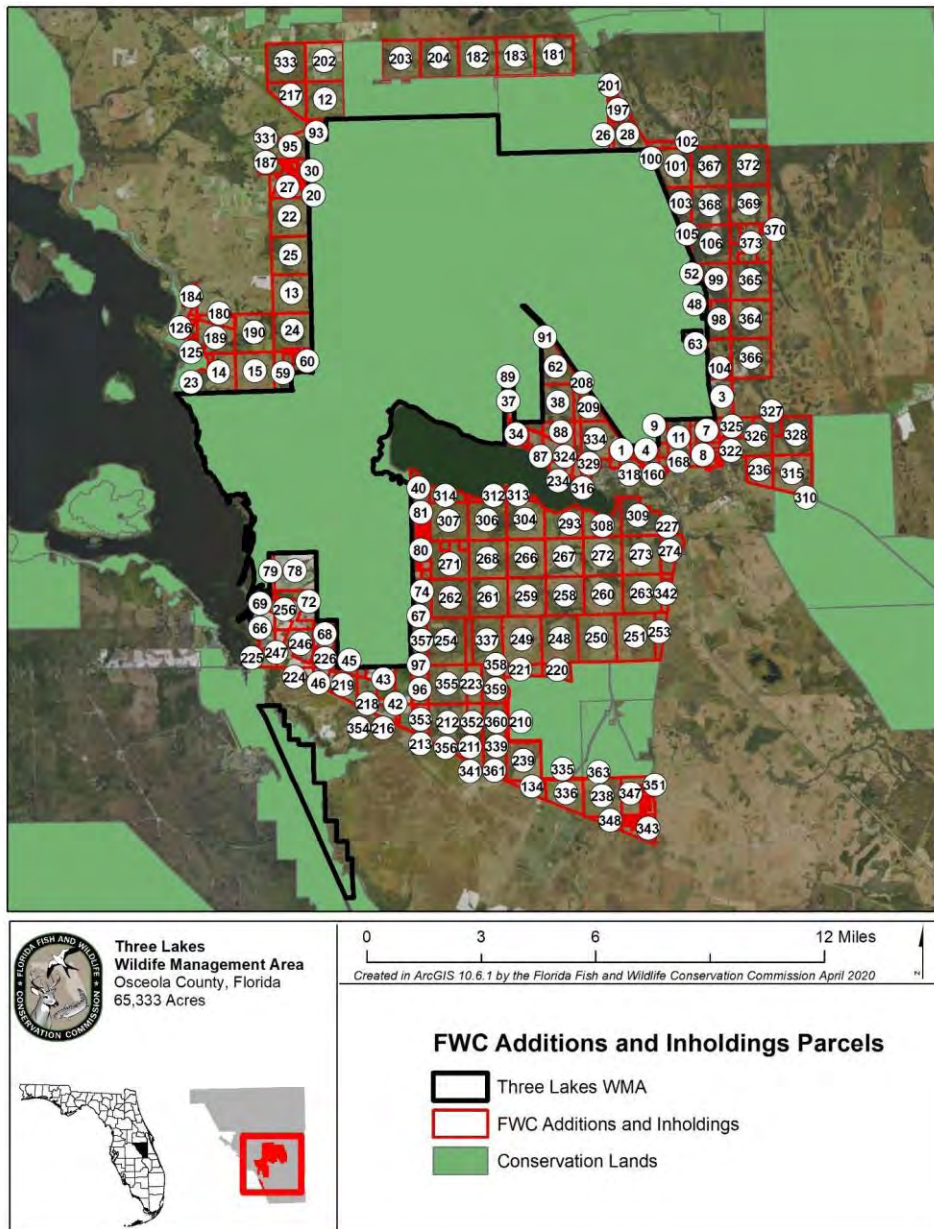


Figure 4. FWC Additions and Inholdings

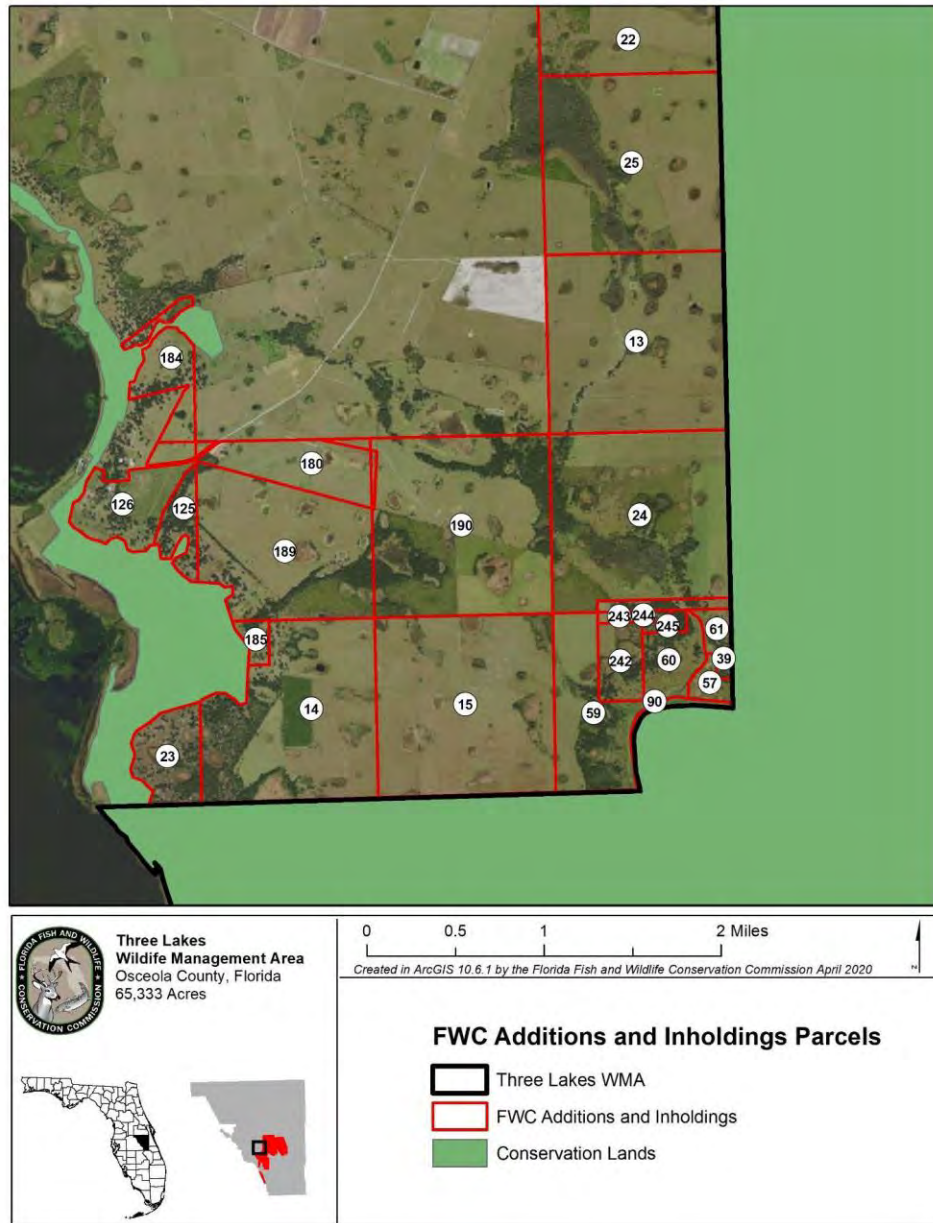


Figure 5. FWC Additions and Inholdings -Zoom In (WEST)

