A Management Plan for the Half Moon Wildlife Management Area 2020 - 2030

Sumter County, Florida

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

Florida Fish and Wildlife Conservation Commission

Commissioners
Bo Rivard
Chairman
Panama City

Robert A. Spottswood
Vice Chairman
Key West

Richard Hanas
Oviedo

Gary Nicklaus
Jupiter

Sonya Rood
St. Augustine

Michael W. Sole
Tequesta

Brian Yablonski
Tallahassee

Office of the Executive Director
Eric Sutton
Executive Director

Thomas Eason
Assistant Executive Director

Jennifer Fitzwater
Chief of Staff

850-487-3796
850-921-5786 FAX

Managing fish and wildlife resources for their long-term well-being and the benefit of people.

620 South Meridian Street
Tallahassee, Florida
32399-1600
Voice: 850-488-4676

Hearing/speech-impaired:
800-955-8771 (T)
800 955-8770 (V)

MyFWC.com

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: Half Moon Wildlife Management Area
Ten Year Management Plan Update
Acquisition and Restoration Council (ARC) Public Hearing

DATE: June 16, 2020

Enclosed are the Half Moon 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 Lance Jacobson at Lance.Jacobson@MyFWC.com if there are any questions related to this plan. Thank you for your assistance.

TH/LJ

Enclosures

cc: Keith Singleton

THIS PAGE INTENTIONALLY BLANK

A Management Plan
for the
Half Moon Wildlife Management Area

Sumter County, Florida

Owned by the Board of Trustees of the Internal Improvement Trust Fund
And the Southwest Florida Water Management District
Managed by the Florida Fish and Wildlife Conservation Commission

June 2020

Approved _____
Kipp Frohlich, Director
Division of Habitat and Species Conservation

THIS PAGE INTENTIONALLY BLANK

LAND MANAGEMENT PLAN EXECUTIVE SUMMARY

Lead Agency: Florida Fish and Wildlife Conservation Commission (FWC)
Common Name of Property: Half Moon Wildlife and Environmental Area (HMWMA)
Location: Sumter County, Florida
Acreage Total: 9,554 acres
Acreage Breakdown:

Land Cover Classification	Acres	Percent of Total Area
Artificial pond	4.11	0.04%
Basin marsh	4.25	0.04%
Basin swamp	529.57	5.51%
Baygall	4.07	0.04%
Blackwater stream	177.16	1.84%
Depression marsh	1022.45	10.63%
Developed	4.08	0.04%
Dome swamp	91.29	0.95%
Floodplain forest	766.19	7.97%
Floodplain swamp	1905.73	19.82%
Hydric hammock	567.67	5.90%
Mesic flatwoods	1257.17	13.07%
Mesic hammock	1444.42	15.02%
Pasture - improved	783.91	8.15%
Pasture - semi-improved	263.82	2.74%
Pine plantation	19.77	0.21%
Restoration mesic flatwoods	121.73	1.27%
Road	118.70	1.23%
Sandhill	47.97	0.50%
Scrubby flatwoods	120.88	1.26%
Spoil area	3.22	0.03%
Spring-run stream	14.34	0.15%
Wet flatwoods	110.72	1.15%
Wildlife food plot	38.00	0.40%
Xeric hammock	195.51	2.03%

*GIS-calculated acreage for land cover classification varies slightly from actual total acreage.
Lease/Management Agreement No.: 3789 (Appendix 12.1)
Use: Single _____ Management Responsibilities:
Multiple X Agency FWC Responsibilities
LEAD, SUBLESSEE (Wildlife Management Area, resource protection, law enforcement)
Designated Land Use: Wildlife Management Area
Sublease (s): None
Encumbrances: Cattle lease, mineral rights, access easement
Type Acquisition: Fish and Wildlife Habitat Program
Unique Features: Natural: Natural communities, Withlacoochee River, Gum Slough, Mill Creek
Archaeological/Historical: Fourteen historical resources documented within the HMWMA.
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: 30,947 acres FWC Additions and Inholdings list.
Surplus Lands/Acreage: None

Public Involvement: Management Advisory Group consensus building meeting and Public Hearing (Appendix 12.3)

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

ARC Approval Date _____ BTIITF Approval Date: _____

Comments: _____

Land Management Plan Compliance Checklist

Required for State-owned conservation lands over 160 acres

Section A: Acquisition Information Items			
Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
1	The common name of the property.	18-2.018 & 18-2.021	1
2	The land acquisition program, if any, under which the property was acquired.	18-2.018 & 18-2.021	5-6
3	Degree of title interest held by the Board, including reservations and encumbrances such as leases.	18-2.021	8, 11
4	The legal description and acreage of the property.	18-2.018 & 18-2.021	1, Appendix 12.11
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	3, 4, 7
6	An **assessment** as to whether the property, or any portion, should be declared surplus. *Provide Information regarding **assessment and analysis** in the plan, and provide **corresponding map**.*	18-2.021	63
7	Identification of other parcels of land within or immediately adjacent to the property that should be purchased because they are essential to management of the property. *Please clearly indicate parcels on a map.*	18-2.021	94-97, Appendix 12.11
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)	5-6
10	Proximity of property to other significant State, local or federal land or water resources.	18-2.021	9-13

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	61
12	A description of past and existing uses, including any unauthorized uses of the property.	18-2.018 & 18-2.021	58-63
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	61-62
14	A description of the management responsibilities of each entity involved in the property's management and how such responsibilities will be coordinated.	18-2.018	6, 11, 97
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	93

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	97
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)	61-62
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	61-62
19	Letter of compliance from the local government stating that the LMP is in compliance with the Local Government Comprehensive Plan.	BOT requirement	Appendix 12.17
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, 57, 100
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	61
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	92, Appendix 12.10
23	A statement regarding incompatible use in reference to Ch. 253.034(10).	253.034(10)	62

*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	15, 112
25	The management prospectus required pursuant to paragraph (9)(d) shall be available to the public for a period of 30 days prior to the public hearing.	259.032(10)	Appendix 12.3
26	LMPs and LMP updates for parcels over 160 acres shall be developed with input from an advisory group who must conduct at least one public hearing within the county in which the parcel or project is located. *Include the advisory group members and their affiliations, as well as the date and location of the advisory group meeting.*	259.032(10)	15, Appendix 12.3
27	Summary of comments and concerns expressed by the advisory group for parcels over 160 acres	18-2.021	Appendix 12.3
28	During plan development, at least one public hearing shall be held in each affected county. Notice of such public hearing shall be posted on the parcel or project designated for management, advertised in a paper of general circulation, and announced at a scheduled meeting of the local governing body before the actual public hearing. *Include a copy of each County's advertisements and announcements (meeting minutes will suffice to indicate an announcement) in the management plan.*	253.034(5) & 259.032(10)	15, Appendix 12.3
29	The manager shall consider the findings and recommendations of the land management review team in finalizing the required 10-year update of its management plan. *Include manager's replies to the team's findings and recommendations.*	259.036	79, Appendix 12.7
30	Summary of comments and concerns expressed by the management review team, if required by Section 259.036, F.S.	18-2.021	Appendix 12.7
31	If manager is not in agreement with the management review team's findings and recommendations in finalizing the required 10-year update of its management plan, the managing agency should explain why they disagree with the findings or recommendations.	259.036	Appendix 12.7

Section D: Natural Resources			
Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
32	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding soil types. *Use brief descriptions and include USDA maps when available.*	18-2.021	16-18, Appendix 12.4
33	Insert FNAI based natural community maps when available.	ARC consensus	20, 21

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	15-58
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	15-58
36	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding beaches and dunes.	18-2.021	57
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	57
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	46-56
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	53, Appendix 12.9
40	The identification or resources on the property that are listed in the Natural Areas Inventory. *Include letter from FNAI or consultant where appropriate.*	18-2.021	53, 55, Appendix 12.5
41	Specific description of how the managing agency plans to identify, locate, protect and preserve or otherwise use fragile, nonrenewable natural and cultural resources.	259.032(10)	57, 93
42	Habitat Restoration and Improvement	259.032(10) & 253.034(5)	
42-A.	Describe management needs, problems and a desired outcome and the key management activities necessary to achieve the enhancement, protection and preservation of restored habitats and enhance the natural, historical and archeological resources and their values for which the lands were acquired.	↓	79-100
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.		100-107
42-C.	The associated measurable objectives to achieve the goals.		100-107
42-D.	The related activities that are to be performed to meet the land management objectives and their associated measures. *Include fire management plans - they can be in plan body or an appendix.*		79-100, Appendix 12.8
42-E.	A detailed expense and manpower budget in order to provide a management tool that facilitates development of performance measures, including recommendations for cost-effective methods of accomplishing those activities.		109-111, Appendix 12.15
43	***Quantitative data description of the land regarding an inventory of forest and other natural resources and associated acreage. *See footnote.*	253.034(5)	19-45

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).		92
44-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		103
44-C.	Measurable objectives (see requirement for #42-C).		103
44-D.	Related activities (see requirement for #42-D).		92
44-E.	Budgets (see requirement for #42-E).		109-111, Appendix 12.15
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).		85-87
45-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		101
45-C.	Measurable objectives (see requirement for #42-C).		101
45-D.	Related activities (see requirement for #42-D).		85-87
45-E.	Budgets (see requirement for #42-E).		109-111, Appendix 12.15
46	***Quantitative data description of the land regarding an inventory of exotic and invasive plants and associated acreage. *See footnote.*	253.034(5)	88-89
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 12.16
48	Exotic and invasive species maintenance and control	259.032(10) & 253.034(5) ↓	
48-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		88-89
48-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		101
48-C.	Measurable objectives (see requirement for #42-C).		101
48-D.	Related activities (see requirement for #42-D).		88-89
48-E.	Budgets (see requirement for #42-E).		109-111, Appendix 12.15

Section E: Water Resources

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
49	A statement as to whether the property is within and/or adjacent to an aquatic preserve or a designated area of critical state concern or an area under study for such designation. *If yes, provide a list of the appropriate managing agencies that have been notified of the proposed plan.*	18-2.018 & 18-2.021	57
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	56, 57
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	19-21, 33-40
52	***Quantitative description of the land regarding an inventory of hydrological features and associated acreage. *See footnote.*	253.034(5)	56, 57
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).	↓	92
53-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		103
53-C.	Measurable objectives (see requirement for #42-C).		103
53-D.	Related activities (see requirement for #42-D).		92
53-E.	Budgets (see requirement for #42-E).		109-111, Appendix 12.15

Section F: Historical, Archeological and Cultural Resources

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
54	**Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding archeological and historical resources. *Include maps of all cultural resources except Native American sites, unless such sites are major points of interest that are open to public visitation.*	18-2.018, 18-2.021 & per DHR's request	57-58
55	***Quantitative data description of the land regarding an inventory of significant land, cultural or historical features and associated acreage.	253.034(5)	57-58, 93
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	57-58, 93, Appendix 12.12
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).	↓	57-58, 93, Appendix 12.12

57-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		103
57-C.	Measurable objectives (see requirement for #42-C).		103
57-D.	Related activities (see requirement for #42-D).		57-58, 93, Appendix 12.12
57-E.	Budgets (see requirement for #42-E).		109-111, Appendix 12.15

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

Section G: Facilities (Infrastructure, Access, Recreation)			
Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
58	***Quantitative data description of the land regarding an inventory of infrastructure and associated acreage. *See footnote.*	253.034(5)	93
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).	↓	93
59-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		104
59-C.	Measurable objectives (see requirement for #42-C).		104
59-D.	Related activities (see requirement for #42-D).		93
59-E.	Budgets (see requirement for #42-E).		109-111, Appendix 12.15
60	*** Quantitative data description of the land regarding an inventory of recreational facilities and associated acreage.	253.034(5)	93
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).	↓	89-92
61-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		102
61-C.	Measurable objectives (see requirement for #42-C).		102
61-D.	Related activities (see requirement for #42-D).		89-92
61-E.	Budgets (see requirement for #42-E).		109-111, Appendix 12.15

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	v-xii
63	Place the Executive Summary at the front of the LMP. Include a physical description of the land.	ARC and 253.034(5)	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	63-78
65	Key management activities necessary to achieve the desired outcomes regarding other appropriate resource management.	259.032(10)	100-107
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)	109-111, Appendix 12.15
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)	109-111, Appendix 12.15
68	A statement of gross income generated, net income and expenses.	18-2.018	109-111, Appendix 12.15

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

Table of Contents

1 Introduction and General Information 1
1.1 Management Plan Purpose 1
1.2 Location 5
1.3 Acquisition 5
1.4 Management Authority 6
1.5 Management Directives 11
1.6 Title Interest and Encumbrances 11
1.7 Proximity to Other Public Conservation Lands 11
1.8 Adjacent Land Uses 14
1.9 Public Involvement 15
2 Natural and Historical Resources 15
2.1 Physiography 15
2.2 Vegetation 19
2.3 Fish and Wildlife Resources 46
2.4 Native Landscapes 54
2.5 Water Resources 58
2.6 Beaches and Dunes 58
2.7 Mineral Resources 58
2.8 Historical Resources 58
2.9 Scenic Resources 59
3 Uses of the Property 59
3.1 Previous Use and Development 59
3.2 Current Use of the Property 61
3.3 Single- or Multiple-use Management 62
3.4 Acreage Recommended for Potential Surplus Review 64
4 Accomplished Objectives from the HMWMA Management Plan 2014 – 2024 64
5 Management Activities and Intent 80
5.1 Land Management Review 80
5.2 Adaptive Management 80
5.3 Habitat Restoration and Improvement 82

5.4 Fish and Wildlife Management, Imperiled and Locally Important Species Habitat Maintenance, Enhancement, Restoration, or Population Restoration 86
5.5 Exotic and Invasive Species Maintenance and Control 88
5.6 Public Access and Recreational Opportunities 90
5.7 Hydrological Preservation and Restoration 93
5.8 Forest Resource Management 93
5.9 Historical Resources 93
5.10 Capital Facilities and Infrastructure 94
5.11 Land Conservation and Stewardship Partnerships 97
5.12 Research Opportunities 100
5.13 Cooperative Management and Special Uses 100
5.14 Climate Change 102
5.15 Soil and Water Conservation 103
6 Resource Management Goals and Objectives 103
6.1 Habitat Restoration and Improvement 104
6.2 Imperiled Species Habitat Maintenance, Enhancement, Restoration, or Population Restoration 104
6.3 Other Wildlife (Game and Nongame) Habitat Maintenance, Enhancement, Restoration, and Population Restoration. 104
6.4 Exotic and Invasive Species Maintenance and Control 104
6.5 Public Access and Recreational Opportunities 105
6.6 Hydrological Preservation and Restoration 106
6.7 Forest Resource Management 106
6.8 Historical Resources 106
6.9 Capital Facilities and Infrastructure 107
6.10 Land Conservation and Stewardship Partnerships 107
6.11 Climate Change 108
6.12 Cooperative Management, Special Uses, and Research Opportunities 110
7 Resource Management Challenges and Strategies 110
8 Cost Estimates and Funding Sources 112
9 Analysis of Potential for Contracting Private Vendors for Restoration and Management Activities 115

10 Compliance with Federal, State, and Local Governmental Requirements 115
11 Endnotes 116
12 Appendices 118
12.1 Lease Agreement 118
12.2 Terms Used in This Management Plan 220
12.3 Public Involvement 254
12.4 Soil Series Descriptions 280
12.5 FNAI Element Occurrence Data Usage Letter 293
12.6 FWC Agency Strategic Plan 294
12.7 Land Management Review Report 300
12.8 Prescribed Burn Plan 313
12.9 Wildlife Conservation and Prioritization and Recovery Program Strategy 327
12.10 Timber Assessment 363
12.11 Conservation Action Strategy 371
12.12 Management Procedures Guidelines - Management of Archaeological and Historical Resources 399
12.13 HMWMA Cattle Grazing Contract 402
12.14 Apiaries 429
12.15 Cost Estimates 456
12.16 Arthropod Control Plan 488
12.17 Sumter County Letter of Compliance with Local Government Comprehensive Plan 493

Table of Figures

Figure 1: General Location of the HMWMA 3
Figure 2: Boundary and Aerial Image of the HMWMA 4
Figure 3: Section, Township, and Range Location of the HMWMA 7
Figure 4: Half Moon WMA Title Interest 8
Figure 5: Nearby Conservation Lands and Florida Forever Projects 9
Figure 6: HMWMA Soil Types 17
Figure 7: HMWMA Soil Depth to the Water Table 18
Figure 8: FNAI Natural Communities 20
Figure 9: HMWMA Historic Natural Communities 21
Figure 10: Florida Landscape Assessment Model 55
Figure 11: FNAI Element Occurrences in the Vicinity of the HMWMA 56
Figure 12: HMWMA Water Resources 57
Figure 13: HMWMA Facilities 95
Figure 14: HMWMA Roads and Trails 96
Figure 15: HMWMA Optimal Conservation Planning Boundary 99
Figure 16: HMWMA Management Plan Goal and Objective Locations 109

Table of Tables

Table 1: Florida Forever Projects Within 20 Miles of the HMWMA 12
Table 2: Conservation Areas Within 20 Miles of the HMWMA 12
Table 3: Natural Community Types on the HMWMA 19
Table 4: Native Plant Species Known to Occur on the HMWMA 22
Table 5: Imperiled Plant Species Observed at the HMWMA 32
Table 6: Exotic and Invasive Plant Species Observed at the HMWMA 32
Table 7: Mammal Species Observed at the HMWMA 46
Table 8: Bird Species Observed at the HMWMA 47
Table 9: Reptile and Amphibian Species Observed at the HMWMA 50
Table 10: Imperiled Species Observed at the HMWMA 54
Table 11: Historical Resources Found at the HMWMA 58

Management Plan Acronym Key

ADA	Americans with Disabilities Act
ARC	Acquisition and Restoration Council
BEBR	Bureau of Economic and Business Research
Board of Trustees	Board of Trustees of the Internal Improvement Trust Fund of the State of Florida
CARL	Conservation and Recreation Lands
CAS	Conservation Action Strategy
DACS	Department of Agriculture and Consumer Services
DEP	Department of Environmental Protection
DFC	Desired Future Condition
DHR	Department of State Division of Historical Resources
DRI	Development of Regional Impact
DRP	Department of Environmental Protection Division of Recreation and Parks
DSL	Department of Environmental Protection Division of State Lands
FAC	Florida Administrative Code
FAMU	Florida Agricultural and Mechanical University
FFS	Florida Forest Service
FLAM	Florida Landscape Assessment Model
FLEPPC	Florida Exotic Pest Plant Council
FNAI	Florida Natural Areas Inventory
FNST	Florida National Scenic Trail
FS	Florida Statute(s)
FWC	Florida Fish and Wildlife Conservation Commission
GIS	Geographic Information Systems
GPS	Global Positioning System
HMWMA	Half Moon Wildlife Management Area
IMPP	Internal Management Policies and Procedures
IPCC	Intergovernmental Panel on Climate Change
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
OGT	Department of Environmental Protection Office of Greenways and Trails

ORB	Optimal Resource Boundary
PASO	Public Access Services Office
SJRWMD	St Johns River Water Management District
SOR	Save Our Rivers
SWFWMD	Southwest Florida Water Management District
USDA	United States Department of Agriculture
USF	University of South of Florida
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

Located in Sumter County, Florida, the Half Moon Wildlife Management Area (HMWMA) is a 9,554-acre composite of wetlands, hammocks, flatwoods, and improved pasture. The Withlacoochee River borders the area to the west and the privately-owned Ventura Ranch borders the HMWMA on the east. Mill Creek and Gum Slough, scenic spring-fed tributaries of the Withlacoochee River, cross the area. The HMWMA's scrubby flatwoods have historically been home to a small population of threatened Florida scrub-jays. The HMWMA's array of wetlands contributes significantly to floral, faunal, and habitat diversity. Portions of the HMWMA are recharge areas for the Floridan aquifer, the source of most of Florida's drinking water. Here, limestone formations of the Upper Floridan aquifer are visible at the land surface. Excellent opportunities exist for a variety of recreational activities, including hunting, fishing, horseback riding, wildlife viewing, biking, and hiking.

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

The HMWMA is owned by the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees) of the State of Florida and the Southwest Florida Water Management District (SWFWMD). The FWC has lead management authority for all resources within the established boundary (Figures 1 and 2). The HMWMA is managed to conserve and restore natural wildlife habitat, and to provide high-quality opportunities for hunting, fishing, wildlife viewing, and other fish and wildlife-based public outdoor recreation opportunities including horseback-riding, bicycling, and hiking.

1.1 Management Plan Purpose

This Management Plan serves as the basic statement of policy and direction for the management of the HMWMA. It provides information including the past usage, conservation acquisition history, and descriptions of the natural and historical resources found on the HMWMA. Furthermore, it identifies FWC's future management intent, goals, and associated short and long-term objectives, as well as identifying challenges and solutions. This Management Plan has been developed to guide each aspect of the HMWMA 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 through the Florida Department of Environmental Protection's Division of State Lands (DSL), in compliance with paragraph seven of Lease No. 3789 (Appendix 12.1) and pursuant to Chapters 253 and 259, Florida Statutes (FS), and Chapters 18-2 and 18-4, Florida Administrative Code (FAC). Format and content were drafted in accordance with ARC requirements for management plans and the model plan outline provided by the staff of DSL. Terms (Appendix 12.2) 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 12.3). 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 HMWMA 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 HMWMA. The LMR report (Section 5.1, Appendix 12.7) provides FWC staff with important information and guidance provided by a diverse team of land management auditors and communicates the recommendations of the LMR team to the FWC so they may be adequately addressed in this Management Plan, and thus guide the implementation of the LMR team recommendations on the HMWMA.

Furthermore, FWC maintains transparency and accountability throughout the development and implementation of this Management Plan. A "living document" concept, linking this updated Management Plan to the previous one, is accomplished by reporting on the objectives, management activities, and projects accomplished over the last planning timeframe (previous ten years; see Section 4), thereby ensuring agency accountability through time.[1] Also, in an effort to remain adaptive for the duration of this Management Plan, continuous input and feedback will be collected from FWC staff, stakeholders, user groups, and other interested parties and individuals. As needed, amendments to this Management Plan will be presented to DSL and ARC for review and consideration.

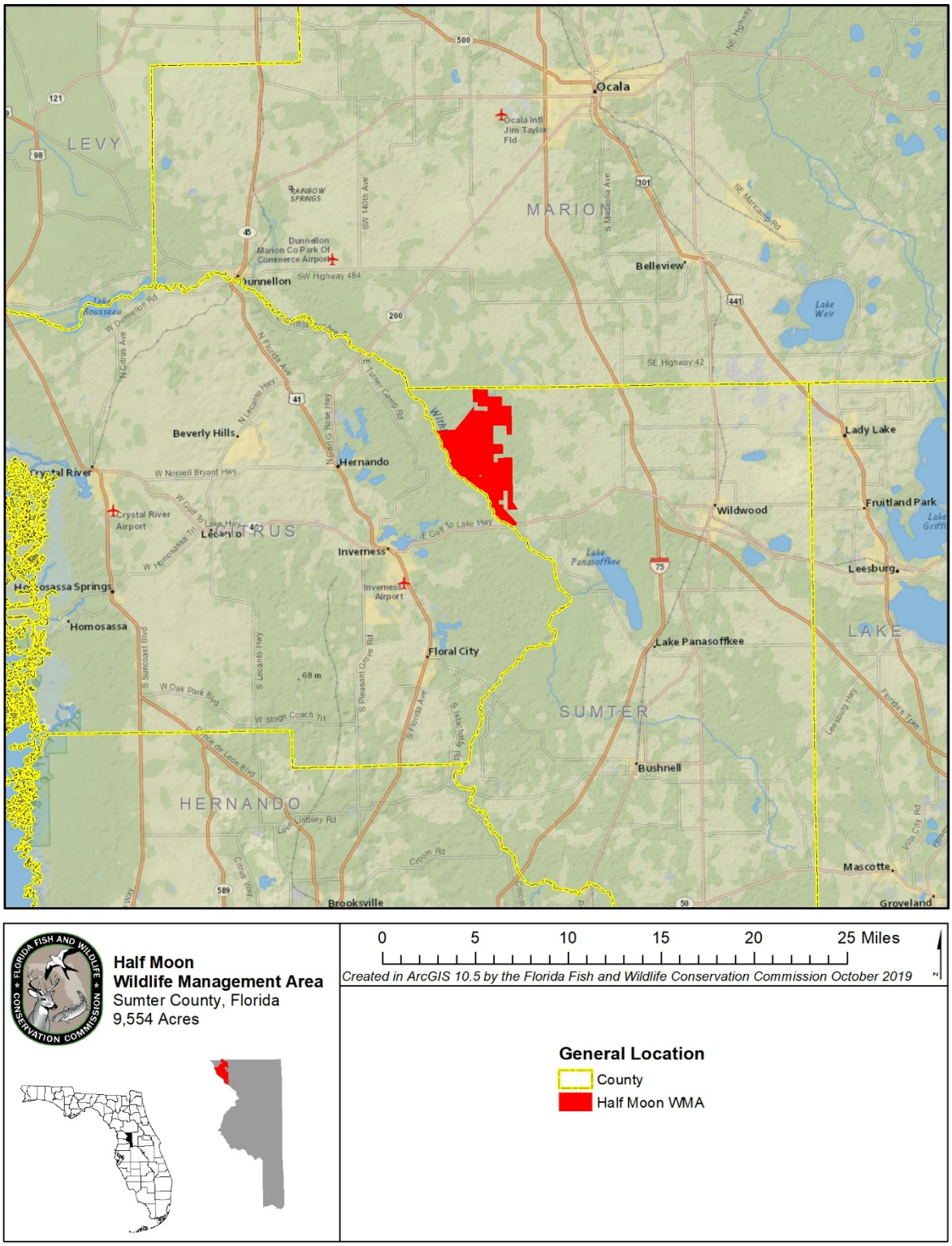


Figure 1: General Location of the HMWMA

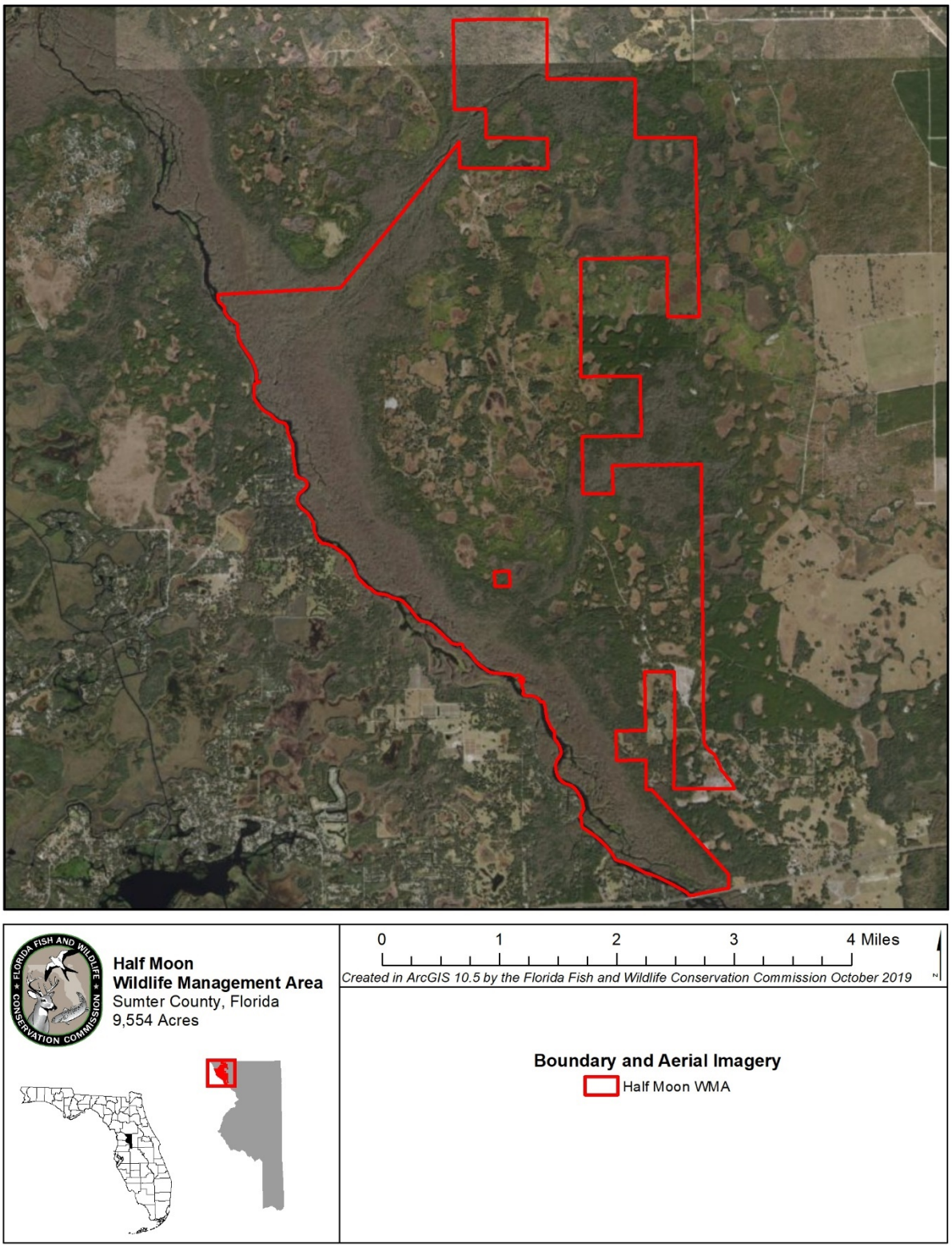


Figure 2: Boundary and Aerial Image of the HMWMA

1.2 Location

The HMWMA is located in northwest Sumter County, Florida. The HMWMA property boundary comprises multiple sections in Townships 18 and 19 South, in Ranges 20 and 21 East (Figure 3). The entrance to the HMWMA is located at the north end of CR 247, off State Road 44 between Inverness and Wildwood. It is approximately 7 miles west of I-75 and the Florida Turnpike, and 25 miles south of Ocala. The HMWMA is located approximately 6 miles east of Hernando and 10 miles northwest of Lake Panasoffkee. Other cities near the HMWMA include Oxford (11 miles east), Wildwood (11 miles east), Belleview (12 miles northeast), Inverness (8 miles west), and Floral City (9 miles southwest).

1.3 Acquisition

1.3.1 Purpose for Acquisition of the Property

The Carlton Half Moon Ranch Conservation and Recreation Lands (CARL) Program Acquisition Project was approved for acquisition under the following listed purposes established under Chapter 259.03(2) Florida Statutes:

1. For use and protection as natural flood plain, marsh, or estuary, if the protection and conservation of such lands is necessary to enhance or protect water quality or quantity or to protect fish or wildlife habitat which cannot otherwise be accomplished through local and state regulatory programs;
2. For use as state parks, recreation areas, public beaches, state forests, wilderness areas, or wildlife management areas;
3. For restoration of altered ecosystems to correct environmental damage that has already occurred; or
4. For preservation of significant archaeological or historical sites.

Specifically, the primary objectives of the acquisition were to preserve the water quality of the Withlacoochee River, Gum Slough, and their proximal tributaries; and to establish a wildlife management area. FWC has been directed 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.”

The lands within the HMWMA acquired by the SWFWMD under the Save Our Rivers (SOR) program must be managed and used as stated below:

Chapter 373.59(3) FS - Lands acquired "shall be managed and maintained in an environmentally acceptable manner and, to the extent practicable, in such a way as to restore and protect their natural state and condition."

Chapter 373.59(10) FS - Lands acquired "shall be used for general public recreational purposes. General public recreational purposes shall include, but not be limited to, fishing, hunting, horseback riding, swimming, camping, hiking, canoeing, boating, diving, birding, sailing, jogging and other related outdoor activities to the maximum extent possible considering the environmental sensitivity and suitability of those lands."

FWC's land management purpose expressed through goals and objectives of the HMWMA Management Plan are consistent with the acquisition purpose and management goals set forth under the CARL Program, SOR Program, and its successor programs, as well as the Preservation 2000 Act and the Florida Forever Act which establishes the purposes for the management of Florida's state-owned public conservation lands. The purpose, goals, and objectives for all of the lands acquired and managed as the HMWMA are more comprehensively expressed in this HMWMA Management Plan, which is reviewed and approved by the ARC, the land acquisition and management advisory council to the Board of Trustees.

1.3.2 Acquisition History

The HMWMA is owned by the citizens of the State of Florida. Title is held by the Board of Trustees and the SWFWMD.

The Carlton Half Moon Ranch project qualified for purchase by the State under the "other lands" criteria of the CARL program. On August 15, 1989, the State of Florida acquired Half Moon Ranch from W. Albert and Barbara C. Carlton.

The original 4,458-acre tract, now commonly referred to as the HMWMA, was the largest single acquisition of the 11,500-acre Carlton Half Moon Ranch CARL project. An additional 878 acres (Seven Springs / Smith Tract) were purchased in 1992, followed by the Potter property (122 acres) acquired in 1996; both were purchased under the CARL Program. In 2008 the SWFWMD purchased the Phebus tract (35 acres). Currently, the entire HMWMA encompasses 9,554 acres, which includes 4,021 acres leased from the SWFWMD which was purchased under the SOR Program.

1.4 Management Authority

The FWC is the designated lead managing agency for the HMWMA under the authority granted by Lease Number 3789 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, and of the FS. These constitutional provisions and laws provide FWC the authority to protect, conserve, and manage the State's fish and wildlife resources.

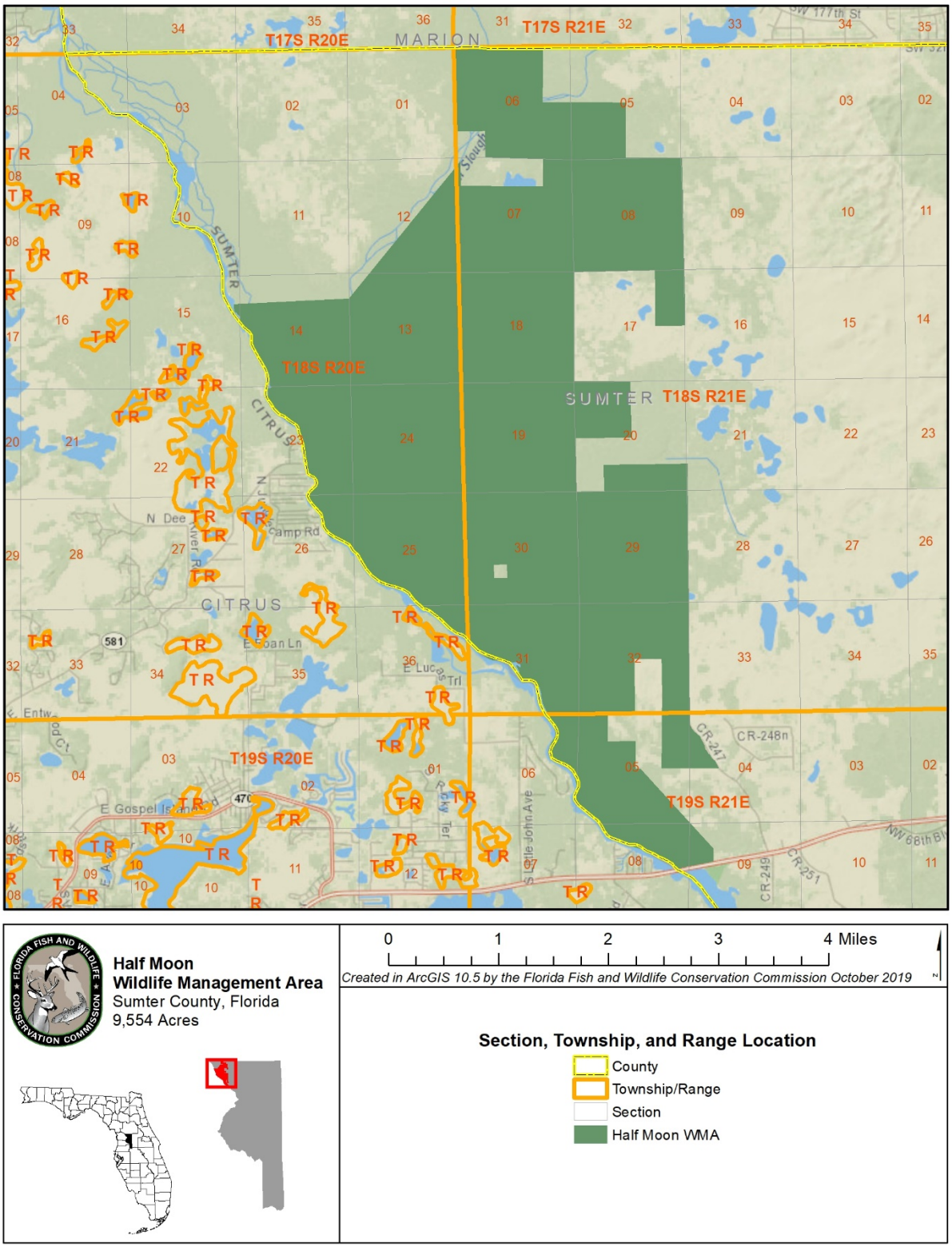


Figure 3: Section, Township, and Range Location of the HMWMA

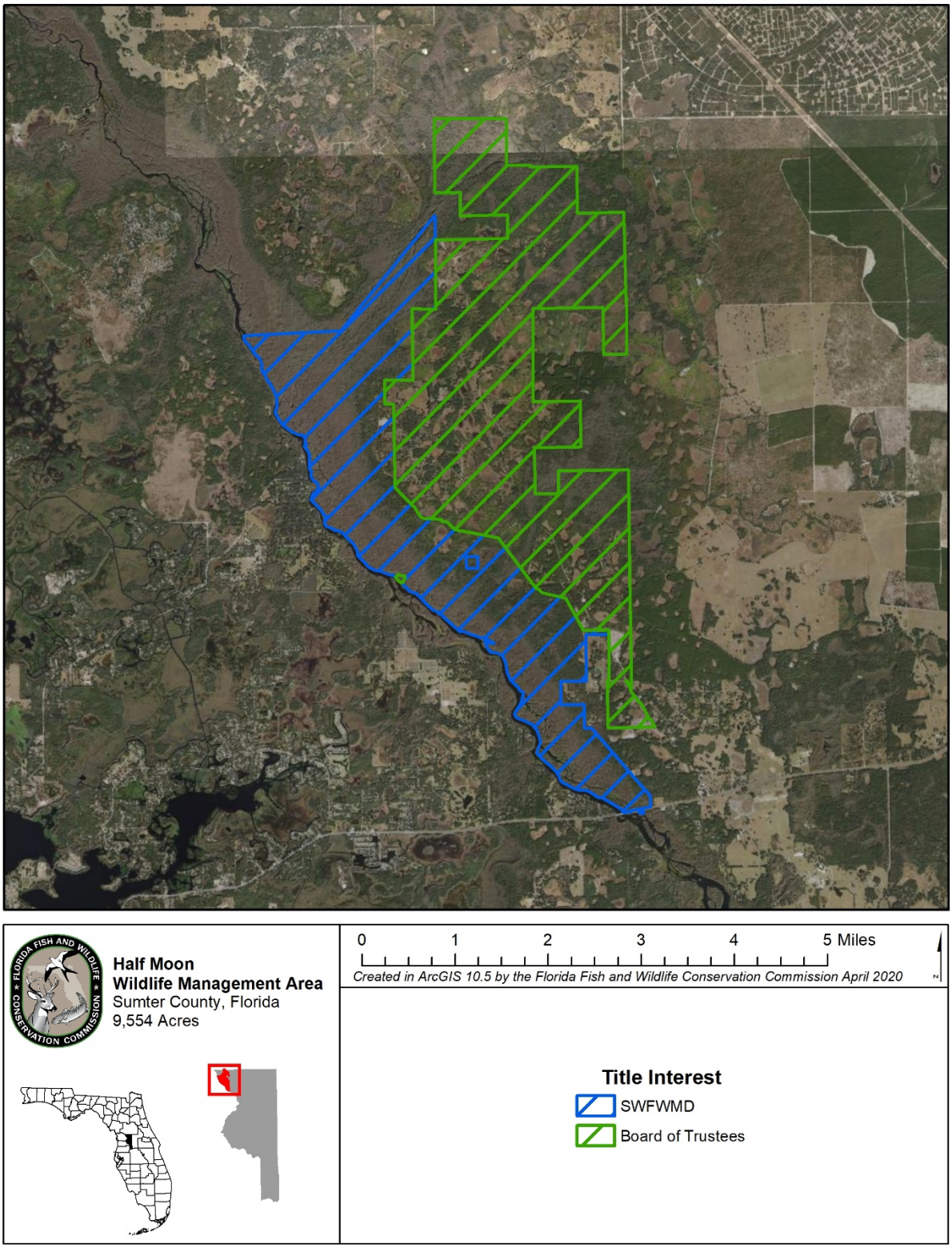


Figure 4: Half Moon WMA Title Interest

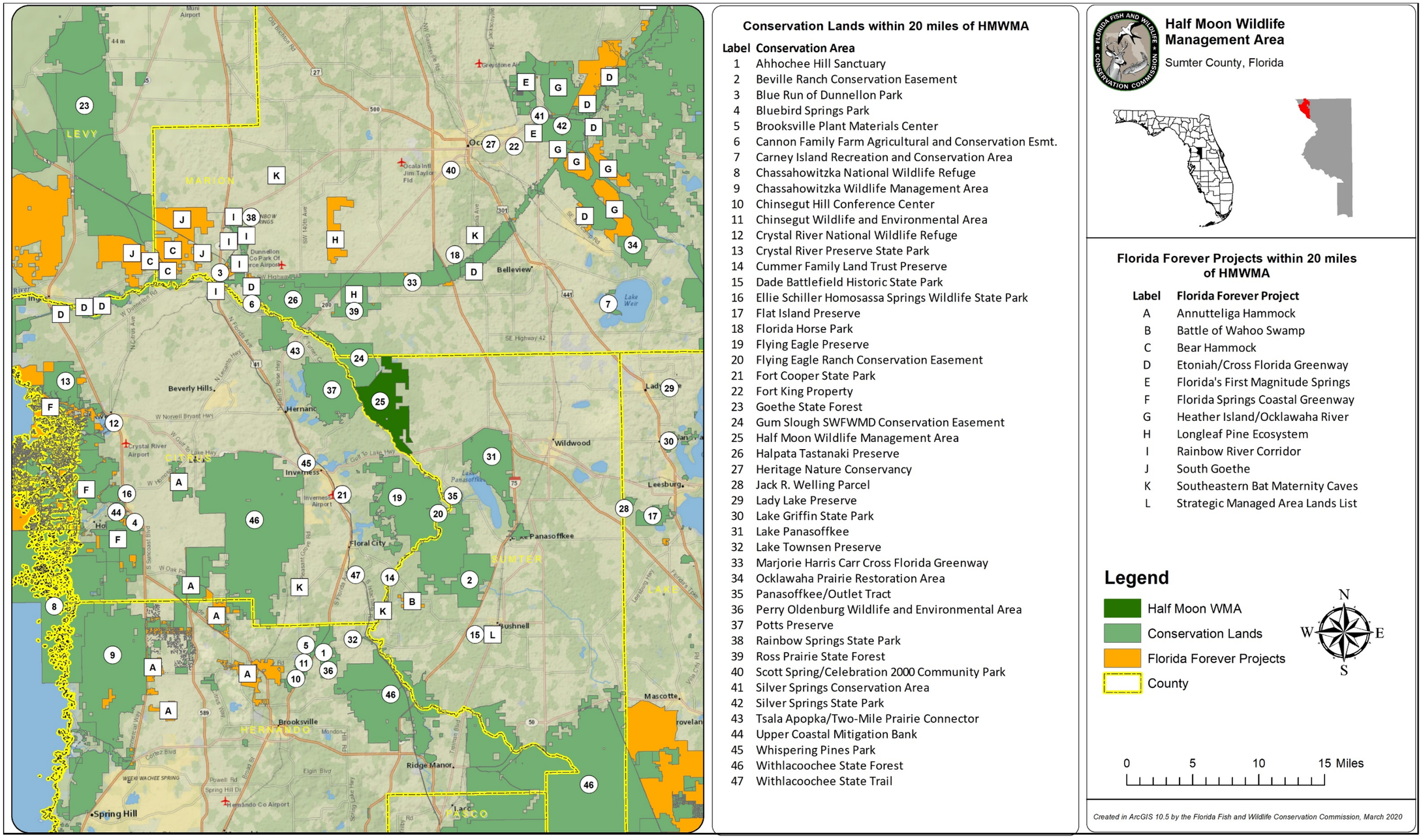


Figure 5: Nearby Conservation Lands and Florida Forever Projects

THIS PAGE INTENTIONALLY BLANK

1.5 Management Directives

The 50-year Board of Trustees' Lease Agreement Number 3789 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), FS..." 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 HMWMA is vested in the Board of Trustees (Governor and Cabinet) and the SWFWMD. In December 1989, the DSL, as staff to the Board of Trustees, entered into Lease Agreement Number 3789, a 50-year lease agreement, granting the FWC management authority for the HMWMA. Similarly, the SWFWMD-titled lands are leased to FWC for lead management responsibility. As noted above, the current established acreage of the HMWMA is 9,554 acres, with the Board of Trustees being the titleholder for 5,533 acres of land included within the HMWMA and the SWFWMD holding title to 4,021 acres (Figure 4).

In June 1997, the FWC and the DSL entered into a 50-year access easement (Easement No. 29760) with Mr. Robert Sanchez, an adjacent landowner, granting him and his family access to the Sanchez Ranch via portions of the HMWMA. Portions of the HMWMA have oil, gas, mineral and subsurface rights and interests held by M.B. Rudman and James G. Allison. A cattle-grazing contract with Tilton & Tilton LLC., is in effect until October 4, 2022.

1.7 Proximity to Other Public Conservation Lands

The HMWMA is in the vicinity of a network of conservation lands (Figure 5), including lands managed by the SWFWMD and Florida Forest Service (FFS). Conservation lands in immediate proximity to the HMWMA include Gum Slough Conservation Easement to the north, Potts Preserve to the west and Flying Eagle Ranch to the south.

The configurations, locations, and proximities of wildlife habitats among these conservation lands are important to the conservation of the many endemic and rare species within this region of Florida. Most of the proximal conservation lands 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 conservation easement retains the remaining title interests. Several Florida Forever projects are also located in the vicinity of the area.

Tables 1 and 2 list the Florida Forever projects and conservation lands within a 20-mile radius of the HMWMA including lands managed by public and private entities that conserve cultural and natural resources within this region of Florida.

Most of the conservation lands listed in Table 2 are owned in full-fee by a public entity. However, some of these areas fall within a less-than-fee ownership classification where the land is owned and being managed by a private landowner while a public agency or not-for-profit organization holds a conservation easement on the land.

Table 1: Florida Forever Projects Within 20 Miles of the HMWMA

Project Name	GIS Acres
Annutteliga Hammock	24,771
Battle of Wahoo Swamp	853
Bear Hammock	4,689
Etoniah/Cross Florida Greenway	3,598
Florida Springs Coastal Greenway	61,271
Florida's First Magnitude Springs	4,936
Heather Island/Ocklawaha River	19,952
Longleaf Pine Ecosystem	12,955
Rainbow River Corridor	1,178
South Goethe	11,706
Southeastern Bat Maternity Caves	271

Table 2: Conservation Areas Within 20 Miles of the HMWMA

Federal Government	Managing Agency*
Brooksville Plant Materials Center	USDA
Chassahowitzka National Wildlife Refuge	USFWS
Crystal River National Wildlife Refuge	USFWS

State of Florida	Managing Agency*
Cannon Family Farm Ag. and Conservation Esmt.	FFS
Chassahowitzka Wildlife Management Area	FWC
Chinsegut Hill Conference Center	University of South Florida
Chinsegut Wildlife and Environmental Area	FWC
Crystal River Preserve State Park	DEP - DRP
Dade Battlefield Historic State Park	DEP - DRP
Ellie Schiller Homosassa Springs Wildlife State Park	DEP - DRP
Fort Cooper State Park	DEP - DRP
Goethe State Forest	FFS
Lake Griffin State Park	DEP - DRP
Marjorie Harris Carr Cross Florida Greenway	DEP - OGT
Perry Oldenburg Wildlife and Environmental Area	FWC
Rainbow Springs State Park	DEP - DRP

Table 2: Conservation Areas Within 20 Miles of the HMWMA

Ross Prairie State Forest	DEP - DRP
Silver River State Park	DEP - DRP
Subtropical Agricultural Research Station	FAMU
Withlacoochee State Forest	FFS
Withlacoochee State Trail	DEP - OGT
Water Management District	**Managing Agency***
Beville Ranch Conservation Easement	SWFWMD
Flying Eagle Preserve	SWFWMD
Flying Eagle Ranch Conservation Easement	SWFWMD
Gum Slough Conservation Easement	SWFWMD
Halpata Tastanaki Preserve	SWFWMD
Jack R. Welling Parcel	SJRWMD
Lake Panasoffkee	SWFWMD
Ocklawaha Prairie Restoration Area	SJRWMD
Panasoffkee/Outlet Tract	SWFWMD
Potts Preserve	SWFWMD
Tsala Apopka/Two-Mile Prairie Connector	SWFWMD
Local Government	**Managing Agency**
Blue Run of Dunnellon Park	Marion County
Bluebird Springs Park	Citrus County
Carney Island Conservation and Recreation Area	Marion County
Flat Island Preserve	Lake County Water Authority
Fort King Property	City of Ocala
Heritage Nature Conservancy	City of Ocala
Lady Lake Preserve	Lake County
Lake Townsen Preserve	Hernando County
Scott Spring/Celebration 2000 Community Park	City of Ocala
Silver Springs Conservation Area	Marion County
Whispering Pines Park	City of Inverness
Private/Public Conservation Organization	**Managing Agency**
Ahhochee Hill Sanctuary	Florida Audubon Society, Inc.
Cummer Family Land Trust Preserve	North Florida Land Trust
Florida Horse Park	FL Ag. and Horse Park Auth.
Upper Coastal Mitigation Bank	Earth Balance

*USDA – United States Department of Agriculture; USFWS – United States Fish and Wildlife Service; DEP – Department of Environmental Protection; DRP – Division of Recreation and Parks; OGT – Office of Greenways and Trails; FAMU – Florida Agricultural and Mechanical University; SJRWMD -St. Johns River Water Management

1.8 Adjacent Land Uses

The majority of the existing landscape within and surrounding HMWMA is currently zoned for Conservation and Agriculture. This designation provides environmental protection, conservation, storm water management and limited public use for publicly owned lands. Within Sumter County's Conservation zone, public or private use or development is prohibited except when otherwise consistent with the Sumter County Comprehensive Plan.

HMWMA is located in the northwestern corner of Sumter County and is bordered to the north by Marion County and to the west by Citrus County. The Withlacoochee River forms the southwest border of HMWMA and State Road 44 acts as a narrow southern boundary. Most of the private lands east of HMWMA form Ventura Ranch. The ranch lands are zoned Agricultural, and within Sumter County's Land Development Code, a maximum density of one dwelling unit per ten acres is permitted. The remaining land to the east of HMWMA, not included within Ventura Ranch, is also zoned Agricultural.

A residential development to the southeast forms a small portion of the HMWMA border. According to Sumter County's Land Development Code, the development is within a Low Density Rural Residential with Optional Housing zone in which residences are allowed at a density of one unit per parcel in order to provide a buffer between Agricultural lands and higher density residential uses.

As noted above, the SWFWMD holds title to, and manages two conservation areas adjacent to HMWMA. Gum Slough is located within Sumter County along the northwest border of HMWMA, while Potts Preserve is located within Citrus County and forms a portion of HMWMA mid-western border. Both of these SWFWMD conservation areas are zoned for Conservation within their respective counties, indicating that development is severely limited.

The southwestern border of HMWMA to the west of the Withlacoochee River is zoned for Low Intensity Coastal and Lakes (CL). Within Citrus County, CL and Coastal and Lakes Residential (CLR) are designated as areas having environmental characteristics sensitive to development. A majority of this land is restricted to a maximum residential density of one dwelling unit per 40 acres; however, within certain upland areas of CL zones, Planned Unit Developments are permitted at a density of one dwelling unit per acre.

Large parcels of land zoned General Agriculture (A-1) comprise the northern most boundary of HMWMA. According to Marion County's Comprehensive Plan, this area is classified with the intent of preserving agriculture as the primary use and includes

provisions for a maximum density of one dwelling unit per ten acres. Marion Oaks is a Development of Regional Impact (DRI) not directly contiguous to HMWMA, but approximately 4 miles northeast of the management area. The DRI is predominately zoned for Single Family Dwellings (R-1) in order to allow for medium density residential development at a maximum of four dwelling units per acre.

The U.S. Census Bureau estimates that there were 124,935 people living in Sumter County in 2018. 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 175,100 people living in Sumter County. The BEBR population projections for the counties surrounding Sumter County for the year 2030 are as follows: Citrus County – 161,100; Hernando County – 218,300; Lake County – 394,000; Marion County – 406,200; Pasco County – 619,900; Polk County – 807,900.

1.9 Public Involvement

The FWC conducted a Management Advisory Group (MAG) meeting in Bushnell, Florida on October 30, 2019 to obtain input from both public and private stakeholders regarding management of the HMWMA. 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 12.3. Further, a public hearing, as required by Chapter 259.032(10), FS, was held in Lake Panasoffkee December 11, 2019, to solicit input and comment from the general public regarding this Management Plan. The report of that hearing is also contained in Appendix 12.3. A website is also maintained for receipt of public input at http://myfwc.com/conservation/terrestrial/management-plans/develop-mps/. Further testimony and input is received at a public hearing held by 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 Sumter County, like much of Florida, is characterized by long, warm, and relatively humid summers and mild, dry winters. In an average year, about 56 percent of the total annual precipitation falls from June through September. The other 44 percent is more or less evenly distributed throughout the rest of the year.

Most summer precipitation is from afternoon or early evening local thundershowers. From June through September, measurable rain can be expected on about 80 of the days in this period. Summer showers are sometimes heavy with 2 to 3 inches of rain falling in an hour or two. Daylong rains in summer are rare and are generally associated with a tropical

cyclone. Winter and spring rains are generally associated with large-scale continental weather developments and are of longer duration. Some last for 24 hours or longer. The long duration rains are generally not as intense as the thundershowers, but occasionally release relatively large amounts of precipitation over large areas.

During the summer months, the average day-to-day temperature is fairly uniform. Afternoon temperatures regularly reach 90 degrees Fahrenheit (F), or higher, and at night the temperatures may fall to as low as 70 degrees F.

Temperatures in winter vary considerably from day-to-day as periodic cold fronts move southward across the state. Temperatures may vary from the 70's F during midday to an early morning low in the high 30's F. Frost or freezing occurs at least once every winter, but temperatures as low as 20 degrees F are rare.

2.1.2 Topography

Straddling the north-south Tsala Apopka Plain and Western Valley physiographic provinces, the topography of HMWMA is comparatively flat. Conspicuous relief occurs only near margins of paludal depressions and crests of widely dispersed relic dunes. Land surface altitudes range from 40 to 60 feet above mean sea level and increase generally from the Tsala Apopka Plain in the west to the Western Valley in the east.

2.1.3 Soils

The U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) data were used to identify the HMWMA soil series and soil depth to water table. The map units described in the soil survey of the HMWMA are distributed as shown in Figure 6. Analyses of depth to water table for map units occurring within the HMWMA are also provided in Figure 7. The NRCS defines a soil map unit as: "a collection of soil areas or non-soil areas (miscellaneous areas) delineated in a soil survey[2]." Soil map units may contain multiple soil components, which are given names that are unique identifiers. Appendix 12.4 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 NRCS. Analysis of depth to water table for map units occurring within the HMWMA are also provided in Appendix 12.4.

At the HMWMA, Gator Muck is the predominant soil type along the Withlacoochee River, while paisley fine sand becomes the predominant soil type in the transition area between the floodplain and the upland habitats. A variety of soil types are found in the upland portions of the HMWMA, including Wabasso fine sand, Malabar fine sand, Sparr fine sand, and EauGallie fine sand.

2.1.4 Geologic Conditions

The surface sediment and near surface sediment in Sumter County consist of quartz sand, clay, peat, limestone, and dolomite[3]. These sediments range from Middle Eocene age (40 to 45 million years ago) to Holocene age (10,000 years ago to present).

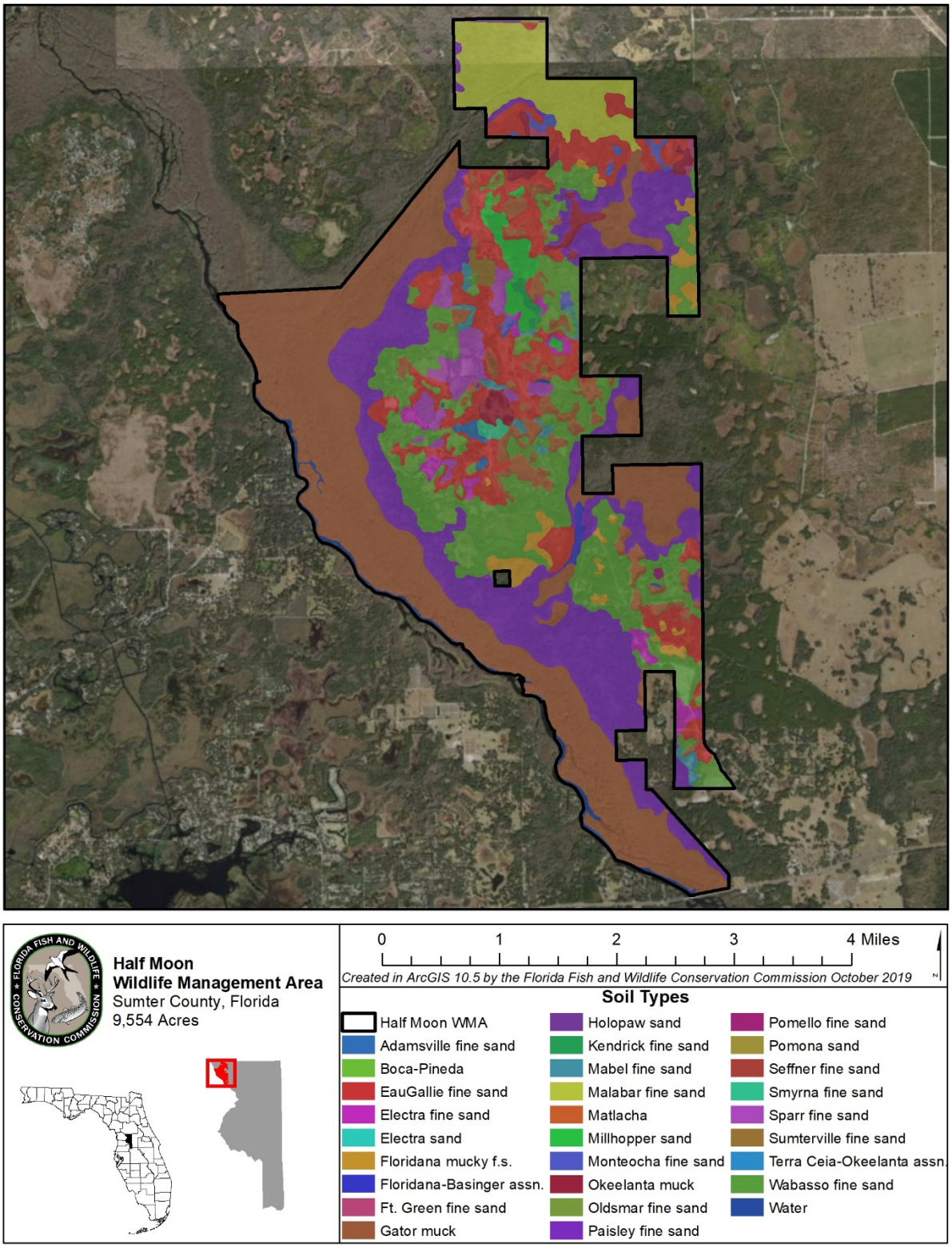


Figure 6: HMWMA Soil Types

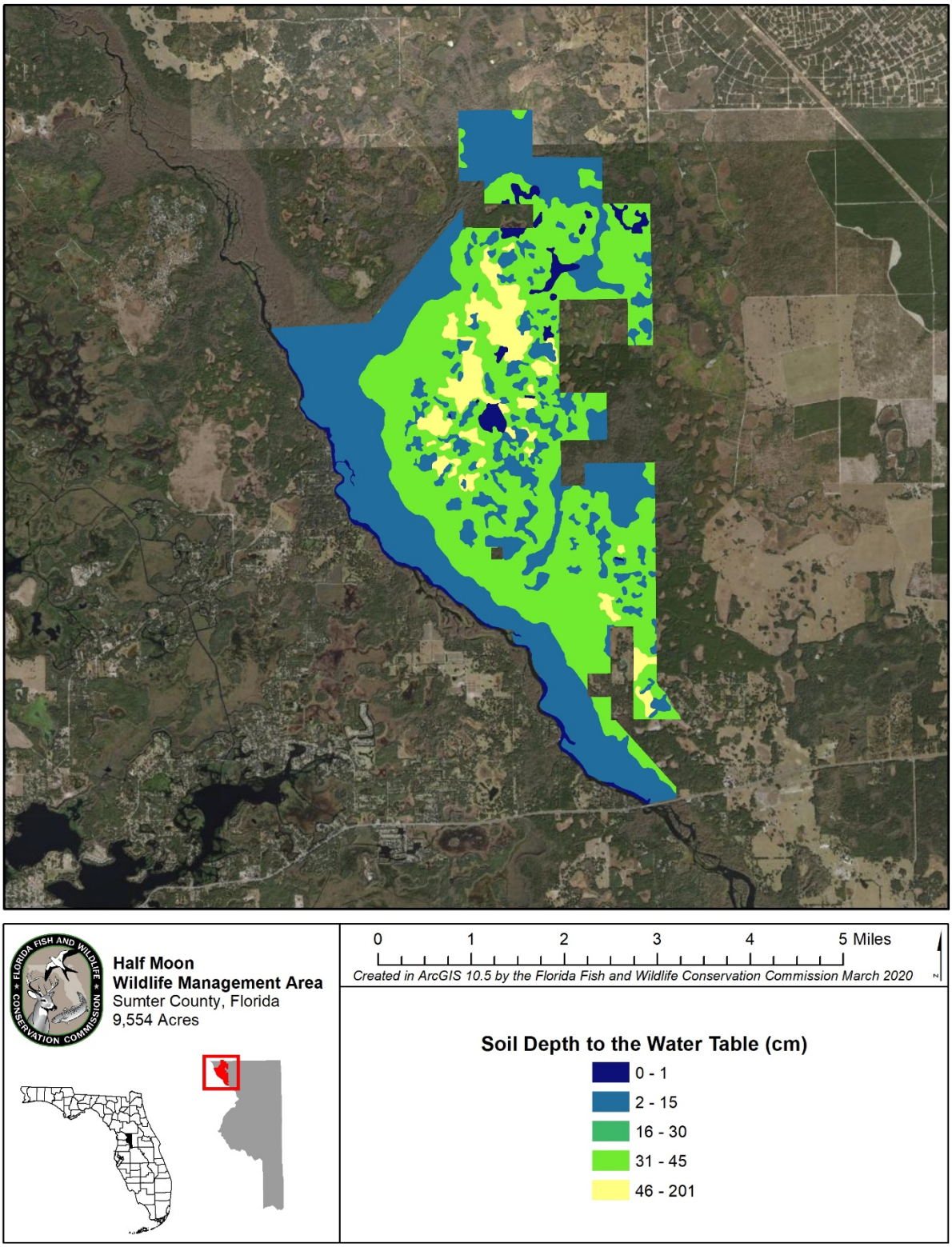


Figure 7: HMWMA Soil Depth to the Water Table

2.2 Vegetation

Due to its location along the east bank of the Withlacoochee River, the HMWMA has a unique blend of floodplain and upland habitats. The FWC has completed historic and current natural and anthropogenic community mapping of the HMWMA through the services of the Florida Natural Areas Inventory (FNAI). Through this work, FNAI has identified and mapped a total of 25 community types within the HMWMA.