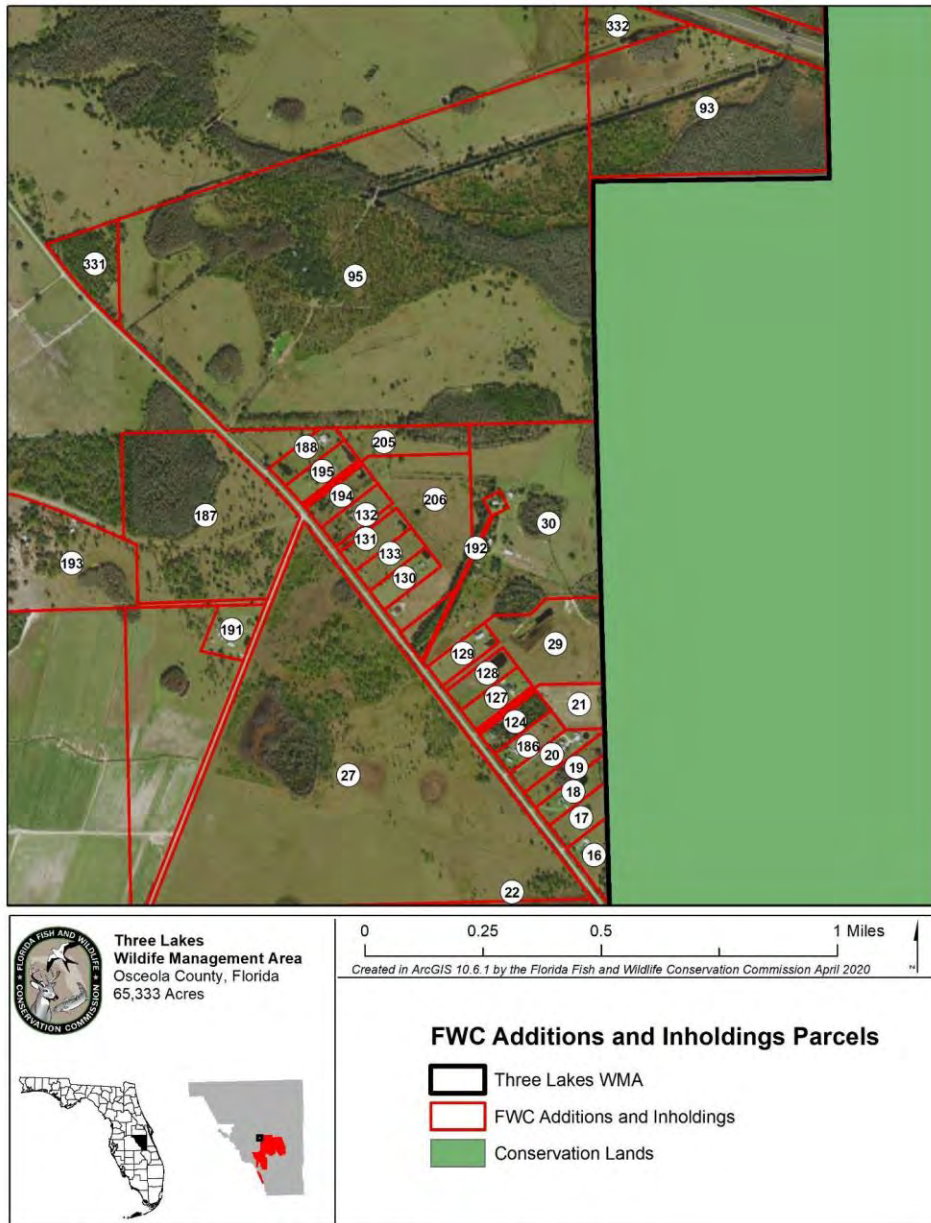


Figure 6. FWC Additions and Inholdings – Zoom In (North West)

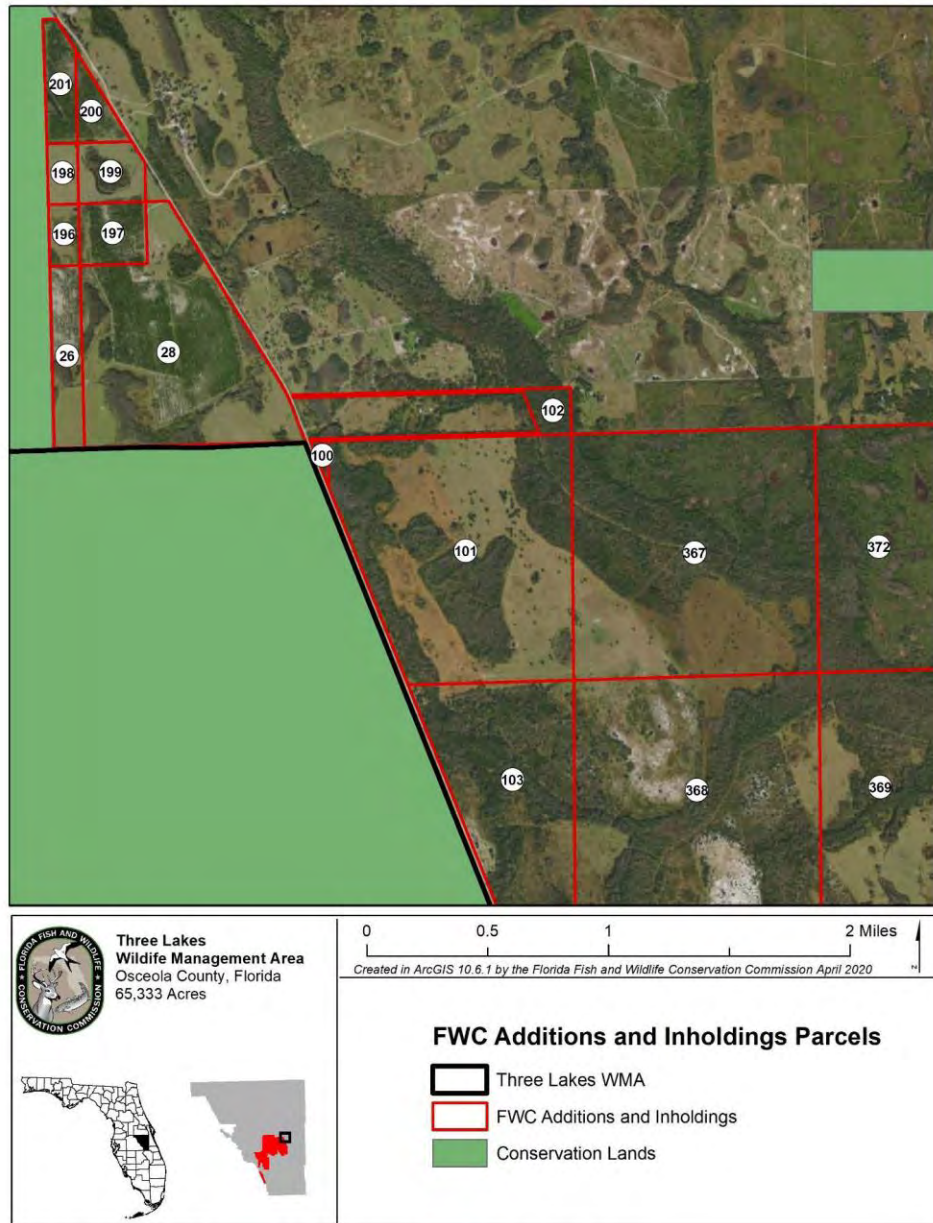


Figure 7. FWC Additions and Inholdings - Zoom In (North East)