The plant communities located on the HMWMA are listed in Table 3 and shown in Figure 8. Historic natural communities on the area are shown in Figure 9. These communities are described in Section 2.2.1. Native and rare plant species known to occur on the HMWMA are listed in Tables 4 and 5, respectively. Table 6 lists the exotic/invasive plant species found on the area and the Florida Exotic Pest Plant Council (FLEPPC) category for each species.

Table 3: Natural Community Types on the HMWMA

Community Type	GIS Acres	Percentage
Artificial pond	4.11	0.04%
Basin marsh	4.25	0.04%
Basin swamp	529.57	5.51%
Baygall	4.07	0.04%
Blackwater stream	177.16	1.84%
Depression marsh	1022.45	10.63%
Developed	4.08	0.04%
Dome swamp	91.29	0.95%
Floodplain forest	766.19	7.97%
Floodplain swamp	1905.73	19.82%
Hydric hammock	567.67	5.90%
Mesic flatwoods	1257.17	13.07%
Mesic hammock	1444.42	15.02%
Pasture - improved	783.91	8.15%
Pasture - semi-improved	263.82	2.74%
Pine plantation	19.77	0.21%
Restoration mesic flatwoods	121.73	1.27%
Road	118.70	1.23%
Sandhill	47.97	0.50%
Scrubby flatwoods	120.88	1.26%
Spoil area	3.22	0.03%
Spring-run stream	14.34	0.15%
Wet flatwoods	110.72	1.15%
Wildlife food plot	38.00	0.40%
Xeric hammock	195.51	2.03%

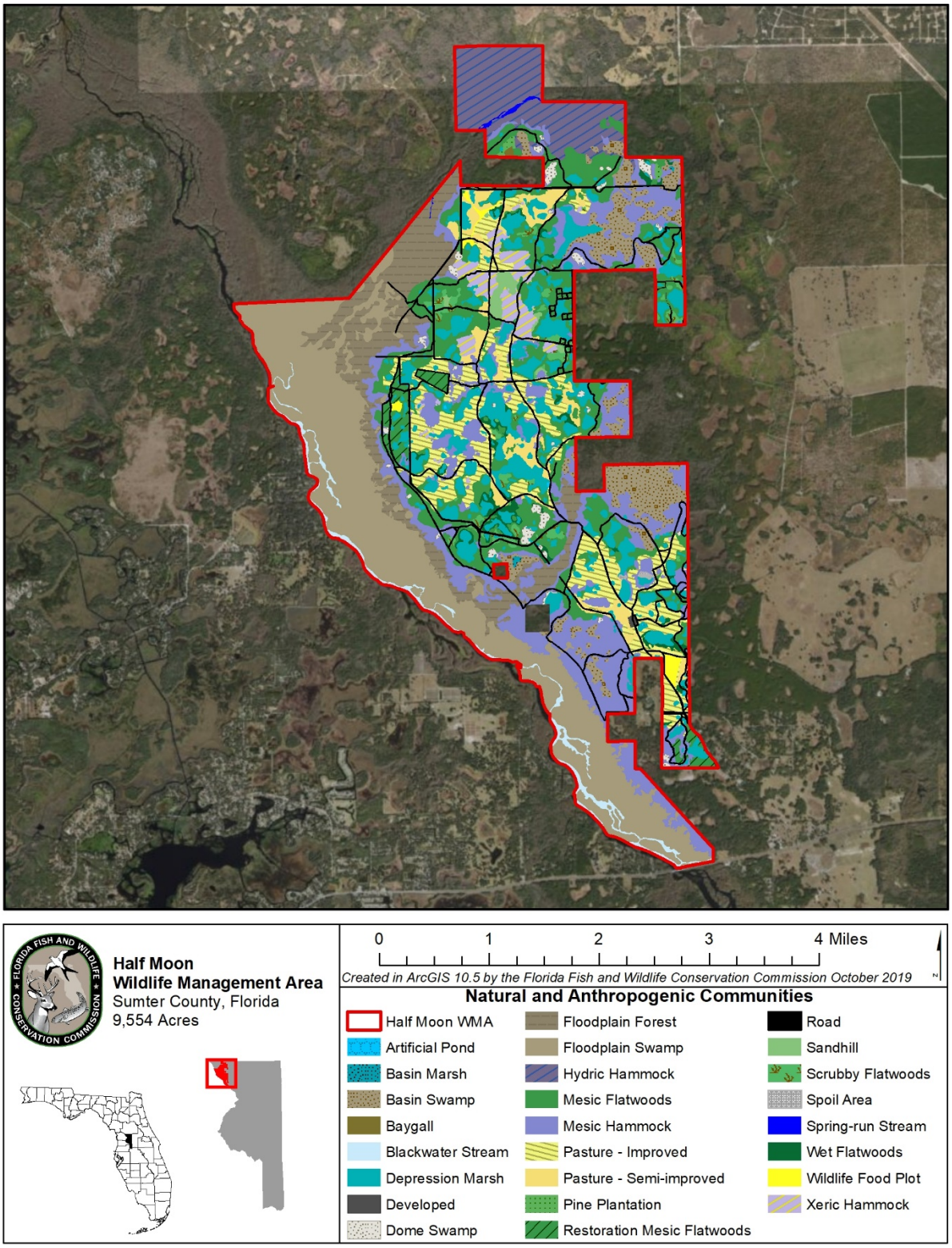


Figure 8: FNAI Natural Communities

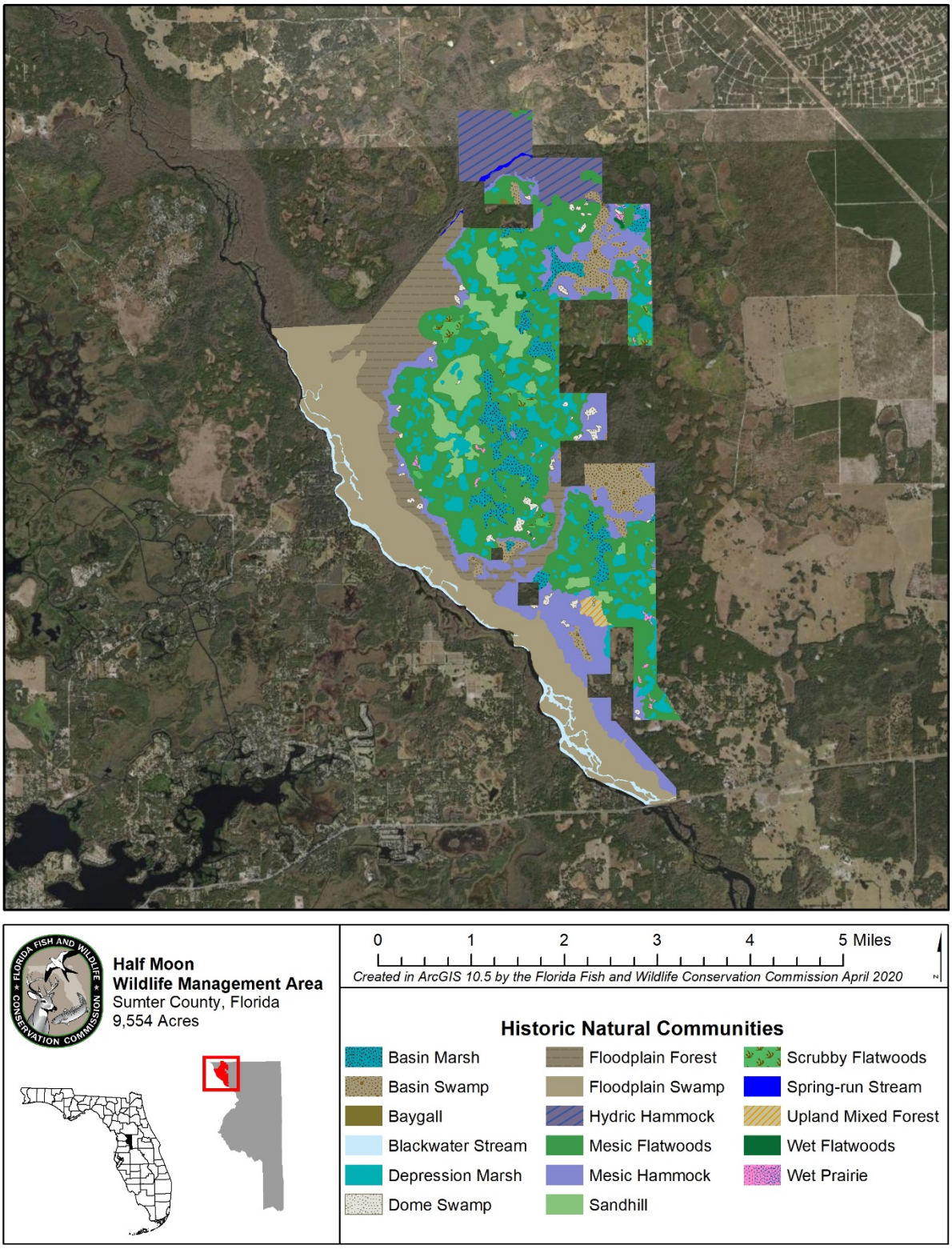


Figure 9: HMWMA Historic Natural Communities

Table 4: Native Plant Species Known to Occur on the HMWMA

Common Name	Scientific Name
Adam's needle	*Yucca filamentosa*
Alligatorflag	*Thalia geniculata*
American beautyberry	*Callicarpa americana*
American elm	*Ulmus americana*
American holly	*Ilex opaca var. opaca*
American hornbeam	*Carpinus caroliniana*
Arrowfeather threeawn	*Aristida purpurascens var. purpurascens*
Aster	*Symphyotrichum sp.*
Atlantic pigeon-wing	*Clitoria mariana*
Bald cypress	*Taxodium distichum*
Baldwin's flatsedge	*Cyperus croceus*
Baldwin's spikerush	*Eleocharis baldwinii*
Basketgrass	*Oplismenus sp.*
Beaked panicum	*Coleataenia anceps*
Beaksedge	*Rhynchospora sp.*
Bedstraw	*Galium sp.*
Big carpetgrass	*Axonopus furcatus*
Bighead rush	*Juncus megacephalus*
Blackroot	*Pterocaulon pycnostachyum*
Blazing star	*Liatris sp.*
Blue huckleberry	*Gaylussacia frondosa*
Blue maidencane	*Amphicarpum muehlenbergianum*
Blueberry	*Vaccinium sp.*
Bluejack oak	*Quercus incana*
Bluestem	*Andropogon sp.*
Bluestem palmetto	*Sabal minor*
Bog white violet	*Viola lanceolata*
Bottlebrush threeawn	*Aristida spiciformis*
Bracken fern	*Pteridium aquilinum*
Bristlegass: foxtail	*Setaria sp.*
Bristly greenbrier	*Smilax tamnoides*
Broomsedge bluestem	*Andropogon virginicus var. virginicus*
Bulltongue arrowhead	*Sagittaria lancifolia*
Bushy bluestem	*Andropogon glomeratus*
Cabbage palm	*Sabal palmetto*
Camphorweed	*Pluchea sp.*
Canada spikerush	*Eleocharis geniculata*
Canadian horseweed	*Conyza canadensis*

Table 4: Native Plant Species Known to Occur on the HMWMA

Common Name	Scientific Name
Candyroot	*Polygala nana*
Capillary hairsedge	*Bulbostylis ciliatifolia*
Carolina redroot	*Lachnanthes caroliana*
Cat greenbrier	*Smilax glauca*
Cattail	*Typha sp.*
Cedar elm	*Ulmus crassifolia*
Chaffhead	*Carphephorus sp.*
Chalky bluestem	*Andropogon virginicus var. glaucus*
Chapman's oak	*Quercus chapmanii*
Chapman's skeletongrass	*Gymnopogon chapmanianus*
Chrysogonum	*Chrysogonum sp.*
Ciliate redtop panicum	*Coleataenia longifolia*
Ciliate wild petunia	*Ruellia ciliosa*
Climbing aster	*Symphyotrichum carolinianum*
Climbing hempvine	*Mikania scandens*
Climbing hydrangea	*Hydrangea barbara*
Clustered bushmint	*Hyptis alata*
Clustered mille graines	*Edrastima uniflora*
Clusterspike false indigobush	*Amorpha herbacea var. herbacea*
Coastal lovegrass	*Eragrostis refracta*
Coastalplain chaffhead	*Carphephorus corymbosus*
Coastalplain golden-aster	*Chrysopsis scabrella*
Coastalplain hawkweed	*Hieracium megacephalon*
Coastalplain honeycomb-head	*Balduina angustifolia*
Coastalplain milkwort	*Polygala setacea*
Coastalplain palafox	*Palafoxia integrifolia*
Coastalplain staggerbush	*Lyonia fruticosa*
Coastalplain willow	*Salix caroliniana*
Combleaf mermaidweed	*Proserpinaca pectinata*
Common arrowhead	*Sagittaria latifolia*
Common blue violet	*Viola sororia*
Common buttonbush	*Cephalanthus occidentalis*
Common persimmon	*Diospyros virginiana*
Common yellow woodsorrel	*Oxalis corniculata*
Corkscrew threeawn	*Aristida gyrans*
Cottonweed	*Froelichia floridana*
Crabgrass	*Digitaria sp.*
Creeping cucumber	*Melothria pendula*

Table 4: Native Plant Species Known to Occur on the HMWMA

Common Name	Scientific Name
Creeping primrosewillow	*Ludwigia repens*
Croton	*Croton sp.*
Crowngrass	*Paspalum sp.*
Curtiss' nutrush	*Scleria ciliata*
Cypress witchgrass	*Dichanthelium ensifolium var. ensifolium*
Dahoon	*Ilex cassine var. cassine*
Darrow's blueberry	*Vaccinium darrowii*
Deerberry	*Vaccinium stamineum*
Dixie aster	*Sericocarpus tortifolius*
Dogfennel	*Eupatorium capillifolium*
Dogtongue wild buckwheat	*Eriogonum tomentosum*
Dollarleaf	*Rhynchosia reniformis*
Downy milkpea	*Galactia volubilis*
Dwarf huckleberry	*Gaylussacia dumosa*
Dwarf live oak	*Quercus minima*
Dwarf pawpaw	*Asimina pygmea*
Earleaf greenbrier	*Smilax auriculata*
Early whitetop fleabane	*Erigeron vernus*
Eastern hophornbeam	*Ostrya virginiana*
Eastern milkpea	*Galactia regularis*
Eastern poison ivy	*Toxicodendron radicans*
Eastern silver aster	*Symphyotrichum concolor*
Eggleaf witchgrass	*Dichanthelium ovale*
Egyptian paspalidium	*Paspalidium geminatum*
Elliott's blueberry	*Vaccinium elliottii*
Elliott's lovegrass	*Eragrostis elliottii*
Elliott's milkpea	*Galactia elliottii*
Elliott's yellow-eyed grass	*Xyris elliottii*
False daisy	*Eclipta prostrata*
False rein orchid	*Habenaria sp.*
Falsefennel	*Eupatorium leptophyllum*
Fascicled beaksedge	*Rhynchospora fascicularis*
Feay's palafox	*Palafoxia feayi*
Fetterbush	*Lyonia lucida*
Fingergrass	*Eustachys sp.*
Fireweed	*Erechtites hieraciifolius*
Flatsedge	*Cyperus sp.*
Flattened pipewort	*Eriocaulon compressum*

Table 4: Native Plant Species Known to Occur on the HMWMA

Common Name	Scientific Name
Flattop goldenrod	*Euthamia graminifolia*
Florida false sunflower	*Phoebanthus grandiflorus*
Florida greeneyes	*Berlandiera subacaulis*
Florida Indian-plantain	*Arnoglossum floridanum*
Flowering dogwood	*Cornus florida*
Forked bluecurls	*Trichostema dichotomum*
Fourpetal St. John's wort	*Hypericum tetrapetalum*
Fragrant eryngo	*Eryngium aromaticum*
Free-tip star-hair fern	*Thelypteris tetragona*
Fringed yellow stargrass	*Hypoxis juncea*
Frog's-bit	*Limnobium spongia*
Gallberry	*Ilex glabra*
Giant sedge	*Carex gigantea*
Glade lobelia	*Lobelia glandulosa*
Goat's rue	*Tephrosia virginiana*
Goldenrod	*Solidago sp.*
Gopher apple	*Geobalanus oblongifolius*
Grape	*Vitis sp.*
Grassleaf rush	*Juncus marginatus*
Green ash	*Fraxinus pennsylvanica*
Green silkyscale	*Anthaenantia villosa*
Greenbrier	*Smilax sp.*
Greenwhite sedge	*Carex albolutescens*
Groundcherry	*Physalis sp.*
Groundsel tree	*Baccharis halimifolia*
Hairy bedstraw	*Galium pilosum*
Hairy bluestem	*Andropogon longiberbis*
Hairy chaffhead	*Carphephorus paniculatus*
Hammock snakeroot	*Ageratina jucunda*
Handsome harry	*Rhexia virginica*
Hawkweed	*Hieracium sp.*
Heartwing dock	*Rumex hastatulus*
Helmet skullcap	*Scutellaria integrifolia*
Hemlock witchgrass	*Dichanthelium portoricense*
Hercules' club	*Zanthoxylum clava-herculis*
Highbush blueberry	*Vaccinium corymbosum*
Hoary-pea	*Tephrosia sp.*
Hog plum	*Ximenia americana*

Table 4: Native Plant Species Known to Occur on the HMWMA

Common Name	Scientific Name
Hornbeam	*Carpinus sp.*
Jamaica swamp sawgrass	*Cladium jamaicense*
Jumpseed	*Persicaria virginiana*
Knotroot foxtail	*Setaria parviflora*
Knotweed	*Polygonum sp.*
Large gallberry	*Ilex coriacea*
Laurel oak	*Quercus hemisphaerica*
Leggett's pinweed	*Lechea pulchella var. ramosissima*
Lespedeza	*Lespedeza sp.*
Licoriceweed	*Scoparia dulcis*
Little bluestem	*Schizachyrium scoparium*
Littleleaf buckbrush	*Ceanothus microphyllus*
Live oak	*Quercus virginiana*
Lizard's tail	*Saururus cernuus*
Loblolly bay	*Gordonia lasianthus*
Loblolly pine	*Pinus taeda*
Longleaf pine	*Pinus palustris*
Longleaf woodoats	*Chasmanthium sessiliflorum*
Long's sedge	*Carex longii*
Lopsided Indiangrass	*Sorghastrum secundum*
Lovegrass	*Eragrostis sp.*
Lyreleaf sage	*Salvia lyrata*
Maidencane	*Panicum hemitomon*
Maiden fern	*Thelypteris sp.*
Manyflower marshpennywort	*Hydrocotyle umbellata*
Manyspike flatssedge	*Cyperus polystachyos*
Maple	*Acer sp.*
Marsh fern	*Thelypteris palustris var. pubescens*
Marsh mermaidweed	*Proserpinaca palustris*
Marshpennywort	*Hydrocotyle sp.*
Maryland golden-aster	*Chrysopsis mariana*
Meadowbeauty	*Rhexia sp.*
Michaux's croton	*Croton michauxii*
Millet beaksedge	*Rhynchospora miliacea*
Mock bishopsweed	*Ptilimnium capillaceum*
Mohr's thoroughwort	*Eupatorium mohrii*
Morning glory	*Ipomoea sp.*
Muscadine	*Vitis rotundifolia*

Table 4: Native Plant Species Known to Occur on the HMWMA

Common Name	Scientific Name
Myrtle oak	*Quercus myrtifolia*
Narrowfruit horned beaksedge	*Rhynchospora inundata*
Narrowleaf silkgrass	*Pityopsis graminifolia*
Narrowleaf sunflower	*Helianthus angustifolius*
Needleleaf witchgrass	*Dichanthelium aciculare*
Netted chain fern	*Woodwardia areolata*
Netted nutrush	*Scleria reticularis*
Netted pawpaw	*Asimina reticulata*
Northern bayberry	*Morella caroliniensis*
Nutrush	*Scleria sp.*
Oak	*Quercus sp.*
Oblongleaf twinflower	*Dyschoriste oblongifolia*
Openflower witchgrass	*Dichanthelium laxiflorum*
Pale meadowbeauty	*Rhexia mariana*
Panic grass	*Panicum sp.*
Partridge pea	*Chamaecrista fasciculata*
Partridgeberry	*Mitchella repens*
Pawpaw	*Asimina sp.*
Peelbark St. John's wort	*Hypericum fasciculatum*
Pellitory	*Parietaria sp.*
Peppervine	*Nekemias arborea*
Pickerelweed	*Pontederia cordata*
Piedmont marshelder	*Iva microcephala*
Piedmont pinweed	*Lechea torreyi*
Pignut hickory	*Carya glabra*
Pinebarren flatsedge	*Cyperus ovatus*
Pinebarren frostweed	*Crocanthemum corymbosum*
Pinebarren goldenrod	*Solidago fistulosa*
Pineland daisy	*Chaptalia tomentosa*
Pineland pinweed	*Lechea sessiliflora*
Pinewoods fingergrass	*Eustachys petraea*
Pinweed	*Lechea sp.*
Plumed beaksedge	*Rhynchospora plumosa*
Pond cypress	*Taxodium ascendens*
Pond pine	*Pinus serotina*
Poor joe	*Diodia teres*
Prairie clover	*Dalea sp.*
Prairie iris	*Iris hexagona*

Table 4: Native Plant Species Known to Occur on the HMWMA

Common Name	Scientific Name
Pricklypear	*Opuntia humifusa*
Primrosewillow	*Ludwigia sp.*
Purple bluestem	*Andropogon glomeratus var. glaucopsis*
Purple lovegrass	*Eragrostis spectabilis*
Purple passion-flower	*Passiflora incarnata*
Purple thistle	*Cirsium horridulum*
Queen's delight	*Stillingia sylvatica*
Rabbitbells	*Crotalaria rotundifolia*
Red bay	*Persea borbonia*
Red cedar	*Juniperus virginiana*
Red chokeberry	*Aronia arbutifolia*
Red maple	*Acer rubrum*
Rice button aster	*Symphyotrichum dumosum*
Rosemallow	*Hibiscus sp.*
Rosy camphorweed	*Pluchea baccharis*
Rough hedgehyssop	*Sophronanthe hispida*
Roundleaf bluet	*Houstonia procumbens*
Roundleaf thoroughwort	*Eupatorium rotundifolium*
Roundpod St. John's wort	*Hypericum cistifolium*
Runner oak	*Quercus pumila*
Rush	*Juncus sp.*
Rustweed	*Polypremum procumbens*
Rusty staggerbush	*Lyonia ferruginea*
Sand blackberry	*Rubus cuneifolius*
Sand cordgrass	*Spartina bakeri*
Sand holly	*Ilex ambigua*
Sand live oak	*Quercus geminata*
Sand post oak	*Quercus margarettae*
Sandyfield hairsedge	*Bulbostylis stenophylla*
Sarsaparilla vine	*Smilax pumila*
Savannah panicum	*Phanopyrum gymnocarpon*
Savannah primrosewillow	*Ludwigia virgata*
Savannah yellow-eyed grass	*Xyris flabelliformis*
Saw greenbrier	*Smilax bona-nox*
Saw palmetto	*Serenoa repens*
Sawtooth blackberry	*Rubus pensilvanicus*
Scaleleaf aster	*Symphyotrichum adnatum*
Scurf hoary-pea	*Tephrosia chrysophylla*

Table 4: Native Plant Species Known to Occur on the HMWMA

Common Name	Scientific Name
Seaside goldenrod	*Solidago sempervirens*
Seaside primrosewillow	*Ludwigia maritima*
Sedge	*Carex sp.*
Sensitive pea	*Chamaecrista sp.*
Sensitive pea	*Chamaecrista nictitans*
Sensitive plant	*Mimosa sp.*
Shiny blueberry	*Vaccinium myrsinites*
Shiny woodoats	*Chasmanthium nitidum*
Shortleaf gayfeather	*Liatris tenuifolia*
Shortleaf yellow-eyed grass	*Xyris brevifolia*
Shortspike bluestem	*Andropogon brachystachyus*
Silkbay	*Persea borbonia var. humilis*
Silver croton	*Croton argyranthemus*
Skeletongrass	*Gymnopogon sp.*
Skullcap	*Scutellaria sp.*
Slash pine	*Pinus elliottii*
Slender crabgrass	*Digitaria filiformis var. filiformis*
Slender fimbry	*Fimbristylis autumnalis*
Slender flattop goldenrod	*Euthamia caroliniana*
Slender gayfeather	*Liatris gracilis*
Slender threeseed mercury	*Acalypha gracilens*
Slender woodoats	*Chasmanthium laxum*
Slimleaf pawpaw	*Asimina angustifolia*
Smallflower mock buckthorn	*Sageretia minutiflora*
Smallflower pawpaw	*Asimina parviflora*
Snoutbean	*Rhynchosia sp.*
Soft rush	*Juncus effusus ssp. solutus*
Southern bogbutton	*Lachnocaulon beyrichianum*
Southern crabgrass	*Digitaria ciliaris*
Southern dewberry	*Rubus trivialis*
Southern magnolia	*Magnolia grandiflora*
Southern umbrellasedge	*Fuirena scirpoidea*
Southern wood fern	*Dryopteris ludoviciana*
Spadeleaf	*Centella asiatica*
Sparkleberry	*Vaccinium arboreum*
Spikerush	*Eleocharis sp.*
Splitbeard bluestem	*Andropogon ternarius*
Spotted beebalm	*Monarda punctata*

Table 4: Native Plant Species Known to Occur on the HMWMA

Common Name	Scientific Name
Spotted water hemlock	*Cicuta maculata*
Spurred butterfly pea	*Centrosema virginianum*
St. andrew's cross	*Hypericum hypericoides*
St. John's wort	*Hypericum sp.*
Staggerbush	*Lyonia sp.*
Stiff sunflower	*Helianthus radula*
Sugarberry	*Celtis laevigata*
Sugarcane plumegrass	*Saccharum giganteum*
Swamp bay	*Persea palustris*
Swamp dock	*Rumex verticillatus*
Swamp laurel oak	*Quercus laurifolia*
Swamp smartweed	*Persicaria hydropiperoides*
Swamp tupelo	*Nyssa sylvatica var. biflora*
Sweet everlasting	*Pseudognaphalium obtusifolium*
Sweet goldenrod	*Solidago odora*
Sweetbay	*Magnolia virginiana*
Sweetgum	*Liquidambar styraciflua*
Switchgrass	*Panicum virgatum*
Tall elephantsfoot	*Elephantopus elatus*
Tall ironweed	*Vernonia angustifolia*
Tarflower	*Bejaria racemosa*
Tenangle pipewort	*Eriocaulon decangulare*
Thin paspalum	*Paspalum setaceum*
Thoroughwort	*Eupatorium sp.*
Threeawn	*Aristida sp.*
Thymeleaf pinweed	*Lechea minor*
Tick-trefoil	*Desmodium sp.*
Tough bully	*Sideroxylon tenax*
Tread-softly	*Cnidoscolus stimulosus*
Tropical resurrection fern	*Pleopeltis polypodioides*
Trumpet creeper	*Campsis radicans*
Turkey oak	*Quercus laevis*
Twistedleaf goldenrod	*Solidago tortifolia*
Vanillaleaf	*Carphephorus odoratissimus*
Violet	*Viola sp.*
Virginia buttonweed	*Diodia virginiana*
Virginia chain fern	*Woodwardia virginica*
Virginia creeper	*Parthenocissus quinquefolia*

Table 4: Native Plant Species Known to Occur on the HMWMA

Common Name	Scientific Name
Virginia snakeroot	*Aristolochia serpentaria*
Virginia willow	*Itea virginica*
Viviparous spikerush	*Eleocharis vivipara*
Walter's viburnum	*Viburnum obovatum*
Wand goldenrod	*Solidago stricta*
Warty panicgrass	*Kellochloa verrucosa*
Water hickory	*Carya aquatica*
Water oak	*Quercus nigra*
Wavyleaf noseburn	*Tragia urens*
Wax myrtle	*Morella cerifera*
Whip nutrush	*Scleria triglomerata*
White ash	*Fraxinus americana*
White crownbeard	*Verbesina virginica*
White thoroughwort	*Eupatorium album*
White waterlily	*Nymphaea odorata*
Whitehead bogbutton	*Lachnocaulon anceps*
Whitetassels	*Dalea carnea var. carnea*
Whorled marshpennywort	*Hydrocotyle verticillata*
Wild coffee	*Psychotria nervosa*
Wild lime	*Zanthoxylum fagara*
Wild petunia	*Ruellia sp.*
Willow	*Salix sp.*
Winged elm	*Ulmus alata*
Winged sumac	*Rhus copallinum*
Wiregrass	*Aristida stricta*
Wiry flatsedge	*Cyperus filiculmis*
Witchgrass	*Dichanthelium sp.*
Wood fern	*Dryopteris sp.*
Wood sage	*Teucrium canadense*
Woodoats	*Chasmanthium sp.*
Woodsgrass	*Oplismenus hirtellus*
Woodsorrel	*Oxalis sp.*
Yankeeweed	*Eupatorium compositifolium*
Yaupon	*Ilex vomitoria*
Yellow hatpins	*Syngonanthus flavidulus*
Yellow Indiangrass	*Sorghastrum nutans*
Yellow jessamine	*Gelsemium sempervirens*
Yellow-eyed grass	*Xyris sp.*

Table 5: Imperiled Plant Species Observed at the HMWMA

Common name	Scientific name	Status*
Angle pod	*Matelea gonocarpos*	ST
Blue-flowered butterwort	*Pinguicula caerulea*	ST
Cardinal flower	*Lobelia cardinalis*	ST
Cinnamon fern	*Osmunda cinnamomea*	CE
Giant wild-pine	*Tillandsia utriculata*	SE
Gypsy-spikes	*Platanthera flava*	ST
Needle palm	*Rhapidophyllum hystrix*	CE
Non-crested eulophia	*Eulophia ecristata*	ST
Peperomia	*Peperomia humilis*	SE
Plume polypody	*Polypodium plumula*	SE
Royal fern	*Osmunda regalis*	CE
Swamp plume polypody	*Polypodium ptilodon*	SE
Yellow-flowered butterwort	*Pinguicula lutea*	ST

*ST = State Threatened, SE = State Endangered, CE = Commercially Exploited

Table 6: Exotic and Invasive Plant Species Observed at the HMWMA

Common name	Scientific name	FLEPPC Category
Bahiagrass	*Paspalum notatum*	-
Bermudagrass	*Cynodon dactylon*	-
Black medick	*Medicago lupulina*	-
Black spikerush	*Eleocharis nigrescens*	-
Caesar's weed	*Urena lobata*	I
Camphor tree	*Cinnamomum camphora*	I
Chamber bitter	*Phyllanthus urinaria*	-
Chinaberry	*Melia azedarach*	II
Chinese brake fern	*Pteris vittata*	II
Chinese tallow, Popcorn tree	*Triadica sebifera*	I
Cogongrass	*Imperata cylindrica*	I
Guava	*Psidium guajava*	I
Hairy indigo	*Indigofera hirsuta*	-
Japanese climbing fern	*Lygodium japonicum*	I
Long brake	*Pteris grandifolia*	-
Nakedstem dewflower	*Murdannia nudiflora*	-
Shortleaf spikesedge	*Cyperus brevifolius*	-
Skunk vine	*Paederia foetida*	I
Threeflower tick-trefoil	*Desmodium triflorum*	-
Torpedo grass	*Panicum repens*	I

Table 6: Exotic and Invasive Plant Species Observed at the HMWMA

Common name	Scientific name	FLEPPC Category
Tropical mexican clover	*Richardia brasiliensis*	-
Tropical soda apple	*Solanum viarum*	I
Watergrass	*Bulbostylis barbata*	-
Water-lettuce	*Pistia stratiotes*	I

2.2.1 FNAI Community Descriptions

2.2.1.1 Basin Marsh (4.3 acres)

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

At the HMWMA, numerous examples of this community are dispersed over the entire area. Characteristic vegetation is maidencane, lance-leaved arrowhead, pickerelweed, and occasionally sawgrass. Deeper areas with open water frequently have white waterlily. Other dominant graminoids include blue maidencane, bushy bluestem, sedges, beaksedge, spikerush, sand cordgrass, big carpetgrass, and soft rush. Other herbaceous species are yellow-eyed grasses, spadeleaf, and whorled pennywort. Shrubs such as wax myrtle, buttonbush, and Carolina willow and trees like pond cypress and swamp tupelo are occasionally interspersed.

2.2.1.2 Basin Swamp (529.6 acres)

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

The open to moderately dense canopy of basin swamp at the HMWMA is dominated by pond cypress, red maple, swamp tupelo, laurel oak, green ash, American elm, and sweet bay. Cabbage palm may be present as trees and saplings. The shrub cover is sparse and dominated by buttonbush, fetterbush, and wax myrtle. Herbaceous cover generally includes sawgrass, maidencane, savannah panicum, sedges, beaksedge, pickerelweed, lizard-tail, Virginia chain fern, swamp fern, and pennywort. Bartram's airplant, an

epiphyte, is frequently in the trees. The HMWMA's basin swamps are located in the northeast corner at Gum Slough and on the east edge at the headwaters of Mill Creek. Both of these high-quality swamps are similar in species composition but vary locally by the amount of pond cypress present. Old cypress stumps are evident in some locations.

2.2.1.3 Baygall (4.1 acres)

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

One area of baygall can be found in the northwest portion of the HMWMA. The canopy has abundant young loblolly bay, a few sweetbay and slash pine, plus occasional emergent pond cypress. Red maple and dahoon are in the subcanopy. The tall shrub stratum is a thicket of fetterbush. The herbaceous groundcover includes Virginia chain fern and sphagnum moss.

2.2.1.4 Blackwater Stream (177.2 acres)

Blackwater stream is a riparian feature with flowing, tannin-stained waters derived from drainage through the swamps and marshes. At the HMWMA, blackwater stream is delineated in the stretch of the Withlacoochee River along the western boundary.

2.2.1.5 Depression Marsh (1,022.4 acres)

Depression marsh, an herbaceous wetland community found in low flatlands, forms the characteristic pockmarked landscape seen on aerial photographs of the flat landscapes of the Florida peninsula. Depression marsh is usually characterized as a shallow, rounded depression in sand substrate with herbaceous vegetation and shrubs, often in concentric bands. These marshes also frequently form an outer rim around swamp communities such as dome swamps. They form when the overlying sands slump into depressions dissolved in underlying limestone. Depression marshes often burn with the surrounding landscape and are seasonally inundated.

Depression marshes typically occur in landscapes occupied by fire-maintained natural communities such as mesic flatwoods, dry prairie, or sandhill.

At the HMWMA, the outer shallow zone of depression marshes is usually composed of bushy bluestem, blue maidencane, yellow-eyed grass, beaksedges, and yellow hatpins. The inner zone consists mainly of maidencane, with varying amounts of lance-leaved arrowhead, and pickerelweed. In some marshes, white water lily or sawgrass occupy the deeper zones. A canopy is generally absent but may include an occasional slash pine or swamp tupelo. The shrub layer is typically sparse but may reach high coverage depending on fire return intervals. Buttonbush and wax myrtle are the most common shrubs. Many marshes are nearly encircled by wax myrtle. At the HMWMA, numerous depression marshes range in size from approximately one-quarter to 20 acres. The marshes regularly go dry during times of drought, with water persisting only in the deepest holes. Some of the marshes are large and irregularly shaped, resulting from two or more marshes merging together. Human impacts to wetlands are apparent throughout the area. Over 2 miles of ditches were excavated to facilitate drainage of larger systems. Portions of at least 15 marshes were excavated to provide permanent water for cattle and almost all wetlands have been grazed.

2.2.1.6 Dome Swamp (91.3 acres)

Dome swamp is an isolated, forested, depression wetland occurring within a fire-maintained community such as mesic flatwoods. These swamps are generally small but may also be large and shallow. The characteristic dome shape is created by smaller trees that grow in the shallower waters of the outer edge, while taller trees grow in the deeper water in the interior of the swamp. Dome swamps are most often found on flat terraces, where they develop when the overlying sand has slumped into a depression in the underlying limestone, creating a rounded depression connected to a shallow water table. In uplands with clay soils, dome swamps may occupy depressions over a perched water table. Soils in dome swamps are variable but are most often composed of a layer of peat, which may be thin or absent at the periphery, becoming thicker toward the center of the dome.

At the HMWMA, the closed canopy of dome swamp consists of pond cypress, swamp tupelo, red maple, sweetgum, green ash, and sweetbay. The subcanopy usually consists of young trees of the canopy species, dahoon, and swamp bay. The shrub layer may be sparse or dense and usually consists of fetterbush and wax myrtle. The trees and shrubs often occur on hummocks with bare mucky soil between them. The herbaceous layer varies from sparse to dense and may have lizard-tail, Virginia chain fern, swamp fern, savannah panicum, sawgrass, and sedges. The branches of pond cypress often support large numbers of Bartram's airplant. Some of the dome swamps at the HMWMA have few or no cypress trees. Instead, they resemble the nearby basin swamps with a mixture of hardwood species such as green ash, red maple, sweetgum, and swamp tupelo.

2.2.1.7 Floodplain Forest (766.2 acres)

Floodplain forest, also referred to as alluvial forest, is a hardwood forest found in river floodplains on low levees, ridges and terraces that are slightly elevated above floodplain swamp and are regularly flooded for a portion of the growing season. These habitats are greatly influenced by a fluctuating riverbed which is both eroding and depositing substrates. Floodplain forest occupies low levees along channels, expansive flats located behind levees, low ridges alternating with swamps, and successional point bars. It is usually intermixed with lower areas of floodplain swamp and higher areas of bottomland forest, baygall, or upland hardwood forest. This forest develops along tertiary or higher order streams where deposition of alluvium becomes a significant factor in floodplain development (rather than simply erosional forces). Soils are variable mixtures of sand and alluvial sediments that have been deposited by the current drainage system and are often distinctly layered. Floodplain forest occupies an elevation within the broader floodplain that is inundated seasonally from riverbank overflow for one to four months of the year during the growing season.

On the HMWMA, floodplain forest occurs in relatively narrow strips between the floodplain swamp and higher mesic hammock. The canopy frequently has many large trees dominated by live oak and laurel oak. American hornbeam is the main subcanopy tree and abundant blue palm is the prevalent shrub. Herbaceous cover often is dominated by slender woodoats. The FNAI-tracked species, plume polypody, was observed infrequently as an epiphyte on live oak. The state-listed species, angle pod, an unusual herbaceous vine, is present. At the HMWMA floodplain forest is found along the eastern edge of the Withlacoochee River floodplain at the west side of the site and along Gum Slough and Mill Creek. Almost all forested wetlands on the HMWMA were logged in the early 20th century.

2.2.1.8 Floodplain Swamp (1,905.7 acres)

Floodplain swamp is located within floodplains of any permanently moving stream or river. It ranges from narrow strips of cypress along primary and secondary streams to expansive stands along large rivers to tidally influenced freshwater swamps near river mouths. Often, floodplain swamps immediately border the stream or river channel. In many cases, however, floodplain swamps are isolated from the main channel by riverbank levees and restricted to oxbows, overflow channels, old stream beds, and expansive flats commonly called backswamps. Soils are variable mixtures of alluvial and organic materials, sometimes with layers of sand in the subsoil. Inundation is seasonal and usually prolonged, restricting the growth of most shrubs and herbs and leaving most of the ground surface open or thinly mantled with leaf litter.

At the HMWMA, the canopy of floodplain swamp is dominated by green ash, bald cypress, swamp tupelo, and red maple. Old bald cypress stumps are regularly encountered. Less common canopy species include sweetbay, sweetgum, and laurel oak. Subcanopy trees include young trees of the canopy species, particularly green ash and red maple, and American elm. The sparse shrub layer is characterized by buttonbush and sapling cabbage palm. Herbs are generally sparse, and may include millet beaksedge, lizard-tail, and iris.

2.2.1.9 Hydric Hammock (567.7 acres)

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

At the HMWMA, hydric hammock is extensive along Gum Slough and sections of the Withlacoochee River floodplain. The diverse, closed canopy consists of laurel oak, sweetbay, red maple, cabbage palm, and sweetgum, plus occasional bald cypress. The subcanopy is usually dominated by cabbage palm, American hornbeam, swamp bay, dahoon, and American elm. The sparse tall shrub layer consists of sapling cabbage palms and wax myrtle. Seedling cabbage palm and blue palm often dominate the short shrub layer. Composition of the herbaceous layer is also variable, with shiny woodoats, millet beaksedge, and southern wood fern dominating. Two FNAI-tracked species, comb polypody and plume polypody, were observed in hydric hammocks on the HMWMA.

2.2.1.10 Mesic Flatwoods (1,257.2 acres)

Mesic flatwoods is the most widespread natural community in Florida, covering the flat sandy terraces left behind by former high sea levels. Mesic flatwoods is characterized by an open canopy of tall pines and a dense, low ground layer of shrubs, grasses, and forbs. Longleaf pine is the principal canopy tree in northern and Central Florida, transitioning to predominately slash pine in south Florida. Soils are acidic, nutrient-poor, fine sands with upper layers darkened by organic matter. Drainage in this flat terrain can be impeded by a loosely cemented organic layer (spodic horizon) formed within several feet of the soil surface. The soils may be alternately xeric during dry periods, and saturated or even inundated after heavy rain events.

The HMWMA flatwoods generally have a canopy of longleaf pine and/or pond pine, a sparse to dense subcanopy of water oak, live oak, and sweetgum, and a dense shrub layer primarily of saw palmetto. Lower densities of gallberry, shiny blueberry, coastalplain staggerbush, and wax myrtle also occur in the shrub strata. The herbaceous groundcover varies from diverse to sparse depending on fire frequency. Wiry graminoids dominate, with occasional bracken fern.

2.2.1.11 Mesic Hammock (1,444.4 acres)

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

At the HMWMA, this widespread and often high-quality natural community is commonly found along the perimeter of the basin and dome swamps and between mesic flatwoods and hydric hammock near the Withlacoochee River. It has a closed canopy of live oak, along with various mixtures of pignut hickory, sweetgum, sand laurel oak, laurel oak, and southern magnolia. Areas with limestone near the soil surface often have sugarberry and red cedar. Cabbage palm is typically found in all strata, often dominating the subcanopy with American hornbeam. The usually open tall shrub layer varies from one location to another but may include cabbage palm, wax myrtle, sparkleberry, and pawpaw. The short shrub stratum may have abundant to sparse saw palmetto, cabbage palm saplings, blue palm, and yaupon. The herbaceous layer may include slender woodoats, tall nutgrass, woodsgrass, and bracken fern. Areas with limestone close to the surface have an unusual variety of plant species such as free-tip star-hair fern and soapberry. Good examples of this natural community are found along Cedar Hammock Road and at the north end of Welch Road. One unique island at the north end in the Gum Slough swamp had abundant wild coffee growing as a low shrub groundcover about one foot tall. Two FNAI-tracked plant species, plume polypody fern and terrestrial peperomia, were found in mesic hammocks on the HMWMA. Angle pod, listed by the state as threatened, also occurs in this community.

2.2.1.12 Sandhill (47.9 acres)

Sandhill occurs on rolling hills with deep, often yellowish, well-drained sands. These are open, xeric communities dominated by widely spaced longleaf pine trees with a sparse midstory of deciduous oaks and a moderate to dense groundcover of grasses, herbs, and low shrubs. The midstory trees and low shrubs can be sparse to dense, depending on fire history, and typically include turkey oak, bluejack oak, sand live oak, sand post oak, sparkleberry, dwarf huckleberry, pricklypear, and gopher apple. The diverse herbaceous groundcover is often dominated by wiregrass, with other grasses and herbs including

pineywoods dropseed, lopsided indiangrass, and a variety of forbs with many species of legumes and asters.

Sandhill persists only as small, scattered remnants on low ridges at the HMWMA. The canopy has scattered older mature longleaf pine over a subcanopy of bluejack oak, sand live oak, live oak, and turkey oak. The shrub layer typically consists of scattered clumps of saw palmetto and sparkleberry. The groundcover includes patches of wiregrass, gopher apple and shiny blueberry. Other herbaceous species include wild buckwheat, greeneyes, narrowleaf silkgrass, coastalplain chaffhead, Florida Indian plantain, milkpea, stinging nettle, shortleaf gayfeather, noseburn, and bluestems. The best observed example of sandhill is between Potter Bend Road and Davies Road about 0.1 miles west of Mill Creek Road.

2.2.1.13 Scrubby Flatwoods (120.9 acres)

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

Scrubby flatwoods is an upland community similar to mesic flatwoods in structure and species composition but including scrub oaks. Scrubby flatwoods typically have a canopy of widely scattered longleaf pine, a subcanopy of scattered clumps of sand live oak and myrtle oak, tall shrubs of sand live oak, myrtle oak, Chapman's oak, and coastalplain staggerbush. The short shrub layer consists of the oaks mixed with saw palmetto. Ground cover is generally very sparse because of shrub density. Herbaceous species usually include wiregrass and bluestems. Scrubby flatwoods are found mixed with mesic flatwoods in the center and east side of the HMWMA.

2.2.1.14 Spring-run Stream (14.3 acres)

Spring-run streams are perennial water courses that derive most, if not all, of their water from artesian openings in the underground aquifer. Spring-run streams generally have sand bottoms or exposed limestone along their central channel. Calcareous silts may form thick deposits in quiet shallow zones, while leaf drift and other debris collect around fallen trees and quiet basins. When undisturbed, submerged aquatic vegetation clothes most of a spring-run stream bottom. The water emanating from the aquifer is generally clear due to the filtering and absorbing actions of the soils and aquifer limestones through which the water percolates and flows. When the water is deep, it may appear bluish because of light-refraction. If the water sources for the aquifer are substantially influenced by nearby swamps or flatwoods, the spring-run stream may temporarily become stained with tannins and other dissolved organics during or following periods of heavy rain events. When

extensive underground cavities connect the spring caverns with nearby sinks and swallow holes, the spring-run stream may become turbid with suspended particulates during and following heavy rains and floods. Conversely during periods of low rainfall, the aquifer can become supersaturated with calcium, carbonates, and other ions. These chemicals readily precipitate when the water reaches the surface, causing the spring head to appear milky.

The Seven Springs run is located at the north end of the HMWMA and has a steady flow of clear water. Dominant species are spotted water hemlock, Kissimmee grass, pennywort, lance-leaved arrowhead, pickerelweed, sawgrass, narrowfruit horned beaksedge, and wild rice. The state threatened species, cardinal flower, and the invasive exotic water lettuce, are abundant.

2.2.1.15 Wet Flatwoods (110.7 acres)

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

On the HMWMA, this community is characterized by a pond pine canopy over a dense shrub layer of saw palmetto, fetterbush, and gallberry with a few scattered wax myrtles. The subcanopy often consists of water oak. Herbaceous cover within the wet flatwoods is sparse to moderate and usually includes wiregrass, bluestems, blue maidencane, and cinnamon fern. Wet flatwoods are often found bordering the numerous marshes on the HMWMA and grade into mesic flatwoods.

2.2.1.16 Xeric Hammock (195.5 acres)

Xeric hammock is an evergreen forest found on well-drained sandy soils. The low canopy is typically closed and usually dominated by sand live oak. An emergent canopy of pine may be present. Xeric hammock typically develops where fire-exclusion allows for the establishment of the oak canopy. This may occur naturally when the area has significant barriers to fire, or more commonly, as the result of human intervention. In these areas, xeric hammock can form extensive stands or can occur as small patches within or near sandhill or scrub. Xeric hammock can also occur on high islands within flatwoods, or on a high, well-drained ridge within a floodplain. Xeric hammock also can occur on barrier islands and in other coastal environs as an advanced successional stage of scrub.

Xeric hammock is an upland forest with a canopy of scrub oaks reaching tree stature and considered to be an advanced successional stage of scrub or sandhill resulting from the

long-term lack of fire. Xeric hammock is found on some of the highest ridges at the HMWMA. A good example is along Mill Creek Road between Potter Bend Road and Cedar Hammock Road. Many older mature longleaf pines grow among a nearly closed canopy of sand live oak, live oak, and sand laurel oak, suggesting that this community developed from sandhill as a result of long-term fire-suppression. Scattered clumps of saw palmetto and occasional sparkleberry dominate the shrub stratum. The groundcover is fairly sparse but does have a variety of species such as wiregrass, coastalplain chaffhead, and narrowleaf silkgrass.

2.2.1.17 Improved Pasture (783.9 acres)

Improved pasture is not a natural community, but a type of agricultural alteration where most of the natural vegetation has been removed to improve cattle grazing conditions. Here the term is applied to areas with well established, bahiagrass monocultures that are maintained by cattle grazing and/or mowing and only have a few persistent native species like netted pawpaw. Loblolly pine, oak, persimmon, wax myrtle, saw palmetto and cabbage palm are colonizing the pastures. Other weedy species such as dogfennel, sand blackberry, and slender flattop goldenrod may cover a portion of the bahiagrass.

2.2.1.18 Semi-improved Pasture (263.8 acres)

Semi-improved pasture is not a natural community, but a type of agricultural alteration where much of the natural vegetation was removed to improve cattle grazing conditions. Here the term is applied to areas with established bahiagrass that are overgrown to a high percentage by woody species such as live oak, wax myrtle, and pines. As a result, the remaining bahiagrass is not as vigorous as in areas without woody cover. Pockets of native vegetation often occur as patches of longleaf pine and saw palmetto. Semi-improved pasture areas often show affinity to their respective historic natural community. Species typical of mesic flatwoods, scrubby flatwoods, mesic hammock, and sandhill are present in greater abundance in semi-improved pasture than in improved pasture. The potential for restoration is higher in semi-improved pasture through the use of appropriate management strategies such as fire. However, the oak, grapevine, blackberry and wax myrtle that have colonized these areas will require intensive control because they do not carry fire well.

2.2.1.19 Pine Plantation (19.7 acres)

Pine plantation is not a natural community, but a type of agricultural alteration where much of the natural vegetation was removed for 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. Dense pine plantations typically have sparse to absent herbaceous vegetation as a result of shading or a cover of deep pine needle duff. 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 can be partially restored by thinning and/or frequent burning, although some planting of perennial grasses such as wiregrass may be required. With activities such as thinning and burning, plantations with intact native groundcover can be restored to the former natural community.

2.2.1.20 Ruderal (7.2 acres)

Ruderal not a natural community, but is a term applied to altered areas where the vegetation has been disturbed to such a degree that the original natural community is no longer functioning. Examples of ruderal areas at the HMWMA include artificial ponds, developed areas, spoil areas, and roads.

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 Florida Department of Agriculture and Consumer Services (DACS) or the 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.

While there has been no formal rare plant inventory on the HMWMA, there are ten imperiled plant species known to occur on the area. Of these, four are state endangered and six are state threatened (Table 5). The protections afforded plants that occur on conservations lands, in conjunction with management actions that include exotic and invasive 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 of the HMWMA.

In addition to the imperiled plants, three plants State listed as commercially exploited are known to occur on the HMWMA (Table 5). The FWC will continue to monitor the known occurrences of these species and report any illegal collection to the appropriate authorities.

It is possible other imperiled species occur on the HMWMA, 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 - Angle Pod prefers moist, well-drained, and 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 year), 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, the FWC will 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 and Yellow-Flowered Butterwort - 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 occupies 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, the FWC will 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 February to April, is the best time for conducting surveys or verifying species identity.

Cardinal Flower - Cardinal Flower prefers sunny areas near sources of water in bottomland forests, dome swamps, hydric hammocks, floodplain swamps, and spring run streams. Cardinal flower is sensitive to fire, and typically prefers non-pyrogenic habitats, which occasionally burn during periods of drought. Soil and hydrologic disturbance negatively affect this species; therefore, the FWC will maintain and restore the natural hydrology where practicable and avoid using heavy machinery in wetlands with known occurrences of these species. Flowering, which primarily occurs from July to September, is the best time for conducting surveys or verifying species identity.

Cinnamon Fern and Royal Fern - 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, FWC staff will make efforts to protect known occurrences from chemical and mechanical treatments. These species do not require fire. However, some of the natural communities in which these species occur are fire adapted, and these ferns resprout after fire. Illegal collecting and hydrological disturbances negatively affect these species; therefore, areas with known occurrences will be protected, 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.

Giant Wild-pine - 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 its moisture and nutrients from the air, rain, and sometimes from debris accumulating around it) that grow on stumps, tree trunks, and branches. However, large individuals may fall to the ground and successfully continue to live. While many airplants grow in communities that the FWC typically does not actively manage, if conducting management activities near known occurrences, FWC staff will 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, 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.

Gypsy-Spikes - Gypsy-Spikes prefers full or partial sun and wet to moist, slightly acidic to slightly alkaline soils in alluvial forests, basin swamps, bottomland forests, floodplain swamps, hydric hammocks, mesic flatwoods, wet flatwoods, and wet prairies. This species may also occur on peaty or sandy soils along the margins of lakes, rivers, and ponds. 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 include frequent (2-3 year) growing season fires that reduce the encroachment of woody species will be beneficial for this species. Because flowering in this species is highly erratic from year to year, populations

may be persisting even if not seen. Soil and hydrological disturbances negatively affect this species; therefore, FWC staff should maintain and restore the natural hydrology, and avoid using heavy machinery in wetlands. Flowering, which occurs primarily from late June to early August, is the best time for conducting surveys or verifying species identity.

Needle Palm – Needle palm prefers basin swamps, bottomland forests, floodplain swamps, hydric hammocks, mesic hammocks, sinkholes, slope forests, and upland hardwoods forests. Even though this species is not fire tolerant, FWC staff should allow fire to naturally enter and extinguish within its habitats when feasible. Illegal collecting and habitat alteration negatively affect this species; therefore, the FWC will protect known occurrences and make sure not to negatively influence areas with known occurrences. The species may be identified throughout the year.

Non-Crested Eulophia - 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, areas with known occurrences will be protected. 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.

Peperomia - Peperomia prefers mesic hammocks, shell mounds and limestone outcrops in mesic hammocks, coastal berms, and cypress dome swamps. This species commonly occurs as a terrestrial plant on limestone rock, but sometimes occurs as an epiphyte on live oak, pond apple, or buttonwood. This species is sensitive to fire; however, its preferred habitats occasionally burn as a result of fire entering from adjacent fire-maintained communities. Hydrologic disturbances to the surrounding communities negatively affect this species. Flowering, which occurs throughout the year, is the best time for conducting surveys or verifying species identity.

Plume Polypody and Swamp Plume Polypody - 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, FWC staff will maintain and restore the natural hydrology where practicable. Surveys or species identification may occur throughout the year for these species.

2.2.3 Forest Resources

Forest resources include the limited pine plantations described above, and natural pine stands found within the sandhill, scrubby flatwoods, mesic flatwoods, and wet flatwoods communities. Forested wetland communities include the dome swamp, floodplain forest, floodplain swamp, and hydric hammock communities.

2.3 Fish and Wildlife Resources

As described above, the HMWMA has a variety of natural communities and habitat types that support a wide array of imperiled, rare, and more common wildlife species. Active wildlife management practices make the HMWMA an excellent place to view wildlife. The HMWMA's floodplain and upland communities provide critical habitat for resident and migratory wildlife.

The FWC maintains an inventory of fauna documented on the HMWMA listed in the following tables, including mammals (Table 7), birds (Table 8), and reptiles and amphibians (Table 9). In addition to the species listed in the tables below, one exotic wildlife species has been documented on the HMWMA (feral hog).