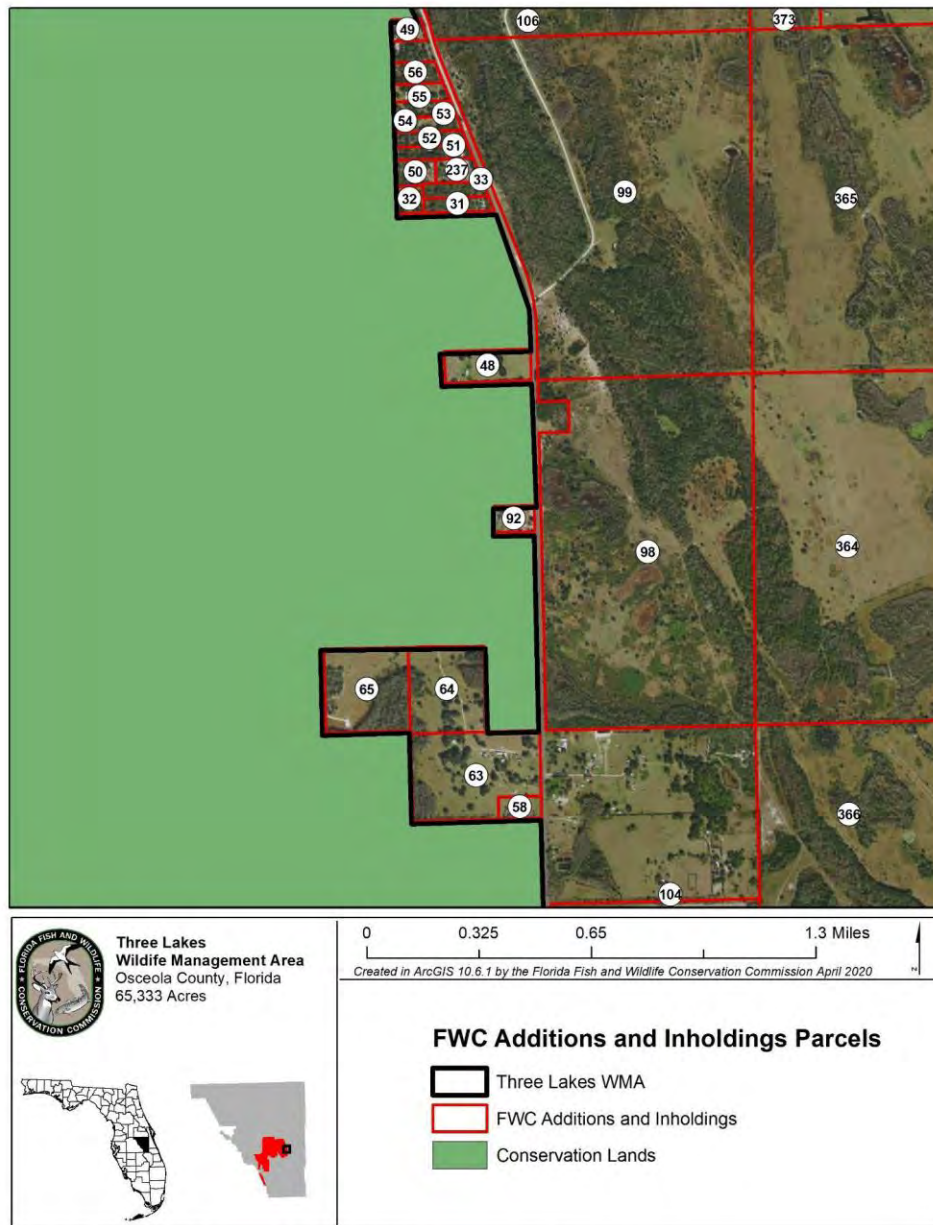


Figure 8. FWC Additions and Inholdings – Zoom In (East)

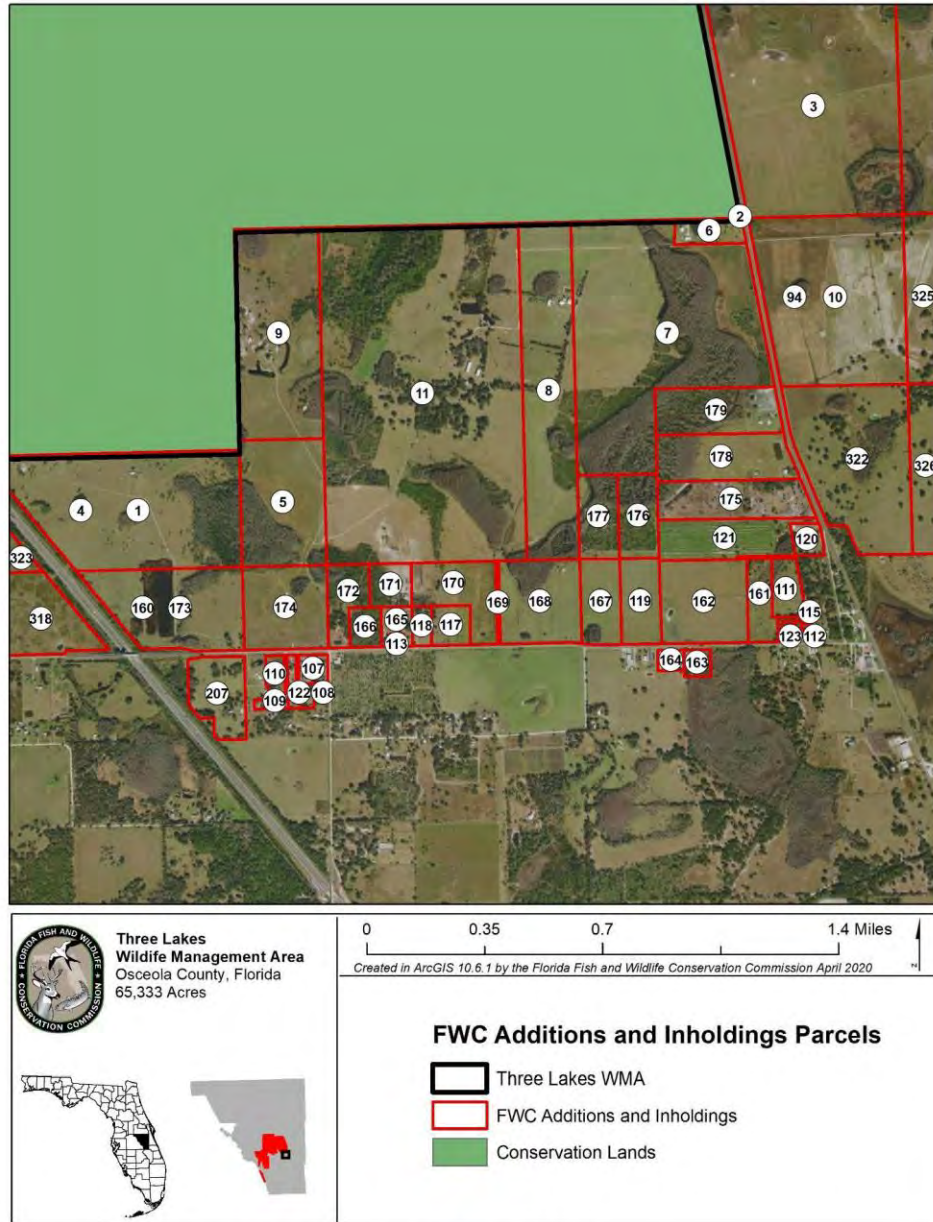


Figure 9. FWC Additions and Inholdings- Zoom In (South East)

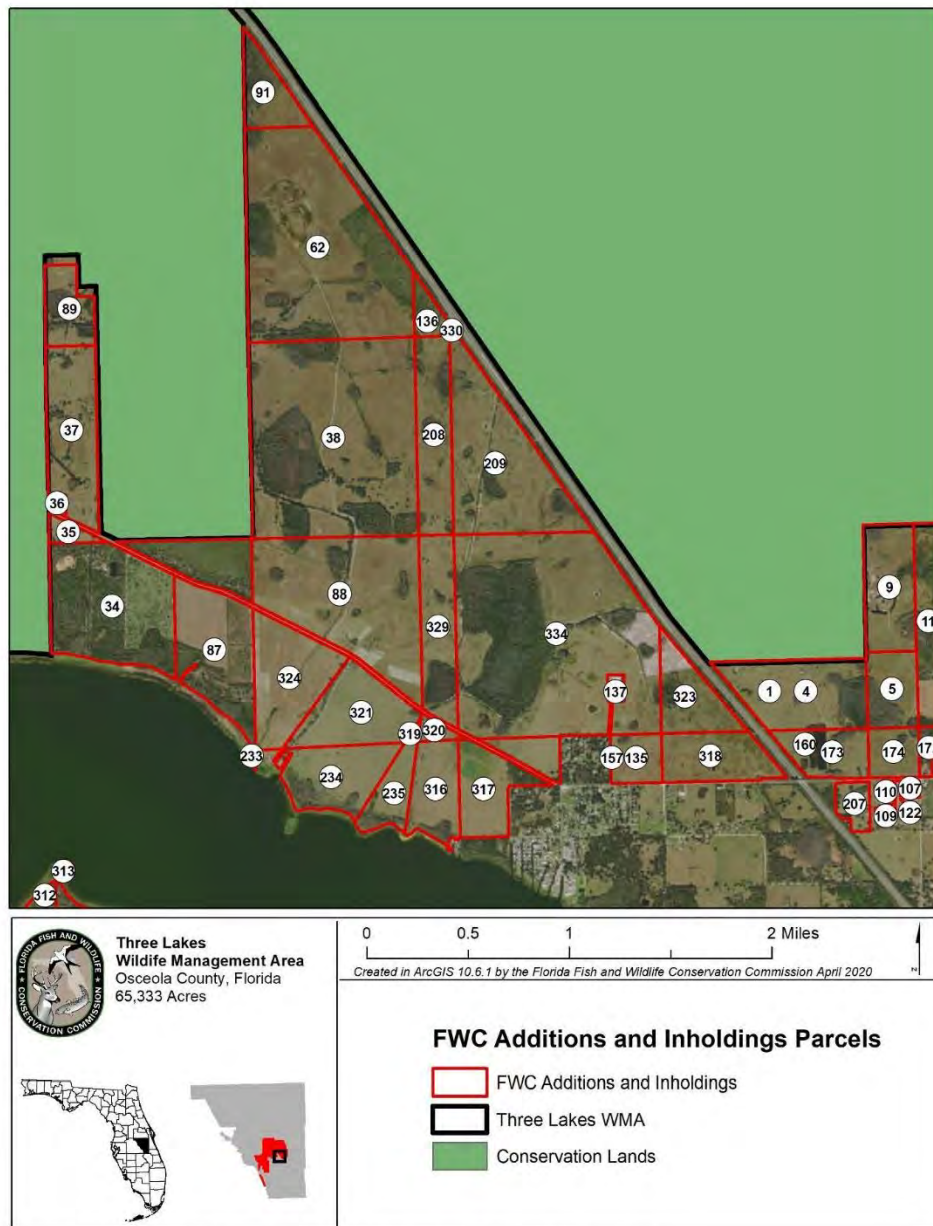


Figure 10. FWC Additions and Inholdings – Zoom In (South Central)

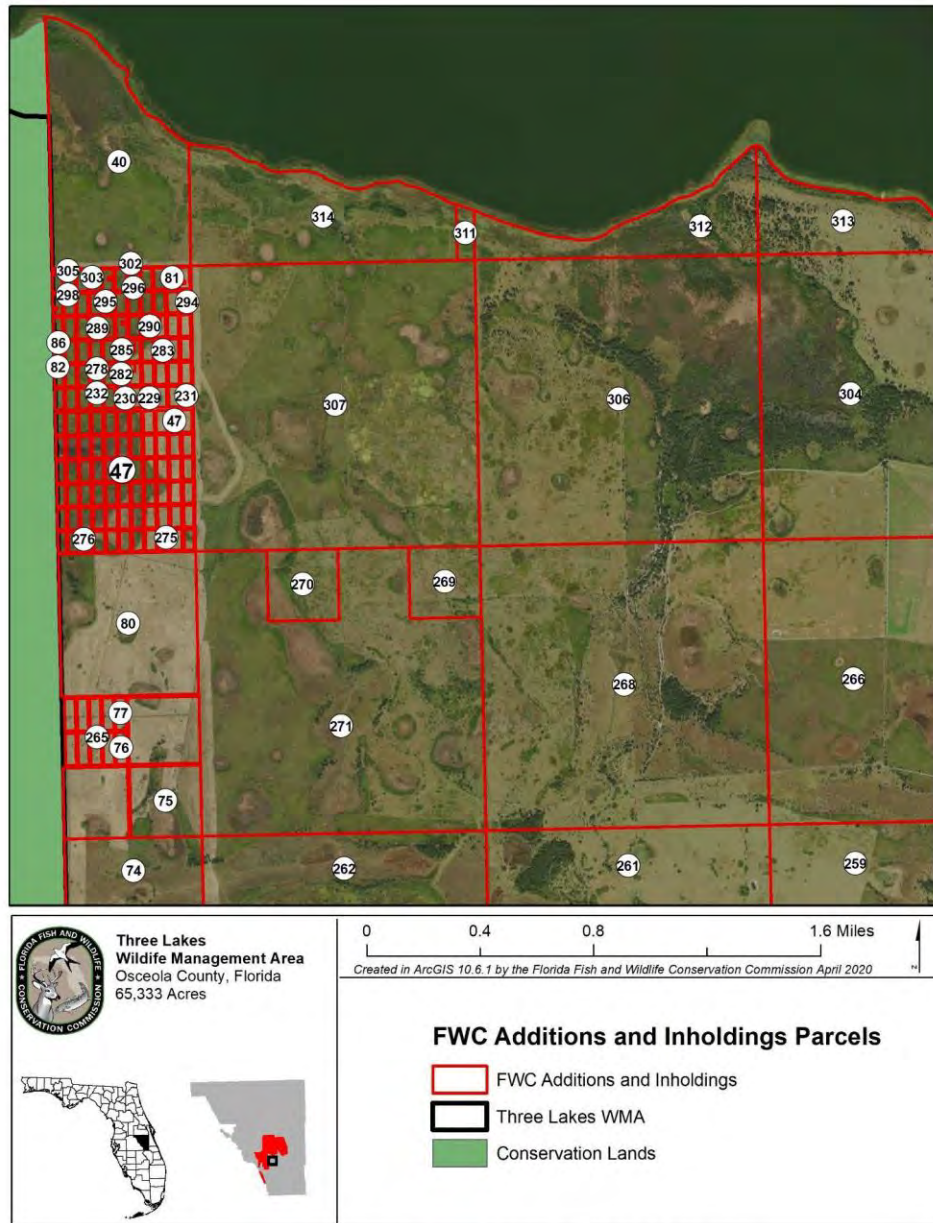


Figure 11. FWC Additions and Inholdings- Zoom In (South of Lake Marian)