Table 7: Mammal Species Observed at the HMWMA

Common Name	Scientific Name
Bobcat	*Lynx rufus*
Cotton mouse	*Peromyscus gossypinus*
Coyote	*Canis latrans*
Eastern cottontail	*Sylvilagus floridanus*
Eastern gray squirrel	*Sciurus carolinensis*
Florida black bear	*Ursus americanus floridanus*
Florida mouse	*Podomys floridanus*
Gray fox	*Urocyon cinereoargenteus*
Hispid cotton rat	*Sigmodon hispidus*
Marsh rice rat	*Oryzomys palustris*

Table 7: Mammal Species Observed at the HMWMA

Common Name	Scientific Name
Nine-banded armadillo	*Dasypus novemcinctus*
Raccoon	*Procyon lotor*
River otter	*Lontra canadensis*
Southeastern bat	*Myotis austroriparius*
Southern fox squirrel	*Sciurus niger shermani*
Southern flying squirrel	*Glaucomys volans*
White-tailed deer	*Odocoileus virginianus*

Table 8: Bird Species Observed at the HMWMA

Common Name	Scientific Name
Acadian flycatcher	*Empidonax virescens*
American bittern	*Botaurus lentiginosus*
American coot	*Fulica americana*
American crow	*Corvus brachyrhynchos*
American goldfinch	*Spinus tristis*
American kestrel	*Falco sparverius*
American redstart	*Setophaga ruticilla*
American robin	*Turdus migratorius*
American woodcock	*Scolopax minor*
Anhinga	*Anhinga anhinga*
Bachman's sparrow	*Peucaea aestivalis*
Bald eagle	*Haliaeetus leucocephalus*
Barn owl	*Tyto alba*
Barn swallow	*Hirundo rustica*
Barred owl	*Strix varia*
Belted kingfisher	*Megaceryle alcyon*
Black vulture	*Coragyps atratus*
Black-and-white warbler	*Mniotilta varia*
Black-bellied whistling duck	*Dendrocygna autumnalis*
Black-crowned night-heron	*Nycticorax nycticorax*
Blue grosbeak	*Passerina caerulea*
Blue jay	*Cyanocitta cristata*
Blue-gray gnatcatcher	*Polioptila caerulea*
Blue-headed vireo	*Vireo solitarius*
Blue-winged teal	*Spatula discors*
Boat-tailed grackle	*Quiscalus major*
Brown creeper	*Certhia americana*
Brown thrasher	*Toxostoma rufum*

Table 8: Bird Species Observed at the HMWMA

Common Name	Scientific Name
Brown-headed cowbird	*Molothrus ater*
Brown-headed nuthatch	*Sitta pusilla*
Carolina chickadee	*Poecile carolinensis*
Carolina wren	*Thryothorus ludovicianus*
Cattle egret	*Bubulcus ibis*
Cedar waxwing	*Bombycilla cedrorum*
Chimney swift	*Chaetura pelagica*
Chipping sparrow	*Spizella passerina*
Chuck-will's-widow	*Antrostomus carolinensis*
Common gallinule	*Gallinula galeatea*
Common grackle	*Quiscalus quiscula*
Common ground-dove	*Columbina passerina*
Common nighthawk	*Chordeiles minor*
Common snipe	*Gallinago gallinago*
Common yellowthroat	*Geothlypis trichas*
Cooper's hawk	*Accipiter cooperii*
Double-crested cormorant	*Phalacrocorax auritus*
Downy woodpecker	*Picoides pubescens*
Eastern bluebird	*Sialia sialis*
Eastern kingbird	*Tyrannus tyrannus*
Eastern meadowlark	*Sturnella magna*
Eastern phoebe	*Sayornis phoebe*
Eastern screech owl	*Megascops asio*
Eastern towhee	*Pipilo erythrophthalmus*
Eastern whip-poor-will	*Antrostomus vociferus*
Eastern wood pewee	*Contopus virens*
European starling	*Sturnus vulgaris*
Field sparrow	*Spizella pusilla*
Fish crow	*Corvus ossifragus*
Florida sandhill crane	*Antigone canadensis pratensis*
Florida scrub-jay	*Aphelocoma coerulescens*
Glossy ibis	*Plegadis falcinellus*
Grasshopper sparrow	*Ammodramus savannarum*
Gray catbird	*Dumetella carolinensis*
Gray-cheeked thrush	*Catharus minimus*
Great blue heron	*Ardea herodias*
Great crested flycatcher	*Myiarchus crinitus*
Great egret	*Ardea alba*
Great horned owl	*Bubo virginianus*
Green heron	*Butorides virescens*
Hairy woodpecker	*Picoides villosus*

Table 8: Bird Species Observed at the HMWMA

Common Name	Scientific Name
Hermit thrush	*Catharus guttatus*
Hooded merganser	*Lophodytes cucullatus*
Hooded warbler	*Setophaga citrina*
House wren	*Troglodytes aedon*
Indigo bunting	*Passerina cyanea*
Killdeer	*Charadrius vociferus*
Least bittern	*Ixobrychus exilis*
Limpkin	*Aramus guarauna*
Little blue heron	*Egretta caerulea*
Loggerhead shrike	*Lanius ludovicianus*
Louisiana waterthrush	*Parkesia motacilla*
Magnolia warbler	*Setophaga magnolia*
Mississippi kite	*Ictinia mississippiensis*
Mottled duck	*Anas fulvigula*
Mourning dove	*Zenaida macroura*
Northern bobwhite quail	*Colinus virginianus*
Northern cardinal	*Cardinalis cardinalis*
Northern flicker	*Colaptes auratus*
Northern harrier	*Circus hudsonius*
Northern mockingbird	*Mimus polyglottos*
Northern parula	*Setophaga americana*
Orange-crowned warbler	*Oreothlypis celata*
Osceola wild turkey	*Meleagris gallopavo osceola*
Osprey	*Pandion haliaetus*
Ovenbird	*Seiurus aurocapilla*
Palm warbler	*Setophaga palmarum*
Pied-billed grebe	*Podilymbus podiceps*
Pileated woodpecker	*Dryocopus pileatus*
Pine warbler	*Setophaga pinus*
Prairie warbler	*Setophaga discolor*
Prothonotary warbler	*Protonotaria citrea*
Purple martin	*Progne subis*
Red-bellied woodpecker	*Melanerpes carolinus*
Red-breasted merganser	*Mergus serrator*
Red-eyed vireo	*Vireo olivaceus*
Red-headed woodpecker	*Melanerpes erythrocephalus*
Red-shouldered hawk	*Buteo lineatus*
Red-tailed hawk	*Buteo jamaicensis*
Red-winged blackbird	*Agelaius phoeniceus*
Rock dove	*Columba livia*
Roseate spoonbill	*Platalea ajaja*

Table 8: Bird Species Observed at the HMWMA

Common Name	Scientific Name
Rose-breasted grosbeak	*Pheucticus ludovicianus*
Ruby-crowned kinglet	*Regulus calendula*
Ruby-throated hummingbird	*Archilochus colubris*
Sandhill crane	*Antigone canadensis*
Scarlet tanager	*Piranga olivacea*
Sedge wren	*Cistothorus platensis*
Sharp-shinned hawk	*Accipiter striatus*
Short-tailed hawk	*Buteo brachyurus*
Snowy egret	*Egretta thula*
Sora	*Porzana carolina*
Spotted sandpiper	*Actitis macularius*
Summer tanager	*Piranga rubra*
Swallow-tailed kite	*Elanoides forficatus*
Swamp sparrow	*Melospiza georgiana*
Tree swallow	*Tachycineta bicolor*
Tricolored heron	*Egretta tricolor*
Tufted titmouse	*Baeolophus bicolor*
Turkey vulture	*Cathartes aura*
Veery	*Catharus fuscescens*
Vermilion flycatcher	*Pyrocephalus rubinus*
White ibis	*Eudocimus albus*
White-eyed vireo	*Vireo griseus*
Wilson's snipe	*Gallinago delicata*
Wood duck	*Aix sponsa*
Wood stork	*Mycteria americana*
Wood thrush	*Hylocichla mustelina*
Yellow warbler	*Setophaga petechia*
Yellow-bellied sapsucker	*Sphyrapicus varius*
Yellow-billed cuckoo	*Coccyzus americanus*
Yellow-rumped warbler	*Setophaga coronata*
Yellow-throated vireo	*Vireo flavifrons*
Yellow-throated warbler	*Setophaga dominica*

Table 9: Reptile and Amphibian Species Observed at the HMWMA

Common Name	Scientific Name
American alligator	*Alligator mississippiensis*
Banded water snake	*Nerodia fasciata*
Barking treefrog	*Hyla gratiosa*
Broadhead skink	*Plestiodon laticeps*

Table 9: Reptile and Amphibian Species Observed at the HMWMA

Common Name	Scientific Name
Brown anole	*Anolis sagrei*
Bullfrog	*Lithobates catesbeianus*
Chicken turtle	*Deirochelys reticularia*
Cope's gray treefrog	*Hyla chrysoscelis*
Dusky pygmy rattlesnake	*Sistrurus miliarius barbouri*
Dwarf siren	*Pseudobranchus striatus*
Eastern coachwhip	*Masticophis flagellum*
Eastern coral snake	*Micrurus fulvius*
Eastern corn snake	*Pantherophis guttatus*
Eastern diamondback rattlesnake	*Crotalus adamanteus*
Eastern garter snake	*Thamnophis sirtalis*
Eastern glass lizard	*Ophisaurus ventralis*
Eastern hognose snake	*Heterodon platirhinos*
Eastern indigo snake	*Drymarchon couperi*
Eastern mud snake	*Farancia abacura*
Eastern mud turtle	*Kinosternon subrubrum*
Eastern narrowmouth toad	*Gastrophryne carolinensis*
Eastern newt	*Notophthalmus viridescens*
Eastern rat snake	*Pantherophis alleghaniensis*
Eastern slender glass lizard	*Ophisaurus attenuatus longicaudus*
Eastern spadefoot toad	*Scaphiopus holbrookii*
Florida box turtle	*Terrapene carolina bauri*
Florida brown snake	*Storeria victa*
Florida cottonmouth	*Agkistrodon piscivorus conanti*
Florida crowned snake	*Tantilla relicta*
Florida green water snake	*Nerodia floridana*
Florida redbelly snake	*Storeria occipitomaculata obscura*
Florida scarlet snake	*Cemophora coccinea*
Florida softshell	*Apalone ferox*
Florida worm lizard	*Rhineura floridana*
Gopher frog	*Lithobates capito*
Gopher tortoise	*Gopherus polyphemus*
Greater siren	*Siren lacertina*
Green anole	*Anolis carolinensis*
Green tree frog	*Hyla cinerea*
Greenhouse frog	*Eleutherodactylus planirostris*
Ground skink	*Scincella lateralis*
Lesser siren	*Siren intermedia*
Little grass frog	*Pseudacris ocularis*
Oak toad	*Anaxyrus quercicus*
Peninsula cooter	*Pseudemys floridana*

Table 9: Reptile and Amphibian Species Observed at the HMWMA

Common Name	Scientific Name
Peninsula ribbon snake	*Thamnophis sauritus sackenii*
Pig frog	*Lithobates grylio*
Pine woods treefrog	*Hyla femoralis*
Rough green snake	*Opheodrys aestivus*
Scarlet kingsnake	*Lampropeltis elapsoides*
Six-lined racerunner	*Aspidoscelis sexlineata*
Slimy salamander	*Plethodon grobmani*
Southeastern five-lined skink	*Plestiodon inexpectatus*
Southern black racer	*Coluber constrictor priapus*
Southern chorus frog	*Pseudacris nigrita*
Southern cricket frog	*Acris gryllus*
Southern fence lizard	*Sceloporus undulatus undulatus*
Southern leopard frog	*Lithobates sphenocephalus*
Southern ringneck snake	*Diadophis punctatus*
Southern toad	*Anaxyrus terrestris*
Spring peeper	*Pseudacris crucifer*
Squirrel tree frog	*Hyla squirella*
Striped crayfish snake	*Regina alleni*
Striped mud turtle	*Kinosternon baurii*
Striped newt	*Notophthalmus perstriatus*
Swamp snake	*Seminatrix pygaea*
Two-toed amphiuma	*Amphiuma means*

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 HMWMA has a very high mean wildlife value of 8.4 (Figure 10).

2.3.2 Imperiled Fish and Wildlife

Nine imperiled animal species have been documented at the HMWMA (Table 10). All abbreviations and status determinations were derived from Florida's Endangered and Threatened Species List published by FWC in December 2018. The FWC maintains the state list of animals designated as Federally-designated endangered or threatened, State-designated endangered or threatened, or State-designated species of special concern, in accordance with Rules 68A-27.003, and 68A-27.005, respectively, FAC.

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 U.S. Fish and Wildlife Service. 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 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.

2.3.3 FWC Wildlife Observations and FNAI Element Occurrences

A diversity of wildlife species is found on the HMWMA. The FNAI element occurrence records include many element occurrences in the vicinity of the HMWMA. 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: http://www.fnai.org/ranks.cfm.

Known locations of FNAI element occurrences from the most recent GIS databases are displayed in Figure 11. Appendix 12.5 contains a letter from the FNAI authorizing the FWC to utilize their database for the purpose of displaying known plant and animal resources.

Table 10: Imperiled Species Observed at the HMWMA

Common Name	Scientific Name	Status
American alligator	*Alligator mississippiensis*	FT(S/A)
Eastern indigo snake	*Drymarchon couperi*	FT
Florida pine snake	*Pituophis melanoleucus mugitus*	ST
Florida sandhill crane	*Grus canadensis pratensis*	ST
Florida scrub-jay	*Aphelocoma coerulescens*	FT
Gopher tortoise	*Gopherus polyphemus*	ST
Little blue heron	*Egretta caerulea*	ST
Southeastern American kestrel	*Falco sparverius paulus*	ST
Wood stork	*Mycteria americana*	FT

2.4 Native Landscapes

The HMWMA features a variety of native landscapes. These include upland communities such as mesic flatwoods as well as floodplain communities along the Withlacoochee River. Section 2.2.1 describes the natural communities found on the HMWMA.

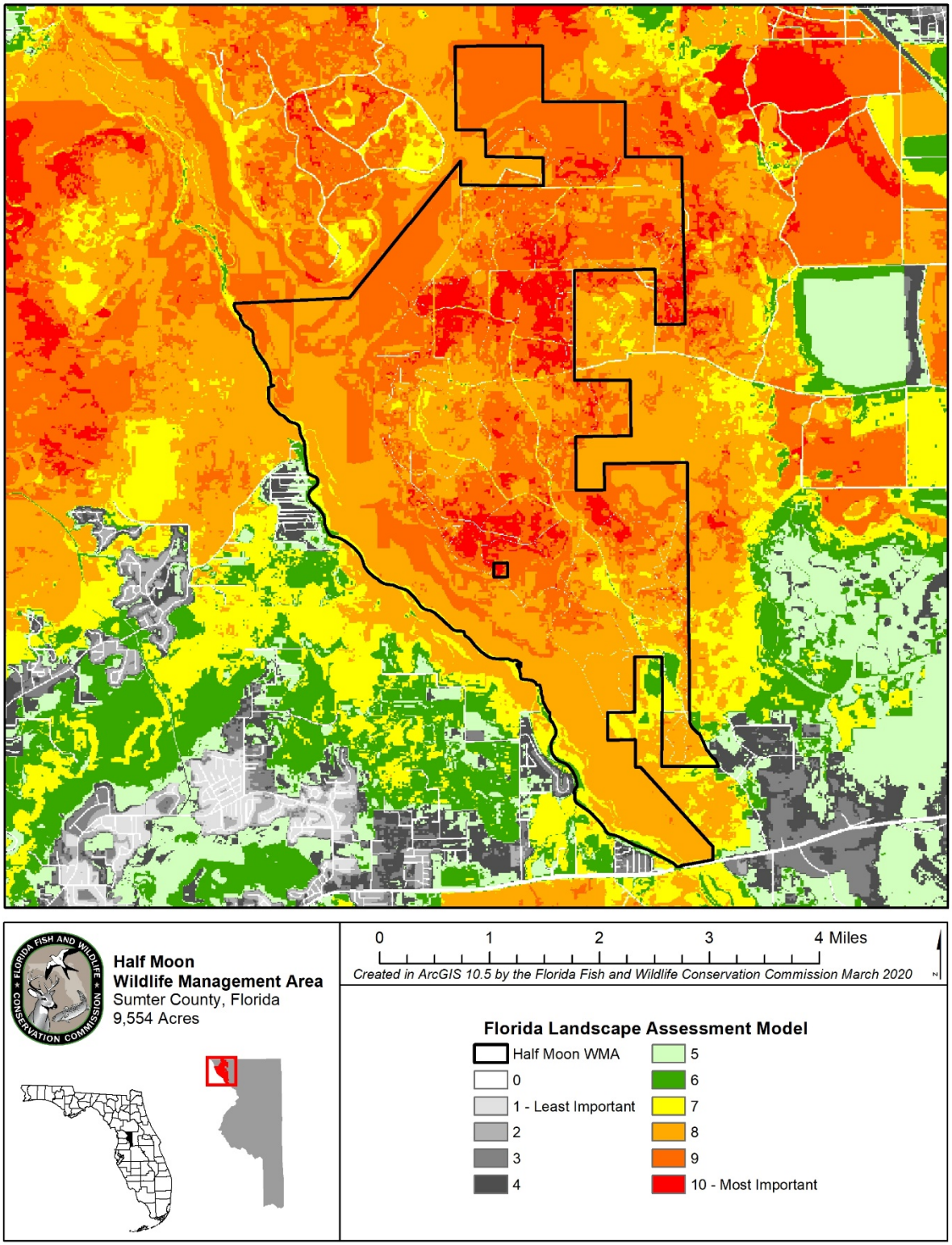


Figure 10: Florida Landscape Assessment Model

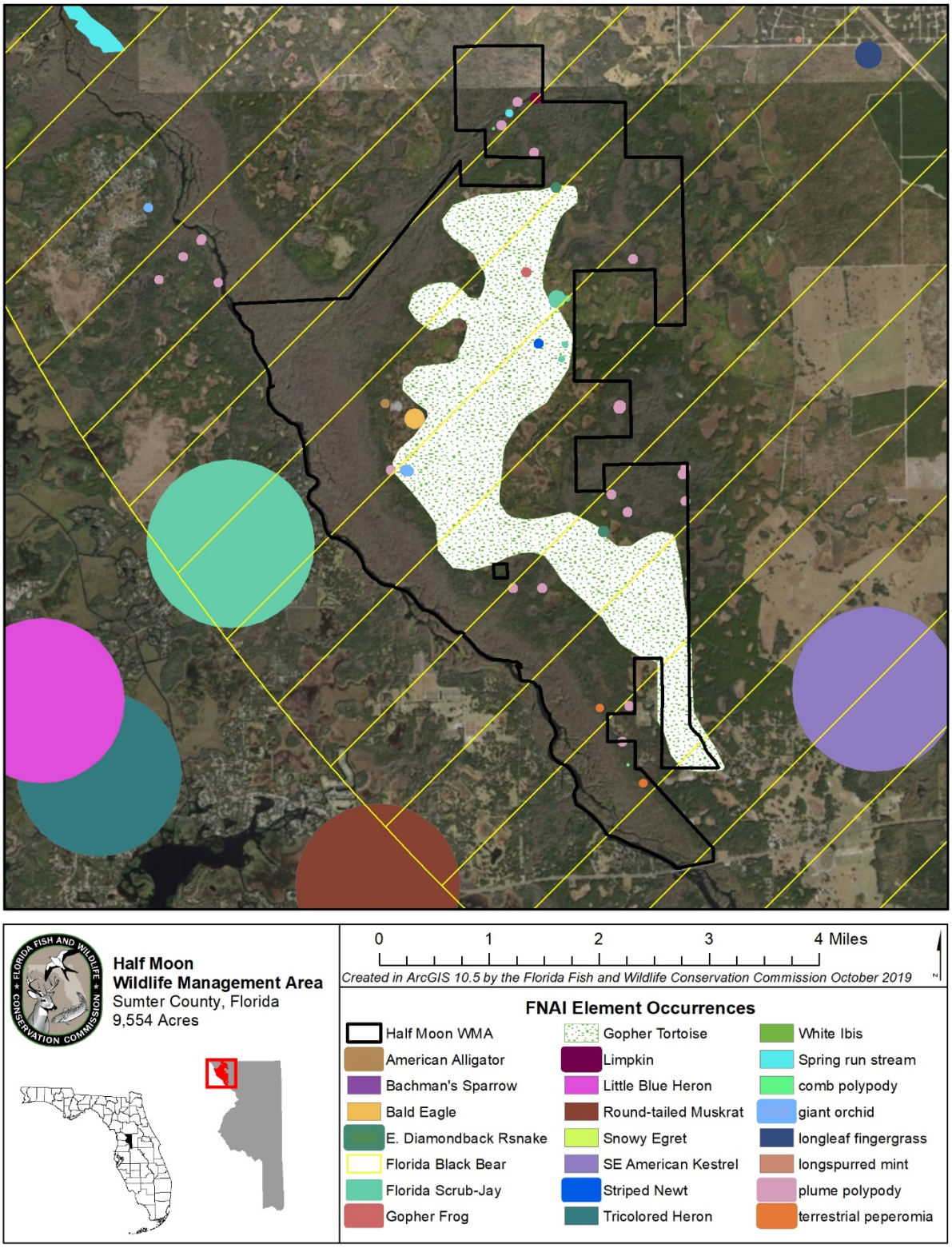


Figure 11: FNAI Element Occurrences in the Vicinity of the HMWMA

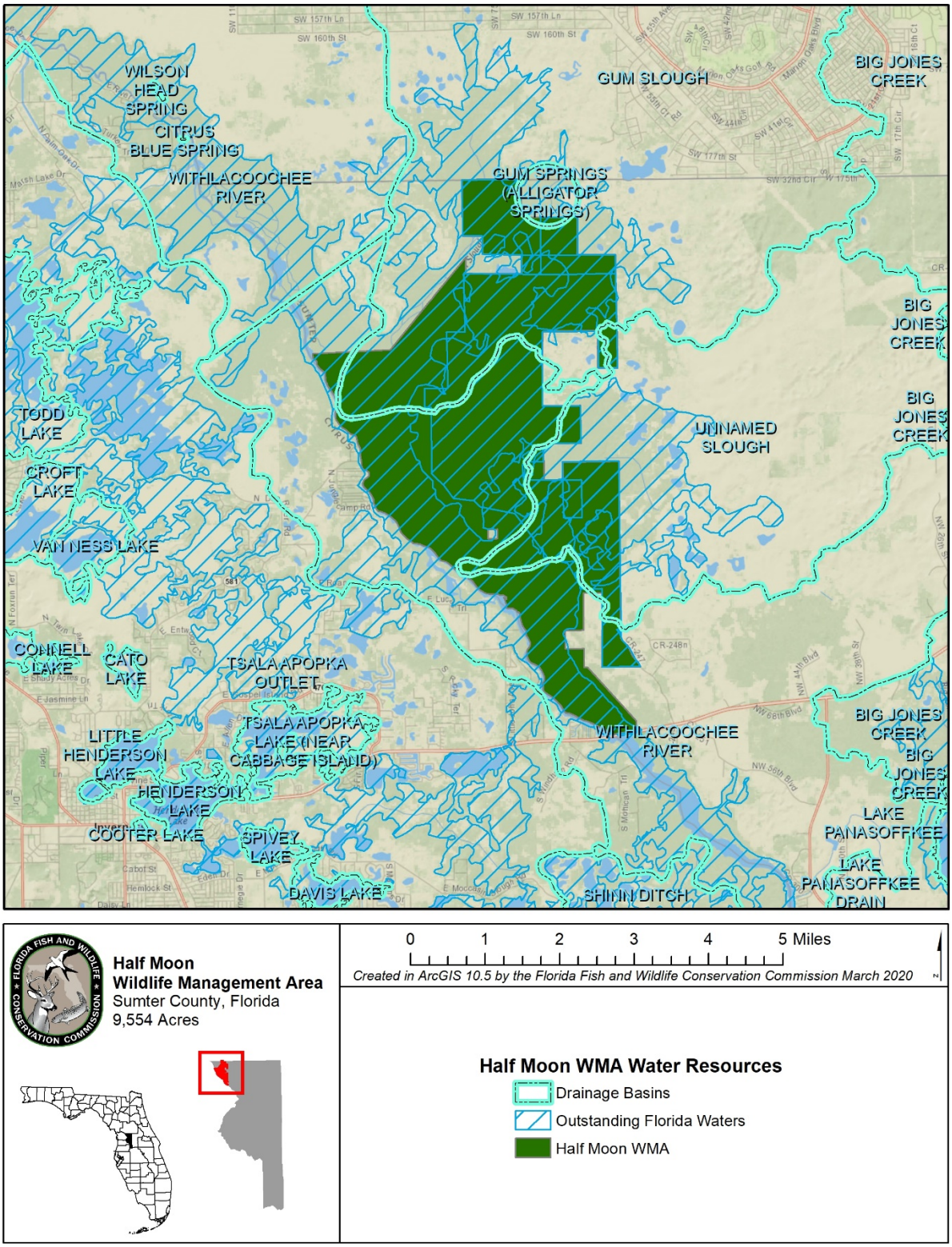


Figure 12: HMWMA Water Resources

2.5 Water Resources

The HMWMA is situated entirely within the watershed of the Withlacoochee River. The northern portion of the area drains to the Withlacoochee River via Gum Slough, the central portion of the area drains to the river via Mill Creek, and the remainder of the area drains directly to the Withlacoochee River (Figure 12). In addition to these water bodies, the HMWMA contains numerous depression marshes.

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 HMWMA 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). Most of the HMWMA, including Gum Slough, Mill Creek and the Withlacoochee River, are designated as OFW. 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.

2.6 Beaches and Dunes

The HMWMA does not contain any beaches or dunes.

2.7 Mineral Resources

Portions of the HMWMA have oil, gas, mineral and subsurface rights and interests held by M.B. Rudman and James G. Allison. However, there are no known commercially viable mineral deposits at the HMWMA.

2.8 Historical Resources

The Florida Department of State's Division of Historical Resources (DHR) observations are broken down into five categories: historic sites, resource groups, historical structures, historic bridges, and historic cemeteries. A review of the DHR's Master Site File indicates that there are 14 historical resources on the HMWMA (Table 11). These include 11 historic sites, a historic structure, a historic cemetery, and a resource group. All Master Site recordings, assessments, and preservation strategies will be coordinated with the DHR. The need for a comprehensive historical resource survey is regularly assessed in cooperation with the DHR.

Table 11: Historical Resources Found at the HMWMA

Site ID	Site Name/Description
SM00708	Prehistoric habitation
SM00709	Prehistoric campsite
SM00710	Prehistoric lithic scatter
SM00711	Prehistoric lithic scatter

Table 11: Historical Resources Found at the HMWMA

Site ID	Site Name/Description
SM00712	Prehistoric lithic scatter
SM00123	Hodge Place Homestead
CI00183	Long Arm Bank ceramic scatter
SM00125A	McKinney Place Site building remains/cistern
CI00032	Prehistoric shell midden
SM00127	Former house remains
SM00124	Welch Place homestead
SM00125	McKinney Place
SM00126	Alto Cemetery
SM00621	Cummer Logging Tram

2.9 Scenic Resources

The assortment of upland and wetland vegetative communities found at the HMWMA provide visitors with a scenic landscape in which to enjoy a variety of recreational opportunities. The Withlacoochee River borders the area to the west and offers a scenic riverine perspective of the landscape. The natural communities found on the area are described in Section 2.2.1.

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 16th 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 accounts of early American settlement in the vicinity of the HMWMA can be traced back to 1857, when the A. W. Rutland family emigrated from North Carolina and settled in what is now known as Rutland, Florida. Although not documented, the Rutlands likely secured a land grant from the federal government and moved to the area to take advantage of the abundant game and rich palmetto flats, the latter being particularly suited to agricultural purposes. The settlement of lands included within the HMWMA boundaries increased during the late 1800's as a small town named Alto was established around 1870 near the intersection of Mill Creek and Oxford Roads. The town and its one-room schoolhouse no longer exist.

Small homesteads continued to be established on the HMWMA in the early 1900s. The McKinneys settled just west of Alto around 1916, and they began using the land to raise cattle. A 60-acre palmetto scrub pasture was cleared by hand to provide forage for their cattle. They also raised hogs of the guinea variety and cultivated peanuts, tobacco, and corn in small fields. Additionally, they planted and maintained a 50-acre plantation of pines for future harvest. One of their houses and a horse stable were removed in the mid-1990s.

The McKinneys were not the only homesteaders on the HMWMA in the early 1900s. The Pendarvis, Graham, and Davis families settled within the vicinity. Their primary land-uses are believed to have been cattle grazing and cultivation of small plots of corn and other grains. It is likely they, as early as the 1880s, grew crops found elsewhere in the county such as Indian corn, sugarcane, oats, sweet potatoes, rice, chufas, peas, and long staple cotton.

Legal descriptions of the small homesteads from 1840 - 1940 do not exist, but the McKinneys continued to extend their land boundaries in the area of what is now the HMWMA. The property was sold to Roland A. Wilson III around 1945 because the male members of the McKinney family were no longer able to participate in the family cattle business because they were obligated to war efforts. After purchasing the property, Mr. Wilson cleared much of the palmetto scrub using a roller chopping drum. His intentions were to open up the brush for cattle and watermelon production. Many acres south of Mill Creek are now in bahia-grass pasture due to these efforts.

In 1962, the property was purchased by the Roxby and Lambert families. No land-use activities were recorded during their ownership since they only held interest in the deed for about 14 months, after which they sold the property to Rex Farrior. This transaction took place in 1963 and is believed to be the purchase that established the property boundary configuration that exists today. Cattle production was likely still the primary land use. Mr. Farrior held title to the land until 1965, when he sold the deed to Audrey and Major Bellamy. Open pastures still existed, and the Bellamy's took advantage of them for cattle production. Some of the land was reportedly used by the family for growing watermelons. The southernmost area of the current HMWMA was one such watermelon field. In addition to the above activities, a small hunt club, believed to be comprised of less than ten members, was allowed to harvest deer and hogs during the Bellamy ownership period.

The Bellamys sold the property in July of 1969 to Mr. Albert and Dr. Barbara Carlton, the owners who eventually negotiated the sale of the original acquisition of the HMWMA to the State of Florida. Like owners preceding them, the Carlton's raised cattle on existing fields and converted more acres from palmetto scrub to improved pasture. The grasses most prominent in the improved pastures are bahia, pangola, and some hemarthia grass. Herd size reached as many as 600 head at times. In order to maintain the vitality of the cattle forage, the Carlton's used prescribed fire and fertilized the fields.

Other land-use activities were implemented by the Carltons as additional sources of income. Bahia-grass sod was harvested in alternating strips in some pastures to supplement the income from cattle. This sod stripping activity continued for several years, even after the Carltons had transferred their grazing rights. Beginning in the early 1980s a hunt club leased the tract for deer hunting. A cattle lease was initiated in the last six years of the Carlton's ownership. Lease holder Greg Bingham reportedly ran about 300 head of cattle. The HMWMA was grazed by Mr. Bingham until February 1990.

3.2 Current Use of the Property

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

Current and anticipated resource uses of the property are diverse. Hunting continues to be a popular recreational activity on the HMWMA. The area also offers excellent opportunities for bird watching, especially for 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 Sumter County, public use can be expected to increase as public awareness of opportunities increases. Annual use of the HMWMA is estimated to be 365 user-days for all activities combined. The FWC administers hunts in the fall and spring for various game species including small game, deer, turkey, and feral hogs, which account for a little more than half of the user-days.

3.2.1 Visitation and Economic Benefits

Visitation and public use of the area for fish and wildlife based public outdoor recreational opportunities is the primary source of economic benefits from the HMWMA and contribute to the overall economy for region of Florida. In Fiscal Year 2018-19, an estimated 8,925

people visited the HMWMA. Primarily, as a result of this visitation and use of the area, the FWC economic analysis estimates indicate that the HMWMA generated an estimated annual economic impact of $1,019,681 for the State and the Central Florida region. This estimated annual economic impact has aided in the support or creation of an estimated 17 jobs.

Further revenue generating potential of the HMWMA will depend upon future uses described in this Management Plan. Additional revenue from environmental lands such as the HMWMA 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 HMWMA will be managed under the multiple-use concept as a Wildlife Management Area. The HMWMA 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 HMWMA 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 HMWMA. 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 12.6). Uses classified as "Conditional" indicate that the use may be acceptable but will be allowed only if approved through a process other than the management plan development and approval process (e.g., special-use permitting, managed-area regulation and rule development). Uses classified as “Rejected” are not considered to be in accordance with the original purpose of acquisition or one or more of the various forms of guidance available for planning and management:

	Approved	Conditional	Rejected
Apiaries		✓	
Astronomy		✓	
Bicycling	✓		
Cattle grazing		✓	
Citrus or other agriculture			✓
Ecosystem services and maintenance	✓		
Ecotourism		✓	

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

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 HMWMA (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 HMWMA 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 HMWMA is recommended for potential surplus review.

4 Accomplished Objectives from the HMWMA Management Plan 2014 – 2024

This section is dedicated to reporting the extent to which the Objectives described in the HMWMA Management Plan 2014 – 2024 were successfully completed. Accomplishments for the HMWMA 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 2014 – 2024 HMWMA Management Plan describe the planned activities for the HMWMA during this period. The degree to which FWC was able to accomplish the planned activities during this period is reflected as **Percent Accomplished** for each associated Objective.

Goals and Objectives	Percent Accomplished
Goal 1: Habitat Restoration and Improvement - Improve extant habitat and restore disturbed areas.	
Short-term (2014-2016)	
Continue to prescribe burn 1,000 acres per year of fire-adapted communities including, basin marsh, depression marsh, mesic flatwoods, pasture, pine plantation, sandhill, scrubby flatwoods, and wet flatwoods. *Comment: The FWC has conducted prescribed burning on the HMWMA's fire-adapted communities at appropriate fire return intervals.*	**100%**

Goals and Objectives	Percent Accomplished
Maintain 4,000 acres (100%) of fire-adapted natural communities within 2 - 4 year target fire return interval per year.) *Comment: The FWC has conducted prescribed burning on the HMWMA's fire-adapted communities at appropriate fire return intervals.*	**100%**
Contract or otherwise obtain a historic and current natural community map for the 35-acre Phebus tract. *Comment: All of the HMWMA's natural communities are due to be remapped in 2021. In an effort to maximize the use of management resources, the FWC has determined it would be more efficient to map the Phebus tract at the same time.*	**0%**
Continue to implement the HMWMA prescribed burn plan. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Conduct habitat/natural community improvement on at least 50 acres per year. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Initiate habitat/natural community restoration activities on 25 acres of improved pasture. *Comment: The FWC has been conducting restoration activities on the HMWMA's improved pastures.*	**100%**
Maintain 100% of natural communities in a desired future condition by continuing to implement the OBVM program. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Restore one acre of former basin and depression marsh by backfilling three existing artificial ponds. *Comment: The FWC has restored this basin marsh.*	**100%**
Long-term (2016-2024)	
Reevaluate natural community mapping approximately every five years. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to prescribe burn 1,000 acres per year of fire-adapted communities including, basin marsh, depression marsh, mesic flatwoods, pasture, pine plantation, sandhill, scrubby flatwoods, and wet flatwoods. *Comment: The FWC continues to implement this ongoing objective.*	**100%**

Goals and Objectives	Percent Accomplished
Continue to maintain 4,000 acres (100%) of fire-adapted natural communities within 2 - 4 year target fire return interval. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Maintain 100% of natural communities in a desired future condition by continuing to implement the OBVM program; reevaluate desired future conditions. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to conduct habitat/natural community improvement of 50 acres of natural communities, including late successional mesic flatwoods, sandhill, and scrubby flatwoods, through hardwood and palmetto control. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Initiate habitat/natural community restoration activities on 60 acres of improved pasture. *Comment: The FWC continues to implement this ongoing objective. Further evaluation of additional acres will be made in the future.*	**100%**
For the purposes of habitat improvement, conduct a 70-acre timber thin of longleaf pine on former improved pasture. *Comment: The FFS determined that the timber was not merchantable. The timber thinning may occur in the future should market conditions improve.*	**0%**
For the purposes of habitat improvement, conduct a 150-acre timber thin of loblolly and slash pine. *Comment: Twenty-eight acres have been harvested. The FWC is awaiting further evaluation of the timber stands in an updated timber assessment.*	**19%**
For the purposes of habitat improvement, conduct a 175-acre timber thin of loblolly and slash pine on the SWFWMD portion of HMWMA. *Comment: The FWC is awaiting further evaluation of the timber stands in an updated timber assessment.*	**0%**
Goal 2: Imperiled Species Habitat Maintenance, Enhancement, Restoration, or Population Restoration - Maintain, improve, or restore imperiled species populations and habitats.	
Short-term	
Continue to implement the WCPR strategy and associated monitoring protocols for 20 focal and imperiled wildlife species including American swallow-tailed kite, Bachman's sparrow,	**100%**

Goals and Objectives	Percent Accomplished
brown-headed nuthatch, Cooper's hawk, Florida black bear, Florida mottled duck, Florida mouse, Florida pine snake, Florida sandhill crane, Florida scrub-jay, gopher frog, gopher tortoise, limpkin, Northern bobwhite, Sherman's fox squirrel, Southeastern American kestrel, Southeastern bat, Southern bald eagle, striped newt, and wading birds (multiple species). *Comment: The 2009 WCPR Strategy has been implemented. An update of the WCPR strategy was completed in 2019.*	
Continue to implement the WCPR strategy for nine imperiled plant species. *Comment: Imperiled plants will be addressed in the updated management plans instead of the WCPR Strategy.*	**100%**
Continue to collect opportunistic wildlife species occurrence data. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Conduct surveys to document breeding activity of gopher frog in all potential breeding ponds in all years with sufficient rainfall by 2014. *Comment: Gopher frog surveys have been completed at the HMWMA.*	**100%**
Conduct surveys to document breeding activity of striped newt in all potential breeding ponds in all years with sufficient rainfall by 2014. *Comment: Striped newt surveys have been completed at the HMWMA.*	**100%**
Continue to collect opportunistic focal and imperiled species occurrence data for Florida pine snake, brown-headed nuthatch, Florida mottled duck, Florida sandhill crane, Florida black bear, and Sherman's fox squirrel. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Long-term	
Continue to implement the WCPR strategy and associated monitoring protocols for 20 focal and imperiled wildlife species listed in Objective 6.2.1. *Comment: The 2009 WCPR Strategy has been implemented. An update of the WCPR strategy was completed in 2019.*	**100%**
Continue to conduct surveys to document breeding activity of gopher frog in all potential breeding ponds in all years with sufficient rainfall. *Comment: The FWC continues to implement this ongoing objective.*	**100%**

Goals and Objectives	Percent Accomplished
Continue to conduct surveys to document breeding activity of striped newt in all potential breeding ponds in all years with sufficient rainfall. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Enhance and maintain 2,550 acres of existing and potential gopher tortoise habitat; restore historic gopher tortoise habitat, including 200 acres of pasture and 50 acres of xeric hammock to sandhill. *Comment: Pasture and xeric hammock restoration work is in progress. The FWC continues to maintain gopher tortoise habitat.*	**80%**
Continue to increase the gopher tortoise population by an average of 1% per year (this population increase rate contributes to meeting the WCPR Strategy objective of increasing the HMWMA gopher tortoise population 20% by 2028). *Comment: Current monitoring protocol is unable to detect small changes in population. The gopher tortoise population at the HMWMA is stable. The 2019 WCPR Strategy contains updated goals regarding the gopher tortoise.*	**0%**
Increase the Bachman's sparrow population by 20% by 2024. *Comment: Current monitoring protocol is unable to detect small changes in population. The 2019 WCPR Strategy contains updated goals regarding the Bachman's sparrow.*	**0%**
Improve identified scrubby flatwoods and mesic flatwoods that can be maintained in a scrubby flatwoods structure, within the Florida scrub-jay Strategic Management Area to suitable conditions for the Florida scrub-jay by 2018. *Comment: The FWC has improved and continues to maintain scrubby flatwoods for the Florida scrub-jay.*	**100%**
Continue to make progress toward increasing the number of Florida scrub-jay family groups from 8-10 to 12-15 by 2022. *Comment: FWC continues to maintain Florida scrub-jay habitat at HMWMA. However, land use changes beyond the WMA boundaries have reduced habitat in the area. Scrub-jay population has continued to decline.*	**0%**
Increase the Northern bobwhite population 20 % by 2024. *Comment: Current monitoring protocol is unable to detect small changes in populations.*	**0%**

Goals and Objectives	Percent Accomplished
Monitor the distribution of Florida mouse by trapping every five years within suitable habitat until the WCPR strategy is updated. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to maintain nine kestrel nesting boxes. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to collect opportunistic occurrence data for focal and imperiled species listed in Objective 6.2.1. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Goal 3: Other Wildlife (Game and Nongame) Habitat Maintenance, Enhancement, Restoration, or Population Restoration - Maintain, improve or restore game and non-game populations and habitats.	
Short-term	
Continue to conduct annual spotlight monitoring surveys for white-tailed deer. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to collect biological harvest data at check station. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to collect opportunistic wildlife occurrence data. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Maintain one bat house, 20 bluebird, and 11 wood duck nesting boxes annually. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to maintain (mow) 80 acres of wildlife openings annually. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to conduct biennial breeding bird point count surveys. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Long-term	
Continue to conduct annual spotlight monitoring surveys for white-tailed deer. *Comment: The FWC continues to implement this ongoing objective.*	**100%**

Goals and Objectives	Percent Accomplished
Continue to collect biological harvest data at check station annually. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to collect opportunistic wildlife occurrence data. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Maintain one bat house, 20 bluebird, and 11 wood duck nesting boxes annually. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to maintain (mow) 80 acres of wildlife openings annually. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to conduct biennial breeding bird point count surveys. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Goal 4: Public Access and Recreational Opportunities - Provide public access and recreational opportunities.	
Short-term	
Maintain public access and recreational opportunities to allow for a recreational carrying capacity of 309 visitors per day. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Develop additional public access and recreational opportunities to allow for a carrying capacity of 361 visitors per day. *Comment: FWC has improved the entrance facility, added a vault toilet, and constructed a boardwalk over mill creek. The HMWMA currently has a recreational carrying capacity of 361 visitors per day.*	**100%**
Continue to provide a two-panel kiosk, entrance kiosk, trail brochure, bird list, and recreation website for interpretation and education. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to implement the Recreation Master Plan. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Develop and make available a HMWMA Recreation Guide. *Comment: A recreation guide for the HMWMA has been developed.*	**100%**

Goals and Objectives	Percent Accomplished
In cooperation with Scouts, FWC Youth Conservation Center Program, and others, investigate the feasibility of developing and providing interpretive/education programs. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Maintain 13.0 miles of designated trails. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Design and construct a footbridge over Mill Creek. *Comment: A foot bridge and boardwalk has been constructed over Mill Creek.*	**100%**
Continue to maintain one fishing dock, one restroom, five picnic tables, and trail signage. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Explore camping opportunities on surrounding conservation or private property and connecting to paddling opportunities at Gum Slough. *Comment: The FWC continues to explore potential recreational opportunities in the region.*	**100%**
Continue to provide hunting opportunities including youth turkey, archery, muzzleloading gun, general gun, small game, wild hog still, spring turkey, and migratory bird seasons. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to provide fishing opportunities on 12 area ponds. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Install rail-mounted interpretive panels on the fishing dock. *Comment: The FWC is planning for the replacement of the fishing dock. Two interpretive panels will be installed after the dock is replaced.*	**0%**
Install interpretive panels on the Gateway Loop. *Comment: FWC staff have determined that interpretive panels along the Gateway Loop would be at risk of being destroyed during prescribed burning.*	**0%**
Continue to work with outfitters and horse trail ride operations to provide a destination for commercial nature-based recreation. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Long-term	

Goals and Objectives	Percent Accomplished
Continue to implement the Recreation Master Plan. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to maintain 13.0 miles of designated trails. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to monitor trails biannually for visitor impacts. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to provide hunting opportunities including youth turkey, archery, muzzleloading gun, general gun, small game, wild hog still, spring turkey, and migratory bird seasons. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to provide fishing opportunities on 12 area ponds. ***Comment: The FWC continues to implement this ongoing objective.***	**100%**
Cooperate with other agencies, County, stakeholders, and regional landowners to investigate regional recreational opportunities including linking paddling, hiking, and multi-use trail systems between adjacent public areas. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
In cooperation with Scouts, FWC Youth Conservation Center Program, and others, investigate the feasibility of developing and providing interpretive/education programs. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to work with outfitters and horse trail ride operations to provide a destination for commercial nature-based recreation. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Reassess recreational opportunities every three years. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Goal 5: Hydrological Preservation and Restoration - Protect water quality and quantity, restore hydrology to the extent feasible, and maintain the restored condition.	
Short-term	
To maintain and enhance natural hydrological functions, install, repair, and maintain low-water crossings and culverts as appropriate.	**100%**

Goals and Objectives	Percent Accomplished
Comment: The FWC continues to implement this ongoing objective.	
Continue to coordinate and cooperate with the SWFWMD with their monitoring responsibility of three water quality and quantity monitoring stations. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to coordinate and cooperate with the SWFWMD to determine any adjacent or regional hydrological restoration needs that may impact HMWMA. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Long-term	
To enhance natural hydrological functions, continue to install, repair, and maintain low-water crossings and culverts as appropriate. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to coordinate and cooperate with the SWFWMD with their monitoring responsibility of three water quality and quantity monitoring stations on HMWMA. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Goal 6: Forest Resource Management - Manage timber resources to improve or restore natural communities for the benefit of wildlife.	
Short-term	
Cooperate with the FFS to update the 2000 Timber Assessment. *Comment: The timber assessment has been updated by the FFS.*	**100%**
Consult with the FFS or a professional forestry consultant regarding forest management activities as appropriate. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Long-term	
Continue to consult with the FFS or a professional forestry consultant regarding forest management activities as appropriate. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Goal 7: Exotic and Invasive Species Maintenance and Control - Remove exotic and invasive plants and animals and conduct needed maintenance - control	
Short-term	
Annually treat at least five acres of EPPC Category I and Category II invasive exotic plant species including skunk vine,	**100%**

Goals and Objectives	Percent Accomplished
Japanese climbing fern, tropical soda apple, Chinese tallow, camphor tree, cogongrass, lantana, Cesarweed, vaseygrass, torpedo grass, natalgrass, and Chinaberry. *Comment: The FWC continues to implement this ongoing objective.*	
Continue to implement control measures (hunting) on wild hog and monitor impacts to evaluate if other control measures are necessary. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to collect GPS data and maintain GIS shapefiles for invasive exotic plant species listed in Objective 6.7.1. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to opportunistically monitor for undocumented invasive plant and animal species including Burmese python, Cuban treefrog, snakehead, etc. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Long-term	
Continue to annually treat at least five acres of EPPC Category I and Category II invasive exotic plant species. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to collect GPS data and maintain GIS shapefiles for invasive exotic plant species. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to implement control measures (hunting) on wild hog and monitor impacts to evaluate if other control measures are necessary. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to opportunistically monitor for undocumented invasive plant and animal species including Burmese python, Cuban treefrog, snakehead, etc. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Goal 8: Cultural and Historical Resources – Protect, preserve, and maintain cultural and historic resources.	
Short-term	
Ensure all known sites are recorded in the DHR Master Site file. *Comment: The FWC continues to implement this ongoing objective.*	**100%**

Goals and Objectives	Percent Accomplished
Monitor the six known recorded sites and submit updates of additional sites to DHR for inclusion in their Master Site file. *Comment: An additional 8 sites have been found on the area and reported to DHR. The FWC continues to implement this ongoing objective.*	**100%**
As directed by DHR, continue to monitor, protect, and preserve the Alto Cemetery. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Follow DHR's Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties for managing cultural and historic resources. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
If determined to be necessary by DHR, contract for a cultural and archaeological resources survey. *Comment: The DHR has determined that the HMWMA is a low priority for a cultural resources survey. The FWC will contract for a cultural resources survey in the future should the DHR request one be completed.*	**100%**
Long-term	
Continue to monitor the six known recorded sites and submit updates of additional sites to DHR for inclusion in their Master Site file. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Cooperate with DHR or available DHR-trained FWC staff in designing site plans for development of infrastructure. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Ensure management staff has DHR Archaeological Resources Monitoring training. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
As directed by DHR, continue to monitor, protect, and preserve the Alto Cemetery. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to follow DHR's Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties for managing cultural and historic resources. *Comment: The FWC continues to implement this ongoing objective.*	**100%**

Goals and Objectives	Percent Accomplished
Goal 9: Capital Facilities and Infrastructure - Develop the capital facilities and infrastructure necessary to meet the goals and objectives of this Management Plan.	
Short-term	
Continue to maintain eight facilities including office, check station, tractor compound, storage buildings, day-use pavilion, fishing dock, and restroom. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Maintain 12 miles of designated public access roads and 14 miles of service roads (26 miles total). *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Maintain 13.0 miles of designated trails. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Long-Term	
Continue to maintain eight facilities including office, check station, tractor compound, storage buildings, day-use pavilion, fishing dock, and restroom. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to maintain 12 miles of designated public access roads and 14 miles of service roads (26 miles total). *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to maintain 13.0 miles of designated trails. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Goal 10: Climate Change - 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 HMWMA.	
Long-term	
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 HMWMA. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Incorporate appropriate climate change adaptation strategies into the WCPR for the HMWMA.	**100%**

Goals and Objectives	Percent Accomplished
The species assessments that have been developed for the WCPR Strategy for HMWMA are informed by climate change adaptation suggestions in Species Action Plans and other sources.	
As appropriate, update the HMWMA Prescribed Fire Plan to incorporate new scientific information regarding projected climate change, such as increased frequency of drought, on the fire regime of HMWMA's fire-adapted habitats. *The FWC updates the HMWMA Prescribed Fire Plan regularly and continues to implement this ongoing objective.*	**100%**
As science, technology, and climate policy evolve, educate natural resource management partners and the public about the agency's policies, programs and efforts to study, document and address potential climate change; assess the need to incorporate public education about climate change into the update of the HMWMA Recreation Master Plan. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Goal 11: Research Opportunities - Explore and pursue cooperative research opportunities.	
Short-term	
Continue to cooperate with USF and SWFWMD with their ongoing hydrological study of Gum Slough and adjacent properties. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to cooperate with the USDA Plant Materials Center to supply plant materials for research of restoration plants. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Long-term	
Continue to cooperate with USF and SWFWMD with their ongoing hydrological study of Gum Slough and adjacent properties. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to cooperate with the USDA Plant Materials Center to supply plant materials for research of restoration plants. *Comment: The USDA no longer operates the Plant Materials Center. This research has been terminated.*	**100%**
Explore and pursue cooperative research opportunities through universities, Fish and Wildlife Research Institute, etc.	**100%**

Goals and Objectives	Percent Accomplished
Comment: The FWC continues to implement this ongoing objective.	
Continue to cooperate with researchers, universities, and others as appropriate. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to assess the need for and pursue research and environmental education partnership opportunities as appropriate. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Goal 12: Conservation Acquisition and Stewardship Partnerships - Enhance fish and wildlife conservation, resource and operational management through development of an optimal boundary.	
Short-term	
Identify potential important wildlife habitat, landscape-scale linkages, wildlife corridors, operational/resource management. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to identify and pursue acquisition needs and conservation stewardship partnerships. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
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. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Develop a Conservation Action Strategy. *Comment: The FWC has developed a Conservation Action Strategy for HMWMA.*	**100%**
Contact and inform adjoining landowners about the FWC Landowners Assistance Program to pursue non-acquisition conservation stewardship partnerships. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Determine which parcels should be nominated for addition to the FWC acquisition list. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Identify potential non-governmental organization partnerships and grant program opportunities. *Comment: The FWC continues to implement this ongoing objective.*	**100%**

Goals and Objectives	Percent Accomplished
Determine efficacy of conducting an adjacent landowner's assistance/conservation stewardship partnership workshop. *Comment: The FWC will continue to evaluate the need for landowner assistance/conservation stewardship partnership workshops.*	**100%**
Long-term	
To minimize fragmentation of the area, continue to identify strategic parcels to revise the completed optimal boundary for WMA as deemed necessary. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
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. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Continue to determine which nominated parcels should be added to the FWC acquisition list. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Propose nominations of selected properties as additions to the FWC acquisition list. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Pursue acquisition of parcels added to the FWC acquisition list as acquisition work plan priorities and funding allow. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
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. *Comment: The FWC continues to implement this ongoing objective.*	**100%**
Coordinate landowner assistance/ conservation stewardship partnership workshop as deemed appropriate. *Comment: The FWC will continue to evaluate the need for landowner assistance/conservation stewardship partnership workshops.*	**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 HMWMA 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 HMWMA. 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, FS. These reviews determine whether the lands are being managed for the purposes for which they were acquired and whether they are being managed in accordance with their land management plan adopted pursuant to s. 259.032, FS. 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."

An LMR of the HMWMA was conducted in October of 2019, and the results of that review and FWC responses to recommendations are included as Appendix 12.7. It was determined that the HMWMA 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";[4] 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.[4, 5] 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.[4, 5] 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.[4, 5]

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 HMWMA.

5.2.1 Monitoring

A well-developed monitoring protocol is also one of the principal, required criteria for the management of the HMWMA. 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 HMWMA 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 HMWMA 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 HMWMA, the FWC will focus on managing for native habitat diversity, emphasizing maintenance of high-quality natural communities, and restoration of disturbed areas. Restoration may be achieved on disturbed areas by the re-introduction of fire, restoring historic hydrological conditions, and/or the use of mechanical or chemical forest management techniques as appropriate. Retention of the native old growth component of forests, while also providing for natural regeneration, remains an important consideration. The HMWMA has high-quality native communities including mesic flatwoods, mesic hammock, depression marshes, and floodplain forest that FWC will continue to manage and protect. On degraded upland sites, the FWC intends to initiate natural community restoration.

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

5.3.1 Objective-Based Vegetation Management

The FWC uses a comprehensive resource management approach to maintain the FWC-managed areas. Restoring the form and function of Florida's natural communities is the foundation of this management philosophy. The FWC uses OBVM to monitor how specific vegetative attributes are responding to FWC management.

The first step in implementing OBVM is to map the current, and in most cases the historic natural communities, on the managed area using the FNAI Natural Community Classification. The FWC contracts with FNAI to provide these mapping services and plans to have natural community maps recertified on most areas on a five-year basis. A natural community, as defined by FNAI, is a distinct and recurring assemblage of populations of plants, animals, fungi and microorganisms naturally associated with each other and their physical environment.

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

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

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

Initial mapping and vegetation sampling 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

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

Timber removal, site preparation, drainage, and lack of fire have all combined to alter the plant species composition of the area resulting in a loss of fuel and inhibiting the return to

a more “natural” fire management regime. Site-specific combinations of prescribed fire, mechanical and chemical vegetation control, reforestation, and restoration of natural water regimes are likely necessary actions needed to restore the area to historic natural communities.

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

On some areas, prescribed burning is limited by the buildup of mid-story brush and a lack of pyrogenic groundcover fuels. This condition creates unsuitable habitat for many wildlife species. Mechanical control of brush on upland sites by roller chopping, logging, shredding, or incidentally by equipment during commercial thinning operations, can reduce shading and encourage the grasses and forbs that are necessary to sustain prescribed fire. Roller chopping can be a valuable management tool, enabling the use of prescribed fires in areas heavily invaded by dense woody vegetation. However, roller chopping may damage the herbaceous ground cover, especially wiregrass. Therefore, its application will be limited to situations where burning can only be accomplished by first reducing woody vegetation by mechanical means.

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

The transitional areas between two adjacent but different vegetative cover types, such as forests and wetlands, are known as ecotones. With the possible exception of wildfire suppression, mechanical soil disturbance in ecotones will be avoided in order to protect habitats for important rare species that often occur between flatwoods and riparian drainages. Silvicultural site preparation and creation of firebreaks are avoided when possible in these zones. Additionally, fires are allowed to burn into the edges of marshes, swamps and other wetlands in order to maintain these habitats. Once fuel loads have been reduced and a more open appearance has returned, vegetative management objectives will likely dictate a fire return interval that averages 2-4 years.

In addition to the general prescribed fire management guidelines described above, an area-specific Prescribed Fire Plan has been developed and implemented for the HMWMA (Appendix 12.8). This plan includes, but is not be limited to, delineation of burn management units, detailed descriptions of prescribed fire methodology, safety, and smoke management guidelines.

During the previous 10-year planning period, 100% of the area's fire adapted communities have been treated with prescribed fire. Approximately 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 continue 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 the HMWMA are discussed in more detail below.

5.3.3 Habitat Restoration

Intensive ground cover restoration began in 2004 using agricultural techniques of mechanical and chemical vegetation control, cultivation (plowing), and planting of native flatwoods seed mixes. An initial 23-acre site was undertaken, followed by smaller portions of a 60-acre site on the Gum Slough tract. Maintenance through spot spraying of exotics is ongoing in these areas, which remain excluded from cattle grazing.

Ongoing restoration activities will include removal of off-site species, planting of native groundcover species including wiregrass, longleaf pine, and other appropriate native mid-story and canopy tree species. Upon successful restoration of these altered areas, they will be monitored and maintained.

Restoration activities will take place primarily on old pastures, pine plantations, and xeric hammock. Various mechanical and chemical treatments will be used to control encroaching oak trees in old pastures. Most of the 60 acres of slash pine plantation has been restored to a more natural state by thinning in 1999 and 2009, burning and planting of wiregrass and longleaf pine.

The FWC employs OBVM, to describe the structural character of managed natural communities, allowing FWC staff to make informed management decisions. Vegetative communities on the HMWMA that may undergo some level of habitat restoration include xeric hammock and pasture.

Additional resource management approaches that will be implemented as needed on the HMWMA include natural community enhancement, altered community restoration, and maintenance of recommended fire return intervals for fire adapted communities, treatment and removal of 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 xeric hammock 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 the HMWMA 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, common game, and non-game species, can be found on the HMWMA. 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 mesic flatwoods, xeric hammock, depression marsh, floodplain forest, and floodplain swamp. Natural communities that are less represented on the HMWMA include wet flatwoods and dome swamp.

The size and natural community diversity of the HMWMA 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 HMWMA 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, due to the limited size of the area, some of the hunting opportunities may be regulated through a limited entry hunt program to ensure the persistence of viable game species populations, as well as hunter safety and satisfaction. The potential for conflicts among recreational activities and user groups will also be considered and continually monitored.

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

Concurrent with ongoing species inventory and monitoring activities, management practices are designed to restore, enhance, or maintain rare and imperiled species, and their habitats. This will be further augmented by following approved Federal and FWC species recovery plans, guidelines, and other scientific recommendations for these species. Guided by these recommendations, land management activities including prescribed burning and timber stand improvements will address rare and imperiled species requirements and habitat needs. Section 5.4.2 below provides further information on FWC's comprehensive species management strategy for rare and imperiled wildlife and their respective habitats.

5.4.2 Imperiled and Locally-Important Species: Wildlife Conservation Prioritization and Recovery

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

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

The WCPR program helps the FWC take a proactive, science-based approach to species management on 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 the 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 select WCPR locally important species found on the area.

In summary, 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 HMWMA. 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 wildlife species.

During the previous planning period, the FWC conducted surveys for five imperiled and locally important species, including striped newt, gopher frog, Bachman's sparrow, Florida scrub-jay, and gopher tortoise. The FWC also monitored nine kestrel nest boxes. These imperiled species projects, along with other ongoing imperiled species management activities, will continue to be implemented in accordance with the HMWMA WCPR Species Management Strategy (Appendix 12.9).

The WCPR Strategy for the HMWMA includes 31 species locally important and imperiled species as having potential habitat on the area. Of these identified species, the HMWMA WCPR Strategy provides measurable objectives or recommends some level of monitoring for gopher tortoise, Bachman's sparrow, brown-headed nuthatch, Florida scrub-jay, Southeastern American kestrel, and white-tailed deer.

5.5 Exotic and Invasive Species Maintenance and Control

The FWC will continue efforts to control the establishment and spread of FLEPPC Category I or II plants on the HMWMA. 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 HMWMA and treated annually by FWC include Caesar's weed, camphor tree, Chinaberry, Chinese brake fern, Chinese tallow,

cogongrass, guava, Japanese climbing fern, skunk vine, torpedo grass, tropical soda apple, and water-lettuce. Exotic and invasive plant species have been identified as occurring at varying densities on the HMWMA. However, the FWC's methodology for determining the number of acres "infested" with invasive and exotic plants only represents a cumulative acreage and does not reflect the degree of the invasive exotic occurrence. The degree of infestation among areas identified with invasive and exotic plant occurrences often varies substantially by species, level of disturbance, environmental conditions, and the status of ongoing eradication and control efforts. The FWC will continue to focus treatments on areas identified as having invasive and exotic 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 HMWMA by inspecting any vehicles and equipment brought onto the area by contractors and requiring that they be free of vegetation and dirt. If vehicles or equipment used by contractors are found to be contaminated, they will be referred to an appropriate location to clean the equipment prior to being allowed on the area. This requirement is included in every contract for contractors who are conducting any operational or resource management work on the area. In this way, FWC implements a proactive approach to controlling the introduction of exotic pests and pathogens to the area.

An exotic animal species of concern on the HMWMA 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 wild hog-dog hunt season, archery, small game, general gun, and muzzleloading gun. 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.

Currently, maintenance and control of invasive and exotic plant species (Table 6) continues to be a significant management challenge at the HMWMA. During the previous 10-year planning period, FWC continued to implement extensive exotic and invasive species control and maintenance activities throughout the HMWMA. These included invasive and exotic plant species treatments on a total of 66 acres within areas classified as infested, resulting in an overall 100% of the HMWMA currently being in a maintenance condition. None of the HMWMA remains classified in an infested condition, thus requiring continued intensive treatments. The FWC will continue to focus control and maintenance activities on areas identified as having invasive and 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 HMWMA are further detailed in Sections 6 – 7 below.

5.6 Public Access and Recreational Opportunities

5.6.1 Americans with Disabilities Act

When public facilities are developed on areas managed by the FWC, every effort is made to comply with the Americans with Disabilities Act (Public Law 101-336). As new facilities are developed, the universal access requirements of this law are followed in all cases except where the law allows reasonable exceptions. Recreation facilities in semi-primitive or primitive zones will be planned to be universally accessible to the degree possible except as allowed by the ADA[7] 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 HMWMA. To accomplish this, the FWC has worked with recreational stakeholders and the general public to develop a Recreation Master Plan for the HMWMA that will be used to further design and develop appropriate infrastructure that will support the recreational use of the area by the general public. This Recreation Master Plan includes planning for parking, trail design, and area resource interpretation.

5.6.3 Public Access Carrying Capacity

Baseline carrying capacities for users on 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 HMWMA can currently support 361 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 HMWMA 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 HMWMA offers a wide variety of native wildlife species, both resident and seasonally migratory, that are available for visitors' enjoyment for observation and photography. The quality and diversity of habitats found on the HMWMA attract an equally diverse suite of wildlife species including waterfowl and wading bird species in the wetlands, passerine birds in the uplands, and various mammalian, reptile, and amphibian wildlife throughout the HMWMA.

5.6.5 Hunting

The HMWMA currently offers limited access (quota) archery, muzzleloading gun, general gun, wild hog, and spring turkey hunting seasons. Additional seasons include small game and migratory bird. An evaluation of the hunting opportunities offered on HMWMA is performed annually.

5.6.6 Fishing

Fishing opportunities exist on the HMWMA at several locations, including Gum Slough and 12 ponds, one of which has a dedicated fishing platform. Game species of fish commonly caught include catfish, bream, and largemouth bass.

5.6.7 Boating

The Withlacoochee River is popular with boaters, including those participating in paddling sports. It should be noted that the floodplain swamp and floodplain forest natural communities that are located along the river make it difficult to access the upland areas of the HMWMA by boat.

5.6.8 Hiking

Currently, there are 24.76 miles of multi-use trails on the HMWMA, including 13.4 miles of marked trails that are available for hikers. The FWC will continue to periodically reevaluate the potential for trail connectivity to other conservation areas and will monitor trails for user impacts to natural communities.

5.6.9 Bicycling

Bicycling is permitted year-round on the HMWMA. Currently, the area offers 24.76 miles of multi-use trails that are available for bicyclists.

5.6.10Equestrian

Currently, the HMWMA offers 24.76 miles of multi-use trails that are available for equestrian users. The main entrance of the HMWMA contains a parking area suitable for trailers.

5.6.11Camping

Camping is not permitted at the HMWMA.

5.6.12Geocaching

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/.

5.6.13 Environmental Education

The FWC currently provides educational and interpretive information via a kiosk on the area. Additionally, the FWC maintains a website for the HMWMA that contains a variety of information about the area, its wildlife, and the recreational opportunities that occur there.

To facilitate wildlife viewing recreational opportunities on the area, the FWC has continued to establish and maintain hiking trails, kiosks, and fishing platforms. During the previous 10-year planning period, the FWC completed several public access, recreational, and facility improvements on the HMWMA, including constructing a boardwalk over Mill Creek and improving the entrance facility. 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 HMWMA Recreation Master Plan.