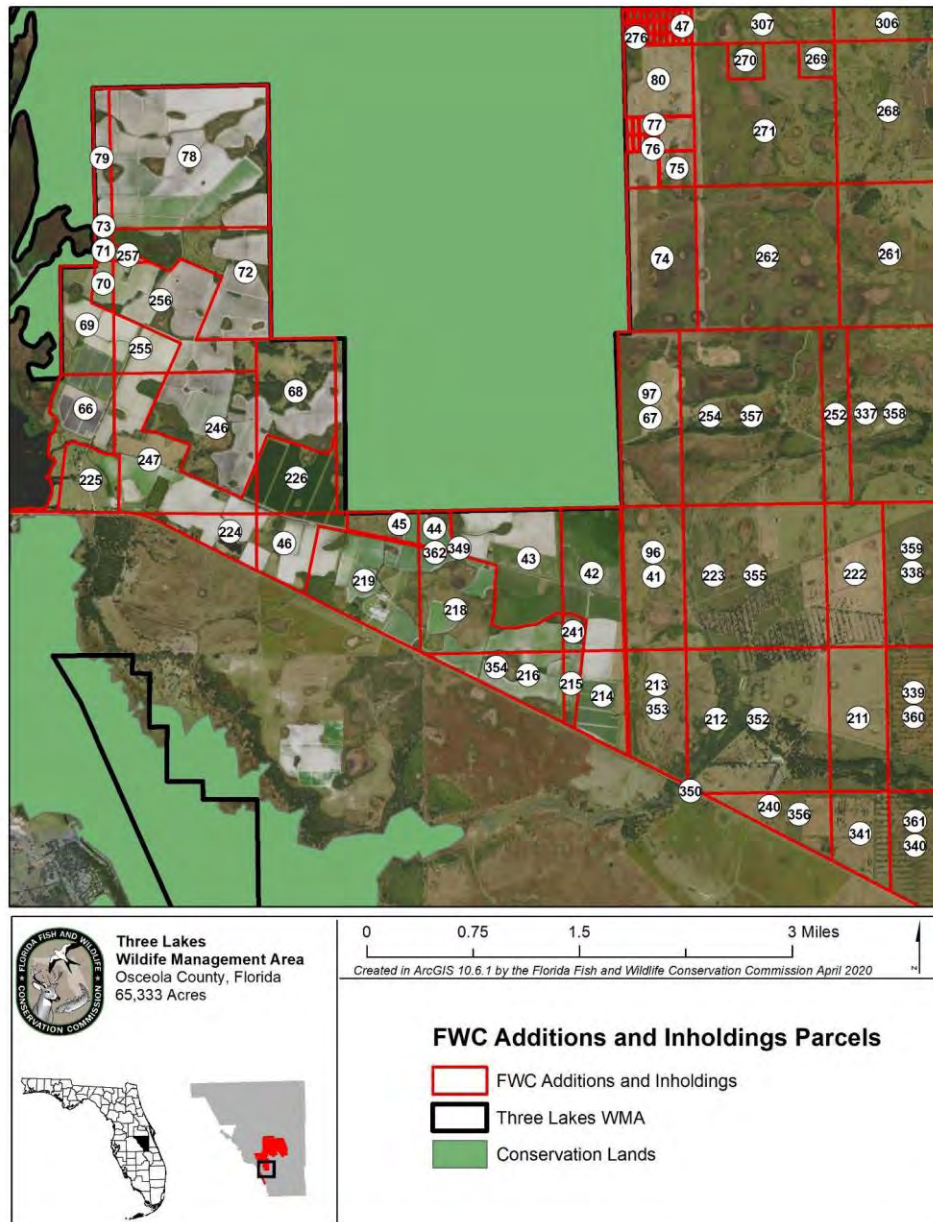


Figure 12. FWC Additions and Inholdings – Zoom In (South)

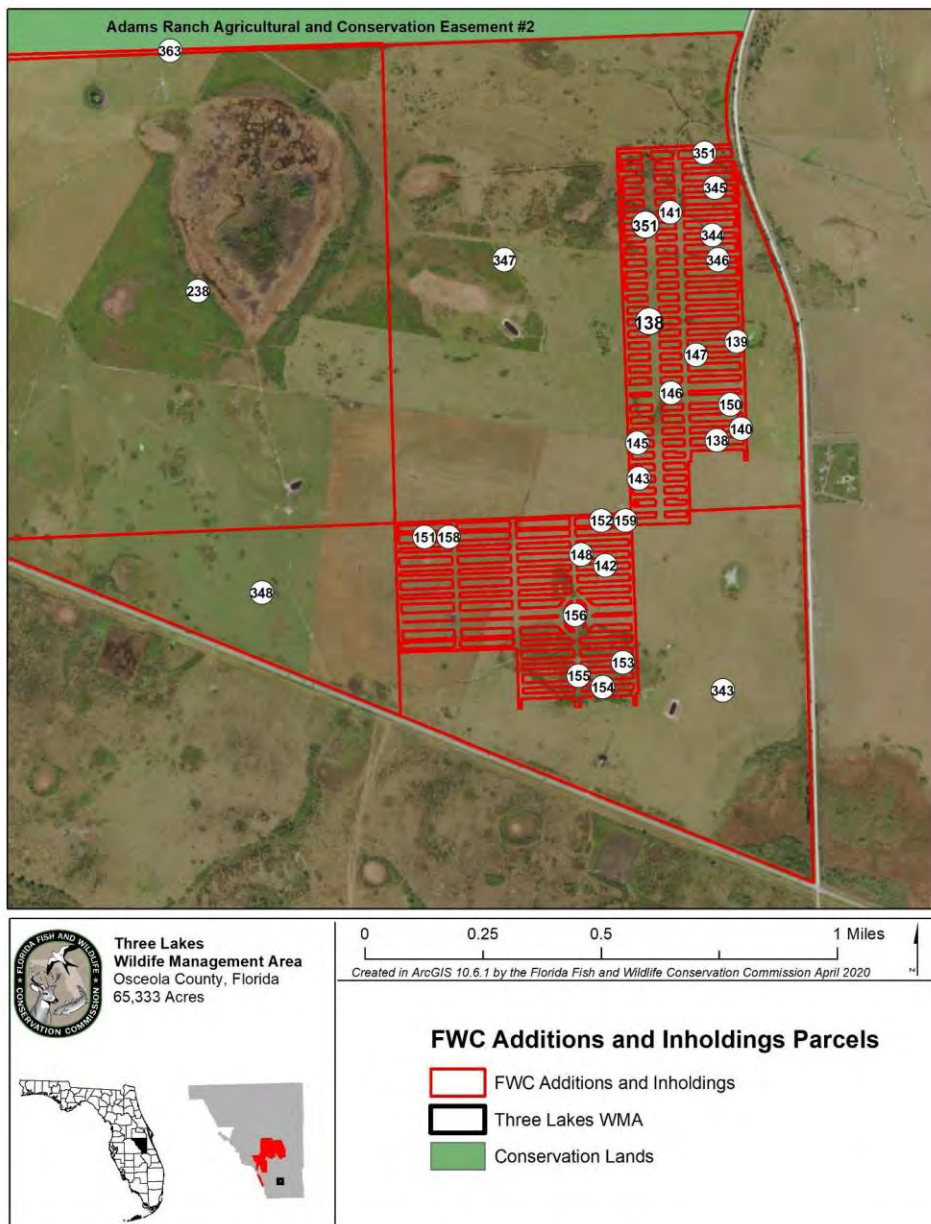


Figure 13. FWC Additions and Inholdings – Zoom In (South-South East)

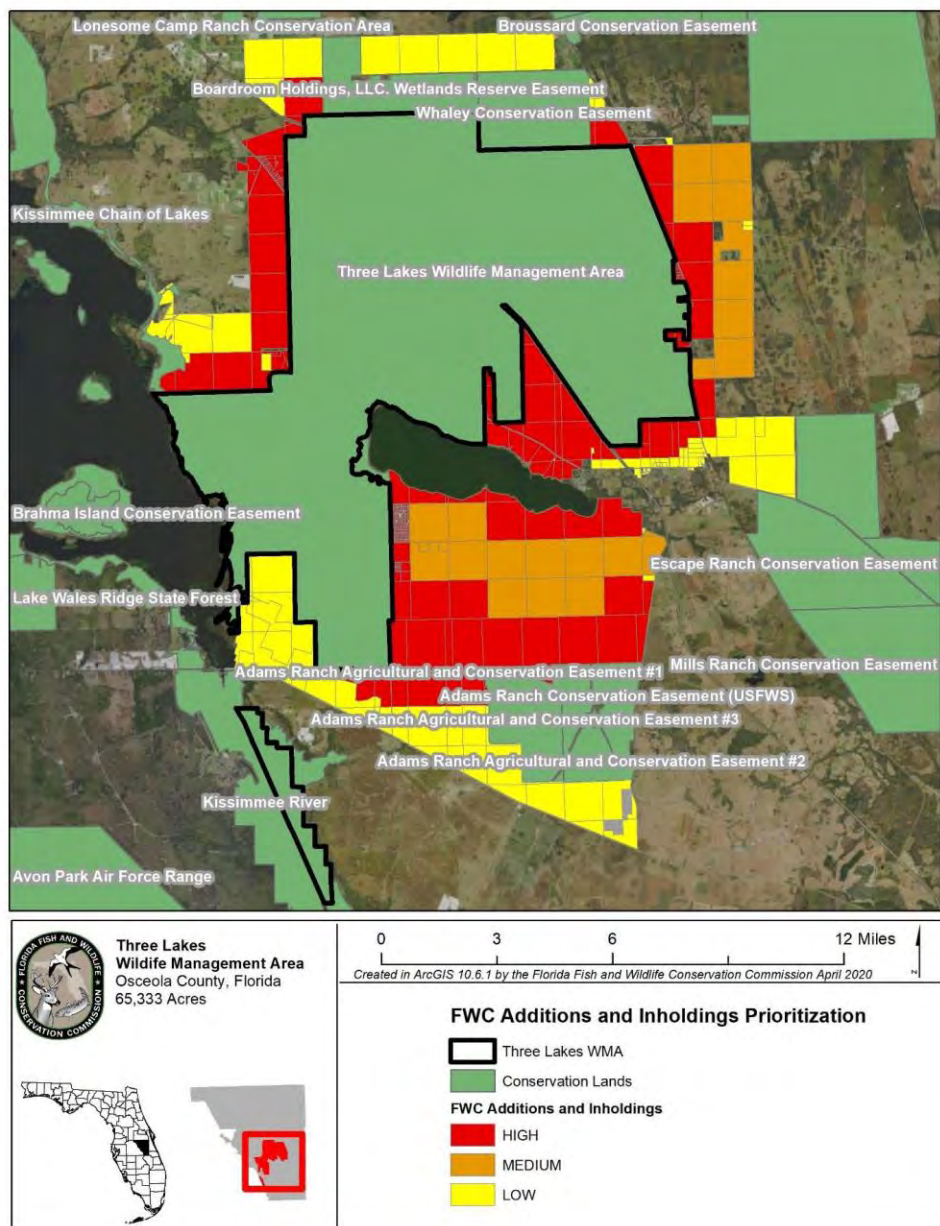


Figure 14. FWC Additions and Inholdings Prioritization

Table 1. FWC Additions and Inholdings List for the TLWMA

<u>Label</u>	<u>Parcel ID</u>	<u>Priority</u>	<u>Acres</u>
1	09303300000021MINR	HIGH	140.38
2	023033000000210000	HIGH	0.02
3	023033000000100000	HIGH	355.81
4	093033000000200000	HIGH	140.38
5	103033000000200000	HIGH	60.21
6	113033000000400000	HIGH	9.84
7	1130330000001300000	HIGH	204.72
8	103033000000150000	HIGH	99.85
9	103033000000300000	HIGH	100.07
10	113033000000150000	HIGH	134.66
11	103033000000100000	HIGH	380.80
12	302832000000100000	HIGH	635.85
13	242931000000100000	HIGH	648.26
14	342931000000100000	HIGH	553.87
15	352931000000100000	HIGH	649.62
16	012931531100010010	HIGH	5.01
17	012931531100010020	HIGH	5.00
18	012931531100010030	HIGH	5.09
19	012931531100010040	HIGH	5.08
20	012931531100010050	HIGH	6.10
21	012931531100010140	HIGH	7.75
22	122931000000100000	HIGH	649.81
23	332931000000100000	HIGH	115.90
24	252931000000100000	HIGH	620.35
25	132931000000100000	HIGH	650.01
26	322833000000200000	HIGH	60.33
27	012931000000100000	HIGH	303.25
28	332833000000200000	HIGH	379.54
29	012931531100010110	HIGH	24.05
30	012931000000400000	HIGH	75.25
31	232933000000410000	HIGH	5.36
32	232933000000400000	HIGH	4.05
33	232933000000390000	HIGH	4.97
34	123032000000100000	HIGH	214.99
35	013032000000200000	HIGH	13.93
36	013032000000160000	HIGH	4.96
37	013032000000150000	HIGH	132.01
38	063033000000100000	HIGH	511.29
39	362931000000500000	HIGH	7.82

40	163032000000100000	HIGH	215.33
41	093132000000100000	HIGH	276.60
42	093132000000300000	HIGH	250.28
43	083132000000400000	HIGH	311.69
44	083132000000300000	HIGH	38.87
45	073132000000300000	HIGH	58.31
46	073132000000100000	HIGH	146.20
47	213032385000010010	HIGH	115.89
48	232933000000700000	HIGH	14.55
49	142933000000400000	HIGH	3.72
50	232933000000300000	HIGH	5.48
51	232933000000360000	HIGH	5.36
52	232933000000350000	HIGH	5.70
53	232933000000340000	HIGH	5.09
54	232933000000330000	HIGH	5.08
55	232933000000320000	HIGH	5.13
56	232933000000310000	HIGH	5.42
57	362931000000550000	HIGH	27.49
58	352933000000410000	HIGH	5.02
59	362931000000100000	HIGH	227.38
60	362931000000400000	HIGH	80.00
61	362931000000600000	HIGH	27.40
62	312933000000100000	HIGH	441.67
63	352933000000400000	HIGH	55.40
64	262933000000600000	HIGH	34.98
65	272933000000200000	HIGH	37.80
66	023131000000100000	HIGH	168.28
67	043132000000100000	HIGH	340.96
68	063132000000300000	HIGH	270.06
69	353031000000200000	HIGH	155.25
70	353031000000400000	HIGH	29.75
71	353031000000500000	HIGH	10.24
72	363031000000200000	HIGH	312.54
73	353031000000300000	HIGH	7.15
74	333032000000100000	HIGH	311.26
75	283032525000010650	HIGH	114.19
76	283032524000400010	HIGH	13.43
77	283032524000230010	HIGH	13.66
78	253031000000100000	HIGH	710.83
79	263031000000200000	HIGH	74.55
80	283032000000100000	HIGH	155.62

81	213032384000010010	HIGH	106.92
82	2130323840000340150	HIGH	0.24
83	2130323840000340130	HIGH	0.11
84	2130323840000340120	HIGH	0.06
85	2130323840000340090	HIGH	0.06
86	2130323840000340010	HIGH	0.25
87	123032000000200000	HIGH	214.30
88	073033000000160000	HIGH	294.78
89	362932000000150000	HIGH	54.18
90	362931000000150000	HIGH	1.78
91	302933000000200000	HIGH	55.21
92	262933000000500000	HIGH	5.80
93	312832000000200000	HIGH	128.45
94	113033000000150000	HIGH	134.66
95	362831000000100000	HIGH	373.66
96	09313200000010MINR	HIGH	276.60
97	04313200000010MINR	HIGH	340.96
98	262933000000100000	HIGH	393.14
99	232933000000100000	HIGH	468.00
100	042933000000200000	HIGH	4.58
101	032933000000100000	HIGH	570.61
102	342833000000100000	HIGH	32.40
103	102933000000200000	HIGH	316.09
104	352933000000800000	HIGH	203.45
105	152933000000200000	HIGH	66.38
106	142933000000100000	HIGH	652.56
107	1530330000001400000	LOW	4.72
108	1530330000001560000	LOW	2.20
109	1530330000001530000	LOW	2.91
110	1530330000001550000	LOW	3.95
111	1430330000000330000	LOW	9.67
112	143033361000170020	LOW	0.29
113	1530330000000650000	LOW	1.01
114	143033361000170010	LOW	0.13
115	143033361000170040	LOW	0.34
116	143033361000170060	LOW	0.17
117	153033000000400000	LOW	8.69
118	153033000000500000	LOW	4.32
119	1430330000000320000	LOW	19.12
120	1130330000000670000	LOW	5.40
121	1130330000000600000	LOW	30.48

122	153033000001520000	LOW	3.16
123	143033361000170070	LOW	1.39
124	012931531100010070	LOW	5.00
125	282931000000150000	LOW	59.17
126	282931000000170000	LOW	150.25
127	012931531100010080	LOW	5.00
128	012931531100010090	LOW	5.00
129	012931531100010100	LOW	5.00
130	012931531200010160	LOW	5.00
131	012931531200010180	LOW	5.00
132	012931531200010190	LOW	5.00
133	012931531200010170	LOW	5.00
134	253132000000100000	LOW	185.16
135	173033000000100000	LOW	38.91
136	312933000000150000	LOW	21.47
137	083033000000300000	LOW	8.00
138	283133335001160010	LOW	27.82
139	283133335001250010	LOW	0.09
140	283133335001360010	LOW	0.09
141	283133334001080070	LOW	0.06
142	333133336001480100	LOW	0.15
143	283133335001400110	LOW	0.17
144	283133335001430130	LOW	0.04
145	283133335001390170	LOW	0.08
146	283133335001320190	LOW	0.04
147	283133335001250270	LOW	0.19
148	333133336001470270	LOW	0.09
149	283133335001360380	LOW	0.07
150	283133335001310420	LOW	0.14
151	333133327000010010	LOW	18.48
152	333133336001440010	LOW	26.42
153	333133336001560050	LOW	0.08
154	333133336001590130	LOW	0.19
155	333133336001560250	LOW	0.09
156	333133336000010PK0	LOW	0.50
157	17303300000011MINR	LOW	38.91
158	33313332700001101M	LOW	18.48
159	33313332700001201M	LOW	26.42
160	16303300000011MINR	MEDIUM	60.87
161	143033000000380000	MEDIUM	12.30
162	143033000000350000	MEDIUM	40.61