5.7 Hydrological Preservation and Restoration

A hydrological assessment for the HMWMA has been completed. Pursuant to the recommendations of the hydrological assessment, the FWC will implement hydrological restoration as feasible and appropriate. In addition, to enhance natural hydrological functions, the FWC will continue to install, repair, and maintain low-water crossings and culverts as appropriate.

Hydrological restoration will also be conducted by plugging ditches and filling artificial ponds. These ditches and ponds were created decades ago to improve conditions for cattle. Most of the ditches have since filled through erosion and are currently less evident and likely have little impact on the hydrology of the HMWMA.

5.8 Forest Resource Management

A Timber Assessment of the timber resources of the HMWMA has been conducted by the FFS (Appendix 12.10). The management of timber resources will be considered in the context of the Timber Assessment and the overall land management goals and activities.

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

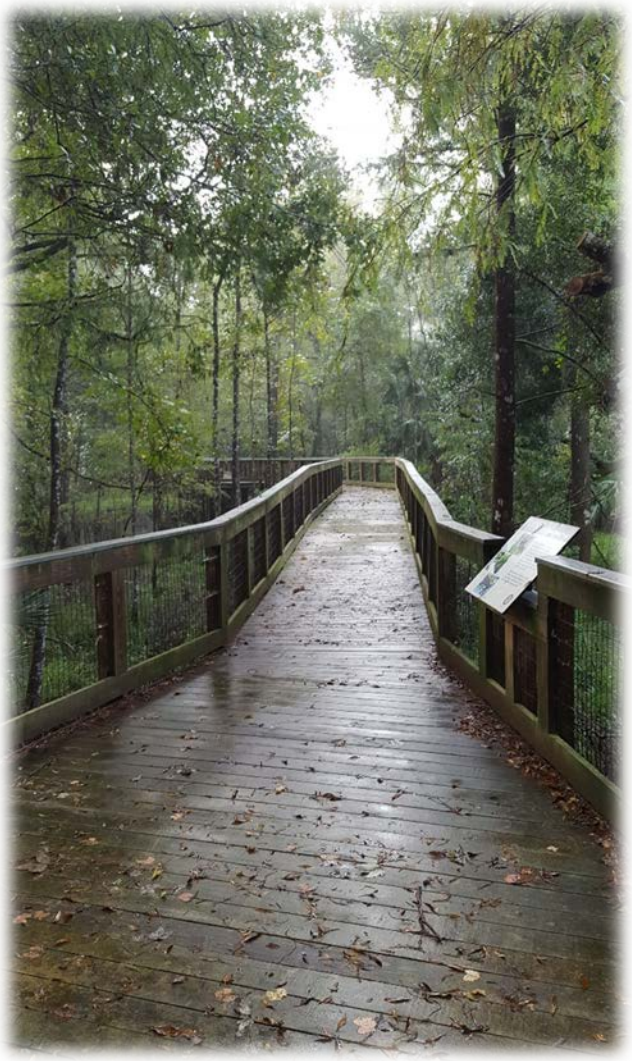
Pursuant to OBVM management goals, the FWC will continue to manage timber resources for wildlife benefits and natural community restoration. Management activities including the use of timber thinning and harvesting may be utilized. The primary management technique for encouraging reforestation is protection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

5.9 Historical Resources

Procedures outlined by the DHR will be followed to preserve the historical sites of the HMWMA. 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 HMWMA.

To date, the DHR Master Site File indicates 14 known historic sites on the HMWMA. The FWC will submit subsequently located historic sites on the HMWMA to the DHR for inclusion in their Master Site File. In cooperation with the DHR, the FWC will continue to monitor these sites on a regular basis.



5.10 Capital Facilities and Infrastructure

The FWC's land management philosophy is designed to conserve the maximum amount of wildlife habitat while providing the minimal number of capital facilities and infrastructure necessary to effectively conduct operational and resource management activities and provide ample opportunities for fish and wildlife resource based public outdoor recreation. For these reasons, planned capital facilities and infrastructure will focus on improving access, recreational potential, hydrology, or other resource and operational management objectives.

Current capital facilities on the HMWMA include a parking area, two kiosks, a staff office facility, check station, equipment storage facility, vault toilet, fishing dock, and a boardwalk (Figure 13). The HMWMA contains 29.83 miles of roads (Figure 14). Additionally, 24.76 miles of trails exist on the area, most of which overlap with the roads.

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

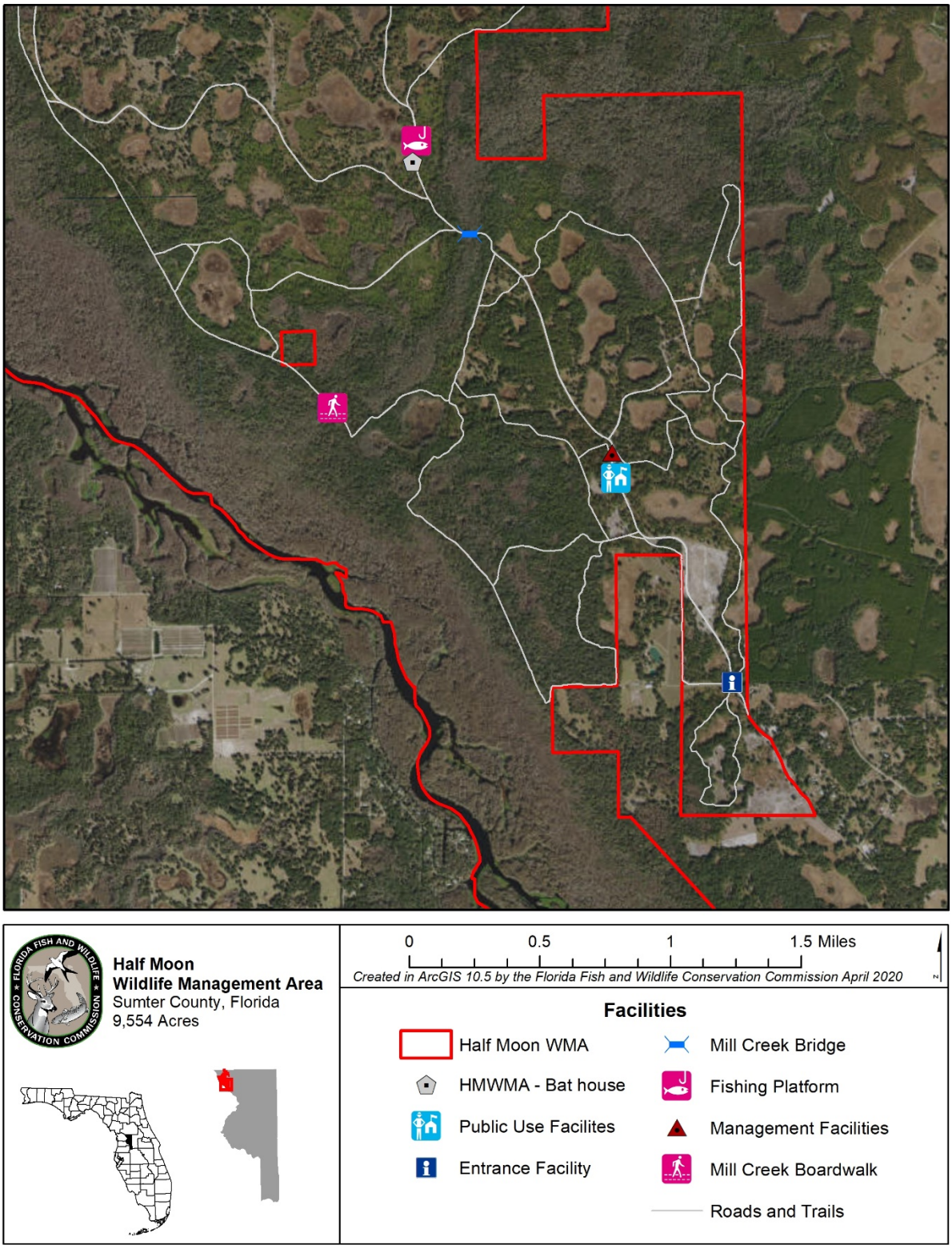


Figure 13: HMWMA Facilities

Figure 14: HMWMA Roads and Trails

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 the 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 the 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 the 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 an FWC managed area is contained while eliminating urban areas or lands that have already been conserved or protected.

5.11.2 Optimal Conservation Planning Boundary

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

The OCPB provides the basis for development of a broader CAS for the HMWMA. 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 (Figure 15). 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 12.11) 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/ .

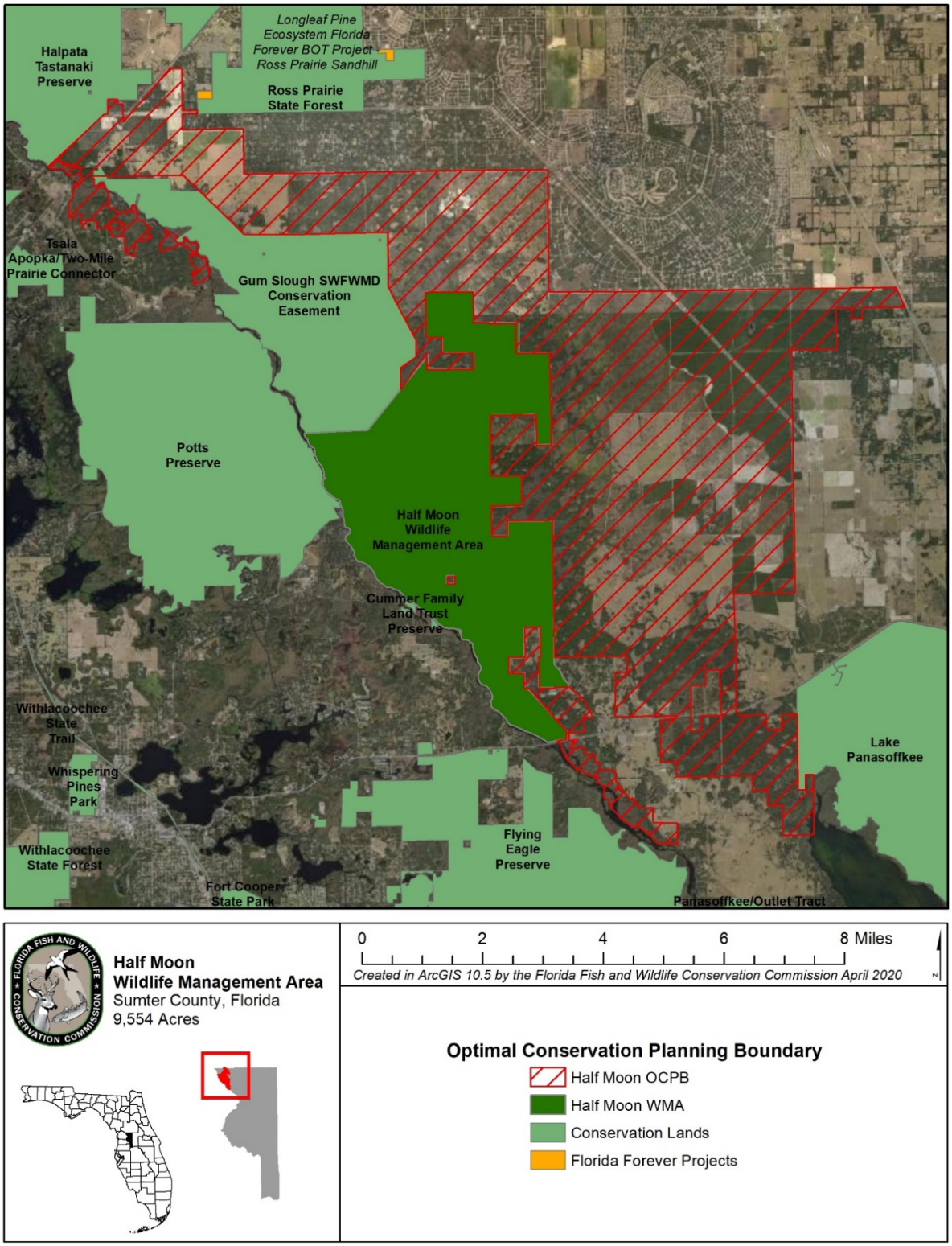


Figure 15: HMWMA Optimal Conservation Planning Boundary

5.11.4 FWC Florida Forever Additions and Inholdings Acquisition List

The FWC 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 30,947 acres of potential additions or privately held inholdings for the HMWMA. As necessary and appropriate, additions to the FWC Florida Forever Additions and Inholdings acquisition list may be recommended.

5.12 Research Opportunities

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

5.13 Cooperative Management and Special Uses

5.13.1 Cooperative Management

The FWC is responsible for the overall management and operation of the HMWMA as set forth in the lease agreements with the Board of Trustees and the SWFWMD. 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) are followed with regard to any ground-disturbing activities. In addition, the FFS

assists the FWC by providing technical assistance on forest resource management. Also, FWC cooperates and consults with the SWFWMD and DEP for the monitoring and management of both ground and surface water resources and the overall management of the HMWMA.

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 HMWMA. Such activities are considered allowable uses only when undertaken intermittently for short periods of time, and in a manner that does not impede the management and public use of the HMWMA 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 HMWMA. Any first-responder or military training that is not low-impact, intermittent and occasional would require an amendment to this management plan, and therefore will be submitted by FWC to DSL and ARC for approval consideration prior to authorization.

5.13.3 Cattle Grazing

A five-year cattle grazing contract (Appendix 12.13) with Tilton & Tilton LLC., is in effect until October 4, 2022. Cattle grazing on HMWMA is used as a management tool to supplement and enhance vegetation management using prescribed fire, mechanical, and chemical treatments. Cattle grazing is primarily conducted on improved and semi-improved pasture areas and is excluded from the floodplain forest and floodplain swamp. To preclude over-grazing, and thus the need to feed hay, which may be a source of exotic and invasive noxious weeds, cattle are stocked at no more than one-half the rate recommended by the NRCS or the University of Florida's Extension Service. As established in the cattle grazing contract, stocking rates shall not exceed 72 animal grazing units on the HMWMA. In addition, the FWC reserves the right to reduce this rate upon 60 days written notice to the contractor if grazing is excessive for optimum wildlife management.

5.13.4 Apiaries

The HMWMA contains four sites suitable for apiaries. The use of apiaries is conditionally approved for the HMWMA, 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 12.6). Location, management, and administration of apiaries on the HMWMA is guided by the FWC Apiary Policy (Appendix 12.14.1) and the HMWMA Apiary Assessment (Appendix 12.14.2). In 2018, FWC entered into a three-year Apiary Agreement with Malcom Brinson which includes all four of HMWMA's apiary sites. (Appendix 12.14.3).

5.14 Climate Change

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

The Intergovernmental Panel on Climate Change (IPCC), a multi-national scientific body, reports that climate change is likely proceeding at a rate where there will be unavoidable impacts to humans, wildlife, and habitat. Given current levels of heat-trapping greenhouse gas emissions, shifts in local, regional, and national climate patterns including changes in precipitation, temperature, increased frequency and intensity of extreme weather events, rising sea levels, tidal fluctuations and ocean acidification are projected. The current trend of global temperature increase has appeared to accelerate in recent decades, and continued greenhouse gas emissions may result in projected global average increases of 2 –11.5° F by the end of the century.[9]

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; [10, 11, 12] more frequent invasions and outbreaks of exotic invasive species;[13] and loss of habitat in coastal areas due to sea level rise.[14] Some species are projected to adjust to these conditions through ecological or evolutionary adaptation, whereas others are projected to exhibit range shifts as their distributions track changing climatic conditions. Those species that are unable to respond to changing climatic conditions are projected to go extinct. Some estimates suggest that as many as 20% - 30% of the species currently assessed by the IPCC are at risk of extinction within this century if global mean temperatures exceed increases of 2.7 – 4.5° F.[15] 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 exotic 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 HMWMA, 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 HMWMA 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 HMWMA. 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

6.1.1 Contract for recertification of 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 improvement on 75 acres per year.

6.1.5 Continue to conduct habitat/natural community restoration activities as feasible.

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 the WCPR strategy by managing identified habitats and monitoring identified species.

6.2.2 Continue to collect and record opportunistic wildlife species occurrence data.

6.2.3 Update the WCPR Strategy by 2029.

6.2.4 Contract for a rare plant survey.

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 locally important wildlife species, as identified in the WCPR strategy.

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 Continue to annually inspect for the level of infestation of FLEPPC Category I and Category II invasive and exotic plant species and treat as needed and appropriate, including along roadsides, fire lines, trails, and disturbed areas for exotic plant species and treat all known locations as needed and appropriate.

6.4.2 Contract to conduct survey and mapping of invasive and exotic plant species.

6.4.3 Continue to implement current control measures on wild hogs and monitor impacts to evaluate if other control measures are necessary.

6.5 Public Access and Recreational Opportunities

Goal: Provide public access and recreational opportunities.

Long-term

6.5.1 Update the Recreation Master Plan if warranted by new acquisitions or other factors.

6.5.2 Maintain public access and recreational opportunities to allow for a maximum recreational carrying capacity of 361 visitors per day.

6.5.3 Continue to provide website, four interpretive signs, McKinney Homestead interpretive sign, and two kiosks for interpretation and education.

6.5.4 Assess the feasibility for supporting active educational opportunities on the area.

6.5.5 Install ground cover restoration interpretive sign (Figure 16).

6.5.6 Continue to maintain 24.76 miles of trails, including 13.4 miles of marked trails.

6.5.7 Monitor trails annually for visitor impacts.

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

6.5.9 Continue to provide paddling opportunities on appropriate water bodies.

6.5.10 Continue to provide fishing opportunities on appropriate water bodies.

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

6.6 Hydrological Preservation and Restoration

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

Short-term

6.6.1 Repair or replace one culvert on the north end of the HMWMA near the Smith property (Figure 16).

Long-term

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

6.6.3 Continue to cooperate with the SWFWMD for the monitoring of surface and ground water quality and quantity.

6.7 Forest Resource Management

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

Long-term

6.7.1 Contract for and implement a Timber Management Plan including reforestation, harvesting, and prescribed burning activities based on restoration and maintenance needs of the natural communities and other goals established for management of the HMWMA.

6.7.2 Continue to consult with the FFS, SWFWMD, 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 DHR Master Site file.

6.8.2 Continue to coordinate with DHR to schedule a historical reconnaissance survey if deemed necessary.

6.8.3 Install feral hog proof fencing around the historic cemetery.

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

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

6.8.6 Continue to monitor 14 identified sites annually, and protect and preserve the sites as necessary.

6.8.7 Coordinate with DHR for cultural resource management guideline staff training as needed.

6.8.8 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.

6.9 Capital Facilities and Infrastructure

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

Long-term

6.9.1 Continue to monitor trails and infrastructure annually for visitor impacts.

6.9.2 Continue to maintain 9 facilities including the parking area, two kiosks, office, check station, storage facility, vault toilet, fishing dock, and boardwalk.

6.9.3 Continue to maintain 29.83 miles of roads.

6.9.4 Continue to maintain 13.4 miles of marked trails existing on site.

6.9.5 Construct restroom facility near parking area if deemed necessary and appropriate (Figure 14).

6.9.6 Replace check station if deemed necessary (Figure 16).

6.9.7 Improve or repair nine facilities, roads, and trails existing on site 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 HMWMA 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 CAS for the HMWMA 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 HMWMA 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 HMWMA.

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 HMWMA.

6.11.2 As appropriate, update the HMWMA 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.

Figure 16: HMWMA Management Plan Goal and Objective Locations

6.12 Cooperative Management, Special Uses, and Research Opportunities

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

Long-term

6.12.1 Continue to cooperate with researchers, universities, University of Florida Institute of Food and Agricultural Services, Florida Native Plant Society, and others as appropriate.

6.12.2 Coordinate and cooperate with Department of Defense military branches to allow for training opportunities for military personnel and other initiatives as appropriate and compatible with the conservation of the HMWMA.

7 Resource Management Challenges and Strategies

The following section identifies and describes further management needs and challenges associated with the HMWMA 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: 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 facilitate area management.

7.1.2 Strategy: Pursue funding for increased law enforcement, management staffing, and additional private sector contract services as appropriate.

7.1.3 Strategy: Periodically explore potential volunteer resources for assisting with management as needed.

7.2 Challenge: A complete boundary survey of HMWMA is lacking.

7.2.1 Strategy: Explore the feasibility of contracting for boundary survey.

7.3 Challenge: While currently at minimal levels, unauthorized access, illegal dumping, vandalism, poaching, and unauthorized off-road vehicle (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.

7.4 Challenge: Currently there are densities of exotic and invasive species on adjacent lands providing an extensive source of seed that disperses onto and throughout the HMWMA.

7.4.1 Strategy: Coordinate with the local University of Florida cooperative extension office, FWC's Uplands Invasive Plant Species Section, FWC's Landowner Assistance Program, and private organizations to obtain resources to control and manage exotic and invasive plants on adjacent properties and the area.

7.4.2 Strategy: Cooperate with adjacent landowners on exotic species control and on obtaining funding to aid in invasive and exotic species management on adjacent private lands.

7.5 Challenge: Potential future development on adjacent lands as well as proposed linear facilities can result in incompatible land uses increasing management challenges for the area.

7.5.1 Strategy: Continue to cooperate with and provide information to local stakeholder groups regarding external threats to the HMWMA.

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

7.6 Challenge: There are inholdings within the HMWMA that can cause management challenges.

7.6.1 Strategy: Explore the feasibility of contracting for a boundary survey.

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

7.6.3 Strategy: Maintain the inholdings within the OCPB.

7.6.4 Strategy: Coordinate with existing landowners regarding management of invasive and exotic plant species.

7.7 Challenge: An ambiguous ordinary high-water line along the Withlacoochee River contributes to trespass and poaching enforcement issues.

7.7.1 Strategy: Continue to consult with DEP-DSL Bureau of Survey and Mapping to obtain official delineation of the ordinary high-water line for the HMWMA to aid in addressing ongoing impacts to the area.

7.7.2 Strategy: Investigate the feasibility of obtaining a lease for the sovereign submerged lands currently included within the established boundary of the HMWMA to address ongoing impacts to the area.

8 Cost Estimates and Funding Sources

The following represents the actual and unmet budgetary needs for managing the lands and resources of the HMWMA. This cost estimate was developed using data developed by FWC and other cooperating entities and is based on actual costs for land management activities, equipment purchase and maintenance, and for development of fixed capital facilities. Funds needed to protect and manage the property and to fully implement the recommended program are derived primarily from the Land Acquisition Trust Fund and from State Legislative appropriations. However, private conservation organizations may be cooperators with the agency for funding of specific projects. Alternative funding sources, such as monies available through 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 HMWMA. Cost estimate categories are those currently recognized by FWC and the Land Management Uniform Accounting Council. More information on these categories, as well as the Fiscal Year 2019-2020 operational plan showing detailed cost estimates by activity and categories of expenditures, may be found in Appendix 12.15.

Half Moon WMA Management Plan
Cost Estimate
Maximum expected one-year expenditure

Resource Management	Expenditure	Priority
Exotic Species Control	$22,210	(1)
Prescribed Burning	$74,203	(1)
Cultural Resource Management	$3,109	(1)
Timber Management	$3,512	(1)
Hydrological Management	$0	(1)
Other (Restoration, Enhancement, Surveys, Monitoring, etc.)	$143,113	(1)
Subtotal	**$246,146**	
Administration		
General administration	**$22,755**	(1)
Support		
Land Management Planning	$31,831	(1)
Land Management Reviews	$5,343	(3)
Training/Staff Development	$8,300	(1)
Vehicle Purchase	$394,439	(2)
Vehicle Operation and Maintenance	$97,292	(1)
Other (Technical Reports, Data Management, etc.)	$17,371	(1)
Subtotal	**$554,575**	
Capital Improvements		
New Facility Construction	$20,171	(2)
Facility Maintenance	$83,716	(1)
Subtotal	**$103,887**	
Visitor Services/Recreation		
Info./Education/Operations	**$43,297**	(1)
Law Enforcement		
Resource protection	**$8,726**	(1)
Total	**$979,385**	*

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

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

Half Moon WMA Management Plan Cost Estimate

Ten-year projection

Resource Management	Expenditure	Priority
Exotic Species Control	$195,138	(1)
Prescribed Burning	$651,955	(1)
Cultural Resource Management	$27,314	(1)
Timber Management	$30,853	(1)
Hydrological Management	$0	(1)
Other (Restoration, Enhancement, Surveys, Monitoring, etc.)	$1,257,402	(1)
Subtotal	**$2,162,663**	
Administration		
General administration	**$199,924**	(1)
Support		
Land Management Planning	$279,674	(1)
Land Management Reviews	$15,295	(3)
Training/Staff Development	$72,922	(1)
Vehicle Purchase	$1,388,047	(2)
Vehicle Operation and Maintenance	$854,816	(1)
Other (Technical Reports, Data Management, etc.)	$152,622	(1)
Subtotal	**$2,763,374**	
Capital Improvements		
New Facility Construction	$58,264	(2)
Facility Maintenance	$735,538	(1)
Subtotal	**$793,802**	
Visitor Services/Recreation		
Info./Education/Operations	**$380,409**	(1)
Law Enforcement		
Resource protection	**$76,668**	(1)
Total	**$6,376,840**	*

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

* Based on the characteristics and requirements of this area, five 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			✓
• Exotic 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 HMWMA 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 12.6). Such uses also comply with the authorities of the FWC as derived from Article IV, Section 9 of the Florida Constitution as well as the guidance and directives of Chapters, 253, 259, 327, 370, 379, 403, 870, 373, 375, 378, 487, and 597 FS.

The FWC has developed and utilizes an Arthropod Control Plan for the HMWMA in compliance with Chapter 388.4111 FS. (Appendix 12.16). This plan was developed in cooperation with the local Sumter County arthropod control agency. This management plan is also in conformance with the Local Government Comprehensive Plan as approved and adopted for Sumter County, Florida (Appendix 12.17).

11 Endnotes

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

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

[3] Soil Survey of Sumter County, Florida. 1988. United States Department of Agriculture, Soil Conservation Service; University of Florida, Institute of Food and Agricultural Sciences, Agricultural Experiment Stations and Soil Science Department; Florida Department of Transportation; Florida Department of Agriculture and Consumer Services. 1, 3, 6pp.

[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

12.1.1 Board of Trustees Lease Number 3789

DIVISION LOG # `2042 AGREEMENT NUMBER 89048

AGREEMENT ROUTING REVIEW FORM

CONTRACTOR DEP / FWC

VENDOR ID NO. _____ PROCUREMENT METHOD*/BID/RFP NO. _____

PROJECT TITLE HALF MOON WMA – MANAGEMENT AGREEMENT

ORIGINATOR/CONTACT D. JERMYN PHONE 488-3831 DIV./OFFICE/MAIL 10

X NEW** __AMENDMENT __ RENEWS OR EXTENDS **PURCHASING USE ONLY: POSTING - 7 DAY: 72 HR**

___EXPENDITURE** ___REVENUE ___AGREEMENT __ EASEMENT/DEED X__LEASE (INCLUDES WMA OR FMA LEASES)

AGREEMENT BEGINNING DATE/EXECUTION 12/18/89 END DATE 12/17/2039 OPTION FOR_____YEARS TOTAL

CONTRACT AMOUNT _____ CONTRACT AMOUNT _____

BILLING PERIODS: ___MONTHLY ___QUARTERLY ___ANNUALLY ___OTHER_____

BUILDING INSURANCE TO BE INCURRED BY THE COMMISSION (LEASES) ___NO ___YES (Notify Property Administrator)

****NEW EXPENDITURE: CONTRACTS**
(1) Attach a copy of the State Project checklist or, for Existing State Projects, show the CSFA No._____
(2) Vendor/Recipient Checklist: Attached? ___Yes ___ No - not a State Project per (1) Checklist

ORG. CODE	E.O.	OBJECT CODE	CATEGORY	AMOUNT	PROJECT ID			FY

Certified Minority: ___Yes ____No ____Not Available ___Not Appl. Minority Category _____ (See reverse side for options)

Commodity Code_____ Federal Funds: Agcy _____CFDA _____

Routing Order for Approval	Approval (Signature)	Date	Comments
1. Project Leader		12/9/09	Budget Sheet is available upon request by external sources. ___ Yes ___ No
2. Budget Director (Expenditure Only)			Budget Authority: __ Existing __ New
3. Div./Reg./Inst./Off. Dir./Section Leader			
4. Contracts Administrator			
5. Legal			
6. Accounting			Funds Availability: ___ Yes ___ No
7. Exec./Div./Reg./Inst./Off. Dir. **review (check below).**			
__ Expenditure Contracts: Return to Originator for Contractor signature. __ Other documents: Send to **(circle)** Exec./Div./Reg./Inst./Off. Dir. for signature.			Expenditure Contracts: After Contractor signs, send to Exec./Div./Reg./Inst./Off. Director for signature and dating.
8. Exec./Div./Reg./Inst. Dir. **execute**			
Originator Copy to Accounting*			Send a complete copy of the Contract & Routing Form
Originator to Contracts Administrator*			Send executed Original Contract & Original Routing Form
Originator to OIG FSAA Originals			Send to OIG: Mail Code 1E

FWC 167/rev. 01/08 \SHARE\FORMS\CONROUTE.167 *See reverse for Codes/Definitions/Distribution

12/10/09

DEPARTMENT OF ENVIRONMENTAL PROTECTION
RECEIPTS SECTION
POST OFFICE BOX 3070
TALLAHASSEE, FL 32315-3070

RECEIVED
JUL 2 2 2003
BUREAU OF WILDLIFE MANAGEMENT

Invoice

Date	Invoice #
7/21/2003	10138

Bill To

MR SCOTT SANDERS
FFWCC
620 SOUTH MERIDIAN
TALLAHASSEE, FL 32399-1600

Lease #	Due Date
3789	8/20/2003

Description	Rate	Amount
ANNUAL LEASE FEE - UPLANDS 2003/2004 (001015) AGENCY FEE	300.00	300.00

BWM

Date Goods Received _____

Date Inspected & Approved _____

Date Invoice Received 7/24/03

PROJECT NAME: CARLTON HALF-MOON WMA

773020 20100 • EO 80

Object 499060 Equip # _____

PERMIT COPY WITH PAYMENT

9200 - 200 - 7329
(Species) (Act.) (Proj.)

Cert. Minority Vendor ___Yes ___No ___Not Avail ✓ N/A

Subtotal	$300.00
Sales Tax (6.0%)	$0.00
Total	$300.00
Balance Due	$300.00

Journal Transfer Instructions:
SAMAS CODE:
37202408001371003000 0

BF OBJ: **001000** **BF CAT:** **000100**

OBJECT CODE:
001015

F&A USE ONLY:
37101000000 K4

Mark B. Brown
7-25-03

7-25-03

DEPARTMENT OF ENVIRONMENTAL PROTECTION
RECEIPTS SECTION
POST OFFICE BOX 3070
TALLAHASSEE, FL 32315-3070

REMIT COPY
WITH PAYMENT

Invoice

Date	Invoice #
7/5/2002	5114

Lease #
3789

Due Date
3/4/2002

Bill To
MR SCOTT SANDERS FFWCC 620 SOUTH MERIDIAN TALLAHASSEE, FLORIDA 32399-1600

Scott Sanders 7/16/02
[illegible] 7/17/02

Description	Rate	Amount
AGENCY FEES-UPLANDS (001015) BWM	300.00	300.00

Date Goods Received _____

Date Inspected & Approved _____

Date Invoice Received 7/16/02

773020 50100 EO 80

Object 449060 Equip # _____

9200 - 104 - 7329
(Species) (Act.) (Proj.)

Cert. Minority Vendor ___Yes ___No ___Not Avail ___N/A

	Subtotal	$300.00
	Sales Tax (6.0%)	$0.00
	Total	$300.00
	Balance Due	$300.00

Journal Transfer Instructions:
SAMAS CODE:
37202408001371003000 0

BF OBJ: BF CAT:
001000 000100

OBJECT CODE:
001015

F&A USE ONLY:
37101000000 K4

INVOICE

DEPARTMENT OF ENVIRONMENTAL PROTECTION
RECEIPT SECTION
POST OFFICE 3070
TALLAHASSEE, FLORIDA 32315-3070
Telephone (850) 488-2291

INVOICE NO. 99 0749
INVOICE DATE 07/01/1999
LEASE NO. 3789

TO: MR SCOTT SANDERS
FGFWFC
620 SOUTH MERIDIAN
TALLAHASSEE, FLORIDA 32399-1600

DUE DATE	DESCRIPTION	98/99 FEE	99/2000 FEE	AMOUNT
07/01/1999	CARLTON HALF-MOON RANCH	0.00	300.00	300.00

TO INSURE PROPER CREDIT FOR PAYMENT

1. DEP Divisions- Please send copy of payment request to attention of: Contract Section, Bureau of Finance and Accounting, MS 78

   State agencies other than DEP- Please send voucher schedule to attention of: Bonnie Roberts, Department of Environmental Protection, Bureau of Finance and Accounting, MS 75, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

   Non-State agencies- Please return one copy of this invoice with your payment.

2. If you submit an amount different than requested, you must attach a letter of explanation with payment.

3. If you have any questions or comments, please call Tracy Peters at 488-2291.

DIVISION OF STATE LANDS
BUREAU OF LAND MANAGEMENT SERVICES

Organization Code 3710-1000-000/D1

Object Code 001015

Samas Code 37 20 2 408001 37100000 00 000100 00

BWM
DATE GOODS RECEIVED 9/ 99
DATE INSPECTED & APPROVED
DATE INVOICE RECEIVED
DIV 30 RCC 4716
OBJECT 432000 20
PROJECT# 3000 - 113 - 9
PROC(4) ACT(3) PROJ(4)
Cert. Minority Vendor ___Yes___No___Not Applicable___N/A

J. Scott Sanders 9/2/99
Mike Wilby 9/7/99

INVOICE

DEPARTMENT OF ENVIRONMENTAL PROTECTION
RECEIPT SECTION
POST OFFICE 3070
TALLAHASSEE, FLORIDA 32315-3070
Telephone (904) 488-2291

INVOICE NO. 98 0749
INVOICE DATE 07/01/98
LEASE NO. 3789

TO: MR SCOTT SANDERS
FGFWFC
620 SOUTH MERIDIAN
TALLAHASSEE, FLORIDA 32399-1600

DUE DATE	DESCRIPTION	97/98 FEE	98/99 FEE	AMOUNT
07/01/98	CARLTON HALF-MOON RANCH	0.00	300.00	300.00

TO INSURE PROPER CREDIT FOR PAYMENT

1. DEP Divisions- Please send copy of payment request to attention of:
Bonnie Roberts, Bureau of Finance and Accounting, MS 75.

State agencies other than DEP- Please send voucher schedule to attention of:
Bonnie Roberts, Department of Environmental Protection, Bureau of Finance and Accounting, MS 75, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

Non-State agencies- Please return one copy of this invoice with your payment.

2. If you submit an amount different than requested, you must attach a letter of explanation with payment.

3. If you have any questions or comments, please call Tracy Peters at 488-2291.

DIVISION OF STATE LANDS
BUREAU OF LAND MANAGEMENT SERVICES

Organization Code 3710-1000-000/D1

Object Code 001015

Samas Code 37 20 2 408001 37100000 00 000100 00

BWM
DATE GOODS RECEIVED 6/24/98
DATE INSPECTED & APPROVED "
DATE INVOICE RECEIVED
DIV 30 RCC 4216 EO 20
OBJECT 732000 EQUIP # —
PROJECT# 3000 - 113 - 7329
PROG(4) ACT(3) PROJ(4)
Cert. Minority Vendor ___Yes___No___Not Avail.___N/A

J. Scott Sanders 7/10/98
Nicki Wiley 7/14/98

Department of
Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

December 18, 1996

Mr. Charles D. Miner
Attorney at Law
105 East Robinson Street
Orlando FL 32801

Dear Mr. Miner:

Enclosed for execution are duplicate originals of Easement No. 29760. This easement has been amended per your recommendations, and in agreement with our legal department .

Please review these documents and if there are no other changes have your client execute both originals and return them to this office. Upon final execution by our department, one original will be returned to Mr. Sanchez for his records.

Should you have further questions or need additional information with respects to this easement, please call me at (904) 488-2291.

Sincerely,

Ed Hachenberger

Ed Hachenberger, Planner
Bureau of Land Management Services
Division of State Lands

eh/
cc: Ms. Judy Drymon, FGFWFC

RECEIVED
DEC 19 1996
BUREAU OF
WILDLIFE MANAGEMENT

"Protect, Conserve and Manage Florida's Environment and Natural Resources"

Printed on recycled paper.

Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

JSS
FHS
MBB
NHB
JAD
File WLD 8-5-2 Halfmoon Andrews

November 19, 1996

Mr. J. Scott Sanders, Assistant Chief
Bureau of Wildlife Management
FGFWFC
620 South Meridian Street
Tallahassee, Florida 32399-1600

RECEIVED
NOV 21 1996
BUREAU OF WILDLIFE MANAGEMENT

Dear Mr. Sanders:

Halfmoon Ranch Wildlife Management Area
Trustees Lease No. 3789, Sumter County

Andrews Wildlife Management Area
Trustees Lease No. 3587, Levy County

On November 18, 1996, the Chief of the Bureau of Land Management Services approved the subject management plans on behalf of the Board of Trustees of the Internal Improvement Trust Fund. Copy of the Certificates of Approval are attached for your records. Pursuant to Section 253.034, Florida Statutes, and Chapter 18-2. Florida Administrative Code, these five year updates will be due in November 2001.

Approval of these land management plans does not waive the authority or jurisdiction of any governmental entity that may have an interest in these projects. Implementation of any upland activities proposed by these management plans may require permits or other authorizations from federal and state agencies having regulatory jurisdiction over those particular activities. Please forward copies of all permits to this office upon issuance.

Should you have any questions, please contact me at 488-2291.

Sincerely,

Hank

Hank Vinson, LMAC Staff
Bureau of Land Management Services

/hv
Attachment

"Protect, Conserve and Manage Florida's Environment and Natural Resources"

Printed on recycled paper.

INVOICE

DEPARTMENT OF ENVIRONMENTAL PROTECTION
RECEIPT SECTION
POST OFFICE 3070
TALLAHASSEE, FLORIDA 32315-3070

Telephone (904) 488-2291

INVOICE NO. 96 0749
INVOICE DATE 07/01/96
LEASE NO. 3789

TO: MR FRANK SMITH
FGFWFC
620 SOUTH MERIDIAN
TALLAHASSEE, FLORIDA 32399-1600

DUE DATE	DESCRIPTION	95/96 FEE	96/97 FEE	AMOUNT DUE
07/01/96	CARLTON HALF-MOON RANCH	0.00	300.00	300.00

TO INSURE PROPER CREDIT FOR PAYMENT

1. DEP Divisions- Please send copy of payment request to attention of:
Bonnie Roberts, Bureau of Finance and Accounting, MS 75.

State agencies other than DEP- Please send voucher schedule to attention of:
Bonnie Roberts, Department of Environmental Protection, Bureau of Finance and Accounting, MS 75, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

Non-State agencies- Please return one copy of this invoice with your payment.

2. If you submit an amount different than requested, you must attach a letter of explanation with payment.

3. If you have any questions or comments, please call Tracy Peters at 488-2291.

DIVISION OF STATE LANDS
BUREAU OF LAND MANAGEMENT SERVICES

Organization Code 3710-1000-000/D1

Object Code 001015

Samas Code 37 20 2 408001 37100000 00 000100 00

RCC 4716
Project 7329
Object 432000
J Scott Sanders 6/17/96
Frank W Smith 6/17/96

INVOICE

DEPARTMENT OF ENVIRONMENTAL PROTECTION
RECEIPT SECTION
POST OFFICE BOX 3070
TALLAHASSEE, FLORIDA 32315-3070

INVOICE NO. 950749

INVOICE DATE 07/01/95

Telephone (904) 488-2291

LEASE NO. 3789

TO: MR FRANK SMITH
FGFWFC
620 SOUTH MERIDIAN
TALLAHASSEE, FLORIDA 32399-1600

RECEIVED
SEP 5 1995
BUREAU OF
WILDLIFE MANAGEMENT

DUE DATE	DESCRIPTION	94/95 FEE	95/96 FEE	AMOUNT DUE
07/01/95	CARLTON HALF-MOON RANCH	0.00	300.00	300.00

TO INSURE PROPER CREDIT FOR PAYMENT

1. DEP Divisions- Please send copy of payment request to attention of: Bonnie Roberts, Bureau of Finance and Accounting, MS 75.

   State agencies other than DEP - Please send voucher schedule to attention of: Bonnie Roberts, Department of Environmental Protection, Bureau of Finance and Accounting, MS 75, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

   Non-state agencies- Please return one copy of this invoice with your payment.

2. If you submit an amount different than requested, you must attach a letter of explanation with payment.

3. If you have any questions or comments, please call Tracy Peters at 488-2291.

DIVISION OF STATE LANDS
BUREAU OF LAND MANAGEMENT SERVICES

Organization Code 3710-1000-000/D1

Object Code 001015

Samas Code 37 20 2 408001 37100000 00 000100 00

RCC: 4716
Project: 7329
Object: 432000
J. Scott Sanders
Frank E. Smith

INVOICE

DEPARTMENT OF ENVIRONMENTAL PROTECTION
RECEIPT SECTION
POST OFFICE BOX 3070
TALLAHASSEE, FLORIDA 32315-3070

RECEIVED
FISCAL OFFICE
'94 SEP 23 AM 8 51

INVOICE NO. 940749

INVOICE DATE 07/01/94

Telephone (904) 488-2291

LEASE NO. 3789

TO: MR FRANK SMITH
FGFWFC
620 SOUTH MERIDIAN
TALLAHASSEE, FLORIDA 32399-1600

FHS
RCC- 4716 Proj 7329 Act 0271
pay by Journal Transfer
$1300
J Scott Sanders
Frank H Smith

DUE DATE	DESCRIPTION	93/94 FEE	94/95 FEE	AMOUNT DUE
07/01/94	CARLTON HALF-MOON RANCH	0.00	300.00	300.00

TO INSURE PROPER CREDIT FOR PAYMENT

1. DEP Divisions- Please send copy of payment request to attention of: Bonnie Roberts, Bureau of Finance and Accounting, MS 75.

   State agencies other than DEP - Please send voucher schedule to attention of: Bonnie Roberts, Department of Environmental Protection, Bureau of Finance and Accounting, MS 75, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

   Non-state agencies- Please return one copy of this invoice with your payment.

2. If you submit an amount different than requested, you must attach a letter of explanation with payment.

3. If you have any questions or comments, please call Tracy Peters at 488-2291.

DIVISION OF STATE LANDS
BUREAU OF LAND MANAGEMENT SERVICES

Organization Code 3710-1000-000/D1

Object Code 001015

Samas Code 37 20 2 408001 37100000 00 000100 00

STATE OF FLORIDA
DEPARTMENT OF NATURAL RESOURCES

Marjory Stoneman Douglas Building • 3900 Commonwealth Boulevard • Tallahassee, Florida 32399
Tom Gardner, Executive Director

December 20, 1989

Mr. Frank H. Smith, Chief
Bureau of Wildlife Management
Game and Fresh Water Fish
Commission
Farris Bryant Building
Tallahassee, Florida 32399-1600

Les 7HS
cc Mike Brooks
Original to Central F
cc. our files

Dear Mr. Smith:

Carlton Half-Moon Ranch CARL Project,
Sumter County

Enclosed for your records is original, fully-executed Lease Agreement No. 3789, between the Board of Trustees and the Game and Fresh Water Fish Commission, covering the above-referenced project.

Sincerely,

Catherine Daniels

Catherine Daniels
Planning Manager
Bureau of Uplands Management
ion of State Lands

CD/

4500

Enclosure

Administration | Beaches and Shores | Law Enforcement | Marine Resources | Recreation and Parks | Resource Management | State Lands

Bob Martinez, Governor | Jim Smith, Secretary of State | Bob Butterworth, Attorney General | Gerald Lewis, State Comptroller | Tom Gallagher, State Treasurer | Doyle Conner, Commissioner of Agriculture | Betty Castor, Commissioner of Education

FLORIDA GAME AND FRESH WATER FISH COMMISSION

C. TOM RAINEY, D.V.M. Miami | WILLIAM G. BOSTICK, JR. Winter Haven | DON WRIGHT Orlando | THOMAS L. HIRES, SR. Lake Wales | MRS. GILBERT W. HUMPHREY Miccosukee

ROBERT M. BRANTLY, Executive Director
ALLAN L. EGBERT, Ph.D., Assistant Executive Director

FARRIS BRYANT BUILDING
620 South Meridian Street
Tallahassee, Florida 32399-1600
(904) 488-1960

November 30, 1989

Ms. Debra A. Hart
Division of State Lands
Department of Natural Resources
3900 Commonwealth Boulevard
Tallahassee, FL 32399

Dear Debra:

Enclosed are two lease agreements for the Half Moon Wildlife Management Area. Please date, witness and execute both copies, retain one for your records and return the other lease agreement to me at the above address.

If I may be of further assistance, please contact me.

Sincerely,

Les J. Rybak
Land Management Specialist
Bureau of Wildlife Management

W451/dr
LEG 8-8
Enclosures
cc: Lt. Colonel Bob Butler
Mr. Mike Brooks
Mr. Tom Wright

FLORIDA GAME AND FRESH WATER FISH COMMISSION

C. TOM RAINEY, D.V.M. Miami
WILLIAM G. BOSTICK, JR. Winter Haven
DON WRIGHT Orlando
THOMAS L. HIRES, SR. Lake Wales
MRS. GILBERT W. HUMPHREY Miccosukee

ROBERT M. BRANTLY, Executive Director
ALLAN L. EGBERT, Ph.D., Assistant Executive Director

CENTRAL REGION
1239 Southwest 10th Street
Ocala, Florida 32674
(904) 629-8162

November 9, 1989

JCC
Les Rybak
H. Boyter
WLD 8-5-2
Half Moon

Mr. Greg Bigham
POB 188
Coleman, FL 34521

Dear Mr. Bigham:

On August 15, 1989 the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida finalized purchase of Carlton Half Moon Ranch (Sumter County Off. Rec. 392, pp. 96-99). As a former leaseholder of grazing privileges, you were extended a grace period to facilitate removal of your cattle from the area. That period has since expired with no apparent compliance except for limited removal of calves. Continued use of the area by you and your cattle is unauthorized and incongruous with goals and objectives under which the property was purchased.

To avoid legal action, please comply promptly with our request to remove all cattle from the area. You may contact our regional office (904/732-1225) in Ocala regarding security arrangements and acquisition of a special use permit for ingress. Thank you for your attention to this matter.

Sincerely,

Michael B. Brooks

Michael B. Brooks
Regional Wildlife Management Biologist

WLD 8-5-2
cc: Lt. Col. Robert Butler
Mr. James Antista
Mr. Frank Smith
Mr. Carlton Chappell
Major David Starling
Sheriff Jamie Adams
Mr. Billy Sermons

FLORIDA GAME AND FRESH WATER FISH COMMISSION

C. TOM RAINEY, D.V.M. Miami
WILLIAM G. BOSTICK, JR. Winter Haven
DON WRIGHT Orlando
THOMAS L. HIRES, SR. Lake Wales
MRS. GILBERT W. HUMPHREY Miccosukee

ROBERT M. BRANTLY, Executive Director
ALLAN L. EGBERT, Ph.D., Assistant Executive Director

CENTRAL REGION
1239 Southwest 10th Street
Ocala, Florida 32674
(904) 629-8162

November 9, 1989

Lee
Les Rybak
WLD-8-5-2
Half Moon

Mr. J. D. Rogers
Route 1, Box 337
Bushnell, FL 33513

Dear Mr. Rogers:

On August 15, 1989 the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida finalized purchase of most of the remaining, privately-held portions of Carlton Half Moon Ranch (Sumter County Off. Rec. 392, pp. 96-99). Forthcoming, the Commission will assume primary managing agency status for the tract. In keeping with that role, our agency is presently reviewing proposals for public use of the property. Also under consideration are egress/ingress needs of owners of inholdings and adjacent properties. To ensure adequate initial security, we intend to change all locks on the main gate located at the terminus of county maintenance of Rutland Road; probably within the next several weeks.

Our records list you as an owner of 200 acres bounded to the north and east by State property. As such, we hope to fully accommodate your access requirements. At your convenience, please contact our regional office (904/732-1225) to discuss this matter further. Thank you for your cooperation.

Sincerely,

Michael B. Brooks

Michael B. Brooks
Regional Wildlife Management Biologist

WLD 8-5-2
cc: Mr. Frank Smith
Mr. Carlton Chappell
Mr. Billy Sermons

FLORIDA GAME AND FRESH WATER FISH COMMISSION

C. TOM RAINEY, D.V.M. Miami
WILLIAM G. BOSTICK, JR. Winter Haven
DON WRIGHT Orlando
THOMAS L. HIRES, SR. Lake Wales
MRS. GILBERT W. HUMPHREY Miccosukee

ROBERT M. BRANTLY, Executive Director
ALLAN L. EGBERT, Ph.D., Assistant Executive Director

CENTRAL REGION
1239 Southwest 10th Street
Ocala, Florida 32674
(904) 629-8162

November 9, 1989

Drake Ranch
2207 South Pine Avenue
Ocala, FL 32671

Dear Gentlemen:

On August 15, 1989 the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida finalized purchase of most of the remaining, privately-held portions of Carlton Half Moon Ranch (Sumter County Off. Rec. 392, pp. 96-99). Forthcoming, the Commission will assume primary managing agency status for the tract. In keeping with that role, our agency is presently reviewing proposals for public use of the property. Also under consideration are egress/ingress needs of owners of inholdings and adjacent properties. To ensure adequate initial security, we intend to change all locks on the main gate located at the terminus of county maintenance of Rutland Road; probably within the next several weeks.

Our records indicate Drake Ranch holds a perpetual egress/ingress easement through State property (Sumter County Off. Rec. 389, p. 134). As such, we hope to fully accommodate your access requirements. At your convenience, please contact our regional office (904/732-1225) to detail security arrangements and expedite processing of special use permits. Thank you for your cooperation.

Sincerely,

Michael B. Brooks

Michael B. Brooks
Regional Wildlife Management Biologist

WLD 8-5-2
cc: Mr. Frank Smith
Mr. Carlton Chappell
Mr. Billy Sermons

FLORIDA GAME AND FRESH WATER FISH COMMISSION

C. TOM RAINEY, D.V.M. Miami | WILLIAM G. BOSTICK, JR. Winter Haven | DON WRIGHT Orlando | THOMAS L. HIRES, SR. Lake Wales | MRS. GILBERT W. HUMPHREY Miccosukee

ROBERT M. BRANTLY, Executive Director
ALLAN L. EGBERT, Ph.D., Assistant Executive Director

CENTRAL REGION
1239 Southwest 10th Street
Ocala, Florida 32674
(904) 629-8162

November 9, 1989

Mr. G. Richard Singletary
POB 1443
Leesburg, FL 34749

Dear Mr. Singletary:

On August 15, 1989 the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida finalized purchase of most of the remaining, privately-held portions of Carlton Half Moon Ranch (Sumter County Off. Rec. 392, pp. 96-99). Forthcoming, the Commission will assume primary managing agency status for the tract. In keeping with that role, our agency is presently reviewing proposals for public use of the property. Also under consideration are egress/ingress needs of owners of inholdings and adjacent properties. To ensure adequate initial security, we intend to change all locks on the main gate located at the terminus of county maintenance of Rutland Road; probably within the next several weeks.

Our records list you as an owner/agent of one 80 acre inholding and one 40 acre parcel contiguous on 3 of 4 boundaries with State property. At your convenience, please contact our regional office (904/732-1225) to discuss this matter further. Thank you for your cooperation.

Sincerely,

Michael B. Brooks
Regional Wildlife Management Biologist

WLD 8-5-2
cc: Mr. Frank Smith
Mr. Carlton Chappell
Mr. Billy Sermons

DIVISION LOG # 540

CONTRACT ROUTING REVIEW FORM

CONTRACT NUMBER 89048 CONTRACTOR GFC/DNR

BRIEF TITLE Lease Agreement - Half Moon WMA

(✓) NEW ( ) RENEWAL ( ) EXTENSION ( ) MODIFICATION

CONTRACT BEGIN DATE Operation END DATE 50 yr lease OPTION FOR -0- YEARS

ORIGINATOR/CONTACT _____ PHONE 488 3831 DIV/OFF _____

Division of Wildlife - Bureau of Wildlife Mgt.

TOTAL CONTRACT AMOUNT $ N/A PAYMENT AMOUNT $ N/A

BILLING PERIODS: ( ) MONTHLY ( ) QUARTERLY ( ) ANNUALLY (✓) OTHER N/A

( ) EXPENDITURE ( ) REVENUE (✓) AGREEMENT

RCC CODE 4037 PROPOSED OBJECT CODE _____ PROJECT (IF NONGAME) N/A

Indicate estimated percent of total contract that is for commodities N/A %.

4500

ROUTING ORDER FOR APPROVAL	CONCUR/INITIALS	DATE
1. PROJECT LEADER*	JHS	10/20/89
2. DIV/REGIONAL DIRECTOR*	[illegible]	5-Nov-1989
3. PURCHASING*	BSA	11/16/89
4. LEGAL	KM	11/17/89
5. AD SERVICES		
DISBURSEMENT SUPERVISOR	SP	11/28/89
REVENUE SUPERVISOR		
FEDERAL AID ACCOUNTANT*		
CHIEF OF ACCOUNTING	[illegible]	11/28/89
AD SERVICES DIRECTOR	WCS	11/28/89
6. EXEC/DIV/REGION DIRECTOR*	[illegible]	11/28/89

*ROUTING OF FEDERAL AID DOCUMENTS ONLY

DIVISION/OFFICES ARE TO FORWARD COMPLETED ORIGINAL CONTRACT AND ROUTING SLIP TO THE PURCHASING OFFICE.

GFC Form 167

M E M O R A N D U M

TO: Colonel Robert M. Brantly, Executive Director

FROM: Mr. Frank Montalbano III, Director, Division of Wildlife

SUBJECT: Half Moon Type I WMA

The enclosed DNR lease agreement will bring approximately 4,500 acres under Commission management as a new Type I WMA. The area was purchased under the CARL program by the Trustees.

Another large area, approximately 3,000 acres, adjacent to the CARL land was purchased under the Save Our River program by the South West Florida Water Management District (SWFWMD). We anticipate that the SWFWMD land will be incorporated into the new Type I WMA at a later date.

The DNR agreement is a "standard" agreement with a 50 year-term and requires the Commission to submit a Management Plan within one year of final execution. There are other terms and conditions which require prior approval from DNR when erecting or remodeling permanent improvements. Bureau of Wildlife Management staff have checked with DNR state lands staff and feel that the requirements of the management agreement will not be a burden in managing the area.

W451/lp
LEG 8-6

89048

SAL8103

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

LEASE AGREEMENT

Lease No. 3789

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

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

NOW, THEREFORE, this lease is made and entered into this 18th day of December, 1989, 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",

WITNESSETH:

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

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

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

3. TERM: The term of this lease shall be for a period of fifty (50) years, commencing on December 18, 1989 and ending on December 17, 2039, unless sooner terminated pursuant to the

Page 1 of 13
Lease No. 3789

provisions of this lease.

4. PURPOSE: LESSEE shall manage the leased premises only for the conservation and protection of natural and historical resources and resource based public outdoor recreation which is compatible with the conservation and protection of these public lands, as set forth in subsection 253.023(11), Florida Statutes, along with other related uses necessary for the accomplishment of this purpose as designated in the Management Plan required by paragraph 7 of this lease.

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

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

7. MANAGEMENT PLAN: LESSEE shall prepare and submit a Management Plan for the leased premises, in accordance with Section 253.034, Florida Statutes, and Chapters 18-2 and 18-4, Florida Administrative Code, within 12 months of the effective date of this lease. The Management Plan shall be submitted to LESSOR for approval through the Division of State Lands. The leased premises shall not be developed or physically altered in any way other than what is necessary for security and maintenance of the leased premises without the prior written approval of LESSOR until the Management Plan is approved. The Management Plan shall emphasize the original management concept as approved by LESSOR at the time of acquisition which established the primary public purpose for which the leased premises were acquired. The approved Management Plan shall provide the basic guidance for all management activities and shall be reviewed jointly by LESSEE and LESSOR at least every five (5) years. LESSEE shall not use or alter the leased premises except as provided for in the approved Management Plan without the prior written approval of LESSOR. The Management Plan prepared under

this lease shall identify management strategies for exotic species, if present. The introduction of exotic species is prohibited, except when specifically authorized by the approved Management Plan.

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

9. INSURANCE REQUIREMENTS: LESSEE shall procure and maintain adequate fire and extended risk insurance coverage for any improvements or structures located on the leased premises in amounts not less than the full insurable replacement value of such improvements by preparing and delivering to the Division of Risk Management, Department of Insurance, a completed Florida Fire Insurance Trust Fund Coverage Request Form immediately upon erection of any structures as allowed by paragraph 4 of this lease. A copy of said form and immediate notification in writing of any erection or removal of structures or other improvements on the leased premises and any changes affecting the value of the improvements shall be submitted to the following: Bureau of Uplands Management, Division of State Lands, Department of Natural Resources, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399.

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

11. ARCHAEOLOGICAL AND HISTORIC SITES: Execution of this lease in no way affects any of the parties' obligations pursuant to Chapter 267, Florida Statutes. The collection of artifacts or the disturbance of archaeological and historic sites on state-owned lands is prohibited unless prior authorization has

been obtained from the Department of State, Division of Historical Resources. The Management Plan prepared pursuant to Section 253.034, Florida Statutes, shall be reviewed by the Division of Historical Resources to insure that adequate measures have been planned to locate, identify, protect and preserve the archaeological and historic sites and properties on the leased premises.

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

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

14. SURRENDER OF PREMISES: Upon termination or expiration of this lease LESSEE shall surrender the leased premises to LESSOR. In the event no further use of the leased premises or any part thereof is needed, written notification shall be made to the Bureau of Uplands Management, Division of State Lands, Department of Natural Resources, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399, at least six (6) months prior to the release of all or any part of the leased premises. Notification shall include a legal description, this lease number and an explanation of the release. The release shall only be valid if approved by LESSOR through execution of a release of lease instrument with the same formality as this lease. Upon release of all or any part of the leased premises or upon expiration or termination of this lease, all improvements, including both physical structures and modifications to the leased premises, shall become the property of LESSOR, unless LESSOR gives written notice to LESSEE to remove any or all such improvements at the expense of LESSEE. The decision to retain any improvements upon termination of this lease shall be at LESSOR'S sole discretion. Prior to surrender of all or any part of the leased premises, a

representative of the Division of State Lands shall perform an on-site inspection and the keys to any buildings on the leased premises shall be turned over to the Division. If the leased premises and improvements located thereon do not meet all conditions set forth in paragraphs 18 and 21 herein, LESSEE shall pay all costs necessary to meet the prescribed conditions.

15. BEST MANAGEMENT PRACTICES: LESSEE shall implement applicable Best Management Practices for all activities conducted under this lease in compliance with paragraph 18-2.004(1)(d), Florida Administrative Code, which have been selected, developed, or approved by LESSOR, LESSEE or other land managing agencies for the protection and enhancement of the leased premises.

16. PUBLIC LANDS ARTHROPOD CONTROL PLAN: LESSEE shall identify and subsequently designate to the respective arthropod control district or districts within one year of the effective date of this lease all of the environmentally sensitive and biologically highly productive lands contained within the leased premises, in accordance with Section 388.4111, Florida Statutes and Chapter 10D-54, Florida Administrative Code, for the purpose of obtaining a public lands arthropod control plan for such lands.

17. DUPLICATE ORIGINALS: This lease is executed in duplicate originals each of which shall be considered an original for all purposes.

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

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

20. PLACEMENT AND REMOVAL OF IMPROVEMENTS: All buildings, structures, improvements, and signs shall be constructed at the

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

21. MAINTENANCE OF IMPROVEMENTS: LESSEE shall maintain the real property contained within the leased premises and any improvements located thereon, in a state of good condition, working order and repair including, but not limited to, keeping the leased premises free of trash or litter, maintaining all planned improvements as set forth in the approved Management Plan, meeting all building and safety codes in the location situated and maintaining any and all existing roads, canals, ditches, culverts, risers and the like in as good condition as the same may be at the date of this lease; provided, however, that any removal, closure, etc., of the above improvements shall be acceptable when the proposed activity is consistent with the goals of conservation, protection, and enhancement of the natural and historical resources within the leased premises and with the approved Management Plan.

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

23. BREACH OF COVENANTS, TERMS, OR CONDITIONS: Should LESSEE breach any of the covenants, terms, or conditions of this lease, LESSOR shall give written notice to LESSEE to remedy such breach within sixty (60) days of such notice. In the event LESSEE fails to remedy the breach to the satisfaction of LESSOR within sixty (60) days of receipt of written notice, LESSOR may either terminate this lease and recover from LESSEE all damages LESSOR may incur by reason of the breach including, but not

limited to, the cost of recovering the leased premises or maintain this lease in full force and effect and exercise all rights and remedies herein conferred upon LESSOR.

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

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

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

27. DAMAGE TO THE PREMISES: LESSEE agrees that it will not do, or suffer to be done, in, on or upon the leased premises or as affecting said leased premises, any act which may result in damage or depreciation of value to the leased premises, or any part thereof. LESSEE shall not dispose of any contaminants including, but not limited to, hazardous or toxic substances, chemicals or other agents used or produced in LESSEE'S operations, on the leased premises or on any adjacent state land or in any manner not permitted by law.

28. PAYMENT OF TAXES AND ASSESSMENTS: LESSEE shall assume full responsibility for and shall pay all liabilities that accrue

to the leased premises or to the improvements thereon, including any and all drainage and special assessments or taxes of every kind and all mechanic's or materialism's liens which may be hereafter lawfully assessed and levied against the leased premises.

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

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

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

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

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

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

35. SPECIAL CONDITIONS: The following special conditions shall apply to this lease.

The LESSEE is hereby authorized to enter into appropriate agreements with other agencies for the conservation and protection of natural and historical resources, along with other related uses as designated in the management plan required by Paragraph No. 7 of this lease.

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

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

Witness

Witness

By: Daniel T. Crabbe (SEAL)
Acting CHIEF, BUREAU OF UPLANDS MANAGEMENT, 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 December, 1989, by Daniel T. Crabbe as Acting Chief, Bureau of Uplands Management, Department of Natural Resources.

Sylvia Scott (SEAL)
NOTARY PUBLIC

My Commission Expires: Notary Public, State of Florida My Commission Expires July 25, 1993 Bonded Thru Troy Fain - Insurance Inc.

Approved as to Form and Legality

By: Eugene E. McCully Jr.
DNR Attorney

STATE OF FLORIDA GAME AND FRESH WATER FISH COMMISSION

Witness

Witness

BY Robert M. Brantly (SEAL)
Its: Executive Director

"LESSEE"

APPROVED AS FISCALLY AND BUDGETARILLY SOUND

William C. Sumner
DIRECTOR
DIVISION OF ADMINISTRATIVE SERVICES
GFWFC

Page 9 of 13
Lease No. 3789

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 28th day of November, 1989, by Robert M. Brantly, as Executive Director.

Rosemary Mara (SEAL)
NOTARY PUBLIC

My Commission Expires:

Notary Public, State of Florida
My Commission Expires Oct. 20, 1991
Bonded Thru Troy Fain - Insurance Inc.

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY

Commission Attorney

Page 10 of 13
Lease No. 3789

The South 3/4 of Section 8, Township 18 South, Range 21 East, AND The South 3/4 of Section 7, Township 18 South, Range 21 East, AND The East 1/4 of Section 13, Township 18 South, Range 20 East, AND The South 1/4 of the West 1/2 of the Southeast 1/4 of Section 13, Township 18 South, Range 20 East, AND The South 1/4 of the East 1/2 of the Southwest 1/4 of Section 13, Township 18 South, Range 20 East, LESS that portion deeded to Southwest Florida Water Management District by corrective warranty deed recorded in Official Records Book 386, page 689, Public Records of Sumter County, Florida; AND Section 18, Township 18 South, Range 21 East, AND The East 1/2 of the Northeast 1/4 of Section 17, Township 18 South, Range 21 East, AND The Northwest 1/4 of Section 20, Township 18 South, Range 21 East, AND The South 1/4 of Section 20, Township 18 South, Range 21 East, LESS the West 1/4 thereof; AND Section 19, Township 18 South, Range 21 East, LESS the Southeast 1/4 of the Southeast 1/4 thereof; AND The East 1/2 of Section 24, Township 18 South, Range 20 East, LESS that portion deeded to Southwest Florida Water Management District by corrective warranty deed recorded in Official Records Book 386, Page 689, Public Records of Sumter County, Florida; AND That portion of the Northeast 1/4 of Section 25, Township 18 South, Range 20 East, LESS that portion deeded to Southwest Florida Water Management District by corrective warranty deed recorded in Official Records Book 386, page 689, Public Records of Sumter County, Florida; AND Section 30, Township 18 South, Range 21 East, LESS that portion deeded to Southwest Florida Water Management District by corrective warranty deed recorded in Official Records Book 386, page 689, Public Records of Sumter County, Florida; AND Section 29, Township 18 South, Range 21 East, LESS the East 1/2 of the Northwest 1/4 thereof, AND LESS that portion deeded to Southwest Florida Water Management District by corrective warranty deed recorded in Official Records Book 386, page 689, Public Records of Sumter County, Florida; AND The North 1/2 of Section 32, Township 18 South, Range 21 East, LESS those portions deeded to Southwest Florida Water Management District by corrective warranty deed recorded in Official Records Book 386, page 689, Public Records of Sumter County, Florida AND The East 1/2 of the Southeast 1/4 of Section 32, Township 18 South, Range 21 East, AND The East 1/2 of the Northeast 1/4 of Section 5, Township 19 South, Range 21 East, AND A portion of the Northwest 1/4 of Section 4, Township 19 South, Range 21 East. All of the above being located in Sumter County, Florida, and further described as follows: Commence at the Northwest corner of Section 4, Township 19 South, Range 21 East, Sumter County, Florida for a Point of Beginning; thence run South 01 degrees 31'10" West, along the West boundary of said Section 4, 459.97 feet; thence run North 16 degrees 29'22" West, 207.60 feet; thence run North 33 degrees 42'30" West, 314.36 feet to the North boundary of Section 5, Township 19 South, Range 21 East; thence run North 89 degrees 49'19" West, along said North boundary, 72.31 feet; thence run South 33 degrees 42'30" East, 345.66 feet; thence run South 16 degrees 29'22" East, 383.027 feet; thence run North 01 degrees 31'10" East, 58.82 feet; thence run South 25 degrees 36'18" East, 170.04 feet; thence run South 40 degrees 33'54" East, 799.24 feet; thence run South 26 degrees 34'18" East, 859.30 feet; thence run South 41 degrees 07'44" East, 312.18 feet; thence run South 24 degrees 47'10" East, 312.24 feet to the South boundary of said Section 4; thence run North 89 degrees 34'14" West, along said South boundary, 1367.94 feet to the West 1/4 corner of said Section 4; thence run North 89 degrees 44'18" West, 1326.26 feet; thence run North 01 degrees 41'55" East, 2631.63 feet to the Northwest corner of the East 1/2 of the Northeast 1/4 of Section 5; thence run North 00 degrees 17'46" East, 2630.28 feet to the boundary of the property conveyed to the Southwest Florida Water Management District by corrective warranty deed recorded in Official Records Book 386, page 689, Public Records of Sumter County, Florida; thence run along said boundary for the next 12 courses: North 00 degrees 23'05" East 251.90 feet; thence run North 89 degrees 37'13" West, 1450.09 feet; thence North 27 degrees 31'03" West, 2067.03 feet; thence North 76 degrees 22'12" West, 1378.81 feet; thence North 35 degrees 51'58" West, 4003.72 feet; thence North 78 degrees 25'35" West, 2516.30 feet; thence North 44 degrees 41'38" West 639.97 feet; thence North 82 degrees 09'11" West, 1463.85 feet; thence North 35 degrees 25'32" West 1061.34 feet; thence North 45 degrees 00'12" West 1230.25 feet; thence North 00 degrees 00'06" West, 4713.27 feet to the North boundary of Section 24, Township 18 South, Range 20 East; thence

run South 89 degrees 54'17" West, along said North boundary 430.08 feet; thence North 00 degrees 00'06" West, 1334.04 feet; thence North 89 degrees 42'19" East, 1650.82 feet; thence North 00 degrees 06'02" East, 4043.55 feet to the Northwest corner of the East 1/2 of the Northeast 1/4 of Section 13, Township 18 South, Range 20 East; thence run South 87 degrees 34'28" East along the North boundary of said Section 13, 1348.08 feet to the Southwest corner of Section 7, Township 18 South, Range 21 East; thence North 00 degrees 40'45" East along the West boundary of said Section 7, 3973.87 feet; thence South 89 degrees 46'30" East, 5298.18 feet to a point on the East boundary of said Section 7; thence North 89 degrees 42'22" East, 5316.91 feet to the East boundary of Section 8, Township 18 South, Range 21 East; thence South 00 degrees 24'22" East, along said East boundary 4006.02 feet to the Northeast corner of Section 17, Township 18 South, Range 21 East; thence run South 00 degrees 21'36" West along the East boundary of said Section 17, 2665.41 feet to the East 1/4 corner of said Section 17; thence North 89 degrees 41'10" West, 1324.80 feet; thence North 00 degrees 15'22" East 2664.54 feet to the North boundary of said Section 17; thence run North 89 degrees 43'24" West, along said North boundary, 3988.89 feet to the Northwest corner of said Section 17; thence South 00 degrees 03'08" West along the West boundary of said Section 17, 5323.97 feet to the Southwest corner of said Section 17; thence run South 89 degrees 25'40" East, along the South boundary of said Section 17, 2650.04 feet to the South 1/4 corner of said Section 17; thence South 00 degrees 01'22" West, 2641.28 feet; thence North 89 degrees 31'56" West 2659.22 feet to the West 1/4 corner of Section 20, Township 18 South, Range 21 East; thence run South 00 degrees 13'58" West along the West boundary of said Section 20, 1325.72 feet; thence South 89 degrees 41'26" West, 1342.87 feet; thence run South 00 degrees 29'16" West, 1326.36 feet to the South boundary of Section 19, Township 18 South, Range 21 East; thence North 89 degrees 39'59" East, along said South boundary, 1348.78 feet to the Southwest corner of Section 20, Township 18 South, Range 21 East; thence South 89 degrees 39'18" East, along said South boundary, 1334.75 feet; thence South 00 degrees 10'21" East, 2654.15 feet; thence South 89 degrees 42'18" East, 1335.27 feet; thence North 00 degrees 11'02" West, 2652.99 feet to said South boundary of Section 20; thence North 89 degrees 39'18" West along said South boundary, 1334.75 feet; thence North 00 degrees 07'17" East, 1324.31 feet; thence South 89 degrees 35'38" East, 3994.49 feet to the East boundary of said Section 20; thence run South 00 degrees 18'12" East along said East boundary, 1320.11 feet to the Northeast corner of Section 29, Township 18 South, Range 21 East; thence South 00 degrees 03'13" East, along the East boundary of said Section 29, 5301.20 feet to the Northeast corner of Section 32, Township 18 South, Range 21 East; thence South 00 degrees 13'16" West, along the East boundary of said Section 32, 5279.55 feet to the Point of Beginning.

SUBJECT to the following encumbrances;

Exhibit "A"
Lease No. 3789
Page 12 of 13

1. Easement for Ingress and Egress to Southwest Florida Water Management District, recorded in Official Record book 336, page 604, Public Records of Sumter County, Florida.

2. Easement reserved by Sumter Electric Cooperative, Inc., in that Quit Claim Deed, dated August 14, 1989, from Sumter Electric Cooperative, Inc. to ALBERT CARLTON and wife, BARBARA C. CARLTON recorded on even date herewith.

3. Easement Agreement to Drake Ranch, recorded in Official Record Book 389, page 134, Public Records of Sumter County, Florida.

4. Those certain oil, mineral rights held by M.B. RUDMAN as set forth in conveyance, assignment and deed recorded in Official Records Book 259, page 112, Public Records of Sumter County, Florida and held by JAMES E. ALLISON as set forth in mineral rights and royalty transfer set forth in Deed Book 121, page 328A, Public Records of Sumter County, Florida. There is no record of any subsequent conveyance of those outstanding oil, gas and mineral rights by M.B. RUDMAN and JAMES G. ALLISON, however, a notice of subsurface interest was recorded in Official Records Book 169, page 133, Public Records of Sumter County, Florida, as to the interest held by M.B. RUDMAN. No notice pursuant to Sections 704.05, 712.05 and 712.06, Florida Statutes, has been filed in the Public Records of Sumter County, Florida in contection with oil, gas, mineral rights held by JAMES G. ALLISON.

Exhibit "A"
Lease No. 3789
Page 13 of 13

STATE OF FLORIDA
DEPARTMENT OF NATURAL RESOURCES

Marjory Stoneman Douglas Building • 3900 Commonwealth Boulevard • Tallahassee, Florida 32399
Tom Gardner, Executive Director

August 29, 1989

Mr. Frank H. Smith, Chief
Bureau of Wildlife Management
Game and Fresh Water Fish
Commission
Farris Bryant Building
Tallahassee, Florida 32399-1600

Dear Mr. Smith:

Carlton Half-Moon Ranch
CARL Project, Sumter County

Enclosed in duplicate is Lease Agreement No. 3789 between the Board of Trustees and the Game and Fresh Water Fish Commission, covering the above-referenced project.

Please have this lease executed by the Commission and return both copies to this office for further processing.

Thank you.

Sincerely,

Catherine Daniels

Catherine Daniels
Planning Manager
Bureau of Uplands Management
Division of State Lands

CD/ss
Enclosures

Administration | Beaches and Shores | Law Enforcement | Marine Resources | Recreation and Parks | Resource Management | State Lands

Bob Martinez, Governor | Jim Smith, Secretary of State | Bob Butterworth, Attorney General | Gerald Lewis, State Comptroller | Tom Gallagher, State Treasurer | Doyle Conner, Commissioner of Agriculture | Betty Castor, Commissioner of Education

STATE OF FLORIDA
DEPARTMENT OF NATURAL RESOURCES

SEP 13 1989

Marjory Stoneman Douglas Building • 3900 Commonwealth Boulevard • Tallahassee, Florida 32399
Tom Gardner, Executive Director

August 31, 1989

Colonel Robert Brantly
Florida Game and Fresh Water
Fish Commission
620 South Meridian
Tallahassee, Florida 32399

Dear Colonel Brantly:

Staff has been advised that the Game Commission would like authority to enter the Carlton Half-Moon Ranch CARL project in Seminole County for the purpose of providing appropriate law enforcement and resource protection on an interim basis. Please consider this the authority, pursuant to Section 253.05, Florida Statutes, to perform the following management responsibilities as the Commission deems necessary to provide protection of these lands:

1. Posting of areas where public use may result in damage or degradation of state-owned land;

2. Patrolling the property and identifying any apparent improper use of state-owned land; and

3. Providing appropriate law enforcement and resource protection.

This authority shall continue until such time as Lease No. 3789 for this property has been finalized. It is my understanding that the lease has been forwarded to the Game Commission for execution and will be completed in the near future.

Sincerely,

Percy W. Mallison, Jr., Director
Division of State Lands

PWM/tps
cc: Mr. Frank Smith

SEP 14 1989

Administration | Beaches and Shores | Law Enforcement | Marine Resources | Recreation and Parks | Resource Management | State Lands

Bob Martinez, Governor | Jim Smith, Secretary of State | Bob Butterworth, Attorney General | Gerald Lewis, State Comptroller | Tom Gallagher, State Treasurer | Doyle Conner, Commissioner of Agriculture | Betty Castor, Commissioner of Education

FLORIDA GAME AND FRESH WATER FISH COMMISSION

C. TOM RAINEY, D.V.M. Miami
WILLIAM G. BOSTICK, JR. Winter Haven
DON WRIGHT Orlando
THOMAS L. HIRES, SR. Lake Wales
MRS. GILBERT W. HUMPHREY Miccosukee

ROBERT M. BRANTLY, Executive Director
ALLAN L. EGBERT, Ph.D., Assistant Executive Director

FARRIS BRYANT BUILDING
620 South Meridian Street
Tallahassee, Florida 32399-1600
(904) 488-1960

September 27, 1989

Mr. Percy W. Mallison, Jr., Director
Division of State Lands
Department of Natural Resources
3900 Commonwealth Boulevard
Tallahassee, FL 32399

Dear Mr. Mallison:

Thank you for your August 31 letter authorizing Commission personnel to provide appropriate law enforcement and resource protection for the Carlton Half-Moon Ranch CARL tract on an interim basis until Lease No. 3789 is executed.

We appreciate your affording us the opportunity to protect the property during the period until the Commission's management lease can be consummated and the area established as a wildlife management area.

Sincerely,

Robert M. Brantly

Colonel Robert M. Brantly
Executive Director

W201/dr
WLD 8-5-2
cc: Colonel Bob Edwards
Lt. Colonel Bob Butler
Major David Starling
Mr. Mike Brooks

Ca

HALF MOON WMA - INHOLDINGS

State Land - 1 Parcel

Description: E 1/2 of NW 1/4 of Sec. 29, Range 21E, Township 18S
Acreage: 80 acres
Owner: Anderson N. Potter
c/o G. Richard Singletary
POB 1443
Leesburg, FL 34749

Southwest Florida Water Management District - 2 Parcels

Description: SW 1/4 of NE 1/4 of SW 1/4 of Sec. 30, Range 21E, Township 18S
Acreage: 10 acres
Owner: Alfred G. Petschaw
314 Antilla St.
Lakeland, FL

Description: NE 1/4 of NE 1/4 of Sec. 31, Range 21E, Township 18S
Acreage: 35 acres
Owner: R. L. Phebus
POB 661
Dyersburg, TN 38024

HALF MOON WMA - SYNOPSIS OF ACCESS EASEMENTS

1. Southwest Florida Water Management District
   Official Record Book 336, p. 604, Sumter Co.

   Exhibit A (p. 607) - Permits SWFWMD to detour riverine portions of Mill Creek by using 2 spur roads that access Mill Creek bridge. See attached map (East 1/2 Sec. 30).

   Exhibit B (p. 608) - Provides egress/ingress through Rutland Road gate for approx. one mile along a 60 ft. swath of the recently purchased State property. Route follows the southern boundary of Sec. 32 westerly to the immediate western boundary of WMA, then runs north approx. 0.5 miles along that boundary before turning west again for 0.25 miles; terminating at a SWFMD gate.

2. Drake Ranch
   Official Record Book 389, p. 134, Sumter Co.

   Exhibit 1 (p. 136) - Allows egress/ingress identical to SWFWMD Exhibits A-B. Also permits travel along entire western boundary of State property to southern boundary of Drake Ranch holdings in Sec. 13.

HALF MOON WMA - ADJACENT LANDOWNERS

Drake Ranch
2207 S. Pine Ave.
Ocala, FL 32671
Note: Granted perpetual limited egress/ingress by previous easement agreement. Drake recently leased approx. 1000 ac. to members of the former Half Moon hunt club (see Potter - below). They presently access the property through State land, but not via the easement path.

Davis M. Austin - Ventura Ranch
POB 2088
Jacksonville, FL 32203

Elizabeth Smith - Seven Springs Ranch
9200 S. Dadeland Blvd.
Miami, FL 33156

J.D. & S.R. Rogers
RT. 1, Box 337
Bushnell, FL 33513
Note: Own 200 acres in Sec. 5 and 32; bounded on all perimeters, except south, by State or SWFWMD properties. The WMA's established north-south road crosses their northeast corner. They currently access their property through State land, but no easement has been granted.

Anderson N. Potter
c/o G. Richard Singletary
POB 1443
Leesburg, FL 34749
Note: Owns 80 acre inholding in Sec. 29 and 40 acres (SE 1/4 of SE 1/4 of Sec. 19, Range 21E, Township 18S) contiguous to State land. Both tracts are leased presently to members of the former Half Moon hunt club. Those hunters have established a camp on the western edge of the 40 ac. parcel and access both tracts through State land. No access easement has been granted.

HALF MOON WMA - LEASE HOLDERS

Greg Bigham - Former lease holder of grazing rights
POB 188
Coleman, FL 44521
(904) 748-1931
Note: His cows remain on State land at this date (10/23/89). He began gathering calves on 10/21/89.

Brunson Gibson - Hunt club member leasing Potter and Drake lands
Leesburg, FL
(904) 787-1950 Home
(904) 787-2244 Office - Attorney

OFF. REC. 389 PAGE 135

TO HAVE AND TO HOLD the said easement unto the party of the second part and unto its successors and assigns forever.

IN WITNESS WHEREOF, the parties hereto have duly executed this Easement Agreement, this 26 day of June, 1989.

Signed, sealed and delivered in our presence as witnesses:

Jessa J. Leftwich — W. Albert Carlton
W. ALBERT CARLTON

Bryan Leftwich — Barbara C. Carlton
BARBARA C. CARLTON

STATE OF ~~FLORIDA~~ North Carolina
COUNTY OF ~~PASCO~~ Jackson

The foregoing Easement Agreement was acknowledged before me this 26 day of June, 1989, by W. ALBERT CARLTON and BARBARA C. CARLTON, his wife.

SHARON B. COGGINS NOTARY PUBLIC JACKSON COUNTY, N.C.

Sharon B. Coggins
Notary Public, State of ~~Florida~~ North Carolina

My commission expires:
My Commission Expires September 1, 1991

Documentary Stamps $ .55
Intangible Tax $ —
PAID 28 day of June 1989
BERNALD R. SHELNUTT JR. CLERK
CIRCUIT COURT, SUMTER COUNTY, FLORIDA
By Nancy L. Bennett D.C.

FILED AND RECORDED IN PUBLIC RECORDS OF SUMTER COUNTY, FLA. RECORD VERIFIED
JUN 28 2 06 PM '89
BERNALD R. SHELNUTT, JR. CLERK OF CIRCUIT COURT
By Nancy L. Bennett D.C.
221284

PREPARED BY:
DAVID L. MACKAY
Mackay & Ranew PA
PO Box 204
Ocala, FLA. 32678

- 2 -

EXHIBIT 1

A strip of land 60.00 feet in width, lying in Section 5, Township 19 South, Range 21 East, Sumter County, Florida, the centerline being described as follows:

Commence at the NE corner of said Section 5:

Run thence S. 01°31'50" W. along the East line of the NE ¼ of said Section 5 a distance of 556.70 feet to the Point of Beginning; thence N. 16°29'25" W. a distance of 295.15 feet; thence N. 33°44'11" W. a distance of 293.78 feet to a point 30.0 feet South, measured perpendicular, from the North line of the NE ¼ of said Section 5; thence Westerly and parallel with the North line of said NE ¼ to a point on the West line of the NE ¼ of the NE ¼ of said Section 5, said point being the Point of Termination;

- ALSO -

The West 60.00 feet of the East ½ of the SE ¼ of Section 32, Township 18 South, Range 21 East, Sumter County, Florida;

- ALSO -

A strip of land 60.00 feet in width, lying in Section 32, Township 18 South, Range 21 East, Sumter County, Florida, the centerline being described as follows:

Commence at the SW Corner of the SE ¼ of the NE ¼ of said Section 32; run thence S. 89°37'51" E. along the South line of said SE ¼ of the NE ¼ a distance of 30.00 feet to the Point of Beginning; thence N. 00°22'09" E. a distance of 281.72 feet; thence N. 89°37'51" W. a distance of 1496.76 feet to the Point of Termination;

- ALSO -

A strip of land 20.00 feet in width lying east of, and adjacent to, the following described line:

Commence at the SE corner of the NW ¼ of Section 32, Township 18 South, Range 21 East; run thence N. 27°29'27" W. a distance of 284.73 feet to the Point of Beginning; thence continue N. 27°29'27" W. a distance of 2067.06 feet; thence N. 76°22'01" W. a distance of 1378.85 feet; thence N. 35°51'14" W. a distance of 4003.63 feet; thence N. 78°25'20" W. a distance of 2516.20 feet; thence N. 44°41'00" W. a distance of 639.94 feet; thence N. 82°08'48" W. a distance of 1463.73 feet; thence N. 35°24'44" W. a distance of 1061.34 feet; thence N. 45°00'00" W. a distance of 1230.31 feet; thence North a distance of 4713.19 feet; thence N. 89°42'54" W. a distance of 430.04 feet; thence North to the South boundary of the North ½ of the SW ¼ of Section 13, Township 18 South, Range 20 East and the Point of Terminus.

OFF. REC. 336 PAGE 604

33.00

SWF Parcel No. 19-193-101

PERPETUAL EASEMENT

THIS PERPETUAL EASEMENT made this 19th day of December, 1986, between W. ALBERT CARLTON, and BARBARA C. CARLTON, his wife, hererinafter called "the GRANTORS", and the SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT, a public corporation created by Chapter 61-691, Laws of Florida, as amended, whose address is 2379 Broad Street, Brooksville, Florida 33512-9712, hereinafter called "the GRANTEE".

WITNESSETH, that the GRANTORS, for and in consideration of the sum of Ten and No/100 Dollars ($10.00) in hand paid by the GRANTEE, the receipt of which is hereby acknowledged, give and grant unto the GRANTEE a non-exclusive perpetual easement for ingress and egress on, over and across the existing dirt access road depicted in Exhibit "A" and a sixty (60) foot wide public access road as described in Exhibit "B", both of which are attached hereto and incorporated herein by reference, lying and being in Sumter County, Florida, subject to the following terms and conditions:

1. This grant of ingress and egress over the dirt access road depicted in Exhibit "A" shall exist for the purpose of access by the the GRANTEE, its agents, employees and representatives to the GRANTEE's lands commonly known as the "Carlton Tract Project" as described in Exhibit "C", attached hereto and incorporated herein by reference.

2. As the GRANTEE is a public corporation, the parties recognize that at some future time the said Carlton Tract Project may be used for public purposes. Then in that event, ingress and egress by the public to the Carlton Tract Project across the GRANTORS' lands shall be restricted to that public access road described in Exhibit "B". No entry shall be allowed by the public or by any entity other than the GRANTEE, its agents, employees and representatives on, over, or across that access road depicted in Exhibit "A".

3. The GRANTORS shall not be required to make any improvements to said access roads to accommodate the activities of the GRANTEE in crossing the lands of the GRANTORS for the purpose of ingress and egress to the Carlton Tract Project; provided, however, that the GRANTEE may make improvements thereto at its expense.

4. The GRANTORS shall not be liable for personal injury to the agents, employees, or representatives, or damage to the property, of the GRANTEE because of the rights granted herein; provided, however, that such liability is not due to the GRANTOR'S negligent or tortious conduct. Nothing herein is intended to be a waiver of the GRANTEE's sovereign immunity under federal or state law.

5. The GRANTORS reserve unto themselves, their successors and assigns, the non-exclusive right to use the access roads granted herein; provided, however, that the GRANTORS shall not engage in or allow any activity which deprives the GRANTEE of or interferes with any rights granted herein.

FILED AND RECORDED IN PUBLIC RECORDS OF SUMTER COUNTY, FLA. RECORD VERIFIED
Dec 19 2 41 PM '86
BERNARD B. SHELNUTT, JR. CLERK OF CIRCUIT COURT
BY: D.C.

198413

Page 1 of 2

IN WITNESS WHEREOF, the parties and the lawful representatives of the parties hereto have caused these presents to be executed in their respective names the day and year first above written.

Signed, sealed and
delivered in the presence of:

Witness

W. ALBERT CARLTON

Witness

BARBARA C. CARLTON

STATE OF FLORIDA
COUNTY OF Hardee

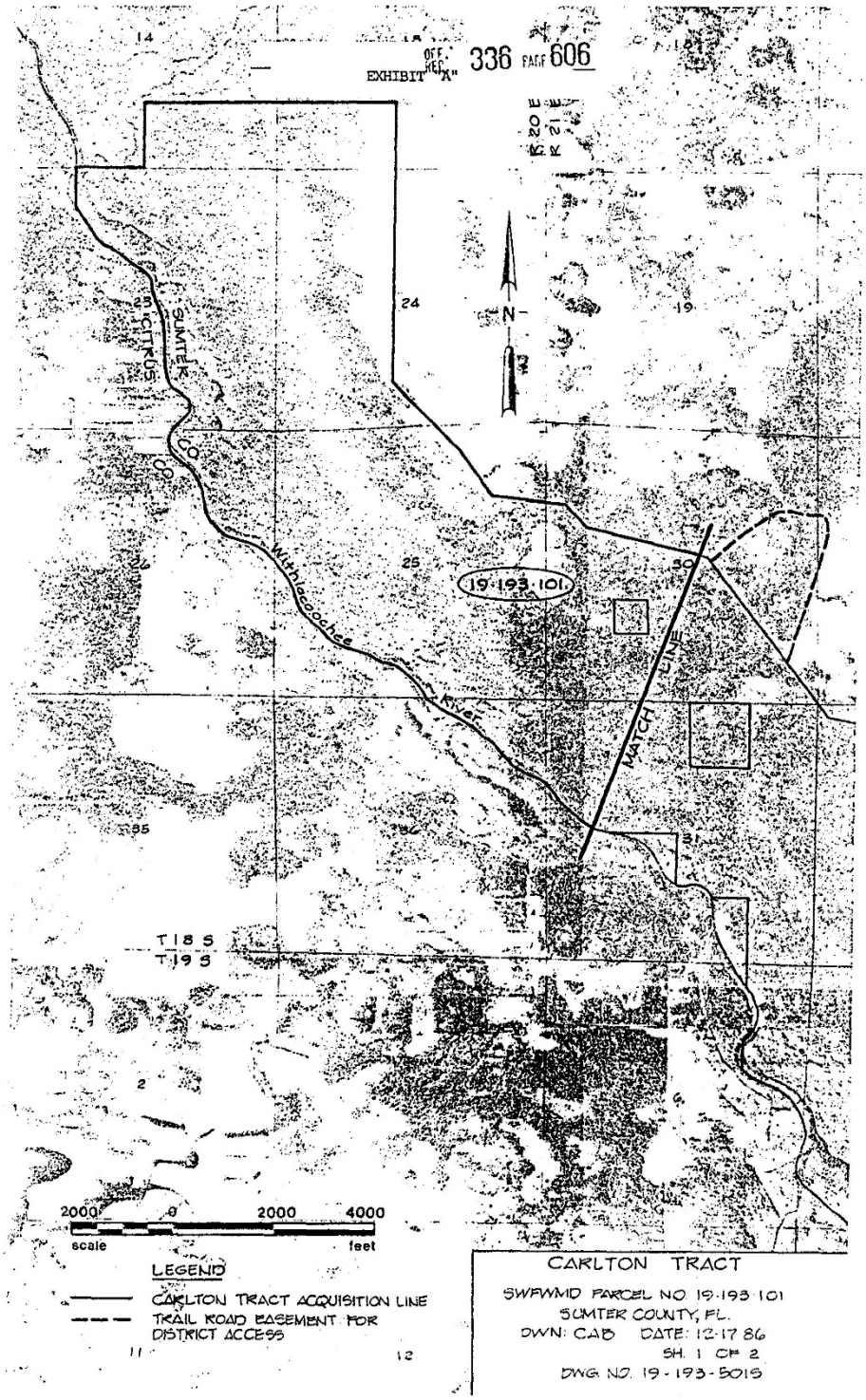
BEFORE ME the undersigned authority, personally appeared W. Albert Carlton and Barbara C. Carlton, who executed and acknowledged before me that they voluntarily executed the foregoing instrument for the purposes stated therein.

Notary Public
State of Florida at Large
My Commission Expires:

NOTARY PUBLIC STATE OF FLORIDA
MY COMMISSION EXP. JAN. 15, 1989
BONDED THRU GENERAL INS. UND.

This instrument prepared by:
Kent A. Zaiser
Deputy General Counsel
Southwest Florida Water Management District
2379 Broad Street
Brooksville, Florida 33512-9712

Page 2 of 2


OFF. REC. 336 PAGE 606
EXHIBIT "A"
SUMTER CO.
CITRUS CO.
Withlacoochee River
MATCH LINE
19-193-101
T18S
T19S
N
2000 0 2000 4000
scale feet
LEGEND
CARLTON TRACT ACQUISITION LINE
TRAIL ROAD EASEMENT FOR DISTRICT ACCESS
CARLTON TRACT
SWFWMD PARCEL NO. 19-193-101
SUMTER COUNTY, FL.
DWN: CAB DATE: 12-17-86
SH. 1 OF 2
DWG. NO. 19-193-5015

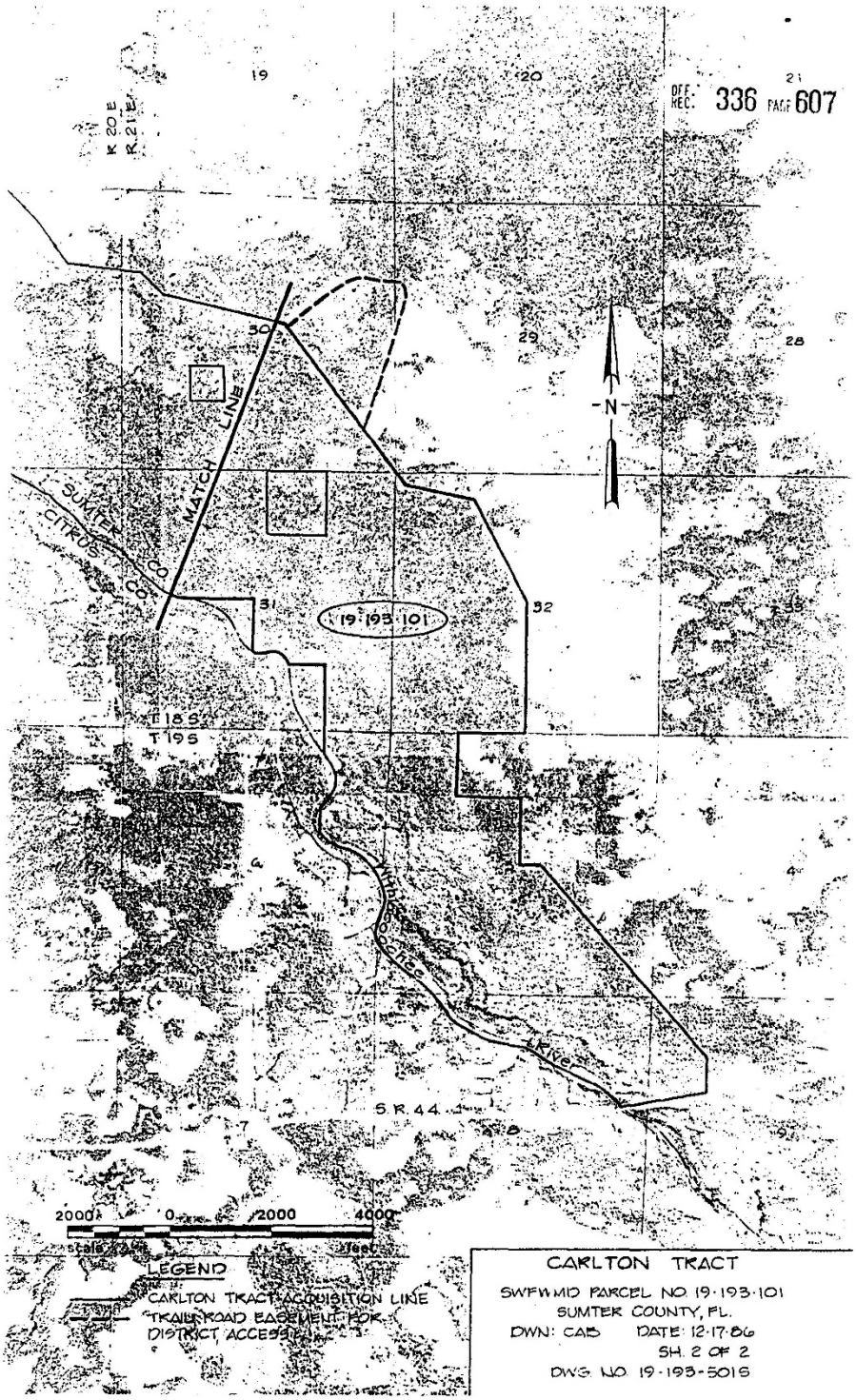

OFF. REC. 336 PAGE 607
R 20 E
R 21 E
19
20
21
30
29
28
31
32
33
MATCH LINE
SUMTER CO.
CITRUS CO.
N
19-193-101
T 18 S
T 19 S
Little Withlacoochee River
S.R. 44
2000 0 2000 4000
Scale Feet
LEGEND
CARLTON TRACT ACQUISITION LINE
TRAILROAD EASEMENT FOR DISTRICT ACCESS
CARLTON TRACT
SWFWMD PARCEL NO 19-193-101
SUMTER COUNTY, FL.
DWN: CAB DATE: 12-17-86
SH. 2 OF 2
DWG. NO. 19-193-5016

EXHIBIT "B"
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
Withlacoochee River Basin
Carlton Tract

Parcel No. 19-193-101B December 17, 1986
ACCESS EASEMENT

A strip of land 60.00 feet in width, lying in SECTION 5, TOWNSHIP 19 SOUTH, RANGE 21 EAST, Sumter County, Florida, the center line being described as follows:

Commence at the NE corner of said SECTION 5:

Run thence S 01° 31' 50" W along the East line of the NE 1/4 of said Section 5, a distance of 556.70 feet to the POINT OF BEGINNING;

Thence N 16° 29' 25" W, a distance of 295.15 feet;

Thence N 33° 44' 11" W, a distance of 293.78 feet to a point 30.0 feet South, measured perpendicular, from the North line of the NE 1/4 of said Section 5;

Thence Westerly and parallel with the North line of said NE 1/4 to a point on the West line of the NE 1/4 of the NE 1/4 of said Section 5, said point being the POINT OF TERMINATION;

-also-

The West 60.00 feet of the East 1/2 of the SE 1/4 of SECTION 32, TOWNSHIP 18 SOUTH, RANGE 21 EAST, Sumter County, Florida:

-also-

A strip of land 60.00 feet in width, lying in SECTION 32, TOWNSHIP 18 SOUTH, RANGE 21 EAST, Sumter County, Florida, the center line being described as follows:

Commence at the SW corner of the SE 1/4 of the NE 1/4 of said Section 32;

Run thence S 89° 37' 51" E along the South line of said SE 1/4 of the NE 1/4, a distance of 30.00 feet to the POINT OF BEGINNING;

Thence N 00° 22' 09" E, a distance of 281.72 feet;

Thence N 89° 37' 51" W, a distance of 1496.76 feet to the POINT OF TERMINATION;

Parcel contains 8.34 acres more or less.

RAH:jb

EXHIBIT "C"

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
Withlacoochee River Basin
Carlton Tract

Parcel No. 19-193-101 November 26, 1986

Commence at the NW corner of SECTION 9, TOWNSHIP 19 SOUTH, RANGE 21 EAST;

Run thence S 02° 06' 18" W (grid bearing) along the West line of said Section 9, a distance of 2090.06 feet to the North right-of-way line of State Road 44, said point being the POINT OF BEGINNING;

Thence N 79° 46' 38" E along said right-of-way line a distance of 1171.03 feet to the West line of the East 200 feet of the West 1/2 of the NW 1/4 of said Section 9;

Thence N 01° 37' 21" E along said West line a distance of 682.98 feet;

Thence N 41° 30' 58" W to the North line of the West 1/2 of the SE 1/4 of SECTION 5, TOWNSHIP 19 SOUTH, RANGE 21 EAST;

Thence Westerly along said North line to the SE corner of the SE 1/4 of the NW 1/4 of said Section 5;

Thence Northerly along the East line of said SE 1/4 of the NW 1/4 to the NE corner of said SE 1/4 of the NW 1/4;

Thence Westerly along the North line of said SE 1/4 of the NW 1/4 to the SE corner of the NW 1/4 of the NW 1/4 of said Section 5;

Thence Northerly along the East line of said NW 1/4 of the NW 1/4 to the SW corner of the SE 1/4 of the SW 1/4 of SECTION 32, TOWNSHIP 18 SOUTH, RANGE 21 EAST;

Thence Easterly along the South line of said SE 1/4 of the SW 1/4 to the SE corner of the SW 1/4 of said Section 32;

Thence Northerly along the East line of said SW 1/4 to the NE corner of said SW 1/4;

Thence N 27° 29' 27" W, a distance of 2351.79 feet;

Thence N 76° 22' 01" W, a distance of 1378.85 feet;

Thence N 35° 51' 14" W, a distance of 4003.63 feet;

Thence N 78° 25' 20" W a distance of 2516.20 feet;

Thence N 44° 41' 00" W, a distance of 639.94 feet;
Thence N 82° 08' 48" W, a distance of 1463.73 feet;

Thence N 35° 24' 44" W, a distance of 1061.34 feet;

Thence N 45° 00' 00" W, a distance of 1838.48 feet;

Thence North, a distance of 5619.39 feet;

Thence Westerly to the NE corner of the S 1/2 of the SE 1/4 of SECTION 14, TOWNSHIP 18 SOUTH, RANGE 20 EAST;

Thence Westerly along the North line of said S 1/2 of the SE 1/4 to the NW corner of said S 1/2 of the SE 1/4;

Thence Southerly along the West line of said S 1/2 of the SE 1/4 to the NE corner of the NW 1/4 of SECTION 23, TOWNSHIP 18 SOUTH, RANGE 20 EAST;

Thence Westerly along the North line of said NW 1/4 to the thread of the Withlacoochee River;

Thence Southerly and Southeasterly along the thread of the Withlacoochee River to the Northerly right-of-way line of State Road 44;

Thence N 79° 46' 38" E along said North right-of-way line to the POINT OF BEGINNING;

EXCEPT

Any portion of the following that lies easterly of the thread of the Withlacoochee River;

The Northwest 1/4 of the Northwest 1/4 of SECTION 23, TOWNSHIP 18 SOUTH, RANGE 20 EAST;

The Southeast 1/4 of the Northeast 1/4 of SECTION 36, TOWNSHIP 18 SOUTH, RANGE 20 EAST;

The Southwest 1/4 of SECTION 31, TOWNSHIP 18 SOUTH, RANGE 21 EAST;

The Southwest 1/4 of the Southeast 1/4 of SECTION 31, TOWNSHIP 18 SOUTH, RANGE 21 EAST;

The West 1/2 of the Northeast 1/4 of SECTION 6, TOWNSHIP 19 SOUTH, RANGE 21 EAST;

The Southeast 1/4 of the Southeast 1/4 of SECTION 6, TOWNSHIP 19 SOUTH, RANGE 21 EAST;

AND EXCEPT

All of the Southwest 1/4 of the Northeast 1/4 of the Southwest 1/4 of SECTION 30, TOWNSHIP 18 SOUTH, RANGE 21 EAST;

AND EXCEPT

That portion of the Northwest 1/4 of the Northeast 1/4 of SECTION 31, TOWNSHIP 18 SOUTH, RANGE 21 EAST not lying within the West 2-1/2 chains of the North 20 chains.

Parcel contains 3048.5 acres more or less, including approximately 87.5 acres of submerged lands below the ordinary high water line of the Withlacoochee River.

RAH:jb
19-101

B08

REC. 392 PAGE 96

This instrument was prepared by:
Name Paul C. Scherer, Esq.
Address 2950 Fifth Avenue No.
St. Petersburg, FL 33713

17.00
3.50
27414.85
27414.85

Warranty Deed (STATUTORY FORM—SECTION 689.02 F.S.)

This Indenture, Made this 11th day of August 1989, Between W. ALBERT CARLTON, A/K/A W.A. CARLTON and BARBARA C. CARLTON, A/K/A BARBARA CARLTON, his wife

of the County of Hardee, State of Florida, grantor, 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, Room 412, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399
of the County of Leon, State of Florida, grantee,

Witnesseth, That said grantor, for and in consideration of the sum of Ten ($10.00) 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 heirs and assigns forever the following described land, situate, lying and being in Sumter County, Florida, to-wit:

See attached Schedule "A"

Documentary Stamps $27414.85
Intangible Tax $
PAID 15th day of Aug 1989
BERNARD R. SHELNUTT, JR. CLERK
CIRCUIT COURT, SUMTER COUNTY, FLORIDA
BY Millicent Alley D.C.

FILED AND RECORDED IN PUBLIC RECORDS OF SUMTER COUNTY, FLA. RECORD VERIFIED
Aug 15 2 43 PM 1989
BERNARD R. SHELNUTT, JR. CLERK OF CIRCUIT COURT
BY Millicent Alley D.C.

222494

and said grantor does hereby fully warrant the title to said land, and will defend the same against the lawful claims of all persons whomsoever, except those title matters set forth in the attached Schedule "B"

"Grantor" and "grantee" are used for singular or plural, as context requires.

In Witness Whereof, Grantor has hereunto set grantor's hand and seal the day and year first above written.
Signed, sealed and delivered in our presence:

Bobbie Middleton
Mickerel
Bobbie Middleton
Mickerel

W. Albert Carlton W.A. Carlton (Seal)
W. ALBERT CARLTON, a/k/a W.A. CARLTON
Barbara C. Carlton Barbara Carlton (Seal)
BARBARA C. CARLTON, a/k/a BARBARA CARLTON
(Seal)
(Seal)

STATE OF NORTH CAROLINA
COUNTY OF JACKSON
I HEREBY CERTIFY that on this day before me, an officer duly qualified to take acknowledgments, personally appeared W. ALBERT CARLTON, a/k/a W.A. CARLTON and BARBARA C. CARLTON, a/k/a BARBARA CARLTON, his wife
to me known to be the persons described in and who executed the foregoing instrument and acknowledged before me that they executed the same.
WITNESS my hand and official seal in the County and State last aforesaid this 11th day of August 1989.

My commission expires: January 6, 1991
K. Reid Bergkuna
Notary Public

K. REID BERGKUNA NOTARY PUBLIC JACKSON COUNTY, N.C.

Ref. Pasco Abstract Co.

DSI Data Supplies, Inc. Orlando, Florida 4270

SCHEDULE "A"

The South 3/4 of Section 8, Township 18 South, Range 21 East, AND The South 3/4 of Section 7, Township 18 South, Range 21 East, AND The East 1/4 of Section 13, Township 18 South, Range 20 East, AND The South 1/4 of the West 1/2 of the Southeast 1/4 of Section 13, Township 18 South, Range 20 East, AND The South 1/4 of the East 1/2 of the Southwest 1/4 of Section 13, Township 18 South, Range 20 East, LESS that portion deeded to Southwest Florida Water Management District by corrective warranty deed recorded in Official Records Book 386, page 689, Public Records of Sumter County, Florida; AND Section 18, Township 18 South, Range 21 East, AND The East 1/2 of the Northeast 1/4 of Section 17, Township 18 South, Range 21 East, AND The Northwest 1/4 of Section 20, Township 18 South, Range 21 East, AND The South 1/4 of Section 20, Township 18 South, Range 21 East, LESS the West 1/4 thereof; AND Section 19, Township 18 South, Range 21 East, LESS the Southeast 1/4 of the Southeast 1/4 thereof; AND The East 1/2 of Section 24, Township 18 South, Range 20 East, LESS that portion deeded to Southwest Florida Water Management District by corrective warranty deed recorded in Official Records Book 386, Page 689, Public Records of Sumter County, Florida; AND That portion of the Northeast 1/4 of Section 25, Township 18 South, Range 20 East, LESS that portion deeded to Southwest Florida Water Management District by corrective warranty deed recorded in Official Records Book 386, page 689, Public Records of Sumter County, Florida; AND Section 30, Township 18 South, Range 21 East, LESS that portion deeded to Southwest Florida Water Management District by corrective warranty deed recorded in Official Records Book 386, page 689, Public Records of Sumter County, Florida; AND Section 29, Township 18 South, Range 21 East, LESS the East 1/2 of the Northwest 1/4 thereof, AND LESS that portion deeded to Southwest Florida Water Management District by corrective warranty deed recorded in Official Records Book 386, page 689, Public Records of Sumter County, Florida; AND The North 1/2 of Section 32, Township 18 South, Range 21 East, LESS those portions deeded to Southwest Florida Water Management District by corrective warranty deed recorded in Official Records Book 386, page 689, Public Records of Sumter County, Florida AND The East 1/2 of the Southeast 1/4 of Section 32, Township 18 South, Range 21 East, AND The East 1/2 of the Northeast 1/4 of Section 5, Township 19 South, Range 21 East, AND A portion of the Northwest 1/4 of Section 4, Township 19 South, Range 21 East. All of the above being located in Sumter County, Florida, and further described as follows: Commence at the Northwest corner of Section 4, Township 19 South, Range 21 East, Sumter County, Florida for a Point of Beginning; thence run South 01 degrees 31'10" West, along the West boundary of said Section 4, 459.97 feet; thence run North 16 degrees 29'22" West, 207.60 feet; thence run North 33 degrees 42'30" West, 314.36 feet to the North boundary of Section 5, Township 19 South, Range 21 East; thence run North 89 degrees 49'19" West, along said North boundary, 72.31 feet; thence run South 33 degrees 42'30" East, 345.66 feet; thence run South 16 degrees 29'22" East, 383.027 feet; thence run North 01 degrees 31'10" East, 58.82 feet; thence run South 25 degrees 36'18" East, 170.04 feet; thence run South 40 degrees 33'54" East, 799.24 feet; thence run South 26 degrees 34'18" East, 859.30 feet; thence run South 41 degrees 07'44" East, 312.18 feet; thence run South 24 degrees 47'10" East, 312.24 feet to the South boundary of said Section 4; thence run North 89 degrees 34'14" West, along said South boundary, 1367.94 feet to the West 1/4 corner of said Section 4; thence run North 89 degrees 44'18" West, 1326.26 feet; thence run North 01 degrees 41'55" East, 2631.63 feet to the Northwest corner of the East 1/2 of the Northeast 1/4 of Section 5; thence run North 00 degrees 17'46" East, 2630.28 feet to the boundary of the property conveyed to the Southwest Florida Water Management District by corrective warranty deed recorded in Official Records Book 386, page 689, Public Records of Sumter County, Florida; thence run along said boundary for the next 12 courses: North 00 degrees 23'05" East 251.90 feet; thence run North 89 degrees 37'13" West, 1450.09 feet; thence North 27 degrees 31'03" West, 2067.03 feet; thence North 76 degrees 22'12" West, 1378.81 feet; thence North 35 degrees 51'50" West, 4003.72 feet; thence North 78 degrees 25'35" West, 2516.30 feet; thence North 44 degrees 41'38" West 639.97 feet; thence North 82 degrees 09'11" West, 1463.85 feet; thence North 35 degrees 25'32" West 1061.34 feet; thence North 45 degrees 00'12" West 1230.25 feet; thence North 00 degrees 00'06" West, 4713.27 feet to the North boundary of Section 24, Township 18 South, Range 20 East; thence

run South 89 degrees 54'17" West, along said North boundary 430.08 feet; thence North 00 degrees 00'06" West, 1334.04 feet; thence North 89 degrees 42'19" East, 1650.82 feet; thence North 00 degrees 06'02" East, 4043.55 feet to the Northwest corner of the East 1/2 of the Northeast 1/4 of Section 13, Township 18 South, Range 20 East; thence run South 87 degrees 34'28" East along the North boundary of said Section 13, 1348.08 feet to the Southwest corner of Section 7, Township 18 South, Range 21 East; thence North 00 degrees 40'45" East along the West boundary of said Section 7, 3973.87 feet; thence South 89 degrees 46'30" East, 5298.18 feet to a point on the East boundary of said Section 7; thence North 89 degrees 42'22" East, 5316.91 feet to the East boundary of Section 8, Township 18 South, Range 21 East; thence South 00 degrees 24'22" East, along said East boundary 4006.02 feet to the Northeast corner of Section 17, Township 18 South, Range 21 East; thence run South 00 degrees 21'36" West along the East boundary of said Section 17, 2665.41 feet to the East 1/4 corner of said Section 17; thence North 89 degrees 41'10" West, 1324.80 feet; thence North 00 degrees 15'22" East 2664.54 feet to the North boundary of said Section 17; thence run North 89 degrees 43'24" West, along said North boundary, 3988.89 feet to the Northwest corner of said Section 17; thence South 00 degrees 03'08" West along the West boundary of said Section 17, 5323.97 feet to the Southwest corner of said Section 17; thence run South 89 degrees 25'40" East, along the South boundary of said Section 17, 2650.04 feet to the South 1/4 corner of said Section 17; thence South 00 degrees 01'22" West, 2641.28 feet; thence North 89 degrees 31'56" West 2659.22 feet to the West 1/4 corner of Section 20, Township 18 South, Range 21 East; thence run South 00 degrees 13'58" West along the West boundary of said Section 20, 1325.72 feet; thence South 89 degrees 41'26" West, 1342.87 feet; thence run South 00 degrees 29'16" West, 1326.36 feet to the South boundary of Section 19, Township 18 South, Range 21 East; thence North 89 degrees 39'59" East, along said South boundary, 1348.78 feet to the Southwest corner of Section 20, Township 18 South, Range 21 East; thence South 89 degrees 39'18" East, along said South boundary, 1334.75 feet; thence South 00 degrees 10'21" East, 2654.15 feet; thence South 89 degrees 42'18" East, 1335.27 feet; thence North 00 degrees 11'02" West, 2652.99 feet to said South boundary of Section 20; thence North 89 degrees 39'18" West along said South boundary, 1334.75 feet; thence North 00 degrees 07'17" East, 1324.31 feet; thence South 89 degrees 35'38" East, 3994.49 feet to the East boundary of said Section 20; thence run South 00 degrees 18'12" East along said East boundary, 1320.11 feet to the Northeast corner of Section 29, Township 18 South, Range 21 East; thence South 00 degrees 03'13" East, along the East boundary of said Section 29, 5301.20 feet to the Northeast corner of Section 32, Township 18 South, Range 21 East; thence South 00 degrees 13'16" West, along the East boundary of said Section 32, 5279.55 feet to the Point of Beginning.

RD8

OFF. REC. 392 PAGE 99

SCHEDULE B

1. Easement for Ingress and Egress to Southwest Florida Water Management District, recorded in Official Record book 336, page 604, Public Records of Sumter County, Florida.

2. Easement reserved by Sumter Electric Cooperative, Inc., in that Quit Claim Deed, dated August 14, 1989, from Sumter Electric Cooperative, Inc. to ALBERT CARLTON and wife, BARBARA C. CARLTON recorded on even date herewith.

3. Easement Agreement to Drake Ranch, recorded in Official Record Book 389, page 134, Public Records of Sumter County, Florida.

4. Those certain oil, mineral rights held by M.B. RUDMAN as set forth in conveyance, assignment and deed recorded in Official Records Book 259, page 112, Public Records of Sumter County, Florida and held by JAMES E. ALLISON as set forth in mineral rights and royalty transfer set forth in Deed Book 121, page 328A, Public Records of Sumter County, Florida. There is no record of any subsequent conveyance of those outstanding oil, gas and mineral rights by M.B. RUDMAN and JAMES G. ALLISON, however, a notice of subsurface interest was recorded in Official Records Book 169, page 133, Public Records of Sumter County, Florida, as to the interest held by M.B. RUDMAN. No notice pursuant to Sections 704.05, 712.05 and 712.06, Florida Statutes, has been filed in the Public Records of Sumter County, Florida in contection with oil, gas, mineral rights held by JAMES G. ALLISON.

Documentary Stamps $ 55

Intangible Tax $ —

PAID 15th day of Aug. 1989

OFF. REC. 392 PAGE 95

QUIT-CLAIM DEED FROM CORPORATION

BERNALD R. SHELNUTT, JR. CLERK
CIRCUIT COURT, SUMTER COUNTY, FLORIDA

BY Melbert Clay D.C.

FORM 42

This Quit-Claim Deed, *Executed this* 14th *day of* August *, A. D. 19* 89 *, by*

SUMTER ELECTRIC COOPERATIVE, INC.

a corporation existing under the laws of Florida *, and having its principal place of business at* Highway 301, Sumterville, Florida 33585 *first party, to* ALBERT CARLTON And Wife, BARBARA C. CARLTON

whose postoffice address is P.O. Box 1088
Wauchula, Florida 33873

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.)

FILED AND RECORDED IN PUBLIC RECORDS OF SUMTER COUNTY, FLA. RECORD VERIFIED

BERNALD R. SHELNUTT, JR. CLERK OF CIRCUIT COURT

Aug 15 2 42 PM '89

D.C.

224 93

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, piece or parcel of land, situate, lying and being in the County of* Sumter *State of* Florida *, to wit:*

The East 1/2 of the SE 1/4 and the NE 1/4 of Section 32, Township 18 South, Range 21 East, and all of Section 29, Township 18 South, Range 21 East, LESS the East 1/2 of the NW 1/4 thereof and;

LESS AND EXCEPT a 30' wide strip of land lying 15' each side of all existing electric distribution lines, together with such additional land as needed for down guys and anchors.

Said existing line located in the East 1/2 of the East 1/2 of Section 32, Township 18 South, Range 21 East.

It is the express intent of the Grantor herein to release by virtue of this Quit-Claim Deed all easement rights affecting the above described lands, not being used for existing electric lines, that were acquired under right-of-way easements dated September 16, 1970 and recorded in O.R. Book 113, Page 213, and dated January 22, 1976 and recorded in O.R. Book 170, Page 796, all in Public Records, Sumter County, Florida.

To Have and to Hold *the same together with all and singular the appurtenances thereunto 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.*

(CORPORATE SEAL)

In Witness Whereof *the said first party has caused these presents to be executed in its name, and its corporate seal to be hereunto affixed, by its proper officers thereunto duly authorized, the day and year first above written.*

ATTEST: Ray Robbins Secretary

SUMTER ELECTRIC COOPERATIVE, INC.

Signed, sealed and delivered in the presence of:

John Sisler

Sabra A. Beaulieu

By C. J. Crenshaw President

Documentary Stamps $

Intangible Tax $

PAID day of 19

BERNALD R. SHELNUTT, JR. CLERK
CIRCUIT COURT, SUMTER COUNTY, FLORIDA

BY D.C.

STATE OF FLORIDA
COUNTY OF SUMTER

I HEREBY CERTIFY that on this day, before me, an officer duly authorized to take acknowledgements, personally appeared C. J. Crenshaw and Ray Robbins

well known to me to be the President and Secretary respectively of the corporation named as first party in the foregoing deed, and that they severally acknowledged executing the same in the presence of two subscribing witnesses freely and voluntarily under authority duly vested in them by said corporation and that the seal affixed thereto is the true corporate seal of said corporation.