163	143033000000600000	MEDIUM	3.98
164	143033000000520000	MEDIUM	3.00
165	153033000000600000	MEDIUM	5.87
166	153033000000700000	MEDIUM	7.15
167	143033000000300000	MEDIUM	19.06
168	153033000000150000	MEDIUM	37.79
169	153033000000160000	MEDIUM	1.48
170	153033000000210000	MEDIUM	26.33
171	153033000000250000	MEDIUM	10.12
172	153033000000200000	MEDIUM	14.94
173	163033000000100000	MEDIUM	60.87
174	153033000000300000	MEDIUM	39.06
175	113033000000640000	MEDIUM	32.80
176	113033000000140000	MEDIUM	18.78
177	1130330000001320000	MEDIUM	18.74
178	113033000000630000	MEDIUM	35.39
179	113033000000610000	MEDIUM	32.16
180	272931000000100000	MEDIUM	152.02
181	192833000000100000	MEDIUM	651.16
182	232832000000100000	MEDIUM	643.67
183	242832000000100000	MEDIUM	644.50
184	212931000000200000	MEDIUM	104.96
185	342931000000150000	MEDIUM	23.42
186	012931531100010060	MEDIUM	5.00
187	012931000000200000	MEDIUM	69.37
188	012931531200010220	MEDIUM	5.02
189	272931000000150000	MEDIUM	465.03
190	262931000000150000	MEDIUM	646.97
191	012931000000600000	MEDIUM	6.72
192	012931000000300000	MEDIUM	2.04
193	022931000000250000	MEDIUM	40.34
194	012931531200010200	MEDIUM	5.01
195	012931531200010210	MEDIUM	5.12
196	322833000000250000	MEDIUM	20.49
197	332833000000250000	MEDIUM	45.39
198	292833000000200000	MEDIUM	20.32
199	282833000000200000	MEDIUM	43.09
200	282833000000250000	MEDIUM	27.60
201	292833000000250000	MEDIUM	39.66
202	192832000000100000	MEDIUM	650.02
203	212832000000100000	MEDIUM	645.33

204	222832000000100000	MEDIUM	644.59
205	012931531200010240	MEDIUM	11.04
206	012931531200010150	MEDIUM	31.50
207	163033000000400000	MEDIUM	22.93
208	063033000000150000	MEDIUM	107.95
209	053033000000200000	MEDIUM	230.75
210	133132000000100000	MEDIUM	70.26
211	143132000000200000	MEDIUM	264.16
212	153132000000100000	MEDIUM	650.82
213	163132000000100000	MEDIUM	225.69
214	163132000000400000	MEDIUM	139.01
215	163132000000500000	MEDIUM	35.70
216	173132000000100000	MEDIUM	159.90
217	252831000000300000	MEDIUM	411.07
218	083132000000200000	MEDIUM	296.03
219	073132000000400000	MEDIUM	306.22
220	073133000000100000	MEDIUM	182.42
221	123132000000100000	MEDIUM	252.35
222	113132000000200000	MEDIUM	264.14
223	103132000000100000	MEDIUM	650.45
224	123131000000100000	MEDIUM	104.37
225	023131000000200000	MEDIUM	115.94
226	063132000000200000	MEDIUM	173.59
227	223033000001250000	MEDIUM	24.16
228	223033000001100000	MEDIUM	5.97
229	213032384000620070	MEDIUM	0.14
230	213032384000610060	MEDIUM	0.21
231	213032384000660010	MEDIUM	1.58
232	213032384000590010	MEDIUM	1.01
233	133032000000100000	MEDIUM	1.90
234	183033000000100000	MEDIUM	98.70
235	183033000000160000	MEDIUM	44.89
236	133033000000100000	MEDIUM	343.17
237	232933000000420000	MEDIUM	5.43
238	293133000000100000	MEDIUM	642.93
239	243132000000100000	MEDIUM	593.21
240	223132000000100000	MEDIUM	141.59
241	093132000000400000	MEDIUM	24.56
242	362931000000300000	MEDIUM	70.86
243	362931000000700000	MEDIUM	10.16
244	362931000000250000	MEDIUM	6.64

245	362931000000200000	MEDIUM	13.46
246	013131000000200000	MEDIUM	318.56
247	013131000000100000	MEDIUM	309.60
248	063133000000100000	MEDIUM	763.81
249	013132000000100000	MEDIUM	820.72
250	053133000000100000	MEDIUM	785.29
251	043133000000100000	MEDIUM	814.70
252	023132000000200000	MEDIUM	146.60
253	033133000000100000	MEDIUM	179.57
254	033132000000100000	MEDIUM	788.00
255	363031000000100000	MEDIUM	89.83
256	363031000000300000	MEDIUM	289.57
257	363031000000400000	MEDIUM	10.09
258	313033000000100000	MEDIUM	649.18
259	363032000000100000	MEDIUM	646.23
260	323033000000100000	MEDIUM	645.38
261	353032000000100000	MEDIUM	645.57
262	343032000000100000	MEDIUM	645.87
263	333033000000100000	MEDIUM	654.64
264	343033000000300000	MEDIUM	29.69
265	283032524000430050	MEDIUM	0.23
266	253032000000100000	MEDIUM	643.21
267	303033000000100000	MEDIUM	647.61
268	263032000000100000	MEDIUM	641.89
269	273032000000100000	MEDIUM	40.16
270	273032000000300000	MEDIUM	40.19
271	273032000000200000	MEDIUM	562.76
272	293033000000100000	MEDIUM	647.36
273	283033000000100000	MEDIUM	660.63
274	273033000000200000	MEDIUM	304.43
275	213032385000640050	MEDIUM	0.14
276	213032385000580190	MEDIUM	0.14
277	213032385000650240	MEDIUM	0.07
278	213032384000510270	MEDIUM	0.11
279	213032384000510290	MEDIUM	0.06
280	213032384000490270	MEDIUM	0.34
281	213032384000500010	MEDIUM	0.45
282	213032384000500250	MEDIUM	0.46
283	213032384000420050	MEDIUM	0.11
284	213032384000400240	MEDIUM	0.52
285	213032384000390010	MEDIUM	1.82

286	213032384000260130	MEDIUM	0.06
287	213032384000260120	MEDIUM	0.06
288	213032384000290210	MEDIUM	0.06
289	213032384000300090	MEDIUM	0.11
290	213032384000260070	MEDIUM	0.28
291	213032384000280050	MEDIUM	0.11
292	213032384000250290	MEDIUM	0.11
293	193033000000100000	MEDIUM	487.71
294	213032384000220060	MEDIUM	0.15
295	213032384000160310	MEDIUM	0.11
296	213032384000050150	MEDIUM	0.23
297	213032384000050120	MEDIUM	0.17
298	213032384000100120	MEDIUM	0.06
299	213032384000010210	MEDIUM	0.10
300	213032384000050100	MEDIUM	0.11
301	213032384000070070	MEDIUM	0.11
302	213032384000050270	MEDIUM	0.11
303	213032384000080240	MEDIUM	0.29
304	243032000000100000	MEDIUM	632.65
305	213032384000100010	MEDIUM	0.11
306	233032000000100000	MEDIUM	642.23
307	223032000000100000	MEDIUM	644.46
308	203033000000100000	MEDIUM	435.42
309	213033000000400000	MEDIUM	557.30
310	193034000000100000	MEDIUM	18.79
311	153032000000100000	MEDIUM	7.45
312	143032000000100000	MEDIUM	103.86
313	133032000000200000	MEDIUM	103.89
314	153032000000200000	MEDIUM	187.93
315	183034000000100000	MEDIUM	627.91
316	183033000000150000	MEDIUM	72.07
317	173033000000220000	MEDIUM	108.52
318	163033000000110000	MEDIUM	81.03
319	073033000000120000	MEDIUM	2.42
320	073033000000140000	MEDIUM	10.60
321	073033000000100000	MEDIUM	108.51
322	113033000000100000	MEDIUM	95.90
323	093033000000100000	MEDIUM	72.91
324	073033000000130000	MEDIUM	124.41
325	123033000000150000	MEDIUM	162.79
326	123033000000100000	MEDIUM	484.06