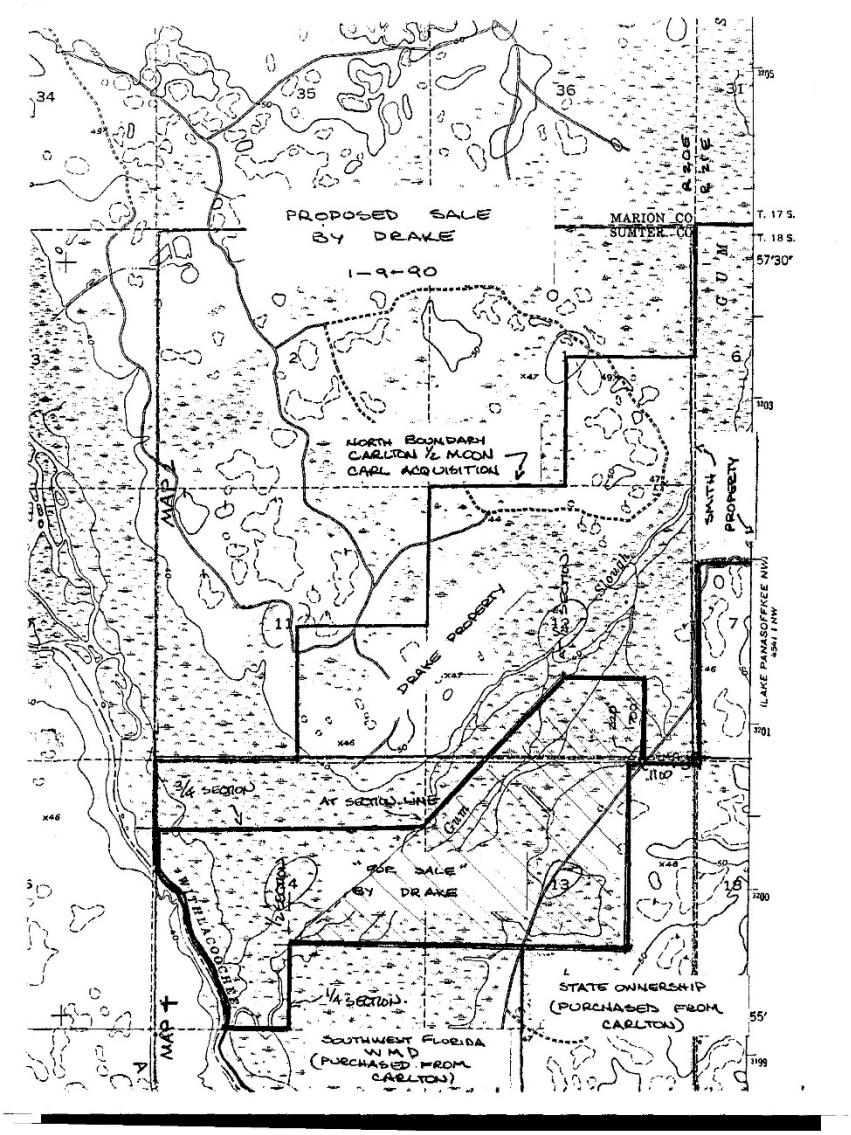
WITNESS my hand and official seal in the County and State last aforesaid this 14th day of August, A. D. 1989

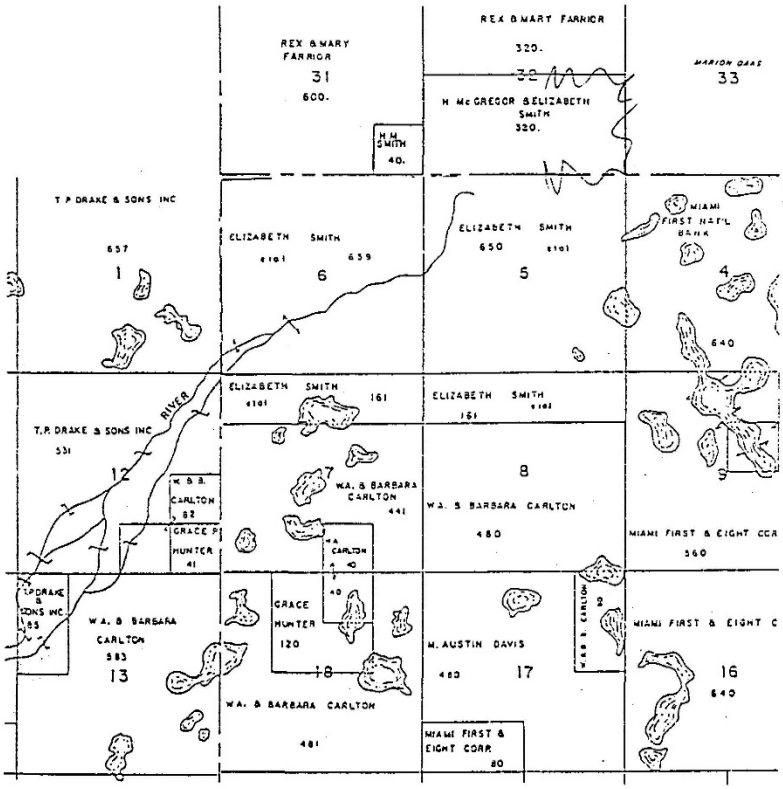
Sabra A. Beaulieu
Notary Public
State of Florida
My commission expires:
8/18/91

This Instrument Was Prepared By
CECIL G. BERRY
Sumter Electric Cooperative, Inc.
P.O. Box 301
Sumterville, FL 33585

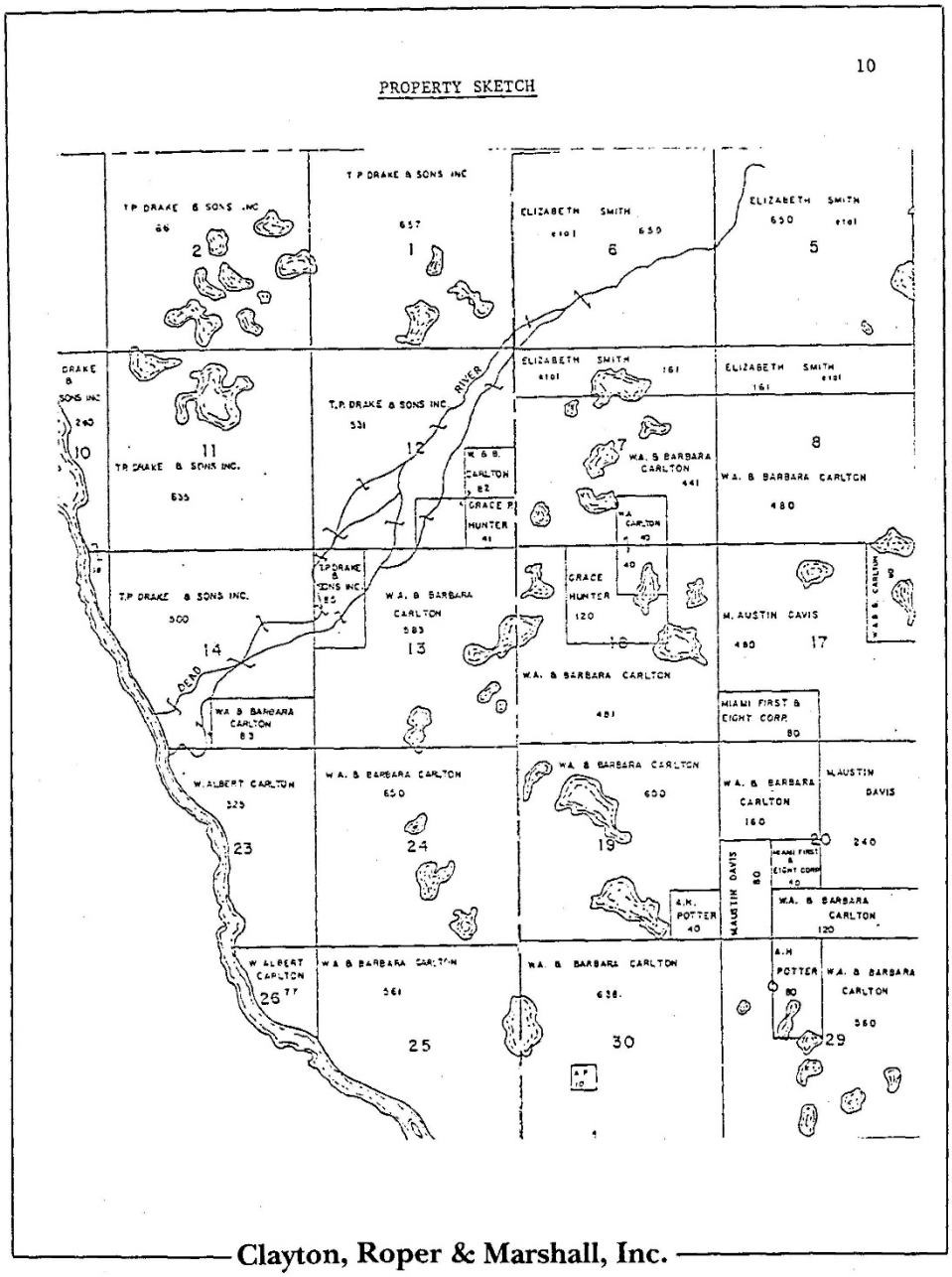
This Instrument prepared by:
Address

Not Have a Letter of Co.


PROPOSED SALE
BY DRAKE
1-9-90
MARION CO
SUMTER CO
T. 17 S.
T. 18 S.
57'30"
NORTH BOUNDARY
CARLTON ½ MOON
CARL ACQUISITION
DRAKE PROPERTY
SMITH PROPERTY
(LAKE PANASOFFKEE NW)
3/4 SECTION
AT SECTION LINE
"FOR SALE"
BY DRAKE
½ SECTION
¼ SECTION
STATE OWNERSHIP
(PURCHASED FROM
CARLTON)
SOUTHWEST FLORIDA
WMD
(PURCHASED FROM
CARLTON)
MAP
55'



Clayton, Roper & Marshall, Inc.


10
PROPERTY SKETCH
T.P. DRAKE & SONS INC
ELIZABETH SMITH
W.A. & BARBARA CARLTON
M. AUSTIN DAVIS
MIAMI FIRST & EIGHT CORP.
W. ALBERT CARLTON
A.H. POTTER
GRACE HUNTER
DEAD RIVER
Clayton, Roper & Marshall, Inc.

The following described lands situate in Sumter County, State of Florida, to-wit:

All of the following parcels in Township 18 South, Range 20 East.

ARCEL 1: The NE 1/4 of the SE 1/4 and the SW 1/4 of the SE 1/4 in Section 12,

and

RCEL 2: All, less the W 1/2 of the NW 1/4 in Section 13,

and

ARCEL 3: The S 1/2 of the SE 1/4 in Section 14,

and

ARCEL 4: The NE 1/4; the N 1/2 of the SE 1/4; the SE 1/4 of the SE 1/4 and fractional NE 1/4 of the NW 1/4, all in Section 23,

and

ARCEL 5: Fraction of the SE 1/4 of the NW 1/4 E of River, and of the SW 1/4 of the SE 1/4 E of River in Section 23,

and

ARCEL 6: The E 1/2 and the E 1/2 of the NW 1/4 and the NE 1/4 of the SW 1/4 in Section 24,

and

RCEL 7: The W 1/2 of the NW 1/4; the W 1/2 of the SW 1/4 and the SE 1/4 of the SW 1/4, all in Section 24,

and

ARCEL 8: The NE 1/4, ~~the~~ and Fract. SE 1/4 of the SW 1/4, and E 1/2 of the SE 1/4 in Section 25,

and

ARCEL 9: The NW 1/4 of the NW 1/4 of Section 25,

and

ARCEL 10: The SW 1/4 of the NW 1/4; the SE 1/4 of the NW 1/4; fractional N 1/2 of the SW 1/4 and fractional W 1/2 of the SE 1/4, all in Section 25,

and

RCEL 11: FRACTIONAL W 1/2 of the NE 1/4 E of River in Section 26,

and

RCEL 12: The E 1/2 of the NE 1/4 of Section 26,

and

RCEL 13: The NE 1/4 of the NE 1/4; fractional NW 1/4 of the NE 1/4, all in Section 36,

EXHIBIT "A", Page One of Three

and

All of the following parcels in Township 18 South, Range 21 East.

PARCEL 14: The S 3/4 in Section 7,

and

PARCEL 15: The S 3/4 in Section 8,

and

PARCEL 16: The E 1/2 of the NE 1/4 in Section 17,

and

PARCEL 17: The S 1/2, and the E 1/2 of the NE 1/4, less 1 acre in a square in the SW corner of the SW 1/4 of the SE 1/4 in Section 18,

and

ARCEL 18: The West 1/2 of the NW 1/4 in Section 18,

and

ARCEL 19: All, less the SE 1/4 of the SE 1/4, in Section 19,

and

ARCEL 20: The NW 1/4, and the SE 1/4 of the SW 1/4, and the SW 1/4 of the SE 1/4, and the SE 1/4 of the SE 1/4 in Section 20,

and

RCEL 21: All, less the E 1/2 of the NW 1/4 in Section 29,

and

ARCEL 22: The N 1/2 of the N 1/2, and the S 1/2 of the NE 1/4, and the S 1/2 of the NW 1/4, and the NW 1/4 of the SW 1/4, and the SE 1/4 of the SW 1/4, and E 1/2 of the SE 1/4 in Section 30,

and

ARCEL 23: The N 1/2 of the NE 1/4 of the SW 1/4; the SE 1/4 of the NE 1/4 of the SW 1/4; the W 1/2 of the SE 1/4 and the SW 1/4 of the SW 1/4, all in Section 30,

and

RCEL 24: Beginning at the NW corner of the NW 1/4 of the NE 1/4, Run S 20 chs, E 2-1/2 chs, N 20 chs, W 2-1/2 chs. to point of beginning, and the NE 1/4 of the NW 1/4, and the E 1/2 of the NE 1/4 in Section 31,

and

RCEL 25: The SW 1/4 of the NE 1/4; fractional SW 1/4 of the NW 1/4 lying North of River; the NW 1/4 of the NW 1/4; the SE 1/4 of the NW 1/4; the NW 1/4 of the SE 1/4 and the E 1/2 of the SE 1/4, all in Section 31,

and

RCEL 26: The N 1/2, and E 1/2 of the SE 1/4, and N 1/2 of the SW 1/4 in Section 32,

EXHIBIT "A", Page Two of Three

and

PARCEL 27: The S 1/2 of the SW 1/4 of Section 32,

All of the following parcels in Township 19 South, Range 21 East.

PARCEL 28; S 1/2 of the SE 1/4 of the SE 1/4 of the SW 1/4 in Section 4,

and

PARCEL 29: Beginning 80 feet East of the SE corner of the SW 1/4 of the NW 1/4 for the point of beginning, run N 28°30'W 380 feet, N 43°45' W 287 feet, N 7°30' E 490 feet, N 78°45' W 232 feet, N 41°30' W 1027.5 feet, N 31° W 296 feet to West boundary of Section 4, South to SW corner of SW 1/4 of NW 1/4, East to point of beginning, LESS road rights of way;

and

PARCEL 30: Beginning at NW corner of NE 1/4 of SW 1/4, run East 80 feet, S 44°30' E 385 feet, S 55°45' E 740 feet, S 39°30' E 813 feet, thence S 11° E 547 feet, S 41°45' E 449 feet, S 21°45' E 343 feet, thence S 4° E 137 feet to South boundary of Section 4, West approximately 2011 feet to SW corner of the SE 1/4 of the SW 1/4 of Section 4, thence North about 2640 feet to point of beginning, LESS the S 1/2 of the SE 1/4 of the SE 1/4 of the SW 1/4 of Section 4, and LESS road rights of way;

and

PARCEL 31: W 1/2 of the SW 1/4 in Section 4, LESS the N 1/2 of NE 1/4 of SW 1/4 of SW 1/4 of Section 4, LESS road rights of way;

and

PARCEL 32: The E 1/2 of the NE 1/4, and the N 1/2 of the SE 1/4, and the SE 1/4 of the SE 1/4 in Section 5;

and

PARCEL 33: The W 1/2 lying East of River less the NE 1/4 of the NW 1/4 and the SW 1/4 of the SE 1/4, all in Section 5,

and

PARCEL 34: Fractional NE 1/4 of Section 8,

and

PARCEL 35: The N 1/2 of the NW 1/4 of Section 9;

and

PARCEL 36: Fractional SW 1/4 of the NW 1/4 of Section 9,

and

PARCEL 37: The E 1/2 of the NE 1/4 and fractional NE 1/4 of the SE 1/4, all in Section 6,

and

PARCEL 38: The East 850 feet of the SW 1/4 of the NE 1/4 of Section 9, lying North of State Road 44 right of way, less road right of way.

EXHIBIT "A", Page Three of Three

Halfmoon

The following described lands situate in Sumter County, State of Florida, to-wit:

All of the following parcels in Township 18 South, Range 20 East.

PARCEL 1: The NE 1/4 of the SE 1/4 and the SW 1/4 of the SE 1/4 in Section 12,

and

PARCEL 2: All, less the W 1/2 of the NW 1/4 in Section 13,

and

PARCEL 3: The S 1/2 of the SE 1/4 in Section 14,

and

PARCEL 4: The NE 1/4; the N 1/2 of the SE 1/4; the SE 1/4 of the SE 1/4 and fractional NE 1/4 of the NW 1/4, all in Section 23,

and

PARCEL 5: Fraction of the SE 1/4 of the NW 1/4 E of River, and of the SW 1/4 of the SE 1/4 E of River in Section 23,

and

PARCEL 6: The E 1/2 and the E 1/2 of the NW 1/4 and the NE 1/4 of the SW 1/4 in Section 24,

and

PARCEL 7: The W 1/2 of the NW 1/4; the W 1/2 of the SW 1/4 and the SE 1/4 of the SW 1/4, all in Section 24,

and

PARCEL 8: The NE 1/4, the SE 1/4 of the SW 1/4, and E 1/2 of the SE 1/4 in Section 25,

and

PARCEL 9: The NW 1/4 of the NW 1/4 of Section 25,

and

PARCEL 10: The SW 1/4 of the NW 1/4; the SE 1/4 of the NW 1/4; fractional N 1/2 of the SW 1/4 and fractional W 1/2 of the SE 1/4, all in Section 25,

and

PARCEL 11: FRACTIONAL : W 1/2 of the NE 1/4 E of River in Section 26,

and

PARCEL 12: The E 1/2 of the NE 1/4 of Section 26,

and

PARCEL 13: The NE 1/4 of the NE 1/4; fractional NW 1/4 of the NE 1/4, all in Section 36,

EXHIBIT "A", Page One of Three

and

All of the following parcels in Township 18 South, Range 21 East.

PARCEL 14: The S 3/4 in Section 7,

and

PARCEL 15: The S 3/4 in Section 8,

and

PARCEL 16: The E 1/2 of the NE 1/4 in Section 17,

and

PARCEL 17: The S 1/2, and the E 1/2 of the NE 1/4, less 1 acre in a square in the SW corner of the SW 1/4 of the SE 1/4 in Section 18,

and

PARCEL 18: The West 1/2 of the NW 1/4 in Section 18,

and

PARCEL 19: All, less the SE 1/4 of the SE 1/4, in Section 19,

and

PARCEL 20: The NW 1/4, and the SE 1/4 of the SW 1/4, and the SW 1/4 of the SE 1/4, and the SE 1/4 of the SE 1/4 in Section 20,

and

PARCEL 21: All, less the E 1/2 of the NW 1/4 in Section 29,

and

PARCEL 22: The N 1/2 of the N 1/2, and the S 1/2 of the NE 1/4, and the S 1/2 of the NW 1/4, and the NW 1/4 of the SW 1/4, and the SE 1/4 of the SW 1/4, and E 1/2 of the SE 1/4 in Section 30,

and

PARCEL 23: The N 1/2 of the NE 1/4 of the SW 1/4; the SE 1/4 of the NE 1/4 of the SW 1/4; the W 1/2 of the SE 1/4 and the SW 1/4 of the SW 1/4, all in Section 30,

and

PARCEL 24: Beginning at the NW corner of the NW 1/4 of the NE 1/4, Run S 20 chs, E 2-1/2 chs, N 20 chs, W 2-1/2 chs, to point of beginning, and the NE 1/4 of the NW 1/4, and the E 1/2 of the NE 1/4 in Section 31,

and

PARCEL 25: The SW 1/4 of the NE 1/4; fractional SW 1/4 of the NW 1/4 lying North of River; the NW 1/4 of the NW 1/4; the SE 1/4 of the NW 1/4; the NW 1/4 of the SE 1/4 and the E 1/2 of the SE 1/4, all in Section 31,

and

PARCEL 26: The N 1/2, and E 1/2 of the SE 1/4, and N 1/2 of the SW 1/4 in Section 32,

EXHIBIT "A", Page Two of Three

and

PARCEL 27: The S 1/2 of the SW 1/4 of Section 32,

All of the following parcels in Township 19 South, Range 21 East.

PARCEL 28; S 1/2 of the SE 1/4 of the SE 1/4 of the SW 1/4 in Section 4,

and

PARCEL 29: Beginning 80 feet East of the SE corner of the SW 1/4 of the NW 1/4 for the point of beginning, run N 28°30'W 380 feet, N 43°45' W 287 feet, N 7°30' E 490 feet, N 78°45' W 232 feet, N 41°30' W 1027.5 feet, N 31° W 296 feet to West boundary of Section 4, South to SW corner of SW 1/4 of NW 1/4, East to point of beginning, LESS road rights of way;

and

PARCEL 30: Beginning at NW corner of NE 1/4 of SW 1/4, run East 80 feet, S 44°30' E 385 feet, S 55°45' E 740 feet, S 39°30' E 813 feet, thence S 11° E 547 feet, S 41°45' E 449 feet, S 21°45' E 343 feet, thence S 4° E 137 feet to South boundary of Section 4, West approximately 2011 feet to SW corner of the SE 1/4 of the SW 1/4 of Section 4, thence North about 2640 feet to point of beginning, LESS the S 1/2 of the SE 1/4 of the SE 1/4 of the SW 1/4 of Section 4, and LESS road rights of way;

and

PARCEL 31: W 1/2 of the SW 1/4 in Section 4, LESS the N 1/2 of NE 1/4 of SW 1/4 of SW 1/4 of Section 4, LESS road rights of way;

and

PARCEL 32: The E 1/2 of the NE 1/4, and the N 1/2 of the SE 1/4, and the SE 1/4 of the SE 1/4 in Section 5;

and

PARCEL 33: The W 1/2 lying East of River less the NE 1/4 of the NW 1/4 and the SW 1/4 of the SE 1/4, all in Section 5,

and

PARCEL 34: Fractional NE 1/4 of Section 8,

and

PARCEL 35: The N 1/2 of the NW 1/4 of Section 9;

and

PARCEL 36: Fractional SW 1/4 of the NW 1/4 of Section 9,

and

PARCEL 37: The E 1/2 of the NE 1/4 and fractional NE 1/4 of the SE 1/4, all in Section 6,

and

PARCEL 38: The East 850 feet of the SW 1/4 of the NE 1/4 of Section 9, lying North of State Road 44 right of way, less road right of way.

EXHIBIT "A", Page Three of Three

SCHEDULE B

Policy No.: 141992

This policy does not insure against loss or damage by reason of the following:

1. Rights or claims of parties in possession not shown by the public records.
2. Easements, or claims of easements, not shown by the public records.
3. Encroachments, overlaps, boundary line disputes, or other matters which would be disclosed by an accurate survey or inspection of the premises.
4. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.
5. Community property, dower, curtesy, survivorship, or homestead rights, if any, of any spouse of the insured.
6. Any titles or rights asserted by anyone including but not limited to persons, corporations, governments or other entities, to tide lands, or lands comprising the shores or bottoms of navigable rivers, lakes, bays, ocean or gulf, or lands beyond the line of the harbor or bulkhead lines as established or changed by the United States Government or water rights, if any.
7. ~~Reservations contained in Patent from the United States of America or State of Florida and the lands described in Schedule A is located.~~
8. ~~Restrictive Covenants affecting the property described in Schedule A.~~
9. Taxes for the year 19 80 and thereafter.

10. Mortgage executed by W. Albert Carlton and wife, Barbara C. Carlton to The Federal Land Bank of Columbia, dated May 22, 1980, recorded May 22, 1980, in the Office of the Clerk of the Circuit Court of Sumter County, Florida, bearing Clerk's Instrument No. 148682; given to secure an indebtedness in the amount of $2,500,000.00, recorded in Official Record Book 231 on page 228, Public Records aforesaid.

11. Riparian rights and title to any lands lying below the ordinary high water mark are not insured.

12. Existing roads and right-of-way easements.

13. Right of way Easements to Sumter Electric Cooperative, Inc., recorded in O.R. Book 113, page 213, and in O.R. Book 170, page 796, Public Records of Sumter County, Florida.

14. Reservation contained in deed from Trustees of Internal Improvement Fund of the State of Florida to Sue B. Jones, dated December 7, 1945, filed January 3, 1946, and recorded in Deed Book 118, page 366, Public Records of Sumter County, Florida, reserving unto the State of Florida the title to an undivided one-half of all petroleum and petroleum products, and title to an undivided three-fourths of all other minerals which may be found on or under the said lands, together with the privilege outside any municipality, this date, to explore, mine and develop same, affecting the N½ of the NE¼ of the NE¼ of Section 31, Township 18 South, Range 21 East.

STEWART TITLE
GUARANTY COMPANY

Attached to and made a part of Stewart Title Guaranty Company Policy No. 141992

Continuation of Schedule B:

15. Reservation contained in deed from W. Reynolds Crook and wife, Helen Reed Crook and J.M. Thomas, bachelor, to Elias P. Townsend, dated December 21,1920, filed January 11, 1921, and recorded in Deed Book 80, page 549, Public Records of Sumter County, Florida, reserving unto the Grantors in said deed, their heirs and assigns, an undivided one-half interest in and to all oil and mineral rights and privileges in, on or under the NE¼ of NE¼ and S½ of NE¼ of Section 29, Township 18 South, Range 21 East, with all rights and privileges appertaining unto the said oil and mineral rights.

16. Reservation contained in Deed from Marcia Woodruff and W.H. Woodruff, her husband to Anna E. Tweedy, dated January 23, 1926, filed January 18, 1926, and recorded in Deed Book 93, page 82, Public Records of Sumter County,Florida, reserving unto Marcia Woodruff her one-half undivided interest in all phosphate and minerals found or to be found on E½ of SE¼ and S½ of NE¼ of Section 25, Township 18 South, Range 20 East.

17. Reservation contained in Deed from Tanner Oil and Development Company to B.J. Benson, dated September ____, 1941, filed December 19, 1941, and recorded in Deed Book 113, page 209, Public Records of Sumter County, Florida, reserving unto the grantor mineral and oil rights in S½ of N½ of Section 7, Township 18 South, Range 21 East.

18. Reservation in Deed from S.E. Peterson and Grace Peterson, his wife to Roland A. Wilson, III, dated August 30, 1956, filed August 31, 1956, and recorded in Deed Book 148, page 248, Public Records of Sumter County,Florida, wherein grantors reserve one-half interest in and to all of the oil, gas and mineral rights in E½ of SW¼ of Section 7, Township 18 South, Range 21 East.

19. Mineral Deed from J.M. Kemp, et al to M.B. Rudman, dated August 18,1944, filed September 1, 1944, recorded in Deed Book 121, page86, Public Records of Sumter County, Florida, wherein M.B. Rudman acquired all interest in and to all of the oil, gas and other minerals in and under and that may be produced from NE¼ of SE¼, and SW¼ of SW¼ of Section 13, Township 18 South, Range 20 East, NW¼ of NE¼. NE¼ of NW¼, NW¼ of SE¼ and S½ of NE¼ of SE¼ of Section 24, Township 18 South, Range 20 East, E½ of NW¼, S½ of SW¼, NE¼ of SW¼, E½ of NW¼ of SW¼, W½ of SE¼ and SW¼ of NE¼, Section 19, Township 18 South, Range 21 East, and NW¼ of NE¼, Section 30, Township 18 South, Range 21 East, together with right of ingress and egress.

20. Mineral right and Royalty Transfer from D.L. McKinney and Mary L. McKinney, his wife to E.R. Smith, dated May 29, 1946, filed June 14, 1946, and recorded in Deed Book 121, page 458, Public Records of Sumter County, Florida, wherein E.R. Smith acquired an undivided one-half interest in and to all of the oil, gas and other minerals of every kind and character in, on or under, or that may be produced from SE¼ of SW¼, and SE¼ of SE¼ of Section 13, Township 18 South, Range 20 East, NE¼ of NE¼, S½ of NE¼, NE¼ of SE¼, S½ of SE¼, NE¼ of SW¼ and SE¼ of NW¼ of Section 24, Township 18 South, Range 20 East; N½ of **

**See Continuation Sheet

STEWART TITLE
GUARANTY COMPANY

1514

Attached to and made a part of Stewart Title Guaranty Company Policy No. 141992

Continuation of Schedule B:

Continuation of Item 20:

NE¼ of Section 25, Township 18 South, Range 20 East; N½ of SE¼ and SE¼ of SE¼ of Section 7, Township 18 South, Range 21 East, S½ of NW¼, SE¼ of SW¼ and NE¼ of SE¼ of Section 8, Township 18 South, Range 21 East, NE¼ of NE¼ and S½ of SE¼ of NE¼ of Section 17, Township 18 South, Range 21 East; NE¼ of NE¼, E½ of SW¼, W½ of SW¼, SE¼, Less NW¼ of NW¼ of SE¼ of Section 18, Township 18 South, Range 21 East; E½ of NE¼, W½ of NW¼, W½ of NW¼ of SW¼, NE¼ of SE¼ of Section 19. Township 18 South, Range 21 East, NW¼, SE¼ of SW¼, S½ of SW¼ of SE¼ and SE¼ of SE¼ of Section 20, Township 18 South. Range 21 East; SW¼, W½ of SE¼, NE¼ of SE¼, W½ of NE¼, SW¼ of NW¼ and E½ of NW¼ of NW¼ of Section 29, Township 18 South, Range 21 East; NE¼ of NE¼ and W½ of SE¼ of NE¼ of Section 30, Township 18 South, Range 21 East; E½ of SE¼ and SE¼ of NE¼ of Section 32, Township 18 South, Range 21 East, together with right of ingress and egress.

21. Reservation contained in Deed from Trustees of Internal Improvement Fund of the State of Florida to S.P. Potter, dated November 30, 1943, filed January 28, 1944, and recorded in Deed Book 118, page 54, Public Records of Sumter County, Florida, reserving unto the State of Florida title to an undivided one-half of all petroleum and petroleum products, and title to an undivided three-fourths of all other minerals which may be found on or under the said lands, together with the privilege outside any municipality, this date, to explore, mine and develop same, affecting the SW¼ of SW¼ of Section 8, Township 18 South, Range 21 East.

Page 6

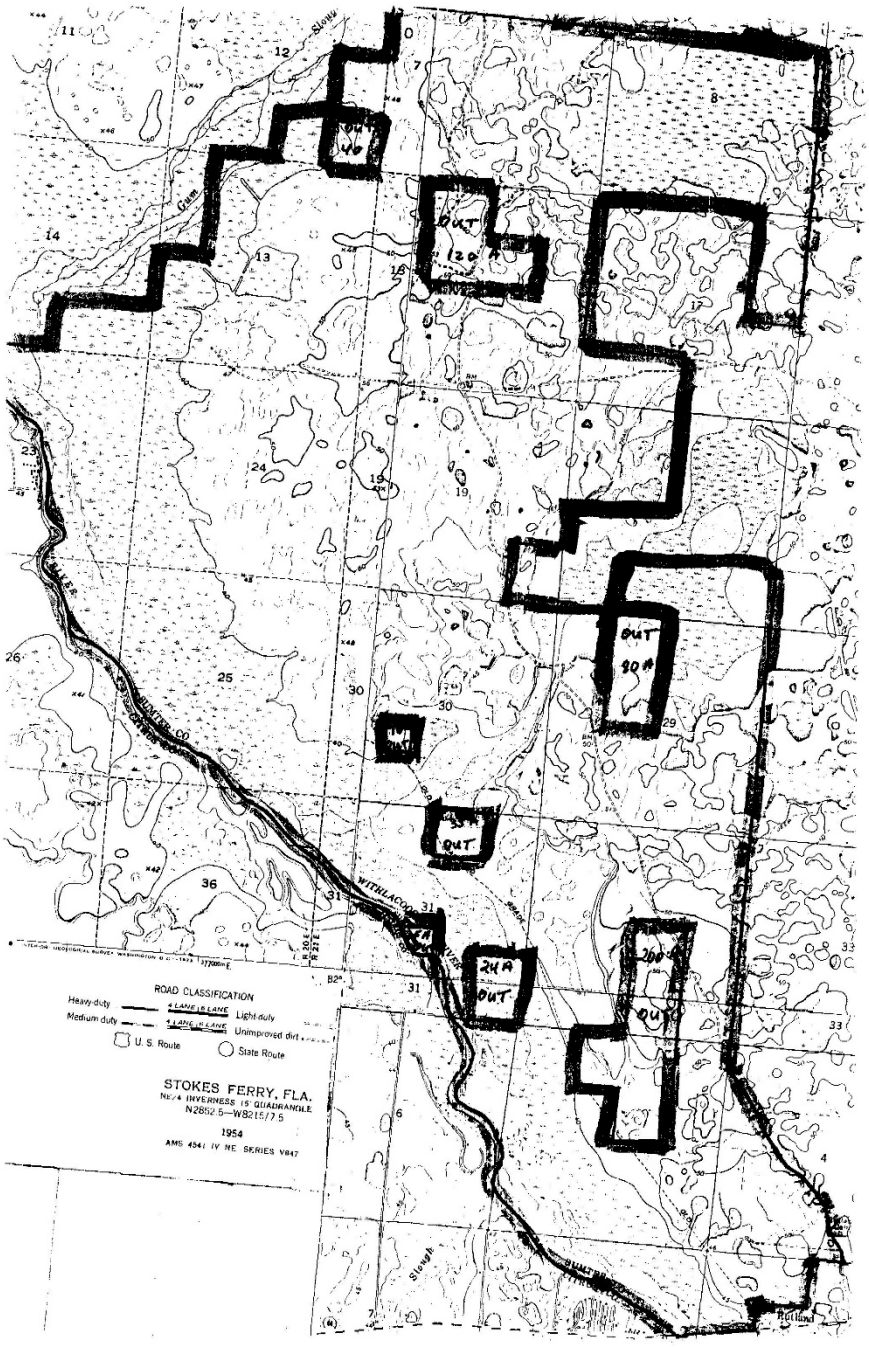
STEWART TITLE
GUARANTY COMPANY

1514

Tmitees = 4500 ±

SWFWMD = 3,000 ±

7500.00 ±



LARGE FOLD OUT MAPS FOR THIS FILE ARE LOCATED WITH DALE JERMYN AND HIS FILES WITHIN THE OFFICE OF HABITAT AND SPECIES OFFICE AT SOUTH END OF 3RD FLOOR.

WH-131

CENTRAL FILE

DIVISION LOG # 4 928

CONTRACT ROUTING REVIEW FORM

CONTRACT NUMBER 89048 CONTRACTOR DEP, GFG

BRIEF TITLE (Amend. No. 1), Half Moon WMA 877 acres

( )NEW ( )RENEWAL ( )EXTENSION (✓)AMENDMENT (See Reverse for Definitions)

CONTRACT BEGIN DATE Execution 5/02/96 END DATE 12/17/2039 OPTION FOR 50 YEARS

ORIGINATOR/CONTACT Judy Ann Drymon PHONE 8-5831 DIV/OFF

TOTAL CONTRACT AMOUNT $ PAYMENT AMOUNT $

BILLING PERIODS: ( )MONTHLY ( )QUARTERLY ( )ANNUALLY ( )OTHER

( )EXPENDITURE ( )REVENUE (✓)AGREEMENT ( )EASEMENT/DEED

BUILDING INSURANCE TO BE INCURRED BY THE COMMISSION __YES __NO (NOTIFY PROPERTY ADMINISTRATOR)

RCC CODE 4716 CATEGORY OBJECT CODE PROJECT 7329

FUND CARL MINORITY CATEGORY (See reverse side for options)

CERTIFIED MINORITY: ( )YES ( )NO ( )NOT AVAILABLE

ROUTING ORDER FOR APPROVAL	CONCUR/INITIALS	DATE	COMMENTS
1. PROJECT LEADER*	THS	1/3/96	
2. DIV/REGIONAL DIRECTOR*	[illegible]	4/2/96	
3. PURCHASING*	BSA	4/5/96	
4. LEGAL	PJR	4.9.96	
5. AD SERVICES			
DISBURSEMENT MANAGER			
REVENUE MANAGER			
CHIEF OF ACCOUNTING			
FEDERAL AID ACCOUNTANT*			
GRANTS/DONATIONS			
AD SERVICES DIRECTOR			
6. EXEC/DIV/REGION DIRECTOR*	AG/[illegible]	4-12-96	

*ROUTING OF FEDERAL AID DOCUMENTS ONLY

DIVISION/OFFICES ARE TO FORWARD COMPLETED ORIGINAL CONTRACT AND ROUTING SLIP TO THE PURCHASING OFFICE.

CLASS/GROUP CODE SACCS YES NO

GFC Form 167

39

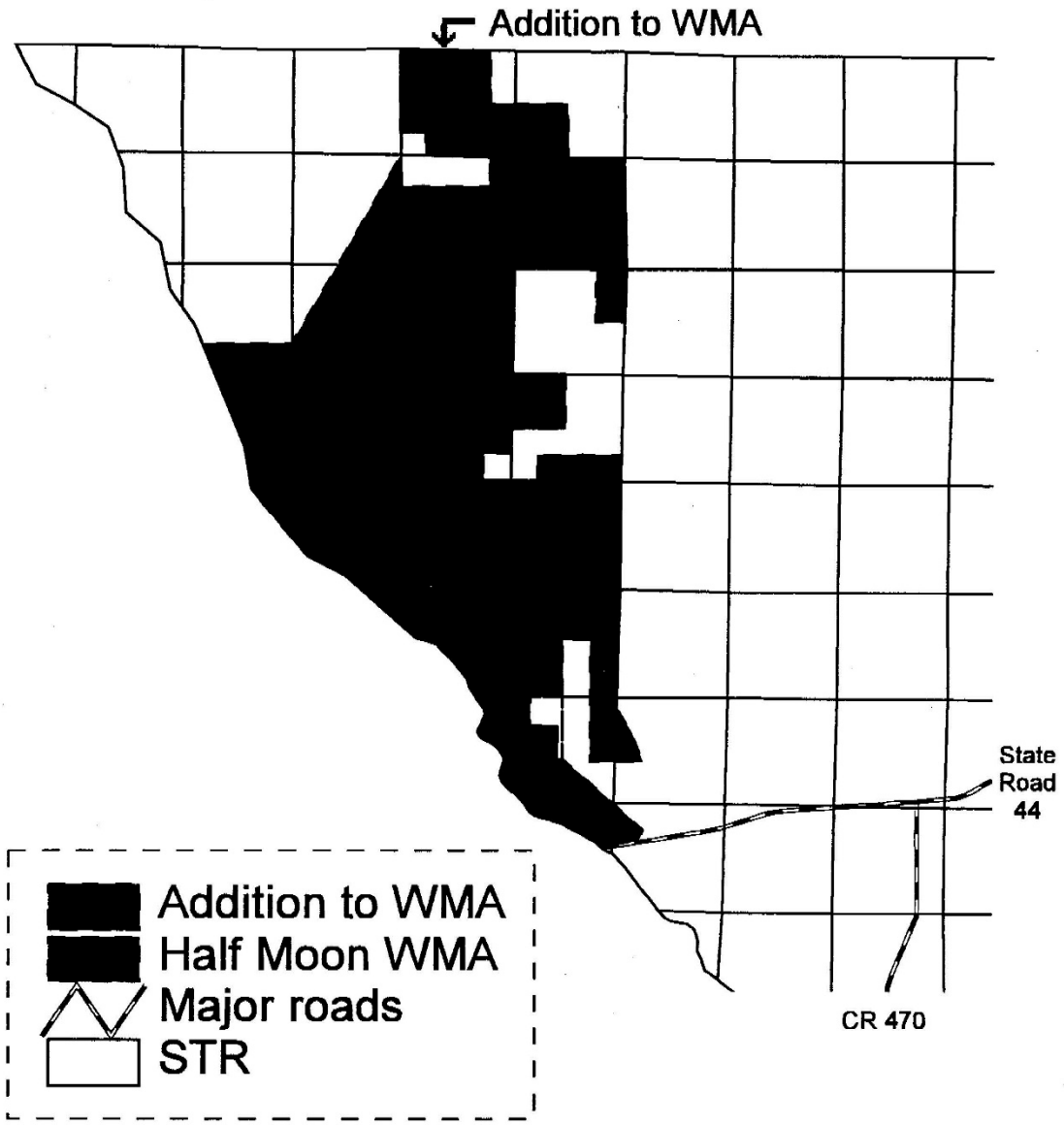
MEMORANDUM

TO: Allan L. Egbert, Ph.D., Executive Director

FROM: Frank Montalbano III, Director, Division of Wildlife

SUBJECT: Amendment No.1, Half Moon (Seven Springs) WMA

Attached are two (2) originals of amendment No.1 to the Half Moon WMA, between the Board of Trustees and the Florida Game and Fresh Water Fish Commission (Lead Agency). The amendment adds 877 acres to the Half Moon Wildlife Management Area. The total acreage of the Half Moon WMA is 9,408 acres.



Half Moon WMA

Sumter County

DIVISION OF WILDLIFE

****

MEMORANDUM February 28, 1996

TO: Mike Abbott, Regional Wildlife Management Biologist

FROM: Jimmy Conner, Wildlife Biologist JCC

SUBJECT: Review of additional lands for Half Moon and Jumper Creek WMAs

****

Per your request, two parcels under review to be added to existing wildlife management areas have been inspected by field personnel. The purpose of this field inspection was to identify any improvements, easements, or other encumbrances that will complicate inclusion of those parcels into the wildlife management area system. The parcels under review are the Smith tract, an 878-acre parcel to be added to Half Moon WMA, and the Wilder tract, a 120-acre parcel to be added to Jumper Creek WMA.

The Smith tract has been traversed by area personnel on several occasions within the last month. No improvements were noted during these visits. An easement, however, does exist on the tract. This easement permits the previous landowners of the property and their guests to access property that was not sold to the State of Florida. The actual route of this easement appears to concur with the description of the easement that is granted in the warranty deed.

I visited the Wilder tract on February 23 and noted no improvements or areas that may be used as an easement. Neither Wayne Jones, the Division of Forestry's Forest Area Supervisor over Jumper Creek, nor Ken Hensley, the Wildlife Officer most familiar with the tract, know of any such improvements or easements as well.

If you have any questions or need further information regarding this matter, please feel free to call.

RECEIVED
MAR 7 1996
BUREAU OF
WILDLIFE MANAGEMENT

WLD 8-5
cc: LTC Robert Butler
Mr. Mike Brooks
Mr. Matt Pollock

ATL8101

BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND

AMENDMENT NUMBER 1 TO LEASE NUMBER 3789

THIS LEASE AMENDMENT is entered into this 1st day of May, 1996, 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 18, 1989, LESSOR and LESSEE entered into Lease No. 3789; and

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

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. 3789 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 No. 3789 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

Witness

Nikey R. Hill
Print/Type Witness Name

Witness

Latonja Peoples
Print/Type Witness Name

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

"LESSOR"

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 1st day of May, 1996 by Daniel T. Crabb, as Chief, Bureau of Land Management Services, 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.

Notary Public, State of Florida

Gloria H. Maddox
Print/Type Notary Name

(SEAL)

GLORIA H. MADDOX
MY COMMISSION EXPIRES SEPTEMBER 25, 1998
#CC 409433
Bonded thru Troy Fain-Insurance
NOTARY PUBLIC STATE OF FLORIDA

Commission Number:

Commission Expires:

Approved as to Form and Legality
By: _____
DEP Attorney

STATE OF FLORIDA GAME AND FRESH WATER FISH COMMISSION

Witness

Rosemary Mara
Print/Type Witness Name

Witness

K. M. Wright
Print/Type Witness Name

By: _____ (SEAL)

Allan L. Egbert
Print/Type Name

Title: Executive Director

"LESSEE"

APPROVED AS TO FORM AND LEGALITY
Preston T. Robertson
Assistant General Counsel

Page 2 of 15
Amendment No. 1 to Lease Number 3789

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 12th day of April, 1996 by Allan L. Egbert as Executive Director, of State of Florida Game and Fresh Water Fish Commission. He/~~she~~ is personally known to me.

Jimmie C. Bevis
Notary Public, State of Florida

(SEAL)

JIMMIE C. BEVIS
MY COMMISSION EXPIRES
DECEMBER 28, 1997
#CC 338592
Bonded thru
Tom Fain Insurance
NOTARY PUBLIC, STATE OF FLORIDA

JIMMIE C. BEVIS
Print/Type Notary Name

Commission Number:

Commission Expires:

Page 3 of 15
Amendment No. 1 to Lease Number 3789

EXHIBIT "A"

OFF. REC. 454 PAGE 326

This Instrument prepared by:
Jorge Diaz-Silveira, Esq.
STEEL HECTOR & DAVIS
4000 Southeast Financial Center
Miami, Florida 33131-2398

RECORD AND RETURN TO

FILED AND RECORDED IN PUBLIC RECORDS OF SUMTER COUNTY, FLA. RECORD VERIFIED
MAY 6 2 29 PM '92
BERNARD R. SHELNUTT, JR. CLERK OF CIRCUIT COURT
BY D.C.

247231

WARRANTY DEED

This Warranty Deed, made this 13th day of April, 1992 by and between SEVEN SPRINGS FOUNDATION, INC., a Florida not-for-profit corporation, McGREGOR SMITH, JR., a married man, and WILSON SMITH, a single man, as tenants in common each owning an undivided 1/3 interest ("Grantors") to the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA ("Grantee"), whose post office address is c/o Department of Natural Resources, Division of State Lands, 3900 Commonwealth Boulevard, Mail Station 115, Tallahassee, Florida 32399.

W I T N E S S E T H:

WHEREAS, Grantors for and in consideration of the sum of Ten Dollars ($10.00) in hand paid by the Grantee and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, hereby grant, bargain and sell to the Grantee and to Grantee's successors and assigns forever, all of Grantors' right, title and interest in and to those certain parcels of land (the "Land"), all of which are located within Township 18 South, Range 21 East, in the County of Sumter, State of Florida, to wit:

All of Section 6, less the East 1/2 of the Northeast 1/4 of said Section 6 and less the Southwest 1/4 of the Southwest 1/4 of said Section 6;

The East 1/4 of the North 1/2 of the North 1/2 of Section 7;

The North 1/2 of the North 1/2 of Section 8; and

The Southwest 1/4 of Section 5.

All in Township 18 South, Range 21 East, Sumter County, Florida.

SUBJECT TO:

1. Reservation of easement for State Road Right of Way unto the State of Florida as contained in Deed No. 322, from the Trustees of the Internal Improvement Fund of the State of Florida, dated December 16, 1941 and recorded December 26, 1941, in Deed Book 114, Page 328 of the Public Records of Sumter County, Florida.

2. Oil, gas and mineral rights reserved in Deed recorded December 19, 1941 in Deed Book 113, Page 209 and subsequent conveyances in Official Records Book 289, Page 213, Official Records Book 294, Page 373, Official Records Book 294, Page 789, Official Records Book 299, Page 203, Official Records Book 312, Page 416, Official Records Book 312, Page 412 and Official Records Book 400, Page 301, all of the Public Records of Sumter County, Florida.

Documentary Stamps $ 7620.00
Intangible Tax $ —
PAID 6th day of May, 19 92
BERNARD R. SHELNUTT, JR., CLERK
CIRCUIT COURT, SUMTER COUNTY, FLORIDA
BY Martha Williams D.C.

APPROVED AS TO FORM & LEGALITY

Note to Tax Examiner: This instrument shall be recorded in the Public Records of Sumter County, Florida, and the appropriate documentary stamp this instrument shall be Florida.

Page 4 of 15
Amendment No. 1 to Lease No. 3789

McGregor Smith, Jr. certifies, represents and warrants that he does not reside and has not resided at any time on said land, that said land is not his homestead property as defined under Article 10, Section 4 of the Florida Constitution, and is not contiguous thereto, and that McGregor Smith, Jr. resides at 11200 S.W. 60th Avenue, Miami, Florida 33156.

Reserving, however, unto the Grantors, and Grantors' successors and assigns, as well as any employee, agent, licensee, invitee, guest or assignee of Grantors, an easement forever over, under, in, on, upon and across the lands described on Exhibit A attached hereto and by this reference expressly made a part hereof (the "Easement Area") for the purpose of vehicular and pedestrian ingress and egress over and across the Easement Area for the benefit of the owners (the "Owners") of adjacent lands more particularly described on Exhibit B attached hereto and made a part hereof (the "Adjacent Lands"), and the Owners' successors and assigns, as well as any employee, agent, licensee, invitee, guest or assignee of the Owners. The Grantors and the Owners and their respective successors and assigns are hereinafter sometimes collectively referred to as the "Benefitted Parties".

By their respective acts of delivering and accepting this Warranty Deed, the Grantors, the Owners and the Grantee, intending to bind themselves and their respective heirs, personal representatives, successors and assigns, including any and all successors in title to them, do hereby agree as follows with respect to the Easement Area and the easement rights thereto reserved by the Grantors herein, to wit:

(i) neither the Benefitted Parties nor the Grantee shall have any duties or obligations, each to the other or to third parties, respecting the condition, maintenance, stabilization, drainage, restoration, and repair of the Easement Area;

(ii) notwithstanding the language set forth in subparagraph (i) above, the Grantors, the Owners or the Grantee, at their or its sole cost and expense, may (but shall not be obligated to) unilaterally perform maintenance services such as soil stabilization and drainage of various portions of the Easement Area;

(iii) the easement rights reserved herein create and establish a perpetual non-exclusive easement in favor of the Benefitted Parties and the Benefitted Parties' successors and assigns, as well as any employee, agent, licensee, invitee, guest or assignee of the Benefitted Parties, and the Benefitted Parties understand and agree that the Grantee shall have the right to (a) engage in any activities on, over, under and across the Easement Area which do not unreasonably interfere with Benefitted Parties' exercise of its rights hereunder, and (b) grant compatible uses to third parties on, over, under and across the Easement Area, provided always, however, that neither the Benefitted Parties nor the Owners, or any of the foregoing, shall have or owe any duty to the

Grantee or any such third parties respecting (i) the quality or condition of the Easement Area, (ii) the maintenance, stabilization, drainage, restoration and repair thereof, and (iii) the suitability or fitness of the Easement Area for any particular purpose;

(iv) no building, structure, fence, obstruction, or improvement of any nature whatsoever shall be placed, erected, constructed or located on any portion of the Easement Area and no portion of the Easement Area shall be relocated, excavated or paved, by the the Grantors, the Owners or the Grantee, without the prior written consent of the other party or parties;

(v) the easement rights reserved herein shall include the right (but not the obligation) of the Grantors or the Owners, and their employees, agents, licensees, invitees, guests, assignees and representatives, upon receipt of written permission from the Grantee or its duly authorized representatives or agents (such permission not to be unreasonably withheld), to cut, trim, remove and keep clear all trees, brush, undergrowth and other obstructions that might endanger or interfere with ingress and egress over and upon the Easement Area, including, but not limited to, the right to remove any buildings, structures, fences, and other obstructions and improvements located or placed within the Easement Area. The party performing such services shall dispose of, to the reasonable satisfaction of Grantee, all brush and refuse resulting from any clearing of the Easement Area accomplished by such party for the uses authorized herein.

(vi) If timber is removed in connection with clearing the Easement Area, the net proceeds from the sale of such timber shall be paid to the Grantee. Benefitted Parties or any of them may, but shall not be obligated to, take precautions to control soil erosion and to prevent any other degradation of the Easement Area or various portions thereof. Benefitted Parties shall not remove water from any source on or about the Easement Area, including, but not limited to, any water course, reservoir, spring, or well, without the prior written approval of the Grantee or its authorized agent or representative. Should any of the Benefitted Parties elect to perform maintenance services in or on the Easement Area, the party so electing to perform maintenance services shall clear, remove and pick up all debris, including, but not limited to, containers, papers, discarded tools and trash foreign to each work location and dispose of the same in a satisfactory manner so as to leave all work locations free and clear of any such debris. Neither Grantors, the Owners nor the Grantee shall dispose of any contaminants, including, but

not limited to, hazardous or toxic substances, chemicals or other agents on any portion of the Easement Area, on any adjacent state land, or in any manner not permitted by law.

(vii) the easement rights reserved herein shall include the right of the Benefitted Parties or any of them, and their employees, agents, licensees, invitees, guests, assignees and representatives, to improve the Easement Area or various portions thereof as and when improvements thereto shall be deemed mutually necessary by the Benefitted Parties and Grantee; provided always however, that none of the Benefitted Parties undertake any duty to so improve or to otherwise maintain the Easement Area or any portion thereof;

(viii) Grantee and its duly authorized agents, representatives or employees shall have the right at any and all times to inspect any and all portions of the Easement Area and any works and operations of Benefitted Parties or any of them thereon or therein to ensure that the same are in compliance with the provisions hereof;

(ix) the easement rights of the Benefitted Parties reserved herein in no way affect any of the Benefitted Parties' or Grantee's obligations pursuant to Chapter 267, Florida Statutes, and the parties expressly acknowledge their understanding and agreement that the collection of artifacts or the disturbance of archaelogical and historic sites on state-owned land is prohibited unless prior authorization has been obtained from the Department of State, Division of Historical Resources;

(x) Benefitted Parties acknowledge that fee simple title to the lands comprising the Easement Area described on attached Exhibit A is vested in the Grantee. The Benefitted Parties covenant and agree with the Grantee that they shall not do, or permit anything to be done by and through them, which establishes or creates, or purports to create, a lien or encumbrance of any nature against the lands owned by the Grantee, including, but not limited to, the creation of mortgage liens or construction liens against all or any portion of the Easement Area or against the fee simple title of the Grantee thereto;

(xi) the Benefitted Parties acknowledge their understanding and agreement that nothing provided herein or reserved hereby authorizes the Benefitted Parties to use any lands located waterward of the mean or ordinary high water line of any lake, river, stream, creek, bay, estuary, or other water body or the waters or the air space thereabove;

(xii) Benefitted Parties agree to and shall pay all costs, charges and expenses, including reasonable attorneys' fees for trial and appellate matters, incurred or paid by the Grantee because of the failure on the part of the Benefitted Parties (after notice of default and a reasonable period of time in which to cure such default) to comply with and abide by each and every one of the Benefitted Parties' stipulations, agreements, covenants and conditions set forth herein, or which are incurred or paid by the Grantee in seeking any remedy available to the Grantee as a result of such failure (after notice and opportunity to cure) on the part of the Benefitted Parties;

(xiii) Benefitted Parties agree to and hereby assume full responsibility to pay for any and all assessments and taxes that may hereafter accrue or be lawfully assessed and levied against the Easement Area or any permitted improvements thereon, including any and all drainage and special assessments or taxes of every kind, and it is further agreed that the party causing to be furnished labor or materials which could give rise to any mechanic's or materialmen's liens shall discharge any and all mechanics' and materialmen's liens created or suffered thereby as liens against the Easement Area or any portion thereof; and

(xiv) Benefitted Parties hereby covenant and agree to investigate, at their sole cost and expense, all claims which arise out of Benefitted Parties' use of the Easement Area, and to indemnify, protect, defend, hold and save harmless Grantee and the State of Florida from any and all loses, liabilities, damages, claims, actions, lawsuits and demands of any kind or nature arising out of Benefitted Parties' use of the Easement Area.

(xv) Except as set forth in subparagraph (xiv) above, neither the Benefitted Parties nor their respective successors and assigns assumes or shall have any liability or responsibility to any party whomsoever using the Easement Area reserved hereby for any bodily injury (including death) or property damage caused by any other party's use of the Easement Area, including specifically, but not limited to, Grantee and its successors and assigns, and the agents, employees, licensees and invitees of Grantee or other persons on the Easement Area with or without the consent of Grantee.

(xvi) The reservation of easement set forth herein shall be binding upon and inure to the benefit of the Benefitted Parties and their respective successors and assigns, as well as any employee, agent, licensee, invitee, guest or assignee of the Benefitted Parties, and the same shall be deemed to be covenants running with the Land and the Adjacent Lands. Nothing set forth herein shall be deemed or construed to preclude the termination of said covenants and easement by

an instrument or instruments in writing or in recordable form executed by both the fee simple title owner of the Land and the fee simple title owner of the Adjacent Lands. In the event that more than one person or entity holds fee simple title to the Land or the Adjacent Lands, the easement reserved herein may be modified or terminated as aforesaid by written instrument in recordable form executed by all of the then owners of fee simple title to each of such parcels of land, as applicable.

AND the Grantors do hereby fully warrant the title to the Land and will defend the same against the lawful claims of all persons whomsoever.

IN WITNESS WHEREOF the Grantors have executed this instrument this 13th day of April, 1992.

Signed, sealed and delivered in the presence of:

Martha B. Levey
Name: MARTHA B. LEVEY

Jorge Diaz-Silveira
Name: Jorge Diaz-Silveira

SEVEN SPRINGS FOUNDATION, INC., a Florida not-for-profit corporation

By: McGregor Smith Jr.
McGregor Smith, Jr.
Vice President

(Corporate Seal)

Mailing Address:
c/o Steel Hector & Davis
4000 Southeast Financial Center
Miami, Florida 33131
Attn: Wilson Smith, P.A.

Martha B. Levey
Name: MARTHA B. LEVEY

Jorge Diaz-Silveira
Name: Jorge Diaz-Silveira

McGregor Smith Jr.
McGregor Smith, Jr., a married man

Mailing Address:
11200 S.W. 60th Avenue
Miami, Florida 33156

Martha B. Levey
Name: MARTHA B. LEVEY

Jorge Diaz-Silveira
Name: Jorge Diaz-Silveira

Wilson Smith, a single man

Mailing Address:
12501 Pine Needle Lane
Miami, Florida 33156

STATE OF FLORIDA)
COUNTY OF DADE)

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 MCGREGOR SMITH, JR., as Vice President of Seven Springs Foundation, Inc., a Florida not-for-profit corporation, who executed the foregoing deed on behalf of said corporation and acknowledged to and before me that he did so voluntarily and for the purposes set

forth herein, and who produced Drivers License as identification and who did take an oath.

WITNESS my hand and official seal in the County and State last aforesaid this 13th day of April, 1992.

Jorge Diaz-Silveira
Notary Public, State of Florida
Name: Jorge Diaz-Silveira
Commission No. CC074331

(Seal)

My commission expires:
Notary Public, State of Florida
My Commission Expires Jan. 3, 1995
Bonded Thru Troy Fain - Insurance Inc.

STATE OF FLORIDA)
COUNTY OF Dade)

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 McGREGOR SMITH, JR., a married man, who executed the foregoing deed and acknowledged to and before me that he did so voluntarily and for the purposes set forth herein, and who produced Drivers License as identification and who did take an oath.

WITNESS my hand and official seal in the County and State last aforesaid this 13th day of April, 1992.

Jorge Diaz-Silveira
Notary Public, State of Florida
Name: Jorge Diaz-Silveira
Commission No. CC074331

(Seal)

My commission expires:
Notary Public, State of Florida
My Commission Expires Jan. 3, 1995
Bonded Thru Troy Fain - Insurance Inc.

STATE OF FLORIDA)
COUNTY OF Dade)

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 WILSON SMITH, a single man, who executed the foregoing deed and acknowledged to and before me that he did so voluntarily and for the purposes set forth herein, and who produced Drivers License as identification and who did take an oath.

WITNESS my hand and official seal in the County and State last aforesaid this 13th day of April, 1992.

Jorge Diaz-Silveira
Notary Public, State of Florida
Name: Jorge Diaz-Silveira
Commission No. CC074331

(Seal)

My commission expires:
Notary Public, State of Florida
My Commission Expires Jan. 3, 1995
Bonded Thru Troy Fain - Insurance Inc.

JDS/2190

ACKNOWLEDGMENT AND ACCEPTANCE BY GRANTEE

For good and valuable consideration, the receipt, sufficiency and adequacy of which is hereby acknowledged, the Grantee, for itself and its successors and assigns, does hereby agree to accept all of the burdens, as well as the benefits imposed by the delivery, acceptance and recordation of this Warranty Deed in the Public Records of Sumter and Marion Counties, Florida, including, but not limited to the easement rights reserved herein.

Signed, sealed and delivered in the presence of:

Name: ED Wood

Name: Gayle H. Brett

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

By: Percy W. Mallison, Jr., Director, Division of State Lands Department of Natural Resources, as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida

STATE OF FLORIDA)
COUNTY OF Leon)

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 Percy W. Mallison, Jr., as Director, Division of State Lands, Department of Natural Resources, as agent for the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, who executed the foregoing instrument on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida and acknowledged to and before me that he did so voluntarily and for the purposes set forth herein, and who produced a Florida driver's license as identification and who did not take an oath.

WITNESS my hand and official seal in the County and State last aforesaid this 30th day of April, 1992.

Notary Public, State of Florida
Name: Gayle H. Brett
Commission No. AA628618

(Seal)

My commission expires:

-8-

Page 11 of 15
Amendment No. 1 to Lease No. 3789

ACKNOWLEDGEMENT AND CONSENT BY OWNERS OF ADJACENT LANDS

For good and valuable and consideration, the receipt, sufficiency and adequacy of which is hereby acknowledged, Elizabeth W. Smith, McGregor Smith, Jr. and Wilson Smith for themselves and their respective successors and assigns, do hereby agree to accept all of the burdens, as well as the benefits imposed by the delivery, acceptance and recordation of this Warranty Deed in the Public Records of Sumter and Marion Counties, Florida.

BK 1831 PG 0739

Signed, sealed and delivered in the presence of:

Name: ELIZABETH F. GROOT

Name: Joyce Hope Simmons

Elizabeth W. Smith

Mailing Address:
c/o Steel Hector & Davis
4000 Southeast Financial Center
Miami, Florida 33131
Attn: Wilson Smith, P.A.

Name: MARTHA B. LEVEY

Name: Jorge Diaz-Silveira

McGregor Smith, Jr., a married man

Mailing Address:
11200 S.W. 60th Avenue
Miami, Florida 33156

Name: MARTHA B. LEVEY

Name: Jorge Diaz-Silveira

Wilson Smith, a single man

Mailing Address:
12501 Pine Needle Lane
Miami, Florida 33156

STATE OF FLORIDA)
COUNTY OF Dade)

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 ELIZABETH W. SMITH, who executed the foregoing instrument and acknowledged to and before me that she did so voluntarily and for the purposes set forth herein, and who produced Self (Known) _____ as identification and who did not take an oath.

WITNESS my hand and official seal in the County and State last aforesaid this 13 day of April, 1992.

Notary Public, State of Florida
Name: Joyce Hope Simmons
Commission No. AA682687

(Seal)

My commission expires: Notary Public, State of Florida My Commission Expires July 27, 1993 Bonded Thru Troy Fain - Insurance Inc.

-9-

Page 12 of 15
Amendment No. 1 to Lease No. 3789

STATE OF FLORIDA)
COUNTY OF Dade)

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 McGREGOR SMITH, JR., a married man, who executed the foregoing instrument and acknowledged to and before me that he did so voluntarily and for the purposes set forth herein, and who produced Drivers License as identification and who did not take an oath.

WITNESS my hand and official seal in the County and State last aforesaid this 13th day of April, 1992.

Jorge Diaz-Silveira
Notary Public, State of Florida
Name: Jorge Diaz-Silveira
Commission No. CC074831

(Seal)

My commission expires:

Notary Public, State of Florida
My Commission Expires Jan. 3, 1995
Bonded Thru Troy Fain - Insurance Inc.

STATE OF FLORIDA)
COUNTY OF Dade)

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 WILSON SMITH, a single man, who executed the foregoing instrument and acknowledged to and before me that he did so voluntarily and for the purposes set forth herein, and who produced Drivers License as identification and who did not take an oath.

WITNESS my hand and official seal in the County and State last aforesaid this 13th day of April, 1992.

Jorge Diaz-Silveira
Notary Public, State of Florida
Name: Jorge Diaz-Silveira
Commission No. CC074831

(Seal)

My commission expires:

Notary Public, State of Florida
My Commission Expires Jan. 3, 1995
Bonded Thru Troy Fain - Insurance Inc.

BK 10316 PG 0740

EXHIBIT A

Legal Description of Easement Reserved to Grantors

An easement for ingress and egress lying 10 feet on each side of and directly adjacent to the following described centerline:

Commence at the Southwest corner of the NE 1/4 of the NE 1/4 of Section 7, Township 18 South, Range 21 East, Sumter County, Florida; thence run N 00°02'10" W, along the West boundary of said NE 1/4 of the NE 1/4, 10.000 feet to the Point of Beginning; thence run S 89°45'12" E, 1318.192 feet; thence run N 89°03'27" E, 1038.840 feet; thence run N 67°33'16" E, 86.718 feet; thence run N 46°03'05" E, 568.624 feet; thence run N 57°12'16" E, 634.941 feet; thence run N 44°36'05" E, 56.249 feet; thence run N 35°07'50" E, 36.004 feet; thence run N 26°59'22" E, 507.827 feet; thence run N 27°22'03" E, 80.010 feet; thence run N 48°06'24" E, 377.162 feet to the Point of Termination. Said point being N 00°50'10" E, and 302.515 feet from the South 1/4 corner of Section 5, Township 18 South, Range 21 East, Sumter County, Florida.

EXHIBIT B

Legal Description for Adjacent Lands

BK 1831 PG 0742

The South 1/2 of Section 32, Township 18 South, Range 21 East, in Marion County, Florida;

The Southeast 1/4 of the Southeast 1/4 of Section 31, Township 18 South, Range 21 East, in Marion County, Florida;

All of Section 5, less the Southwest 1/4 of said Section 5, Township 18 South, Range 21 East, in Sumter County, Florida;

The Southwest 1/4 of the Southwest 1/4 of Section 6, Township 18 South, Range 21 East, in Sumter County, Florida;

The North 1/2 of the North 1/2 of Section 7, less the Northeast 1/4 of the Northeast 1/4 of said Section 7, all in Township 18 South, Range 21 East, in Sumter County, Florida; and

The East 1/2 of the Northeast 1/4 of Section 6, Township 18 South, Range 21 East, in Sumter County, Florida.

CENTRAL FILE
WA-131

DIVISION LOG # LL-956

CONTRACT ROUTING REVIEW FORM

CONTRACT NUMBER 89048 CONTRACTOR DEP GFC

BRIEF TITLE Amend. No. 2 / Lease No. 3789 / Half Moon 122 acres

( )NEW ( )RENEWAL ( )EXTENSION (✓)AMENDMENT (See Reverse for Definitions)

CONTRACT BEGIN DATE Execution 8/20/96 END DATE 12/17/39 OPTION FOR 50 YEARS

ORIGINATOR/CONTACT Judy Ann Drymon 4SS PHONE 8-3831 DIV/OFF Wildlife

TOTAL CONTRACT AMOUNT $_____ PAYMENT AMOUNT $_____

BILLING PERIODS: ( )MONTHLY ( )QUARTERLY ( )ANNUALLY ( )OTHER _____

( )EXPENDITURE ( )REVENUE ( )AGREEMENT ( )EASEMENT/DEED

BUILDING INSURANCE TO BE INCURRED BY THE COMMISSION __YES __NO (NOTIFY PROPERTY ADMINISTRATOR)

RCC CODE 4716 CATEGORY _____ OBJECT CODE _____ PROJECT 7329

FUND CARL MINORITY CATEGORY _____ (See reverse side for options).

CERTIFIED MINORITY: ( )YES ( )NO ( )NOT AVAILABLE

ROUTING ORDER FOR APPROVAL	CONCUR/INITIALS	DATE	COMMENTS
1. PROJECT LEADER*	JHS	7/15/96	
2. DIV/REGIONAL DIRECTOR*	MB	7/16/96	
3. PURCHASING*	AK	7/17/96	
4. LEGAL	JA	7/22/96	
5. AD SERVICES			
DISBURSEMENT MANAGER			
REVENUE MANAGER			
CHIEF OF ACCOUNTING	KB	7-23-96	
FEDERAL AID ACCOUNTANT*			
GRANTS/DONATIONS			
AD SERVICES DIRECTOR	SP	7-25-96	
6. EXEC/DIV/REGION DIRECTOR*	[illegible]	7-Aug-96	

*ROUTING OF FEDERAL AID DOCUMENTS ONLY

DIVISION/OFFICES ARE TO FORWARD COMPLETED ORIGINAL CONTRACT AND ROUTING SLIP TO THE PURCHASING OFFICE.

GLASS/GROUP CODE _____ SACCS YES_____ NO _____

GFC Form 167

39

MEMORANDUM

TO: Allan L. Egbert Ph.D., Executive Director

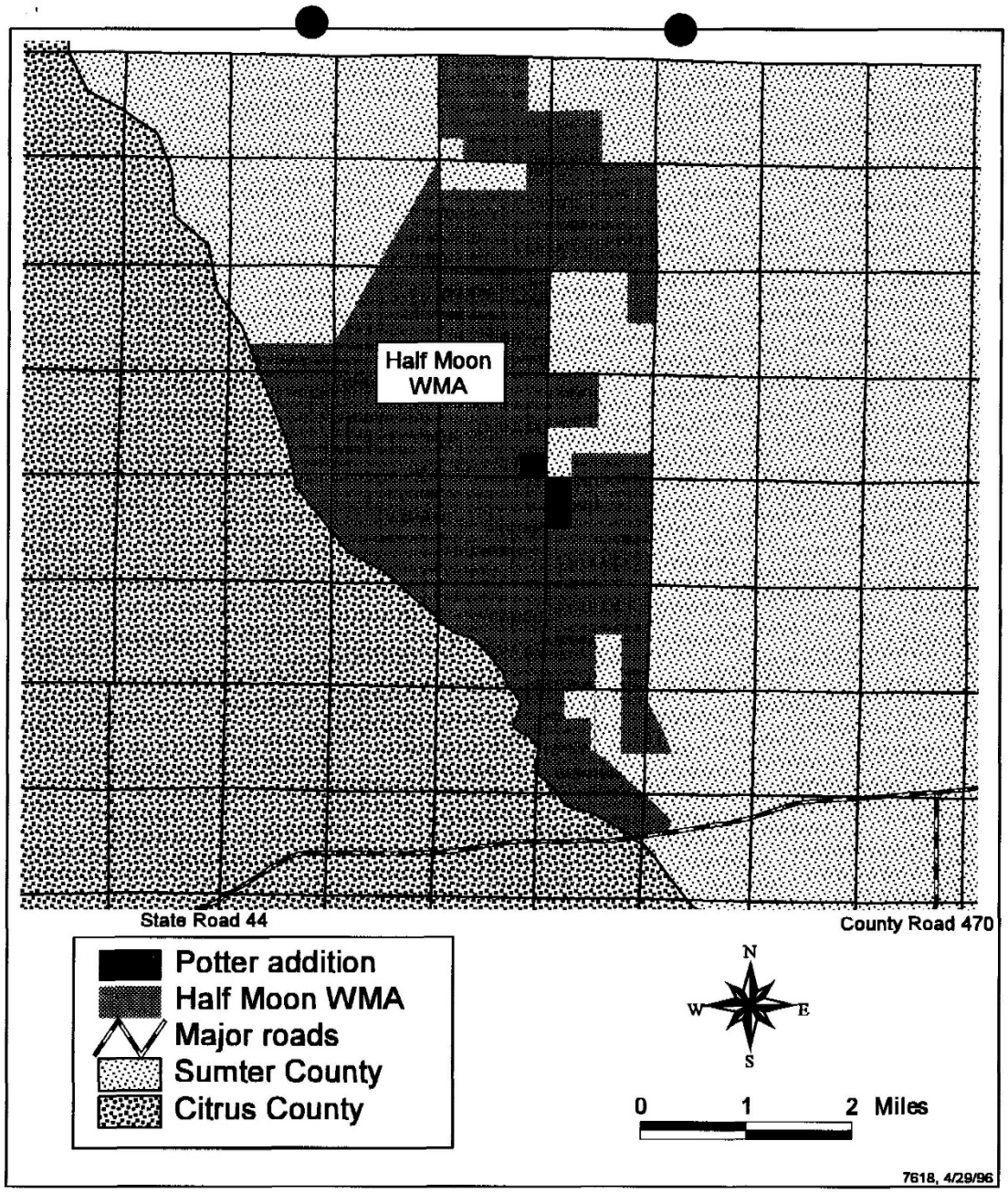
FROM: Frank Montalbano III, Director, Division of Wildlife

SUBJECT: Amendment No. 2 for Lease 3789, Half Moon Type I WMA

Attached are two (2) originals of Amendment No.2 to Lease 3789 between the Board of Trustees and the Florida Game and Fresh Water Fish Commission. The amendment will add approximately 122 acres to the Half Moon Type I WMA.

Thank you for your consideration of this agreement.

LEG 8-5
Judy\RT.MEMO\LL.956



Location of the Potter addition to the Half Moon WMA, Sumter County.

DIVISION OF WILDLIFE

****

MEMORANDUM April 2, 1996

TO: Mike Abbott, Regional Wildlife Management Biologist

FROM: Jimmy Conner, Wildlife Biologist JC

SUBJECT: Review of Additional Lands for Half Moon WMA

****

Per your request, two parcels under review to be added to Half Moon Wildlife Management Area (WMA) have been inspected by field personnel. The purpose of this field inspection was to identify any improvements, easements, or other encumbrances that will complicate inclusion of those parcels into the wildlife management area system. The parcels under review were both previously owned by the Potter family prior to State purchase. One is a 40-acre parcel, referred to as the Potter 40 tract, and the other consists of 80 acres, referred to as the Potter 80 tract.

The Potter 80 tract has been inspected by area personnel on several occasions, with no improvements or other encumbrances identified. No easements are known to exist on the parcel. Two improvements have been discovered on the Potter 40 tract, however. One is a 26-foot by 12-foot concrete slab. This slab was most likely used as a trailer pad. Removal of the slab, if deemed necessary, would result in a minimal cost. Heavy machinery rented or borrowed on an annual basis to accomplish unrelated area projects (i.e. road improvement) could be used to assist in its removal. The other improvement on the Potter 40 tract is an uncapped well. A nominal cost is expected to cap the well, as materials can be obtained from a local hardware store for approximately $5.00.

As you are aware, GFC has had permission from the previous landowners to allow a portion of our road system to bisect the Potter 40 tract. The addition of this parcel to Half Moon WMA would ensure continued access to the northern one-half of the WMA without having to potentially incur the enormous expense of re-routing some of our roads. In addition, we will be able to improve that portion of the road that crosses the Potter 40 tract. We have been unable to do this in the past, resulting in the closure of the road during inclement weather, and restricting vehicular access to 50% of our road system as a result.

It is strongly recommended that these parcels be established into Half Moon WMA. By taking such action, the problems mentioned above with vehicular access can be alleviated. Also, the additional acreage will increase the recreational opportunities afforded to area users and protect the natural resources on the parcels. If you have any questions or need further information regarding this matter, please feel free to call.

WLD 8-5
cc: LTC Robert Butler
Mr. Mike Brooks
Mr. Matt Pollock

RECEIVED
APR 8 1996
BUREAU OF
WILDLIFE MANAGEMENT

ATL1

BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT

TRUST FUND

AMENDMENT NUMBER 2 TO LEASE NUMBER 3789

CARLTON HALF-MOON RANCH

THIS LEASE AMENDMENT is entered into this 20th day of August, 1996, 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 Decenber 18, 1989, LESSOR and LESSEE entered into Lease Number 3789; 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 3789 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 3789 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

Kelly Servedio
Witness

Kelly Servedio
Print/Type Witness Name

Jenna Bridges
Witness

Jenna Bridges
Print/Type Witness Name

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

"LESSOR"

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 20th day of August, 1996, by Daniel T. Crabb, as Chief, Bureau of Land Management Services, 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.

Patricia Toloday
Notary Public, State of Florida

(SEAL)

NOTARY PUBLIC STATE OF FLORIDA
OFFICIAL NOTARY SEAL
PATRICIA TOLODAY
COMMISSION NUMBER
CC545665
MY COMMISSION EXPIRES
APR. 18,2000

Print/Type Notary Name

Commission Number:

Commission Expires:

Approved as to Form and Legality

By: Sarah L. Hirsin
DEP Attorney

Page 2 of 9
Amendment No. 2 to Lease No. 3789

THE STATE OF FLORIDA GAME AND
FRESH WATER FISH COMMISSION

Bonnie S. Holcomb
Witness

By: Victor J. Heller (SEAL)

Bonnie S. Holcomb
Print/Type Witness Name

Victor J. Heller
Print/Type Name

Carol Jean Wood
Witness

Title: Assist. Exec. Director

Carol Jean Wood
Print/Type Witness Name

"LESSEE"

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 7th day of August, 1996, by Victor J. Heller as Assistant Executive Director of the State of Florida Game and Fresh Water Fish Commission. He/she is personally known to me.

Jimmie C. Bevis
Notary Public, State of Florida

(SEAL)

JIMMIE C. BEVIS
Print/Type Notary Name

Commission Number

Commission Expires

JIMMIE C. BEVIS
MY COMMISSION EXPIRES
DECEMBER 28, 1997
#CC 338592
Bonded thru
Troy Fain-Insurance
NOTARY PUBLIC, STATE OF FLORIDA

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY
James N. Antista
Commission Attorney

Page 3 of 9
Amendment No. 2 to Lease No. 3789

This Instrument Prepared By and
Please Return to:
STEVEN J. RICHEY, P.A.
Attorney & Counselor at Law
P.O. Box 492460
Leesburg, FL 34749-2460

SPACE BELOW FOR RECORDER'S USE

APPROVED AS TO FORM AND LEGALITY
By: William C. Rikmsnyf
DEP Attorney
Date: 12-18-95

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

THIS INDENTURE, made this 17th day of November, A.D. 1995, between SAMUEL G. POTTER, a married person, as to an undivided 1/9th interest; and MARY ELLA POTTER SINGELTARY O'GRADY, a/k/a MARY E. O'GRADY, f/k/a MARY ELLA POTTER, f/k/a MARY ELLA SINGELTARY, a single person, as to an undivided 1/3rd interest; 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 Sumter County, Florida, to-wit:

The Southeast 1/4 of the Southeast 1/4 of Section 19, Township 18 South, Range 21 East, Sumter County, Florida. (Parcel Account No. B19-002)

AND

The East 1/2 of the Northwest 1/4 of Section 29, Township 18 South, Range 21 East, Sumter County, Florida. (Parcel Account No. B29-002)

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:

Donna D. Richey
(SIGNATURE OF FIRST WITNESS AS TO FIRST GRANTOR)

Donna D. Richey
(PRINTED, TYPED OR STAMPED NAME OF FIRST WITNESS)

Terry Neal
(SIGNATURE OF SECOND WITNESS AS TO FIRST GRANTOR)

Terry T. Neal
(PRINTED, TYPED OR STAMPED NAME OF SECOND WITNESS)

Samuel G. Potter
SAMUEL G. POTTER
05132 Royal Oaks Drive
Fruitland Park, Florida 34731

Robert G. Loth
(SIGNATURE OF FIRST WITNESS AS TO SECOND GRANTOR

Robert G. Loth
(PRINTED, TYPED OR STAMPED NAME OF FIRST WITNESS)

Cindy S. Smith
(SIGNATURE OF SECOND WITNESS AS TO SECOND GRANTOR)

Cindy S. Smith
(PRINTED, TYPED OR STAMPED NAME OF SECOND WITNESS)

Mary Ella Potter Singeltary O'Grady
MARY ELLA POTTER SINGELTARY O'GRADY
4 Belleview Blvd., Apt. 203
South Garden
Bellair, Florida 33516

PAGE 4 OF 9
EXHIBIT A
AMENDMENT NO. 2 TO LEASE NO. 3789

APPROVED AS TO FORM AND LEGALITY
By: William C. Rikmsnyf
DEP Attorney
Date: 10-26-95

WARRANTY DEED
PAGE 2

STATE OF Florida)
COUNTY OF Brevard)

The foregoing instrument was acknowledged before me this 2nd day of November, 1995, by SAMUEL G. POTTER. Such person (Notary Public must check applicable box):

[ ] is personally known to me.
[✓] produced a current driver license. 0263-595-14-762-0
[ ] produced _____ as identification.

(NOTARY PUBLIC SEAL)

Kathryn A. Oliver
Notary Public

KATHRYN A. OLIVER
NOTARY PUBLIC, STATE OF FLORIDA
My Commission Expires Sept. 19, 1999
Commission # CC 486714

(Printed, Typed or Stamped Name of Notary Public)

Commission No.: _____

My Commission Expires: _____

STATE OF Florida)
COUNTY OF Lake)

The foregoing instrument was acknowledged before me this 16th day of November, 19__, by MARY ELLA POTTER SINGELTARY O'GRADY, a/k/a MARY E. O'GRADY, f/k/a MARY ELLA POTTER, f/k/a MARY ELLA SINGELTARY. Such person (Notary Public must check applicable box):

[✓] is personally known to me.
[ ] produced a current driver license.
[ ] produced _____ as identification.

(NOTARY PUBLIC SEAL)

TERRY T. NEAL
MY COMMISSION EXPIRES AUGUST 16, 1997
#CC 308845
Bonded thru Troy Fain-Insurance
NOTARY PUBLIC, STATE OF FLORIDA

Terry Neal
Notary Public

Terry T. Neal
(Printed, Typed or Stamped Name of Notary Public)

Commission No.: _____

My Commission Expires: _____

DNR 61-46(16)
WARRANTY DEED
REVISED 07/18/94

PAGE 5 OF 9
TRACT A
PARCEL NO. 2 TO LEASE NO. 3789

This Instrument Prepared By
and Please Return to:
STEVEN J. RICHEY, P.A.
Attorney & Counselor At Law
P. O. Box 492460
Leesburg, Florida 34747-2460
Phone No. (904)365-2262

APPROVED AS TO FORM AND LEGALITY
By: William C. Robinson
DEP Attorney
Date 12-18-95

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

THIS INDENTURE, made this 16 day of November, A.D. 1995, between **CHARLES A. POTTER, a married person, as to an undivided 1/9th interest, and ANNE C. POTTER, formerly ANNE P. STEVENS, as to an undivided 1/9th interest**, 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 Sumter County, Florida, to-wit:

The Southeast 1/4 of the Southeast 1/4 of Section 19, Township 18 South, Range 21 East, Sumter County, Florida. (Parcel Account No. B19-002)

AND

The East 1/2 of the Northwest 1/4 of Section 29, Township 18 South, Range 21 East, Sumter County, Florida. (Parcel Account No. B29-002)

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:

Kathryn Parsons
Witness Signature
Witness Name: Kathryn Parsons
Please Print

Charles A. Potter
CHARLES A. POTTER
1400 S. Nova Road, #148
Daytona Beach, FL 32214

Martin W. Glesser
Witness Signature
Witness Name: Martin W. Glesser
Please Print
Witnesses as to Charles A. Potter

Kathryn Parsons
Witness Signature
Witness Name: Kathryn Parsons
Please Print

Anne C. Potter
ANNE C. POTTER, formerly ANNE P. STEVENS
802 Horton Street
New Smyrna, FL 32169

Jessica E. Ross
Witness Signature
Witness Name: JESSICA E. ROSS
Please Print
Witnesses as to Anne C. Potter

APPROVED AS TO FORM AND LEGALITY
By: William C. Robinson
DEP Attorney
Date: 10-20-95

6 OF 9
A
2 TO LEASE NO. 3789

This Instrument Prepared By and
Please Return To:
Steven J. Richey, P.A.
Attorney & Counselor At Law
P.O. Box 492460
Leesburg, Florida 34749-2460

APPROVED AS TO FORM AND LEGALITY
By: William C. Robinson
DEP Attorney
Date: 12-18-95

SPECIAL WARRANTY DEED

THIS INDENTURE, made this 7th day of November, A.D., 1995, between **HENRY RANDOLPH MORRISON, MARGARET M. RUCKER and RICHARD SINGELTARY, as Co-Trustees of the Sarah Potter Horn Trust, dated May 1, 1992, as to an undivided 1/3rd interest**, 9505 Silver Lake Drive, Leesburg, of the County of Lake 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, Mail Station 115, Tallahassee, FL 32399-3000, grantee,

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

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

The Southeast 1/4 of the Southeast 1/4 of Section 19, Township 18 South, Range 21 East, Sumter County, Florida. (Tax Identification Parcel Account No. B19-002)

AND The East 1/2 of the Northwest 1/4 of Section 29, Township 18 South, Range 21 East, Sumter County, Florida. (Tax Identification Parcel Account No. B-29-002)

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

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

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

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

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

Signed, sealed and delivered in
the presence of:

Marta O. Thompson
(SIGNATURE OF FIRST WITNESS)

MARTA O. THOMPSON
(PRINTED TYPED OR STAMPED
NAME OF FIRST WITNESS)

Billie A. Grey
(SIGNATURE OF SECOND WITNESS)

BILLIE A. GREY
(PRINTED, TYPED OR STAMPED
NAME OF SECOND WITNESS)
Witnesses as to Henry Randolph Morrison

Henry Randolph Morrison
(SIGNATURE OF GRANTOR) HENRY RANDOLPH MORRISON,
as Co-Trustee of the Sarah Potter Horn Turst,
dated May 1, 1992
HENRY RANDOLPH MORRISON
(PRINTED, TYPED OR STAMPED NAME OF GRANTOR)

P.O. Box 183, Gulf Beach Dr., Eastpoint, Fl 32328
(PRINTED, TYPED OR STAMPED ADDRESS OF GRANTOR)

Morningstar Butler
(SIGNATURE OF FIRST WITNESS)

MORNINGSTAR BUTLER
(PRINTED, TYPED OR STAMPED
NAME OF FIRST WITNESS)

Anne Louise Smith
(SIGNATURE OF SECOND WITNESS)

ANNE LOUISE SMITH
(PRINTED, TYPED OR STAMPED
NAME OF SECOND WITNESS)
Witnesses as to Margaret Rucker

Margaret M. Rucker
(SIGNATURE OF GRANTOR) MARGARET M. RUCKER, as
Co-Trustee of the Sarah Potter Horn Trust,
dated May 1, 1992
MARGARET M. RUCKER
(PRINTED, TYPED OR STAMPED NAME OF GRANTOR)

P.O. Box 490898, Leesburg, Fl 34749-0898
(PRINTED, TYPED OR STAMPED ADDRESS OF GRANTOR)

APPROVED AS TO FORM AND LEGALITY
By: William C. Robinson
DEP Attorney
Date: 10-26-95

PAGE 8 OF 9
EXHIBIT A
AMENDMENT NO. 2 TO LEASE NO. 3789
AMENDMENT NO. 2 TO LEASE NO. 3701

STATE OF Florida

COUNTY OF Volusia

The foregoing instrument was acknowledged before me this 16th day of November, 1995, by **CHARLES A. POTTER.** Such person (Notary Public must check applicable box):

[ ] is personally known to me.
[X] produced a current driver license.
[ ] produced _____ as identification.

(NOTARY PUBLIC SEAL)

ELAINE LOUISE GARDNER
My Comm Exp. 7/12/99
Bonded By Service Ins
No. CC480253
[] Personally Known [X] Other I.D.

Elaine Louise Gardner
Notary Public

(Printed, Typed or Stamped Name of Notary Public)

Commission No.: _____

My Commission Expires: _____

STATE OF Florida

COUNTY OF Volusia

The foregoing instrument was acknowledged before me this 16th day of November, 1995, by **ANNE C. POTTER, formerly ANNE P. STEVENS.** She (Notary Public must check applicable box):

[X] is personally known to me.
[ ] produced a current driver license.
[ ] produced _____ as identification.

(NOTARY PUBLIC SEAL)

Elaine Louise Gardner
Notary Public

(Printed, Typed or Stamped Name of Notary Public)

Commission No.: _____

My Commission Expires: _____

WARRANTY DEED
REVISED 07/18/94

ELAINE LOUISE GARDNER
My Comm Exp. 7/12/99
Bonded By Service Ins
No. CC480253
[] Personally Known [X] Other I.D.

PAGE 7 OF 9
EXHIBIT A
AMENDMENT NO. 2 TO LEASE NO. 3789

This Instrument Prepared By and
Please Return To:
Steven J. Richey, P.A.
Attorney & Counselor At Law
P.O. Box 492460
Leesburg, Florida 34749-2460

APPROVED AS TO FORM AND LEGALITY
By: William C. Robinson
DEP Attorney
Date: 12-18-95

SPECIAL WARRANTY DEED

THIS INDENTURE, made this 7th day of November, A.D., 1995, between HENRY RANDOLPH MORRISON, MARGARET M. RUCKER and RICHARD SINGELTARY, as Co-Trustees of the Sarah Potter Horn Trust, dated May 1, 1992, as to an undivided 1/3rd interest, 9505 Silver Lake Drive, Leesburg, of the County of Lake 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, Mail Station 115, Tallahassee, FL 32399-3000, grantee,

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

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

The Southeast 1/4 of the Southeast 1/4 of Section 19, Township 18 South, Range 21 East, Sumter County, Florida. (Tax Identification Parcel Account No. B19-002)

AND The East 1/2 of the Northwest 1/4 of Section 29, Township 18 South, Range 21 East, Sumter County, Florida. (Tax Identification Parcel Account No. B-29-002)

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

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

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

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

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

Signed, sealed and delivered in
the presence of:

Marta O. Thompson
(SIGNATURE OF FIRST WITNESS)

MARTA O. THOMPSON
(PRINTED TYPED OR STAMPED
NAME OF FIRST WITNESS)

Billie A. Grey
(SIGNATURE OF SECOND WITNESS)

BILLIE A. GREY
(PRINTED, TYPED OR STAMPED
NAME OF SECOND WITNESS)
Witnesses as to Henry Randolph Morrison

Henry Randolph Morrison
(SIGNATURE OF GRANTOR) HENRY RANDOLPH MORRISON,
as Co-Trustee of the Sarah Potter Horn Turst,
dated May 1, 1992
HENRY RANDOLPH MORRISON
(PRINTED, TYPED OR STAMPED NAME OF GRANTOR)

P.O. Box 183, Gulf Beach Dr., Eastpoint, Fl 32328
(PRINTED, TYPED OR STAMPED ADDRESS OF GRANTOR)

Morningstar Butler
(SIGNATURE OF FIRST WITNESS)

MORNINGSTAR BUTLER
(PRINTED, TYPED OR STAMPED
NAME OF FIRST WITNESS)

Anne Louise Smith
(SIGNATURE OF SECOND WITNESS)

ANNE LOUISE SMITH
(PRINTED, TYPED OR STAMPED
NAME OF SECOND WITNESS)
Witnesses as to Margaret Rucker

Margaret M. Rucker
(SIGNATURE OF GRANTOR) MARGARET M. RUCKER, as
Co-Trustee of the Sarah Potter Horn Trust,
dated May 1, 1992
MARGARET M. RUCKER
(PRINTED, TYPED OR STAMPED NAME OF GRANTOR)

P.O. Box 490898, Leesburg, Fl 34749-0898
(PRINTED, TYPED OR STAMPED ADDRESS OF GRANTOR)

APPROVED AS TO FORM AND LEGALITY
By: William C. Robinson
DEP Attorney
Date: 10-26-95

PAGE 8 OF 9
EXHIBIT A
AMENDMENT NO. 2 TO LEASE NO. 3789

Donna D. Richey
(SIGNATURE OF FIRST WITNESS)

Donna D. Richey
(PRINTED, TYPED OR STAMPED NAME OF FIRST WITNESS)

Terry Neal
(SIGNATURE OF SECOND WITNESS)

Terry T. Neal
(PRINTED, TYPED OR STAMPED NAME OF SECOND WITNESS)

Witnesses as to Richard Singletary

R. Lloyd Singletary
(SIGNATURE OF GRANTOR) RICHARD SINGELTARY, as Co-Trustee of the Sarah Potter Horn Trust, dated May 1, 1992

RICHARD SINGELTARY
(PRINTED, TYPED OR STAMPED NAME OF GRANTOR)

P.O.Box 491443, Leesburg, Fl 34749-1443
(PRINTED, STYPED OR STAMPED ADDRESS OF GRANTOR)

STATE OF FLORIDA

COUNTY OF FRANKLIN

The foregoing instrument was acknowledged before me this 7th day of November, 19 95 by HENRY RANDOLPH MORRISON, as Co-Trustee of the Sarah Potter Horn Trust dated May 1, 1992. Such person (Notary Public must check applicable box:)

[xx] is personally known to me.
[xx] produced his current driver license.
[ ] produced _____ as identification.

(NOTARY PUBLIC SEAL)
MARTA O. THOMPSON
MY COMMISSION EXPIRES FEBRUARY 18, 1996
#CC 175435
NOTARY PUBLIC, STATE OF FLORIDA

Marta O. Thompson
Notary Public Signature

MARTA O. THOMPSON
(Printed, Typed or Stamped Name of Notary Public)

Commission No.: CC 175435

My Commission Expires: Feb. 18, 1996

STATE OF FLORIDA)

COUNTY OF LAKE)

The foregoing instrument was acknowledged before me this 22nd day of November, 19__, by MARGARET M. RUCKER, as Co-Trustee of the Sarah Potter Horn Trust, dated May 1, 1992. Such person (Notary Public must check applicable box):

[✓] is personally known to me.
[ ] produced her current driver license.
[ ] produced _____, as identification.

(NOTARY PUBLIC SEAL)
MARTA O. THOMPSON
MY COMMISSION EXPIRES FEBRUARY 18, 1996
#CC 175435
NOTARY PUBLIC, STATE OF FLORIDA

Anne Louise Smith
Notary Public

ANNE LOUISE SMITH
(Printed, Typed or Stamped Name of Notary Public)

Commission No.:

My Commission Expires:

OFFICIAL NOTARY SEAL
ANNE LOUISE SMITH
NOTARY PUBLIC STATE OF FLORIDA
COMMISSION NO. CC368729
MY COMMISSION EXP. OCT. 25,1998

STATE OF Florida)

COUNTY OF Lake)

The foregoing instrument was acknowledged before me this 21st day of November, 19 95, by RICHARD SINGELTARY, as Co-Trustee of the Sarah Potter Horn Trust, dated May 1, 1992, He is personally known to me.

(NOTARY PUBLIC SEAL)
TERRY T. NEAL
MY COMMISSION EXPIRES AUGUST 16, 1998
#CC 308845
Bonded thru Top Fain-Insurance
NOTARY PUBLIC, STATE OF FLORIDA

Terry Neal
Notary Public Signature

Terry T Neal
(Printed, Typed or Stamped Name of Notary Public)

Commission No.:

My Commission Expires:

SPECIAL WARRANTY DEED
REVISED 07/18/94

PAGE 9 OF 9
EXHIBIT A
AMENDMENT NO. 2 TO LEASE NO. 3789

12.1.2 Southwest Florida Water Management District Agreement

original

FWC Contract # 07134

EXHIBIT 5.

DIVISION LOG # 694

CONTRACT ROUTING REVIEW FORM

CONTRACT NUMBER _____ CONTRACTOR GFC / SWFWMD

BRIEF TITLE Wildlife Agreement - Half-Moon WMA

(✓)NEW ( )RENEWAL ( )EXTENSION ( )MODIFICATION

CONTRACT BEGIN DATE execution END DATE indefinite OPTION FOR -0- YEARS

ORIGINATOR/CONTACT Lee J. Rybak PHONE 4883831 DIV/OFF

Division of Wildlife / BWM

TOTAL CONTRACT AMOUNT $ N/A PAYMENT AMOUNT $ N/A

BILLING PERIODS: ( )MONTHLY ( )QUARTERLY ( )ANNUALLY (✓)OTHER N/A

( )EXPENDITURE ( )REVENUE (✓) AGREEMENT

RCC CODE 4037 CATEGORY _____ OBJECT CODE _____ PROJECT _____

CLASS/GROUP CODE _____ SACCS YES _____ NO _____

ROUTING ORDER FOR APPROVAL	CONCUR/INITIALS	DATE	COMMENTS
1. PROJECT LEADER*			
2. DIV/REGIONAL DIRECTOR*	BM	3/5/92	Very onerous contract. Changes needed in p3, item 15, p4, item 16, 17
3. PURCHASING*	BSA	3/31/92	
4. LEGAL	KM	4/1	
5. AD SERVICES			
DISBURSEMENT MANAGER			
REVENUE MANAGER			
ACCOUNTING DIRECTOR	SP	4/2/92	
FEDERAL AID ACCOUNTANT*			
AD SERVICES DIRECTOR	WS	4/3/92	
6. EXEC/DIV/REGION DIRECTOR*	[illegible]	4/6/92	

*ROUTING OF FEDERAL AID DOCUMENTS ONLY

DIVISION/OFFICES ARE TO FORWARD COMPLETED ORIGINAL CONTRACT AND ROUTING SLIP TO THE PURCHASING OFFICE.

33

M E M O R A N D U M

TO: Colonel Robert M. Brantly, Executive Director

FROM: Frank Montalbano III, Director
Division of Wildlife

SUBJECT: Half Moon Wildlife Management Area

The enclosed agreement will add approximately 4,021 acres to the Half Moon Wildlife Management Area. The property, owned by the Southwest Florida Water Management District, is bordered by the Withlacoochee river on the west and Trustees land on the east. The new area will be formally added to the existing area at the May-July Commission meeting.

SWF Parcel No. 19-193-102X
Approved by Attorney

HALF-MOON/CARLTON
WILDLIFE MANAGEMENT AREA AGREEMENT

This Agreement, made and entered into this 28th day of May, 1992, by and between the Southwest Florida Water Management District, a public corporation created by Chapter 61-691, Laws of Florida, as amended, whose address is 2379 Broad Street, Brooksville, Florida 34609-6899, hereinafter referred to as "the District", and the Florida Game and Fresh Water Fish Commission, an agency existing under Article IV, Section 9, Florida Constitution, whose address is Farris Bryant Building, 620 South Meridian Street, Tallahassee, Florida 32301, hereinafter referred to as "the Commission".

1. TERM: This agreement shall be for a period of one (1) year, commencing on May 28, 1992, to and including May 27, 1993, and renewed automatically for each year thereafter, subject to suspension or termination under paragraph 22.

2. ACREAGE: The lands subject to this agreement, generally known as the Carlton Tract, contain approximately 4,021 acres as described in Exhibit "A" attached hereto and incorporated herein by reference, hereinafter referred to as "the Wildlife Management Area".

3. PURPOSE AND USES: The purpose of this agreement is to provide for management of the Carlton Tract as a Type I Wildlife Management Area, as defined in Exhibit "B" and to provide public hunting and fishing by the Commission, at a reasonable cost to the public, on lands owned by the District which are defined in Exhibit "A", and are subject to the following terms, conditions and limitations. The Wildlife Management Area shall be maintained principally for water management, water supply and the conservation, restoration and protection of water resources and natural ecological systems, and the wildlife management area uses, as herein provided, shall be subordinate to and not inconsistent therewith. The uses of the Wildlife Management Area authorized hereby shall be only for the management of wildlife and freshwater fish by all legal means, including the establishment and implementation of programs for hunting and for non-consumptive uses of game and non-game wildlife resources by the public. The Wildlife Management Area is subject to flooding; however, the District shall make reasonable efforts to inform the Commission of any anticipated natural water conditions or water conditions caused by the District's operations which may have a material effect on the uses authorized hereby. The District reserves the right to permit any form of lawful activities including recreation other than hunting in the Wildlife Management Area. The District shall administer such recreation and shall make reasonable efforts to ensure that such recreation does not conflict with the Commission's programs in the Wildlife Management Area.

4. SUBMISSION OF PROPOSALS: The Commission shall submit to the District's Executive Director on or before September 1, beginning in 1992, and every two (2) years thereafter, proposed rules for the Wildlife Management Area, including but not limited to hunting dates (see Exhibit "C"). The District's Executive Director shall review and approve or disapprove such proposed rules within sixty (60) days after submission by the Commission to the District. In

the event of disapproval of any such proposed rules, the District's Executive Director shall provide alternative proposed rules to the Commission. In addition, the Commission shall submit annually,on or before March 1, beginning in 1992, a map to the District proposing the uses in the Wildlife Management Area. Review and approval or disapproval of such map shall be within (60) days after submission to the District's Executive Director. The District's staff shall provide to the Commission alternate map changes in the event of disapproval. Annual amendments to the rules shall not be precluded if the proposed rule changes: (1) address significant threats to the long-term welfare of the fish and wildlife resources or their habitat; (2) address significant concerns of a Type I Wildlife Management Area landowner; (3) protect private property or public safety; (4) comply with constitutional or legislative changes in the Commission's authority; or, (5) avoid jeopardizing the effectiveness of existing or development of new Commission programs or management efforts.

5. LAW ENFORCEMENT: The Commission, to the fullest extent of its authority and within the constraints of budget and manpower, shall enforce the law in the Wildlife Management Area, including but not limited to patrolling; protecting against vandalism, fires, litter, habitat destruction, unauthorized use; and enforcing all federal and state laws and rules relating to the management, protection and taking of wild animal life and freshwater aquatic life.

6. REPORTS: The Commission shall submit a post-hunt report to the District no later than thirty (30) days after the closing date of any hunting season established in the Wildlife Management Area, including a harvest report by species, the number of users, and the number and description of the citations issued and arrests made by the Commission within the Wildlife Management Area. The Commission also shall provide to the District a copy of all reports and studies it makes or prepares concerning the Wildlife Management Area. Proposed annual work plans, and annual work accomplishment reports concerning the development and maintenance of ongoing Commission programs shall be submitted to the District in a timely fashion.

7. COSTS AND MAINTENANCE: Repairs to and maintenance of bridges, fences, roads and other improvements in the Wildlife Management Area shall be the sole responsibility of the District. The Commission shall be responsible for all costs directly attributed to the maintenance and/or replacement of any structure(s) or sign(s) erected by the Commission.

8. HABITAT, BIOLOGICAL SURVEYS AND MONITORING SITES: The Commission may plan and implement programs for wildlife habitat improvements in the Wildlife Management Area with prior written approval of the District. However, the Commission shall not unreasonably interfere with or degrade the quality of habitat or waters in the Wildlife Management Area, and the Commission, to the best of its ability and to the fullest extent of its authority, shall prevent such interference or degradation by any person. The Commission may conduct biological surveys or assessments in the Wildlife Management Area. However, no such surveys or assessments requiring or resulting in material physical alteration to the existing habitat shall be made without the prior written approval of the District. The District may maintain monitoring sites for environmental studies. The District shall notify the Commission of any plans for

such monitoring sites and of the location of such monitoring sites, and the Commission shall not do anything whereby such sites are disturbed or degraded.

9. ENDANGERED SPECIES: Nest sites known to be inhabited by bald eagles shall be posted as "RESTRICTED" by the Commission for the protection of that species and no public access shall be allowed.

10. STRUCTURES: The Commission shall obtain the prior written approval of the District before constructing or locating any structure in the Wildlife Management Area. No structure shall be constructed or located permanently. The Commission shall maintain all such structures. The Commission shall remove all structures which it has constructed or located in the Wildlife Management Area upon termination of this agreement as provided in paragraph 20. The Commission shall not install, or permit to be installed, pit or vault latrines. Any other sanitary facility, except portable toilets installed by the Commission at designated check stations, shall be prohibited.

11. SIGNS: The Commission, at its expense, shall post the public entrance to the Wildlife Management Area with the sign bearing the legend set out in Exhibit "D" attached hereto and incorporated herein by reference and shall post at reasonable places along the boundaries of the Wildlife Management Area signs bearing the legend set out in Exhibit "E" attached hereto and incorporated herein by reference.

12. MAINTENANCE AND PRESERVATION: Except as provided in paragraph 7, the Commission, shall maintain and preserve the Wildlife Management Area in a clean and natural state and shall prevent and remove all litter and debris on the Wildlife Management Area arising from the uses authorized hereby. Further, except as priorly approved in writing by the District under paragraph 8, the Commission, to the best of its ability, shall prevent the removing or cutting of live or dead trees or plants and the starting of fires by any person.

13. USE OF MOTOR VEHICLES: The use of private vehicles will be allowed on select all-weather roads, as determined by the District. Wet-weather barriers and/or "road closed" signs will be installed by the Commission on roads mutually determined by the District and the Commission, to be unsuitable for public use. Vehicular and hunter access will be controlled by the Commission at the check station located on the adjacent Half-Moon Wildlife Management Area.

14. PARKING AREAS: Parking areas will be designated at various locations, as shown in Exhibit "F", to prevent undue disturbance to existing roadways, road shoulders and adjacent habitat.

15. USE OF ADJACENT LANDS OWNED BY THE STATE OF FLORIDA BOARD OF TRUSTEES: The Commission has management responsibility and control concerning adjacent land owned by the State of Florida Board of Trustees. There are established roadways lying on this adjacent land. To the extent that the Commission has the authority and controls the use of Board of Trustees' lands, the Commission will permit the District to use those roadways for ingress and egress onto District property. The location of these roadways is shown on Exhibit "F" which is attached hereto and incorporated herein by reference.

16. SITE INSPECTION AND ACCEPTANCE: The Commission accepts the lands described in Exhibit "A" in their present condition. Failure of the Commission to acquaint itself with the present appearance, conditions and boundaries of the Wildlife Management Area shall not relieve the Commission of performance hereunder. The District may enter and inspect the Wildlife Management Area at any time to ensure compliance by the Commission hereunder or for any purpose may enter the Wildlife Management Area.

17. ADDITIONAL USES: The District may lease or otherwise make use of any part or all of the Wildlife Management Area for any lawful purpose, including but not limited to apiary sites, cattle grazing, haying, hiking and nature study.

18. HORSEBACK RIDING: Horseback riding will be prohibited on that portion of the Wildlife Management Area owned by the District and will be posted as "closed" to such activity by the Commission.

19. INDEMNIFICATION: To the extent permitted by law, the Commission shall fully defend, indemnify and hold harmless the District from any actions, causes, claims, demands, losses, judgments, recoveries and suits made against the District arising from the uses of the Wildlife Management Area authorized hereby. Nothing contained herein shall be construed as a waiver of immunity of the parties hereto under federal or state law. Nothing contained herein shall be construed as a waiver of the limitations on liability enjoyed by a landowner providing lands to the public for outdoor recreational purposes, as provided in Section 375.251, Florida Statutes.

20. DISCRIMINATION: The Commission shall comply with the Civil Rights Act of 1964, as amended, and shall not exclude any person from participating in, deny to any person the benefits of, or otherwise subject to discrimination any person utilizing the Wildlife Management Area and any Commission operation thereon, due to race, religion, color, creed, sex, or national origin.

21. FEES AND PROFITS: Except for fees established by law, the Commission shall not charge the public for uses of the Wildlife Management Area, and the uses of the Wildlife Management Area authorized hereby shall not be for profit.

22. SUSPENSION OR TERMINATION: The District may suspend this agreement or hunting conducted hereunder immediately and temporarily until the cause for suspension is completed, dissipates, or is rectified, as to all or any part of the Wildlife Management Area by giving written notice to the Commission in the event that suspension is necessary because:

a. Conditions exist that are dangerous to the safety of life or property from fire, flood, or other such causes;

b. The Wildlife Management Area is required for a District flood control or water management conservation project such that use of the lands for wildlife management or for hunting conducted under this agreement is impractical or impossible;

c. There has been a breach of the terms and conditions of this agreement by the Commission;

d. The Wildlife Management Area is required by the District for construction or any other activity; or,

e. Conditions exist that would damage the environmental or physical characteristics, or impair the function of habitat, water management, water supply, or conservation and protection of water resources within the Wildlife Management Area.

The District may immediately terminate this agreement by giving written notice to the Commission as provided in paragraph 23 in the event suspension is not adequate to address those conditions enumerated in this paragraph and terminated in lieu of suspension is required. In the event of imminent threat to the public health, safety, or welfare, the District may immediately suspend this agreement until such imminent threat no longer exists without such written notice as provided in paragraph 23. However, in the event of such imminent threat, the District shall give such notice to the Commission's regional office in Ocala, Florida, or to the Commission's headquarters in Tallahassee, Florida, as is practicable under the circumstances. In the event of such imminent threat, the District may immediately close the Wildlife Management Area to public access and, upon receiving such actual notice of such immediate suspension and closure, the Commission shall take immediate steps to assist the District in enforcing such closure.

Either party shall have the right to terminate this agreement upon ninety (90) days written notice to the other party; provided, however, that if said notice of termination is given after February 1 of any calendar year, the date of termination shall be the first January 15 after the date of said notice or ninety (90) days after the date of said notice, whichever shall be later. In the event of termination, the Commission shall remove expeditiously all structures constructed or located pursuant to paragraph 10 and all signs erected pursuant to paragraph 11. In the event of suspension or termination, the Commission shall assist the District in removal of all persons admitted to the Wildlife Management Area.

23. ADMINISTRATION; NOTICES: This agreement shall be administered for the District and the Commission by their respective executive directors.

All notices to the District shall be in writing and hand-delivered or sent by certified United States mail, return receipt requested, to the Executive Director and/or the Land Resources Director, at 2379 Broad Street, Brooksville, Florida 34609-6899. All notices to the Commission shall be in writing and hand-delivered or sent by certified United States mail, return receipt requested, to the Executive Director at the Farris Bryant Building, 620 South Meridian Street, Tallahassee, Florida 32399-1600.

24. COMPLETE AGREEMENT: This agreement contains the complete understanding between the District and the Commission and shall supersede all other agreements between the District and the Commission as to the Wildlife Management Area.

25. MODIFICATION OF AGREEMENT: No waiver or modification of this agreement or of any covenant, condition, or limitation herein contained shall be

Page 5 of 6

valid unless in writing and lawfully executed by the party to be charged therewith.

26. NON-ASSIGNMENT: Any assignments or delegation of the Commission's covenants or duties hereunder, other than to employees of the Commission or agents of the Commission in the usual course of the Commission's business, shall be without any binding effect on either party and shall be null and void.

In Witness Whereof, the lawful representatives of the parties hereto have executed this agreement on the day and year above first written.

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Attest:

Sally Thompson

Sally Thompson, Secretary

By: Charles A. Black, Chairman

(Seal)

FLORIDA GAME AND FRESH WATER FISH COMMISSION

Attest:

Terry Mara

Attest: Colonel Robert M. Brantly, Executive Director

(Seal)

APPROVED AS FISCALLY AND BUDGETARILLY SOUND

William C. Sumner

DIRECTOR
DIVISION OF ADMINISTRATIVE SERVICES
GFWFC

APPROVED AS TO FORM AND LEGAL SUFFICIENCY

Commission Attorney

CARL.WMA
03/12/92

Page 6 of 6

EXHIBIT A

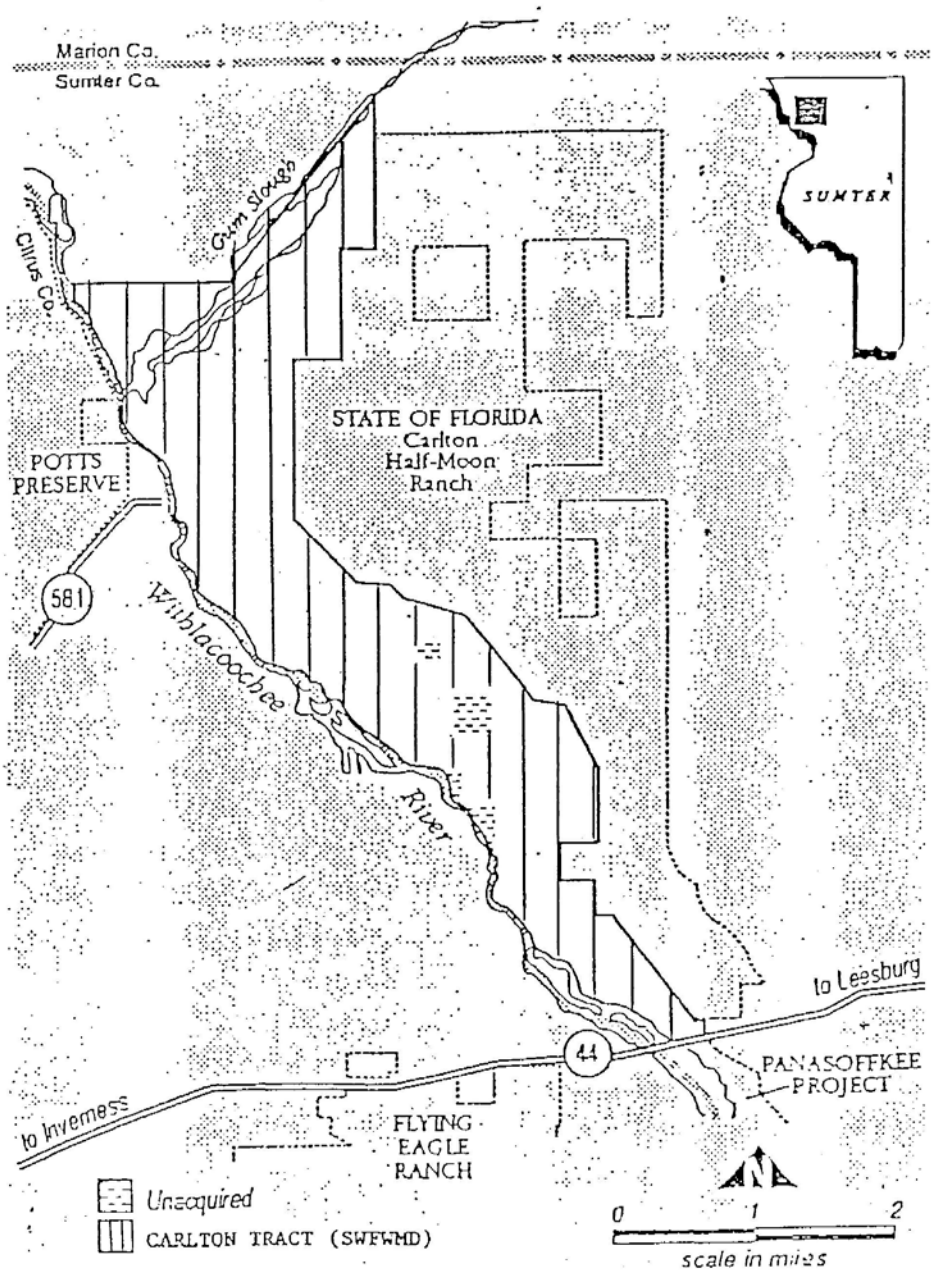

Marion Co.
Sumter Co.
Citrus Co.
Grum Slough
SUMTER
STATE OF FLORIDA
Carlton
Half-Moon
Ranch
POTTS
PRESERVE
581
Withlacoochee
River
to Leesburg
44
PANASOFFKEE
PROJECT
to Inverness
FLYING
EAGLE
RANCH
Unacquired
CARLTON TRACT (SWFWMD)
0
1
2
scale in miles

EXHIBIT A - continued

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
Withlacoochee River Basin
Wildlife Management Area

Parcel No. 19-193-102X August 19, 1991

Commence at the NW corner of SECTION 9, TOWNSHIP 19 SOUTH, RANGE 21 EAST;

Run thence S 02° 06' 18" W (grid bearing) along the West line of said Section 9, a distance of 2090.06 feet to the North right-of-way line of State Road 44, said point being the POINT OF BEGINNING;

Thence N 79° 57' 38" E along said right-of-way line a distance of 1171.03 feet to the West line of the East 200 feet of the West 1/2 of the NW 1/4 of said Section 9;

Thence N 01° 37' 21" E along said West line a distance of 682.98 feet;

Thence N 41° 30' 58" W a distance of 5166.88 feet to the North line of the SE 1/4 of SECTION 5, TOWNSHIP 19 SOUTH, RANGE 21 EAST;

Thence N 89° 59' 54" W along said North line a distance of 249.14 feet to the SE corner of the SE 1/4 of the NW 1/4 of said Section 5;

Thence N 00° 41' 17" E along the East line of said SE 1/4 of the NW 1/4 a distance of 1326.72 feet to the NE corner of said SE 1/4 of the NW 1/4;

Thence S 89° 48' 15" W along the North line of said SE 1/4 of the NW 1/4 a distance of 1322.46 feet to the SE corner of the NW 1/4 of the NW 1/4 of said Section 5;

Thence N 00° 04' 28" E along the East line of said NW 1/4 of the NW 1/4 a distance of 1323.88 feet to the SW corner of the SE 1/4 of the SW 1/4 of SECTION 32, TOWNSHIP 18 SOUTH, RANGE 21 EAST;

Thence N 89° 52' 35" E along the South line of said SE 1/4 of the SW 1/4 a distance of 1321.81 feet to the SE corner of the SW 1/4 of said Section 32;

Thence N 00° 21' 07" E along the East line of said SW 1/4 a distance of 2635.02 feet to the NE corner of said SW 1/4;

Page 1 of 5

Thence N 27° 29' 27" W, a distance of 2351.79 feet;

Thence N 76° 22' 01" W, a distance of 1378.85 feet;

Thence N 35° 51' 14" W, a distance of 4003.63 feet;

Thence N 78° 25' 20" W a distance of 2516.20 feet;

Thence N 44° 41' 00" W, a distance of 639.94 feet;

Thence N 82° 08' 48" W, a distance of 1463.73 feet;

Thence N 35° 24' 44" W, a distance of 1061.34 feet;

Thence N 45° 00' 00" W, a distance of 1230.31 feet;

Thence North, a distance of 4713.19 feet to the North line of Section 24, Township 18 South, Range 20 East;

Thence N 89° 42' 54" W, along said North line a distance of 430.04 feet;

Thence North, a distance of 1334.10 feet;

Thence N 88° 27' 14" W a distance of 2374.52 feet to the NE corner of the S 1/2 of the SE 1/4 of SECTION 14, TOWNSHIP 18 SOUTH, RANGE 20 EAST;

Thence S 89° 37' 24" W along the North line of said S 1/2 of the SE 1/4 a distance of 2633.44 feet to the NW corner of said S 1/2 of the SE 1/4;

Thence S 00° 03' 51" W along the West line of said S 1/2 of the SE 1/4 a distance of 1350.11 feet to the NE corner of the NW 1/4 of SECTION 23, TOWNSHIP 18 SOUTH, RANGE 20 EAST;

Thence N 89° 35' 17" W along the North line of said NW 1/4 to the thread of the Withlacoochee River;

Thence Southerly and Southeasterly along the thread of the Withlacoochee River to the Northerly right-of-way line of State Road 44;

Thence N 79° 57' 38" E along said North right-of-way line to the POINT OF BEGINNING;

EXCEPT

Any portion of the following that lies easterly of the thread of the Withlacoochee River;

Page 2 of 5

The Northwest 1/4 of the Northwest 1/4 of SECTION 23, TOWNSHIP 18 SOUTH, RANGE 20 EAST;

The Southeast 1/4 of the Northeast 1/4 of SECTION 36, TOWNSHIP 18 SOUTH, RANGE 20 EAST;

The Southwest 1/4 of SECTION 31, TOWNSHIP 18 SOUTH, RANGE 21 EAST;

The Southwest 1/4 of the Southeast 1/4 of SECTION 31, TOWNSHIP 18 SOUTH, RANGE 21 EAST;

The West 1/2 of the Northeast 1/4 of SECTION 6, TOWNSHIP 19 SOUTH, RANGE 21 EAST;

The Southeast 1/4 of the Southeast 1/4 of SECTION 6, TOWNSHIP 19 SOUTH, RANGE 21 EAST;

AND EXCEPT

All of the Southwest 1/4 of the Northeast 1/4 of the Southwest 1/4 of SECTION 30, TOWNSHIP 18 SOUTH, RANGE 21 EAST;

AND EXCEPT

That portion of the Northwest 1/4 of the Northeast 1/4 of SECTION 31, TOWNSHIP 18 SOUTH, RANGE 21 EAST not lying within the West 2-1/2 chains of the North 20 chains.

Parcel contains 3048.5 acres, more or less, including approximately 87.5 acres of submerged lands below the ordinary high water line of the Withlacoochee River.

AND ALSO

That part of SECTIONS 1, 12, 13, 14 and 15, TOWNSHIP 18 SOUTH, RANGE 20 EAST, Sumter County, Florida, described as follows:

Commence at the NE corner of said Section 13, said point being the POINT OF BEGINNING;

Run thence N87°15'05"W along the North line of the NE 1/4 of said Section 13 a distance of 1354.44 feet to the NE corner of the West 1/2 of the NE 1/4 of said Section 13;

Thence S00°20'50"W along the East line of said West 1/2 of the NE 1/4 a distance of 2685.82 feet to the SE corner thereof;

Page 3 of 5

Thence S00°14'49"W along the East line of the NW 1/4 of the SE 1/4 of said Section 13 a distance of 1342.47 feet to the SE corner thereof;

Thence N89°05'28"W along the South line of said NW 1/4 of the SE 1/4 a distance of 1341.99 feet to the SE corner of the North 1/2 of the SW 1/4 of said Section 13;

Thence continue N89°05'26"W along said South line of the North 1/2 of the SW 1/4 a distance of 312.37 feet;

Thence South a distance of 26.40 feet;

Thence N88°27'14"W a distance of 2374.54 feet to the SE corner of the North 1/2 of the SE 1/4 of said Section 14;

Thence S89°37'24"W along the South line of said North 1/2 of the SE 1/4 a distance of 2633.44 feet to the SW corner thereof;

Thence S00°03'51"W along the East line of the SW 1/4 of said Section 14 a distance of 1350.11 feet to the SE corner thereof;

Thence N89°35'17"W along the South line of said SW 1/4 a distance of 1238.81 feet more or less to the thread of the Withlacoochee River;

Thence Northwesterly along the thread of the Withlacoochee River to a point on the West line of the NW 1/4 of said Section 14;

Thence N00°16'22"E along said West line of the NW 1/4 a distance of 200.00 feet more or less to a point on the NE bank of the Withlacoochee River;

Thence Northwesterly along said NE bank of the Withlacoochee River to a point in said Section 15 lying on a Westerly extention of the North line of the South 1/2 of the NW 1/4 of said Section 14;

Thence N88°02'16"E along said Westerly extention of the North line of the South 1/2 of the NW 1/4 a distance of 286.62 feet to the NW corner of the South 1/2 of the NW 1/4 of said Section 14;

Thence N88°02'16"E along the North line of said South 1/2 of the NW 1/4 a distance of 2625.69 feet to the NE corner thereof;

Thence continue N88°02'16"E along the North line of the South 1/2 of the NE 1/4 of said Section 14 a distance of 2624.16 feet;

Page 4 of 5

Thence N40°10'33"E a distance of 8465.15 feet to a point on the East line of said Section 1;

Thence S00°32'37"W along said East line of Section 1 a distance of 27.90 feet to the NE corner of said Section 12;

Thence continue S00°32'37"W along the East line of said Section 12 a distance of 5313.68 feet to the SE corner thereof, said point being the POINT OF BEGINNING;

EXCEPT

Begin at the SW corner of the North 1/2 of the SW 1/4 of SECTION 13, TOWNSHIP 18 SOUTH, RANGE 20 EAST, Sumter County, Florida;

Thence S89°05'27"E, along the south line of said North 1/2 of the SW 1/4, a distance of 2373.97 feet;

Thence South, a distance of 26.40 feet;

Thence N88°27'14"W, a distance of 2374.54 feet to the POINT OF BEGINNING.

Parcel contains 972.81 acres, more or less, including approximately 22.66 acres of area lying within the Withlacoochee River and Gum Slough.

RAH:WRB:sw
19102X.WMA

Page 5 of 5

EXHIBIT B

The Florida Game And Freshwater Fish Commission's 1991-1992 Hunting Handbook Regulations Summary defines a Type I Wildlife Management Area as:

> "Type I wildlife management areas are public hunting and recreation areas operated by the Commission in cooperation with private, state and federal landowners. A $25 Wildlife Management Area Stamp is required of all hunters (except those indicated as exempt on page 6 of this handbook) to hunt in these areas. Persons who possess a gun on a Type I wildlife management area for the exclusive purpose of shooting at a Commission-authorized shooting range are exempt from wildlife management area requirements. A Quota Hunt Permit may also be required during certain time periods. Type I wildlife management area stamps and wildlife management area regulations brochures, and most quota hunt application forms are available from county tax collectors and their subagents. Type I wildlife management area brochures and quota hunt application forms are also available from any of the Commission's five regional administrative offices, listed on page 2."

EXHIBIT "C"

HALF MOON WILDLIFE MANAGEMENT AREA

A. OPEN SEASON:

1. ARCHERY -- SEPTEMBER 26-28 AND OCTOBER 2-4.
2. MUZZLELOADING GUN -- OCTOBER 30 THROUGH NOVEMBER 1.
3. GENERAL GUN -- NOVEMBER 14-16 AND 20-22.
4. SMALL GAME -- DECEMBER 4-6, 11-13, AND 18-20.
5. SPRING TURKEY -- MARCH 26-28 AND APRIL 2-4 AND 9-11.
6. FISHING AND FROGGING -- PERMITTED THROUGHOUT THE YEAR.
7. TRAPPING AND FROGGING -- PROHIBITED.

B. LEGAL TO TAKE: ALL LEGAL GAME, FISH, AND FURBEARERS. DURING THE ARCHERY, MUZZLELOADING GUN, AND GENERAL GUN SEASONS, ANTLERLESS DEER MAY BE TAKEN BY PERMIT ONLY. DURING THE ARCHERY, MUZZLELOADING GUN, AND GENERAL GUN SEASONS THE BAG LIMIT FOR ANTLERED DEER SHALL BE ONE (1) PER QUOTA HUNT PERMIT. DURING THE SPRING TURKEY SEASON, THE BAG LIMIT FOR TURKEY SHALL BE ONE (1) GOBBLER (OR BEARDED TURKEY) PER QUOTA HUNT PERMIT.

C. CAMPING -- PROHIBITED.

D. GENERAL REGULATIONS:

1. DURING PERIODS WHEN THE AREA IS CLOSED TO HUNTING, PUBLIC ACCESS OTHER THAN ON FOOT (PEDESTRIAN) OR HORSEBACK (EQUESTRIAN) IS PROHIBITED.
2. PUBLIC ACCESS IS PROHIBITED IN AREAS POSTED AS "RESTRICTED" FOR THE PROTECTION OF ENDANGERED SPECIES.
3. HUNTING WITH DOGS IS PROHIBITED, EXCEPT BIRD DOGS MAY BE USED DURING THE SMALL GAME SEASON AND DOGS ON LEASH MAY BE USED FOR TRAILING WOUNDED GAME.
4. VEHICLES MAY BE OPERATED ONLY ON NAMED OR NUMBERED ROADS AND MAY BE PARKED ONLY AT DESIGNATED PARKING AREAS.
5. THE USE OF TRACKED VEHICLES, AIRBOATS, MOTORCYCLES, OR ALL-TERRAIN VEHICLES IS PROHIBITED. THE USE OF HORSES IS PROHIBITED DURING THE ARCHERY, MUZZLELOADING GUN, GENERAL GUN, AND SPRING TURKEY SEASONS.
6. HUNTERS SHALL CHECK IN AND OUT AT THE CHECK STATION WHEN ENTERING OR EXITING THE AREA AND SHALL CHECK ALL GAME TAKEN.
7. NO DEER, HOG, OR TURKEY SHALL BE DISMEMBERED UNTIL CHECKED AT THE CHECK STATION.
8. A QUOTA HUNT PERMIT SHALL BE REQUIRED FOR EVERY HUNTER ENTERING THE AREA.