327	073034000000200000	MEDIUM	83.18
328	073034000000100000	MEDIUM	577.21
329	073033000000150000	MEDIUM	99.82
330	322933000000150000	MEDIUM	0.86
331	352831000000100000	MEDIUM	11.71
332	312832000000300000	MEDIUM	10.68
333	242831000000100000	MEDIUM	653.30
334	083033000000100000	MEDIUM	588.38
335	193133000000100000	MEDIUM	23.97
336	303133000000100000	MEDIUM	474.71
337	023132000000100000	MEDIUM	623.79
338	113132000000100000	MEDIUM	375.78
339	143132000000100000	MEDIUM	383.51
340	233132000000100000	MEDIUM	332.69
341	233132000000300000	MEDIUM	155.70
342	343033000000200000	MEDIUM	122.57
343	333133000000200000	MEDIUM	227.22
344	283133334001120350	MEDIUM	0.29
345	283133334001060380	MEDIUM	0.21
346	283133334001130400	MEDIUM	0.07
347	283133000000200000	MEDIUM	405.79
348	323133000000100000	MEDIUM	118.38
349	083132000000100000	MEDIUM	2.03
350	153132000000200000	MEDIUM	0.64
351	283133334001010010	MEDIUM	16.40
352	15313200000010MINR	MEDIUM	650.82
353	16313200000010MINR	MEDIUM	225.69
354	17313200000010MINR	MEDIUM	159.90
355	10313200000010MINR	MEDIUM	650.45
356	22313200000010MINR	MEDIUM	141.59
357	03313200000010MINR	MEDIUM	788.00
358	02313200000010MINR	MEDIUM	623.79
359	11313200000010MINR	MEDIUM	375.78
360	14313200000010MINR	MEDIUM	383.51
361	23313200000010MINR	MEDIUM	332.69
362	08313200000010MINR	MEDIUM	2.03
363	203133000000400000	MEDIUM	5.33
364	252933000000100000	MEDIUM	675.43
365	242933000000100000	MEDIUM	671.78
366	362933000000100000	MEDIUM	673.53
367	022933000000100000	MEDIUM	657.59

368	112933000000100000	MEDIUM	657.72
369	122933000000100000	MEDIUM	664.93
370	132933000000200000	MEDIUM	20.91
371	132933000000100000	MEDIUM	20.87
372	012933000000100000	MEDIUM	655.29
373	132933000000300000	MEDIUM	467.60

12.22 Arthropod Control Plan



Nicole 'Nikki' Fried
COMMISSIONER

Florida Department of Agriculture and Consumer Services
Division of Agricultural Environmental Services

ARTHROPOD MANAGEMENT PLAN - PUBLIC LANDS

Section 388.4111, F.S.
Telephone: (850) 617-7995

For use in documenting an Arthropod Control Plan for lands designated by the State of Florida or any political subdivision thereof as being environmentally sensitive and biologically highly productive therein. Fill this form out if control work is necessary or planned.

Name of Designated Land: Three Lakes Wildlife Management Area

Is Control Work Necessary: ☐ Yes ☒ No

Location: Osceola County

Land Management Agency: Florida Fish and Wildlife Conservation Commission

Are Arthropod Surveillance Activities Necessary? ☐ Yes ☒ No
If "Yes", please explain:

Which Surveillance Techniques Are Proposed?
Please Check All That Apply

- | | | |
|--|--------------------------------------|--|
| ☐ Landing Rate Counts | ☐ Light Traps | ☐ Sentinel Chickens |
| ☐ Citizen Complaints | ☐ Larval Dips | ☐ Other |

If "Other", please explain: N/A

Arthropod Species for Which Control is Proposed:

Proposed Larval Control:

Proposed larval monitoring procedure:

Are post treatment counts being obtained:

☐ Yes

☒ No

Biological Control of Larvae:

Might predacious fish be stocked:

☐ Yes ☒ No

Other biological controls that might be used:

Material to be Used for Larvaciding Applications:

(Please Check All That Apply.)

☐ Bti

☐ Bs

☐ Methoprene

☐ Non-Petroleum Surface Film

☐ Other, please specify:

Please specify the following for each larvacide: N/A

Chemical or Common name: N/A

☐ Ground

☐ Aerial

Rate of application:

Method of application:

Proposed Adult Mosquito Control:

Aerial adulticiding ☐ Yes ☒ No

Ground adulticiding ☐ Yes ☒ No

Please specify the following for each adulticide:

Chemical or common name:

Rate of application:

Method of application:

Proposed Modifications for Public Health Emergency Control: In the event of a declared public health emergency, control may be performed by the arthropod control agency, as part of a larger treatment plan to safeguard public health. Land managers of the area will be notified prior to treatment.

Proposed Notification Procedure for Control Activities:

Manager of the area will be notified by e-mail when treatment of the area will occur. The notice should include a map of the area being treated, the material to be used and the general time of day the treatment will occur.

Records:

Are records being kept in accordance with Chapter 388, F.S.?

☒ Yes ☐ No

Records Location

1 Courthouse Square,
Suite 3100
Kissimmee, FL 34741

How long are records maintained:

10 years

Vegetation Modification:

What trimming or altering of vegetation to conduct surveillance or treatment is proposed?

None

Proposed Land Modifications:

Is any land modification, i.e., rotary ditching, proposed:

None

Include proposed operational schedules for water fluctuations:

None

List any periodic restrictions, as applicable, for example peak fish spawning times.

None

Proposed Modification of Aquatic Vegetation:

None

Land Manager Comments:

Arthropod Control Agency Comments:

James C Conner III

Digitally signed by James C Conner III
Date: 2020.05.06 16:47:57 -04'00'

Signature of Lands Manager or Representative Date

Susan Gosselin

5/6/2020

Signature of Mosquito Control Director / Manager Date

12.23 Osceola County Letter of Compliance with Local Government Comprehensive Plan



**DEPARTMENT OF
COMMUNITY
DEVELOPMENT**

Dave Tomek
Administrator

Brian K. Brown
Deputy Administrator

Susan E. Caswell, AICP
Assistant Administrator

Kelly Haddock
Current Planning Director

Jose A. Gomez, P.E.
Development Review
Director

Kerry Godwin, AICP
Planning & Design
Director

Kevin Ostrowski
Sports & Event Facilities
Manager

**Osceola
County**

1 Courthouse Square
Suite 1100
Kissimmee, FL 34741
PH: (407) 742-8650
FAX: (407) 742-8651
www.osceola.org

Sent via email: Dylan.Haase@MyFWC.com

June 9, 2020

Dylan Imlah Haase
Sr. Conservation Planner
Florida Fish and Wildlife Conservation Commission
Division of Habitat and Species Conservation
620 S. Meridian Street
Tallahassee, Florida 32399

RE: Three Lakes WMA Management Plan 2019 - 2029.

Dear Ms. Haase:

Osceola County is pleased to provide a review of the Florida Fish and Wildlife Conservation Commission's Three Lakes Wildlife Management Area (TLWMA) Management Plan. Planning Department staff finds that the TLWMA Management Plan is in compliance with the Osceola County 2040 Comprehensive Plan.

Thank you for the opportunity to contribute and to review the proposed management plan. If I can be of further assistance, please me at (407) 742-0294 or at Harry.Fix@osceola.org.

Respectfully,

Harry Fix, AICP, Senior Planner
Planning and Design Office

CC: Cori Carpenter, Principal Planner, Planning & Design