NOTE: OTHER GENERAL REGULATIONS RELATING TO TYPE 1 WILDLIFE MANAGEMENT AREAS MIGHT APPLY.

EXHIBIT "C" (CONTINUED)

GENERAL REGULATIONS RELATING TO TYPE 1 WILDLIFE MANAGEMENT AREAS

1. GENERAL PROHIBITIONS: HUNTING, FISHING, OR TRAPPING IS PROHIBITED ON ANY PORTION OF ANY WILDLIFE MANAGEMENT AREA POSED AS CLOSED TO HUNTING, FISHING, OR TRAPPING. HUNTING, FISHING, TRAPPING, CAMPING, OR OTHER USAGE RELATED TO SUCH ACTIVITY ON ANY WILDLIFE MANAGEMENT AREA SHALL ONLY BE AT THE TIME AND IN THE MANNER PROVIDED BY THE REGULATIONS FOR THE PARTICULAR WILDLIFE MANAGEMENT AREA. ALL LEGAL METHODS FOR TAKING FISH OR WILDLIFE WILL BE PERMITTED, UNLESS PROHIBITED UNDER THE RULES GOVERNING A PARTICULAR AREA.

2. PERMITS REQUIRED:

   A. A WILDLIFE MANAGEMENT AREA STAMP AS PROVIDED BY S.372.57, FLORIDA STATUTES, IN ADDITION TO ALL REGULAR LICENSE REQUIREMENTS, IS REQUIRED FOR PERSONS, EXCEPT THOSE EXEMPTED IN SUBSECTION (3) HEREOF, TO HUNT, TRAP OR BE IN POSSESSION OF A GUN, TRAP, OR OTHER DEVICE FOR TAKING WILDLIFE OR FURBEARING ANIMALS ON A WILDLIFE MANAGEMENT AREA.

   B. A SPECIAL DAILY OR SEASONAL WILDLIFE MANAGEMENT AREA STAMP IS MANDATORY ON THOSE WILDLIFE MANAGEMENT AREAS WHERE REQUIRED BY REGULATIONS FOR THAT AREA.

   C. A WILDLIFE MANAGEMENT AREA STAMP SHALL BE REQUIRED OF ANY PERSON, EXCEPT THOSE EXEMPTED IN SUBSECTION (3) HEREOF, WHO ENGAGES IN ANY OUTDOOR RECREATION ACTIVITY ON THE J. W. CORBETT AND CECIL M. WEBB AREAS (EXCEPT FOR ORGANIZED GROUP ACTIVITY UNDER CONTRACTUAL AGREEMENT WITH THE COMMISSION). MEMBERS OF A STAMPHOLDER'S FAMILY (INCLUDES SPOUSE AND DEPENDENT CHILDREN) TRAVELING IN THE COMPANY OF A STAMPHOLDER ARE EXEMPT FROM THESE RECREATIONAL STAMP REQUIREMENTS.

3. PERMIT EXCEPTIONS: PERSONS EXEMPTED BY S. 372.57(1) OR (6), OR THOSE PERSONS WHO POSSESS A GUN ON A WILDLIFE MANAGEMENT AREA FOR THE EXCLUSIVE PURPOSE OF SHOOTING AT A COMMISSION-AUTHORIZED SHOOTING RANGE ARE EXEMPT FROM WILDLIFE MANAGEMENT AREA STAMP REQUIREMENTS.

4. LEGAL TO HUNT:

   A. ONLY GOBBLERS OR BEARDED TURKEYS MAY BE TAKEN DURING THE SPRING SEASON; TURKEYS MAY NOT BE TAKEN DURING ANY FALL SEASON IN WHICH FIREARMS MAY BE USED UNLESS OTHERWISE PROVIDED FOR A SPECIFIC AREA.

B. ONLY SPECIES WHICH ARE LEGAL TO TAKE IN THE REGION WHERE THE WILDLIFE MANAGEMENT AREA LIES, UNLESS OTHERWISE PROVIDED FOR A SPECIFIC AREA, MAY BE TAKEN.

C. DURING THE SPRING TURKEY SEASON, THE HUNTING OR TAKING OF ANY OTHER SPECIES OF WILDLIFE IS PROHIBITED UNLESS OTHERWISE PROVIDED FOR A SPECIFIC AREA.

D. TURKEY OR ANTLERLESS DEER MAY BE TAKEN DURING ARCHERY SEASONS UNLESS OTHERWISE PROVIDED BY SPECIFIC AREA REGULATION.

E. ANTLERLESS DEER MAY BE TAKEN DURING GUN SEASONS ONLY BY HUNTERS POSSESSING VALID ANTLERLESS DEER PERMITS OR AS OTHERWISE PROVIDED BY SPECIFIC AREA REGULATION.

F. ON ANY WILDLIFE MANAGEMENT AREAS WHERE AN ANTLERED DEER QUOTA IS ESTABLISHED BY ORDER, NO PERSON SHALL TAKE ANTLERED DEER AFTER THE QUOTA FOR ANTLERED DEER IS ATTAINED. ON ANY WILDLIFE MANAGEMENT AREA WHERE AN ANTLERLESS DEER QUOTA IS ESTABLISHED BY ORDER, NO PERSON SHALL TAKE ANTLERLESS DEER AFTER THE QUOTA FOR ANTLERLESS DEER IS ATTAINED.

G. FOX SQUIRRELS MAY NOT BE TAKEN.

5. HUNTERS:

A. AUTHORIZED HUNTING EQUIPMENT OR DOGS (IF PERMITTED BY AREA REGULATIONS) MAY BE TAKEN ON THE AREA AFTER 8:00 A.M. ONE (1) DAY BEFORE THE OPENING OF THE SEASON AND SHALL BE REMOVED FROM THE AREA BEFORE 6:00 P.M. ONE (1) DAY FOLLOWING THE CLOSE OF THE SEASON UNLESS OTHERWISE PROVIDED BY SPECIFIC AREA REGULATIONS.

B. DRIVING A METAL OBJECT INTO ANY TREE, OR HUNTING FROM A TREE IN WHICH A METAL OBJECT HAS BEEN DRIVEN, IS PROHIBITED.

6. GUNS:

A. NO PERSON SHALL POSSESS ANY GUN ON ANY WILDLIFE MANAGEMENT AREA DURING ANY PERIOD IN WHICH HUNTING BY THE USE OF A GUN IS PROHIBITED UNLESS OTHERWISE AUTHORIZED BY PERMIT FROM THE EXECUTIVE DIRECTOR.

B. THE POSSESSION OF A FIREARM OR CROSSBOW IS PROHIBITED ON ANY WILDLIFE MANAGEMENT AREA DURING ESTABLISHED SEASONS FOR ARCHERY HUNTING UNLESS OTHERWISE STIPULATED IN A REGULATION ESTABLISHED FOR A SPECIFIC AREA. THE POSSESSION OF A GUN (EXCEPT A MUZZLELOADING GUN) IS PROHIBITED ON ANY WILDLIFE MANAGEMENT AREA DURING SEASONS FOR MUZZLELOADING GUN HUNTING. THE POSSESSION OF A GUN IS PROHIBITED ON ANY WILDLIFE MANAGEMENT AREA DURING ANY

SEASON OPEN ONLY FOR THE TAKING OF FURBEARING ANIMALS OR FROGS UNLESS OTHERWISE STIPULATED IN A REGULATION ESTABLISHED FOR A SPECIFIC AREA.

C. NO PERSON SHALL HAVE ANY GUN UNDER HIS CONTROL WHILE UNDER THE INFLUENCE OF ALCOHOL OR DRUGS.

D. THE POSSESSION OF CENTER-FIRE RIFLES IS PROHIBITED DURING SMALL GAME SEASON.

E. THE POSSESSION OF ANY FIREARM CONTAINING SHELLS OR CARTRIDGES, OR ANY CAPPED OR PRIMED MUZZLELOADING GUN IS PROHIBITED ON ANY PUBLIC CAMPSITE OR CHECK STATION AREA. THE DISCHARGE OF FIREARMS IS PROHIBITED ON, FROM, OR ACROSS ANY CAMPSITE OR CHECK STATION AREAS.

7. DOGS:

A. DOGS MAY BE USED FOR HUNTING DURING OPEN SEASONS UNLESS PROHIBITED BY REGULATIONS FOR THE PARTICULAR MANAGEMENT AREA.

B. NO PERSON SHALL KNOWINGLY OR NEGLIGENTLY ALLOW ANY DOG TO PURSUE OR MOLEST ANY WILDLIFE DURING ANY PERIOD IN WHICH THE TAKING OF SUCH WILDLIFE BY THE USE OF DOGS IS PROHIBITED.

C. NO PERSON SHALL POSSESS ANY DOG DURING ANY PERIOD IN WHICH THE TAKING OF WILDLIFE BY THE USE OF DOGS IS PROHIBITED PROVIDED THAT DOGS NOT NORMALLY USED FOR HUNTING AND KEPT UNDER RESTRAINT MAY BE POSSESSED.

8. CAMPING:

A. CAMPING DURING OPEN SEASON SHALL BE LIMITED TO DESIGNATED CAMPSITES EXCEPT UNDER SPECIAL RULES FOR PARTICULAR WILDLIFE MANAGEMENT AREAS. CAMPING IS PERMITTED DURING CLOSED SEASON UNLESS PROHIBITED BY SPECIFIC AREA REGULATIONS.

B. WHEN CAMPING IS PERMITTED ON ANY WILDLIFE MANAGEMENT AREA, AUTHORIZED CAMPING EQUIPMENT MAY BE TAKEN ON THE AREA AFTER 8:00 A.M. ONE (1) DAY BEFORE THE OPENING OF EACH SEASON AND SHALL BE REMOVED FROM THE AREA BEFORE 6:00 P.M. ONE (1) DAY FOLLOWING THE CLOSE OF EACH SEASON UNLESS OTHERWISE PROVIDED BY SPECIFIC AREA REGULATIONS.

9. VEHICLES:

A. NO MOTOR VEHICLE SHALL BE OPERATED ON ANY PART OF ANY WILDLIFE MANAGEMENT AREA DESIGNATED BY AREA REGULATIONS AS CLOSED TO VEHICULAR TRAFFIC OR TEMPORARILY CLOSED BY ADMINISTRATIVE ACTION AND POSTING NOTICE OF SUCH ON THOSE AREAS BECAUSE OF INCLEMENT WEATHER, POOR ROAD CONDI-

TIONS, CONSTRUCTION OR MANAGEMENT ACTIVITIES, OR WILDLIFE SURVEYS. THE USE OF TWO-WHEELED MOTOR-POWERED VEHICLES OR ALL-TERRAIN VEHICLES IS PROHIBITED ON ANY ROADS OR TRAILS NOT OPEN TO OR USED BY OTHER VEHICLES UNLESS OTHERWISE PROVIDED BY SPECIFIC AREA REGULATION.

B. NO PERSON SHALL PARK ANY VEHICLE IN A MANNER WHICH OBSTRUCTS A ROAD, GATE, OR FIRELANE.

10. GRAIN AND FOOD: NO PERSON SHALL PLACE, EXPOSE, OR DISTRIBUTE ANY GRAIN OR OTHER FOOD FOR WILDLIFE ON ANY WILDLIFE MANAGEMENT AREA EXCEPT AS AUTHORIZED BY PERMIT FROM THE EXECUTIVE DIRECTOR. NO PERSON SHALL TAKE WILDLIFE ON ANY LAND OR WATERS UPON WHICH GRAIN OR OTHER FOOD HAS BEEN DEPOSITED, PROVIDED THAT QUAIL MAY BE HUNTED IN PROXIMITY TO ESTABLISHED GAME FEEDERS.

11. RELEASE OF WILDLIFE: NO PERSON SHALL RELEASE WILDLIFE OF ANY SPECIES ON ANY WILDLIFE MANAGEMENT AREA UNLESS AUTHORIZED BY PERMIT FROM THE EXECUTIVE DIRECTOR.

12. PLANTS: NO PERSON SHALL CUT OR DESTROY ANY TREE ON, OR REMOVE ANY TREE, SHRUB, OR PROTECTED PLANT (AS DESIGNATED IN S. 581.185, FLORIDA STATUTES) FROM, ANY WILDLIFE MANAGEMENT AREA WITHOUT WRITTEN PERMISSION FROM THE LANDOWNER OR PRIMARY LAND MANAGER.

13. NOTWITHSTANDING ANY OTHER PROVISIONS HEREIN, THE HARVEST OF ALLIGATORS, THEIR EGGS OR HATCHLINGS MAY BE CONDUCTED ON TYPE I WILDLIFE MANAGEMENT AREAS IN ACCORDANCE WITH COMMISSION ORDER(S) AND RULES 39-25.031, 39-25.032, AND 39-25.042. A PRIVATE LANDOWNER MAKING HIS LANDS AVAILABLE FOR USE IN THE TYPE I WILDLIFE MANAGEMENT AREA SYSTEM MAY PARTICIPATE IN AN ALLIGATOR MANAGEMENT PROGRAM ON SUCH LANDS IN ACCORDANCE WITH RULE 39-25.032.

PME:bb
EXHIBIT.C
January 23, 1992

HALF-MOON WILDLIFE MANAGEMENT AREA

A FEDERAL AID PROJECT

UNAUTHORIZED GUNS, DOGS, OR TRAPPING

NOT ALLOWED

FLORIDA GAME AND FRESHWATER FISH COMMISSION,

FLORIDA DEPARTMENT OF NATURAL RESOURCES

AND

THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

COOPERATING

EXHIBIT "D"

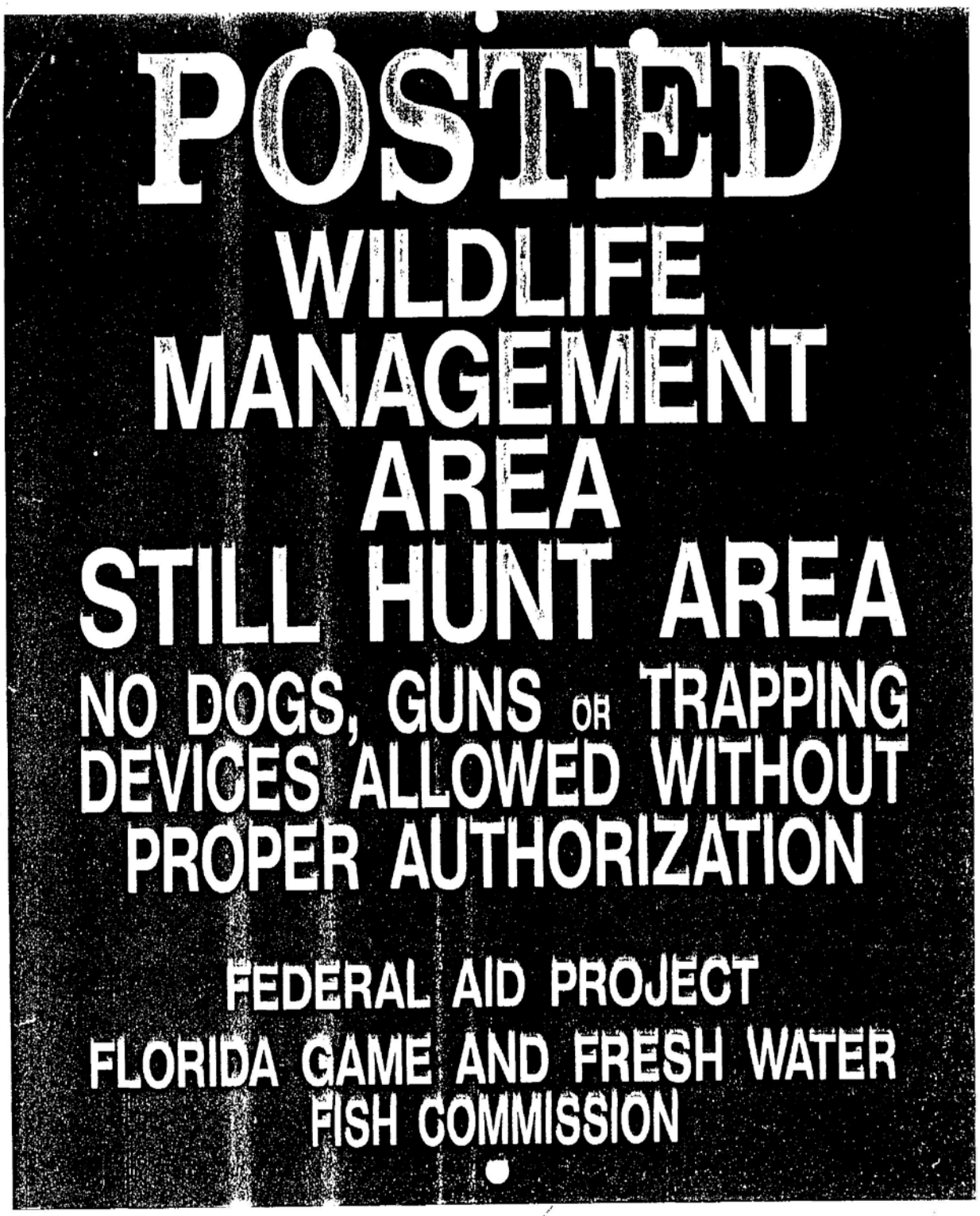
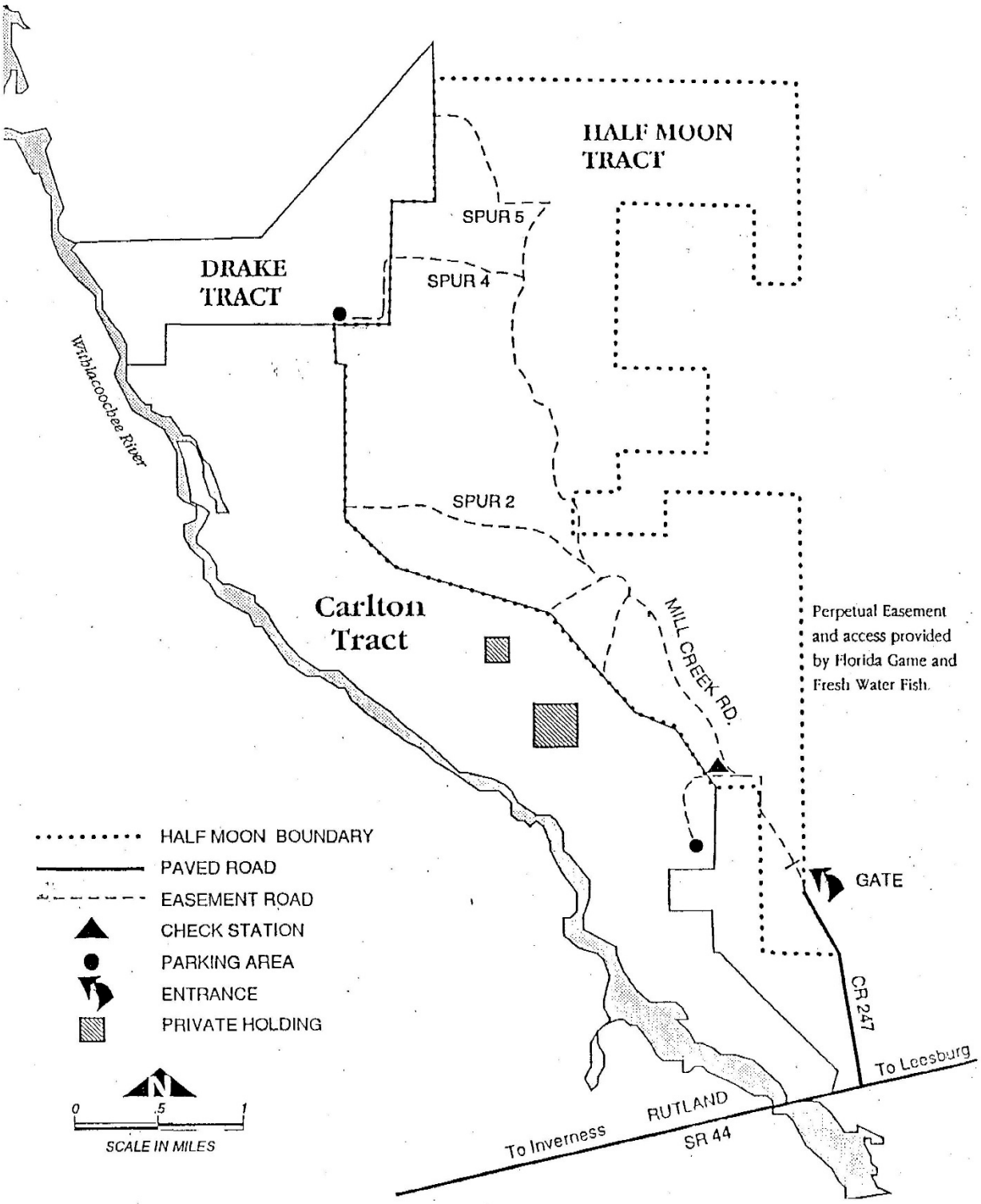

POSTED
WILDLIFE
MANAGEMENT
AREA
STILL HUNT AREA
NO DOGS, GUNS OR TRAPPING
DEVICES ALLOWED WITHOUT
PROPER AUTHORIZATION
FEDERAL AID PROJECT
FLORIDA GAME AND FRESH WATER
FISH COMMISSION

EXHIBIT "E"

EXHIBIT "F"


HALF MOON TRACT
SPUR 5
SPUR 4
DRAKE TRACT
Withlacoochee River
SPUR 2
Carlton Tract
MILL CREEK RD.
Perpetual Easement and access provided by Florida Game and Fresh Water Fish.
GATE
CR 247
To Leesburg
RUTLAND
To Inverness
SR 44
HALF MOON BOUNDARY
PAVED ROAD
EASEMENT ROAD
CHECK STATION
PARKING AREA
ENTRANCE
PRIVATE HOLDING
N
0
.5
1
SCALE IN MILES

DIVISION LOG # 1795 CONTRACT NUMBER 07134

CONTRACT ROUTING REVIEW FORM

CONTRACTOR SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT AND FWC

VENDOR ID NO. ____ PROCUREMENT METHOD*/BID/RFP NO. N/A

PROJECT TITLE 1ST AMENDMENT TO THE HALF-MOON/CARLTON WMA AGREEMENT FOR MGMT OF THE GUM SLOUGH PROJECT

ORIGINATOR/CONTACT RICH MOSPENS PHONE 488-3831, X17289 DIV./OFFICE/MAIL HSC/THCR

___NEW** _X_AMENDMENT __ RENEWS OR EXTENDS PURCHASING USE ONLY: POSTING - 7 DAY: 72 HR

___EXPENDITURE** ___REVENUE _X_AGREEMENT ___ EASEMENT/DEED ___LEASE (INCLUDES WMA OR FMA LEASES)

CONTRACT BEGINS: 5/28/92 _X_ DATE EXECUTED OR___ END DATE 5/27 OF EA YR, W/ AUTO RENEWAL EA YR OPTION FOR____YEARS

TOTAL CONTRACT AMOUNT $____ PAYMENT AMOUNT $____

BILLING PERIODS: ___MONTHLY ___QUARTERLY ___ANNUALLY ___OTHER____

BUILDING INSURANCE TO BE INCURRED BY THE COMMISSION(LEASES) ___NO _X – IF BY FWC_ YES (Notify Property Administrator)

****NEW EXPENDITURE: CONTRACTS**
(1) Attach a copy of the State Project checklist or, for Existing State Projects, show the CSFA No.____
(2) Vendor/Recipient Checklist: Attached? ___Yes ___ No - not a State Project per (1) Checklist

ORG. CODE	E.O.	OBJECT CODE	CATEGORY	AMOUNT	PROJECT ID			FY

Certified Minority: ___Yes ___No ___Not Available ___Not Appl. Minority Category____ (See reverse side for options)

Commodity Code____ Federal Funds: Agcy ____CFDA ____

Routing Order for Approval	Approval (Signature)	Date	Comments
1. Project Leader	M. BROOKS	9/11/07 9-26-07	
2. Proj. Budget Mgr. (Expenditure Only)			Budget Authority: __ Existing __ New
3. Div./Reg./Inst./Off. Dir.			
4. Contracts Administrator (Office. Ops)	B. Lamb.	9/27/07	
5. Legal		11/1/07	
6. Accounting	S Bradley	11-2-07 11-5-07	Funds Availability: N/A Yes ___ No
7. Dir. of Audit Signature for Receipt Not Approval		11/7/07	
8. Exec./Div./Reg./Inst./Off. Dir. review (check below).		9 NOV. 2007	
__ Expenditure Contracts: Return to Originator for Contractor signature. __ Other documents: Send to (circle) Exec./Div./Reg./Inst./Off. Dir. for signature.			Expenditure Contracts: After Contractor signs, send to Exec./Div./Reg./Inst./Off. Director for signature and dating.
9. Exec./Div./Reg./Inst. Dir. execute		9 NOV. 2007	
Originator Copy to Accounting*			Send a complete copy of the Contract & Routing Form
Originator to Contracts Administrator*			Send executed Original Contract & Original Routing Form
Contracts Admin.. to Central Files*		2/28/08	

FWC 167/rev. 04/07 \SHARE\FORMS\CONROUTE.167 *See reverse for Codes/Definitions/Distribution

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION
DIVISION OF HABITAT AND SPECIES CONSERVATION

MEMORANDUM

Date: January 11, 2008

To: Brent Panuicki
Matt Pollock
Nancy Dwyer
David Alden, cover memo only
Rosa Torres, cover memo only

From: Rich Mospens
HSC/THCR

RE: First Amendment to the Half-Moon/Carlton Wildlife Management Area Agreement (SWF Parcel #19-193-102X and FWC Contract #07134) between the Southwest Florida Water Management District and the Florida Fish and Wildlife Conservation Commission, dated December 4, 2007 for the Management of the Gum Slough Project

Included herewith please find a fully executed original of the referenced First Amendment and the contract routing form for your file. The First Amendment grants FWC with additional management responsibilities related to all public use and natural systems activities and facilities for the concerned SWFWMD land (Carlton Tract – 4,021 acres) that is west of and adjacent to Half Moon WMA.

Let me know if there are any questions relative to this matter.

Gum Slough Project
SWF Parcel No. 19-193-102X
FWC Contract # 07134

FIRST AMENDMENT TO THE HALF-MOON/CARLTON WILDLIFE MANAGEMENT AREA AGREEMENT BETWEEN SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT AND FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION FOR MANAGEMENT OF THE GUM SLOUGH PROJECT

This First Amendment to the Half-Moon/Carlton Wildlife Management Area Agreement for the management of properties within the Southwest Florida Water Management District's Gum Slough Project by the Florida Fish and Wildlife Conservation Commission hereinafter referred to as the "Management Agreement", by and between the Southwest Florida Water Management District, a public corporation hereinafter referred to as the " District," and having a mailing address of 2379 Broad Street, Brooksville, Florida 34604-6899; and the Florida Fish and Wildlife Conservation Commission (formerly known as the Florida Game and Fresh Water Fish Commission), ,an agency of the state having a mailing address of Farris Bryant Building, 620 South Meridian Street, Tallahassee, Florida 32399-1600, hereinafter referred to as "the Commission."

WITNESSETH

WHEREAS, the District and the Commission entered into a Management Agreement dated May 28, 1992, by which the Commission manages the wildlife and freshwater fisheries resources on the District's Gum Slough Project, referred to as the "Project", as delineated in Exhibit "A".of the Management Agreement and known as the "Carlton Tract" therein, and

WHEREAS, the Commission then managed and still manages land adjacent to and to the east of the Project known as Half Moon Wildlife Management Area, hereinafter referred to as "Half Moon WMA", and

WHEREAS, the District and the Commission desire the Commission to be the lead managing agency and assume full management responsibilities for the Project.

NOW THEREFORE, the District and the Commission, in consideration of the mutual covenants and conditions contained herein, do mutually agree to amend the Management Agreement, dated May 28, 1992, as follows:

1. **Term:** This First Amendment will be effective from the date of its execution by the last of the parties, and shall thereafter be in force in accordance with the terms of the Management Agreement, dated May 28, 1992.

Page 1 of 3

2. **Additional Management Obligations:** The District and the Commission mutually agree the Commission will accept the following management responsibilities in addition to those specified in the Management Agreement for the lands in the Project, referred to as the Wildlife Management Area in the Management Agreement:

   a. Public Use – The Commission shall be responsible for all activities and costs associated with managing all public use activities and the development of public use facilities as set forth in the approved Management Plan for the Half Moon WMA.

   b. Land Management – The Commission shall be responsible for all activities and costs associated with managing the natural systems in a manner consistent with the management goals of the Half Moon WMA and facilities as set forth in the approved Management Plan for the Half Moon WMA.

3. **Management Plan**: The Commission will be the lead managing agency for the Wildlife Management Area. It is understood by the District and the Commission that all management activities on the Wildlife Management Area within the Half Moon WMA shall be designed to conserve, protect and enhance the properties, and will be incorporated into a management plan. The Commission has a conceptual management plan ("CMP") in place pursuant to Chapter 259, Florida Statutes that is in force until 2011 for the Half Moon WMA. Subsequent revisions to the CMP will include lands within the Project and at a minimum and without limitation, habitat management, mitigation and restoration, maintenance, any resource inventories or monitoring, exotic plant species removal, prescribed burning, security measures, construction of facilities or other improvements, and public access/recreational opportunities. The District will have ninety (90) days from receipt to review the Commission's proposed revisions to the CMP. If the District fails to provide comments or otherwise respond within ninety (90) days, the proposed revisions to the CMP will be deemed acceptable by the District. If the District provides written comments or recommendations on the proposed revisions to the CMP, the Commission will respond within ninety (90) days from receipt. The Commission's response will be in writing and include either a revised CMP that incorporates the District's comments or recommendations or a detailed explanation of why it is not feasible to revise the proposed CMP. The District and the Commission may agree that the Commission has more time to respond to the District's comments or recommendations if additional review, research or investigation is necessary for the response.

   Following the aforesaid CMP internal review, for each CMP amendment and commencing with the planning to review the CMP for 2011 and for each CMP review thereafter during the existence of this Management Agreement, the Commission agrees to work with the District in accordance with the procedure set forth above

4. **Management Agreement:** Section 24 of the Management Agreement is hereby amended to add to following language: "Any alterations, variations, changes, modifications or waivers of provisions of this Management Agreement shall only be valid when they have been reduced to writing into an amendment, and duly signed by each of the parties hereto, unless otherwise provided herein."

5. **Terms and Conditions:** The District and Commission acknowledge that all other terms and conditions of the Management Agreement, not modified herein, remain in full force and effect and apply to the Wildlife Management Area.

IN WITNESS WHEREOF, the parties or their lawful representatives, have executed this Management Agreement on the day and year set forth next to their signatures below.

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

By: _____ Witness: _____
David L. Moore, Executive Director

Date: 12-4-07

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

By: _____ Witness: _____

Name: Victor J. Heller

Title: Assist. Exec. Director

Date: 9 Nov. 2007

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY
_____
Commission Attorney

APPROVED BY:	INITIALS	DATE
ATTORNEY		2/13/07
MANAGER		2-12-07
DIRECTOR		18 May 07
DEPUTY EXEC DIR		5-25-7

Page 3 of 3

12.2 Terms Used in This Management Plan

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.

12.3 Public Involvement

12.3.1 Management Advisory Group Meeting Results

Half Moon Wildlife Management Area
Management Advisory Group (MAG)
Consensus Meeting Results

October 30th, 2019 in Bushnell, 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 October 30th, 2019 at Sumter County Public Works Division, in Bushnell, Florida in Sumter 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:

Rank	# of Votes	Score	Idea
1.	[7]	[17]	8. **Continue restoration and maintenance of natural communities, including mesic and wet flatwoods.** Converting previous altered sites to historic natural communities either through forest structure or ground cover.

Rank	# of Votes	Score	Idea	
2.	[7]	[21]	3.	**Monitor and control invasive species, including feral hogs.** Controlling invasive species especially where it is impacting the natural communities and other species. The population management is important for community management, and it is a large issues that need to be looked at.
3.	[6]	[6]	1.	**Continue prescribed fire program with increase growing season burns.** Maintain the burn rotation of 2-4 years on the 4,000 upland acres. Overall maintain fire program and burn rotation. Most area's goals are to increase growing season burns in order to gain more diversity.
4.	[4]	[17]	18.	**Continue to provide quality hunting opportunities.** Maintain what the area has going on know and maintaining the number of hunters that utilize the area and the wildlife that is out there.

Two items of equal rank:

5.	[3]	[9]	2.	**Balance recreational use with hunting schedule.** As hunting season and prime equestrian uses are at the same time, you can ride in the area during some hunting seasons, but it would be preferred there were times when hunting was not taking place. This is also for hiking, bird watching, and other public uses.
	[3]	[9]	5.	**Continue conservation of wildlife resources.** Looking at hunting and land management opportunities, and maintaining a balance of public use while promoting hunting and fishing.
7.	[3]	[11]	9.	**Update the timber assessment and manage timber resources.** It is a statutory requirement for public lands over 1,000 acres to have a timber assessment. There was one done in the early 2000s, and a lot of good timber management has occurred since then. So an updated timber assessment may be warranted.

Rank	# of Votes	Score	Idea	
8.	[3]	[12]	21.	**Continue the surveying of imperiled and indicator species.** Continue to implement the WCPR and continue to monitor the species. It is good to look at indicator species in order to see what is out there. The WCPR plan update was completed in 18/19 and should continue to be implemented.
9.	[3]	[14]	11.	**Continue to monitor and protect cultural resources.** There are 14 sites on property and the FWC has annual inspections on 6 of them. This is to ensure no looting is occurring and keeping hogs away from areas such a the cemetery.
10.	[2]	[3]	33.	**Maintain prioritization of wildlife over human use activities.** Ensure human uses are not impacting wildlife activity.
11.	[2]	[6]	6.	**Additional restroom and parking facilities.** If the area continues to be open to the public, you need to have restroom facilities and parking available at the entrance. Ultimately looking towards how accessible you want to make it to the public.

Two items of equal rank:

12.	[2]	[8]	20.	**Development of long term restoration plan.** Restoration plan for the 1,000 or so acres of pasture on the area, and consider alternate uses where appropriate, such as cattle and food plots. Create a plan that looks at the long term benefits and effects before establishing alternative uses.
	[2]	[8]	42.	**Coordinate and work with volunteer organizations, including IFAS Master Gardeners.** Organization, such as IFAS master gardeners can help with restoration activities, and invasive species identification and removal. As well as work with the different counties to extend the volunteer program.

Rank	# of Votes	Score	Idea	
14.	[1]	[2]	44.	**Support local advocacy groups for protection of natural resources and large scale public use changes.** This is referencing issues such as turnpike expansion, land use changes. Public corridors are being developed around the area. Look towards forming a group that is aware of what is going on and can advocate for the area, and ensure these changes are not impacting the area. When you have a "friends of" group they can work with the agency and assist with issues that may come up.
15.	[1]	[3]	31.	**Consider expanding horse trails** The trails that are there go through water and wet areas, and there are some drier areas that potential loops can be made to avoid the wetter areas. Still consider the wetlands, but there may be plenty of land to add some more trails.
16.	[1]	[5]	26.	**Work with The Nature Conservancy to develop a regional stakeholder group.** There are about 40,000 acres around and including Half Moon that are important for wildlife connectivity, this includes private landowners and other areas. Potentially have TNC involved so they are aware of where to put their money to the best use. Bring partners together that have a collective interest in the area and can be a liaison to TNC for finding financing and grants where needed. This is can be for things like restrooms and trails.

The following items received no votes. All ideas represent valuable input, and are considered in development of the MP, but carry no rank with regard to the priority perceptions of the MAG.

	[]	[]	4.	**Continue and expand management of avian species.** Continue the good job staff has been doing for scrub jays, and look towards expanding kestrel boxes. Kestrel monitoring has occurred, but look towards potentially recruiting volunteers for further monitoring and explore the possibility of relocating kestrel boxes.
	[]	[]	7.	**Panthers** Look towards bringing a group such as a Friends of Half Moon, that could participate in panther monitoring and other species monitoring.

Rank	# of Votes	Score	Idea
	[]	[]	10. **Pursue strategic acquisitions.** Strategic acquisitions of inholdings and boundaries is important. Optimally would want to see better boundary structure. Additionally to look towards pursuing oil and gas mineral rights.
	[]	[]	13. **Assess cattle impacts and possible acre withdrawal.** Determine if the cattle are degrading wetlands areas and if that needs to be reassessed or stopped.
	[]	[]	15. **Switch from regulation quota hunt to special opportunity** Looking at hunting quality of Half Moon, and determining is special opportunity hunts could be appropriate.
	[]	[]	16. **Better access to internal trails and use permits.** Exploring access to drive into the area.
	[]	[]	17. **Coordinate law enforcement engagement for 3 counties.** Limited funds and opportunities exist and looking towards keeping dialogue open among law enforcement agencies. There are 3 different law enforcement agencies and people can get away with doing certain things. Work towards being proactive and gather a large collection of people in case adverse things occur. Things are happening anyway, there needs to be a way to address these issues. There needs to be a way for collective communication so when something occurs everyone is aware of who to get in touch with. Establish friendly ongoing way to discuss and brainstorm how to improve these issues.
	[]	[]	22. **Develop plant species list through restoration.** The previous manager was good at plant species identification. This may not be a strong suit of current staff. So look towards potentially bringing in people for BioBlitz's and utilizing iNaturalist. Because if restoration work is being done, we may not know of plant species that occur out there.
	[]	[]	23. **Explore funding and grant opportunities.** More money is needed to complete activities on the area.

Rank	# of Votes	Score	Idea
	[]	[]	25. **Provide hiking access to the river.** If there are hiking trails there, it would be nice to access the river and hike along the river.
	[]	[]	27. **Restore hydrology as required.** Based on the hydrological assessment completed on the area. Look at hydrological restoration that needs to be completed as recommended by the assessment.
	[]	[]	30. **Maintain roads and trails.** Continue to maintain for public access.
	[]	[]	32. **Continue focal species management, even in absence.** The plan usually address the management of land for the species, but some focal species are decline. However, the area could still be used for animal relocation. The plant and animal species that aren't listed or observed may have their own requirements. So using focal species as a target in land management even if those species aren't on the area.
	[]	[]	36. **Management plan discussion of resource protection** Expand discussion for gates, fencing, signage and law enforcement presence. The current management plan discussion is minimal.
	[]	[]	40. **Explore restrictions of motorized vessels at gum slough.** There are currently know issues with motorized vessels at gum slough.

Half Moon Wildlife Management Area
MAG Meeting Participants

Name	Affiliation
Active Participants	
Chris Green	FWC Area Biologist
Lt. Whitney Chase	FWC Law Enforcement
Michael Edwards	Florida Forest Service
Virginia Hall	Citrus Audubon Society Chapter
David Nicholson	National Wild Turkey Federation
Chris Reed	Southwest Florida Water Management District
Athena Philips	Citrus Chapter Florida Native Plant Society
Jeanne Cornelle	Equestrian User
Gene Bouley	Florida Trail Association
Judy Smith	Private Landowner
Supportive Participants	
Matthew Pollock	FWC Habitat and Species Conservation (HSC), Regional Biologist
Rick Spratt	FWC HSC, District Biologist
Katherine Burke	FWC Public Access Services Office (PASO)
Tom M. Matthews	FWC PASO
Officer Chase Creel	FWC Law Enforcement
Scotland Talley	FWC HSC, Regional Conservation Biologist
Hana Brinkley	FWC HSC, Biologist
Sharon Hale	Florida Native Plant Society
Tricia Auffhammer	Audubon Society
Invited but Unable to Attend	
Jason O'Donoughe	Division of Historical Resources
Dan Hipes	Florida Natural Areas Inventory
James Davis	IFAS County Extension Director
Dough Gilpin	Gilchrist County Commission, District 2
Karl Holley	Gilchrist County Planning Department
Tracy Muzyczka	Florida Department of Environmental Protection
Chuck O'Rourke	Natural Resources Conservation Service
Chris DeLibro	Ocala Mountain Bike Association
Nathan Whitt	Paddling Stakeholder
Robin Kirkland	Hunting Stakeholder
FWC Planning Personnel	
Lance Jacobson	Land Conservation Planner, Facilitator
Dylan Imlah	Senior Conservation Planner, Recorder
Blake Finnegan	Land Conservation Planner, Recorder

12.3.2 Public Hearing Notice

NOTICE

The Florida Fish and Wildlife Conservation Commission (FWC)
Announces a

PUBLIC HEARING

for the

Half Moon

Wildlife Management Area

Management Plan

Sumter County, Florida

7:00 P.M. Wednesday, December 11, 2019

Lake Panasoffkee Recreation Center
East Wing Meeting Rm
1589 CR 459
Lake Panasoffkee, FL 33538

PURPOSE: To receive public comment regarding considerations for the FWC ten-year Land Management Plan for the Half Moon Wildlife Management Area (HMWMA). This hearing is being held EXCLUSIVELY for discussion of the DRAFT Half Moon 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/

or call (850) 487-7063.

A Management Prospectus for the Half Moon WMA is available upon request. For a copy, please contact Lance Jacobson, Florida Fish and Wildlife Conservation Commission, Land Conservation and Planning, 620 South Meridian Street, Tallahassee, Florida 32399-1600. Telephone: (850) 487-9767. Email: Lance.Jacobson@MyFWC.com

12.3.3 Internal FWC Press Release

Help plan the future of Half Moon Wildlife Management Area

The Florida Fish and Wildlife Conservation Commission (FWC) will present a 10-year plan for the Half Moon Wildlife Management Area at a public hearing in Sumter County on Wednesday, December 11, 2019.

The public hearing will be held at 7 p.m. at the Lake Panasoffkee Community Building, 1589 County Road 459, in Lake Panasoffkee. The public is encouraged to attend and will have the opportunity to comment and ask questions regarding the DRAFT land management plan for the FWC-managed WMA.

The Half Moon WMA is located along the Withlacoochee River in Sumter County approximately 15 miles west of Wildwood. It offers many opportunities for outdoor recreation, including hunting, fishing, wildlife viewing, hiking, biking, horseback riding, and paddling.

Mesic flatwoods and hammock in the Half Moon WMA provide important wildlife habitat for species such as white-tailed deer, gopher tortoises and Bachman's sparrows. The WMA's floodplain swamp and hydric hammock also provide an important buffer and filter system for run-off between upland areas and the Withlacoochee River.

"The Half Moon WMA was purchased to ensure the preservation of fish, wildlife, and other natural and cultural resources for future generations, and to provide fish-and wildlife-based outdoor recreation opportunities to the public," said Lance Jacobson, FWC land conservation planner. "This draft plan will specify how we intend to accomplish that goal."

For more information on this upcoming local public hearing, go to MyFWC.com/Conservation and select “Terrestrial Programs” then “Management Plans.”

Pursuant to Chapters 253 and 259, Florida Statutes, 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. For more information and background on management plans and their goals, visit MyFWC.com/Conservation and select “Terrestrial Conservation Programs” then “Management Plans.”

Hunting and fishing regulations are not included in this plan or meeting; those are addressed through a separate public process. For more information about hunting and fishing regulations, please visit https://myfwc.com/hunting/regulations/.

To obtain a copy of the land management prospectus for the Half Moon WMA, call Lance Jacobson at 850-487-9767 or email Lance.Jacobson@MyFWC.com.

For more on the Half Moon WMA, go to MyFWC.com and select “Wildlife Viewing” then “Wildlife Management Areas.”

12.3.4 Newspaper Advertisement

Proof of Publication

from the
SUMTER COUNTY TIMES
Bushnell, Sumter County, Florida
PUBLISHED WEEKLY

STATE OF FLORIDA
COUNTY OF SUMTER
Before the undersigned authority personally appeared

Theresa Holland and/or Mary Ann Naczi and/or Mishayla Coffas

Of the Sumter County Times, a newspaper published weekly at Bushnell, in Sumter County, Florida, that the attached copy of advertisement being a public notice in the matter of the

6813-1128 SCT (12/11 FWC meeting) The Florida Fish and Wildlife Conservation Commission (FWC) announces a PUBLIC HEARING for the FWC Lead Managed Portions of Half Moon Wildlife Management Area located in Sumter County, Florida. 7:00 P.M. Wednesda

Court, was published in said newspaper in the issues of November 28th, 2019,

Affiant further says that the Sumter County Times is a Newspaper published at Bushnell in said Sumter County, Florida, and that the said newspaper has heretofore been continuously published in Sumter County, Florida, each week and has been entered as second class mail matter at the post office in Bushnell in said Sumter County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he/she has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Mary Ann Naczi

The forgoing instrument was acknowledged before me

This 29th day of November, 2019

By: Theresa Holland and/or Mary Ann Naczi and/or Mishayla Coffas

who is personally known to me and who did take an oath.

Mishayla Coffas

Notary Public

Notary Public State of Florida
Mishayla Coffas
My Commission GG 280131
Expires 11/28/2022

6813-1128 SCT (12/11 FWC meeting)

The Florida Fish and Wildlife Conservation Commission (FWC) announces a PUBLIC HEARING for the FWC Lead Managed Portions of Half Moon Wildlife Management Area located in Sumter County, Florida.

7:00 P.M. Wednesday, December 11, 2019
Lake Panasoffkee Recreation Center
East Wing Meeting Room
1589 CR 459, Lake Panasoffkee, FL 33538

PURPOSE: To receive public comment regarding considerations for FWC's ten-year Management Plan for the FWC Lead Managed Portions of Half Moon Wildlife Management Area (HMWMA).

This hearing is being held EXCLUSIVELY for discussion of the DRAFT Half Moon WMA 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 http://myfwc.com/about/rules-regulations/changes/

A Management Prospectus for Half Moon 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) 487-9767 or by e-mail at Lance.Jacobson@MyFWC.com .

Published November 28, 2019.

12.3.5 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: 12/10/2019** **Invoice Number: 101897**

	P.O. #	Publication in Florida Administrative Register	#units	$each	Extension
1	B59932	Vol/No: 45/231, November 27, 2019, Notice ID: 22614306	251	0.14	$35.14

Invoice # must appear on all checks and correspondence. Please pay balance due: **$35.14**
F.E.I.D. number: F 59-3466865 ***Net Due - 15 days - No Discount***

1/10/20

TO INSURE PROPER CREDIT, PLEASE RETURN THIS PORTION.

Department of State - Division of Administrative Services - Bureau of Planning, Budget and Financial Services - (850)245-6579
R.A. Gray Bldg - 500 S. Bronough St, 4th Fl. - Tallahassee, Fl 32399-0250

Account: 1072 **Invoice Date: 12/10/2019** **Number: 101897** **Amount Due: $35.14**

State Agencies - Journal Transfer to Account Code: 45-60-2-572001-45400100-00 BF Obj 019000 BF Cat 001903
Org Code / EO : 45400120200 7X Object:019032 Category: 001903

For Accounting Use Only: Object Code: 019032 Cat: 001903 ARGL: 16300 GL: 67100
FLAIR Account Code: 77-10-1-000083-77200100-00 Vendor FEID:

ID 22614306

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: December 11, 2019, 7:00 p.m.

PLACE: Lake Panasoffkee Recreation Center, East Wing Meeting Rm., 1589 CR 459, Lake Panasoffkee, FL 33538

GENERAL SUBJECT MATTER TO BE CONSIDERED: To receive public comment regarding considerations for FWC's ten-year Management Plan for the FWC Lead Managed Portions of Half Moon Wildlife Management Area (HMWMA). This hearing is being held EXCLUSIVELY for discussion of the DRAFT Half Moon 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 copy of the agenda may be obtained by contacting: A Management Prospectus for Half Moon 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)487-9767 or by e-mail at Lance.Jacobson@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, (850)487-7063, Diana.Kilgore@MyFWC.com.

12.3.6 Public Hearing Report

PUBLIC HEARING REPORT

FOR

HALF MOON WILDLIFE MANAGEMENT AREA MANAGEMENT PLAN

HELD BY THE

HALF MOON WILDLIFE MANAGEMENT AREA MANAGEMENT ADVISORY GROUP

AND THE

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

DECEMBER 11, 2019 – SUMTER COUNTY, FLORIDA

The following report documents the public input that was received at the Half Moon Wildlife Management Area (HMWMA) Management Advisory Group's (MAG) public hearing for the update to the Management Plan for HMWMA that was held at 7:00-9:00 PM, on December 11, 2019 at the Sumter County Lake Panasoffkee Community Building in Lake Panasoffkee, Florida.

HMWMA Management Advisory Group Introduction:
The meeting was introduced by Ms. Tricia Auffhammer, a HMWMA Management Advisory Group participant, who represented the HMWMA MAG. Ms. Auffhammer indicated that she was one of twelve stakeholders that attended the Florida Fish and Wildlife Conservation Commission (FWC) facilitated HMWMA MAG meeting held on October 30, 2019. Ms. Auffhammer stated that the Draft Management Plan was being presented tonight by FWC staff, and that hardcopies of the draft plan and the HMWMA MAG meeting report were available at the front door for the public's review. Ms. Auffhammer thanked everyone for attending and then introduced Mr. Lance Jacobson, Land Conservation Planner, FWC, to facilitate and coordinate the presentation of an overview of HMWMA, FWC's planning process, and the draft components of the HMWMA Draft Management Plan.

Presentation on an Overview of HMWMA and the FWC Planning Process:
FWC member Mr. Lance Jacobson welcomed everyone and thanked the public for their attendance. Mr. Jacobson 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 HMWMA, and not hunting and fishing regulations, indicating there is a separate public input process for FWC rule and regulation development. Mr. Jacobson then described the materials that were available at the door for public review, including the HMWMA Draft Management Plan and the MAG Meeting Report and Accomplishment Report. Mr. Jacobson then presented the agenda for the public hearing and facilitated the introduction of all FWC staff in attendance to the audience. Mr. Jacobson then presented an overview and orientation of HMWMA, including a description of the natural communities, data about HMWMA 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. He 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 HMWMA Overview and FWC's Planning Process:

Mr. Jacobson 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. Mr. Jacobson again emphasized that the exclusive purpose for the public hearing was to collect public input regarding the Draft Management Plan for HMWMA, and not to discuss area hunting, fishing and use regulations since, as was noted earlier, FWC has a separate process for input on hunting and fishing regulations.

Public Question #1: An unidentified member of the audience provided the following comments and questions:

For your prescribed burns, do you have areas in there that you feel certain types of tree, that I'm familiar with from other management areas, have grown in areas not historically there and are you trying to eliminate those or keep them there?

FWC Response: Mr. Chris Green, Area Manager, responded:

We do have oak encroachment in some of our flatwoods we try mechanical means to remove that.

Public Question #2: An unidentified member of the audience provided the following comments and questions:

Do we have any grasshopper sparrows on the area?

FWC Response: Mr. Chris Green, Area Manager, responded:

There are.

No (further) questions or comments were received at this stage of the HMWMA public hearing meeting.

Presentation of the HMWMA Draft Management Plan:
At this point, Mr. Lance Jacobson, Land Conservation Planer, began the presentation of the HMWMA Draft Management Plan. Mr. Jacobson then completed and concluded the presentation of the HMWMA Draft Management Plan.

Questions and Comments on the HMWMA Draft Management Plan Presentation:
Mr. Lance Jacobson 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. He informed them that all comments, questions, and public testimony will be duly considered equally by FWC.

Public Question #1: An unidentified member of the audience provided the following comments and questions:

I've got a few -- the 75 acres per year that you're doing restoration on – does that keep pace with what needs to be done by the time you have to cycle back?

FWC Response: Mr. Chris Green, Area Manager, responded:

Yeah, that's mostly that encroachment, oak encroachment around the edges.

Public Response: The same unidentified member of the audience continued this line of comments and questions:

So is that 75 acres keeping pace with what you need to do?

FWC Response: Mr. Chris Green, Area Manager, responded:

Yes -- it'll give or take a little year to year.

FWC Response: Mr. Lance Jacobson, Land Conservation Planner, responded:

Once that gets into a maintenance condition it will be included the acreage that gets the regular prescribed burn treatments, which is listed as a separate goal in there.

Public Response: The same unidentified member of the audience continued this line of comments and questions:

And you mentioned the timber management in there, is there a fair number of trees, timber-wise?

FWC Response: Mr. Chris Green, Area Manager, responded:

We do have some plantations that will be coming up in the next ten years, but not too many.

Public Response: The same unidentified member of the audience continued this line of comments and questions:

And by plantation, you mean planted pine? And you mentioned 26 miles of road to be maintained, tell me cause I'm not familiar with the area, those roads really can't be used except during hunting, otherwise you have to be on bicycle or horseback, so maintaining 26 miles of road for how many days a year?

FWC Response: Mr. Chris XX, Area Manager, responded:

There's 52 hunt days 365 days of hiking and biking and horseback riding.

Public Response: The same unidentified member of the audience continued this line of comments and questions:

What about hog management? Is that the hog hunts taking place for hog management?

FWC Response: Mr. Chris Green, Area Manager, responded:

We think so.

Public Response: The same unidentified member of the audience continued this line of comments and questions:

OK – and what kind of invasive species do you have here? Do you have lygodium?

FWC Response: Mr. Chris Green, Area Manager, responded:

Yes, we do.

Public Response: The same unidentified member of the audience continued this line of comments and questions:

During your presentation, Lance, you said something about cooperating with Osceola county, I didn't really understand that. Was that part of the boiler plate that got in there?

FWC Response: Mr. Lance Jacobson, Land Conservation Planner, responded:

It was because I had a previous plan in Osceola county, but I meant to say Sumter County. It's the same focus.

Public Question #2: An unidentified member of the audience provided the following comments and questions:

What was the point about the highwater mark along the river, was that trouble with poachers or something? It was talking about the highwater mark and the land? I didn't quite understand that.

FWC Response: Mr. Chris Green, Area Manager, responded:

I think it mostly goes with law enforcement. It's a gray area.

Public Response: The same unidentified member of the audience continued this line of comments and questions:

OK, and they were going to look into the State right?

FWC Response: Mr. Lance Jacobson, Land Conservation Planner, responded:

The state already owns it, but FWC doesn't have management authority all the way to the river, essentially is what the problem is.

Public Response: The same unidentified member of the audience continued this line of comments and questions:

Why not? That doesn't make much sense.

FWC Response: Mr. Lance Jacobson, Land Conservation Planner, responded:

I know – it's a little bureaucratic. It's because the Sovereign-Submerged Lands are held by the Division of State Lands at DEP.

Public Response: The same unidentified member of the audience continued this line of comments and questions:

It's a gray area in the law then?

FWC Response: Mr. Lance Jacobson, Land Conservation Planner, responded:

Its not necessarily a gray area in the law. It's a gray area in knowing how far our boundary actually extends to the river.

FWC Response: Lt. Whitney Chase, FWC Law Enforcement, responded:

Look at it this way – if you don't look at it like state lands, and you look at it as private property bordering the river…so you got the highwater mark, well people can go down the waterway and you wouldn't be on the property, so it kind of gives them the dimensions.

Public Response: The same unidentified member of the audience continued this line of comments and questions:

Is it adequately marked where we can't go off the river?

FWC Response: Lt. Whitney Chase, FWC Law Enforcement, responded:

It would depend on State Lands and what DEP does. I've seen them mark it and go out there, I've seen them send letters and say this area is closed of because..

FWC Response: Mr. Lance Jacobson, Land Conservation Planner, responded:

In this case, it's my understanding that it's not..

Public Response: The same unidentified member of the audience continued this line of comments and questions:

Is that part of what the survey was talking about – to find that boundary?

FWC Response: Mr. Lance Jacobson, Land Conservation Planner, responded:

Just to reiterate – the problem that we have, even though we're part of the state, and the state also owns the river, FWC doesn't have authority in the river, is what the problem is.

Public Response: The same unidentified member of the audience continued this line of comments and questions:

Lance – FWC law enforcement can stop you from speeding on the highway, you have the authority.

FWC Response: Mr. Lance Jacobson, Land Conservation Planner, responded:

I'm talking about the management side – the biology side.

FWC Response: Lt. Whitney Chase, FWC Law Enforcement, responded:

That waterline – as for the management boundaries, so they have to have a quota permit in there. If you get caught hunting on that, coming in from the river, you're in violation. So as far as management goes, in maintaining the waterway, that's not them.

Public Response: The same unidentified member of the audience continued this line of comments and questions:

No, but you have the authority if someone's breaking the law.

FWC Response: Lt. Whitney Chase, FWC Law Enforcement, responded:

I have the authority, yes, but he's not talking about law enforcement, he's just talking about biologist, Half Moon and the management area.

Public Response: The same unidentified member of the audience continued this line of comments and questions:

I misheard then.

Public Question #3: An unidentified member of the audience provided the following comments and questions:

There was a little factoid in there that came out. The visitor population should be no more than 321 a day and you have 10,000 acres?

FWC Response: Mr. Lance Jacobson, Land Conservation Planner, responded:

That's our carrying capacity and that's based on the facilities that we already have on the area. And we have a whole section of our agency that's called Public Access Services office and they handle all the recreation facilities for all our WMAs. And they have a formula that creates that number, and I'm not familiar with that myself, but essentially, for example, we have a certain number of people per mile of trail and they add that to the number of people who can use the toilet and they add those stuff to come up with the total number.

Public Response: The same unidentified member of the audience continued this line of comments and questions:

They've never had a problem with that, have they? What if they had an event and 1,000 people came?

FWC Response: Mr. Lance Jacobson, Land Conservation Planner, responded:

That's what the facilities on the area could potentially support, at maximum. We have, and I can't recall the number, but it's in the handout we provided, we have a visitation count from the past fiscal year of how many people showed up, and it's a few thousand for the whole year. So It's much lower than that 361 a day.

Public Question #4: An unidentified member of the audience provided the following comments and questions:

What type of presence does FWC have on the property, both law enforcement and non-law enforcement

FWC Response: Mr. Chris Green, Area Manager, responded:

There's district technicians and district biologist out there. There's a district office, so there's essentially seven people.

Public Question #5: An unidentified member of the audience provided the following comments and questions:

During hunting season, do you have a manned check-in station. And do you all attempt to do any necropsy work on harvests?

FWC Response: Mr. Chris Green, Area Manager, responded:

We collect samples for CWD to the send to the lab. I for years would try to get men at checking stations to do a brief necropsy instead of looking at the back of a pickup truck and say 'yeah, that's a six foot' to try and get some information over the years.

No further questions or comments were received at this stage of the HMWMA public hearing meeting.

Public Testimony on the HMWMA Draft Management Plan:

One members of the public audience submitted a speaker card indicating their intention to provide formal public testimony. Mr. Jacobson again emphasized that the public hearing was for taking input regarding the HMWMA Draft Management Plan and called the first speaker to the podium.

Public Testimony #1: Byron Maharrey provided the following public testimony:

More than testimony, there's a few questions I'm asking. I'm not familiar with the area because I'm from south Florida, where I was very active with the management areas, but I don't know this area that well, and I think most of my questions have been answered. I do have one other question though – if you had a stakeholder meeting in October, and they went through with the voting of most important and that type of thing – what do you do after? And was it a 3x5 card style or what?

FWC Response: Mr. Lance Jacobson, Land Conservation Planner, responded:

We used to, but now we have a single sheet, and each MAG rep gets their individual sheet of people.

Public Response: Byron Maharrey continued this line of comments and questions:

If the stakeholders have already done this, what are we doing here tonight? To justify this or to say 'OK we agree or disagree?' And if so, what happens from there?

FWC Response: Mr. Lance Jacobson, Land Conservation Planner, responded:

We take every piece of public feedback we get seriously and incorporate it in the plan as much as we are able. The management advisory group gives us a foundation, a direction for us to start of in. So essentially yes, the public hearing says yes- we can go along with what the Management Advisory Group said- or no, this isn't want the public wants. So it's more to make sure we're headed in the right direction now that we have these goals.

Public Response: Byron Maharrey continued this line of comments and questions:

So it's just to justify what the meeting in October said?

FWC Response: Mr. Lance Jacobson, Land Conservation Planner, responded:

In a way, yes. And these meetings are both required by state law. When we develop these plans, if anyone leaves here and wishes to contribute more, it would probably be a good six to nine months before this plan makes it to the Acquisition Restoration Council, and I take any input all the way through the process.

Public Response: Byron Maharrey continued this line of comments and questions:

I was kind of surprised, when you were talking about the different agencies that this management plan has to go through. And I understand the cooperation between agencies, but since FWC is a constitutionally mandated agency, I would think they would have the final say.

FWC Response: Mr. Lance Jacobson, Land Conservation Planner, responded:

Well the whole reason we are doing this, is that FWC doesn't hold the title to the land, and that's the case for almost all state-owned land. The Board of Trustees, which is the Governor in Cabinet, they hold the title, and the law requires that all state agencies who manage conservation lands, we lease this land from the Board of Trustees, and as such the law requires that we do the management plan.

Public Question #2: An unidentified member of the audience provided the following comments and questions:

How do you advertise? I didn't hear about the one in October, and I barely heard about the one today.

FWC Response: Mr. Lance Jacobson, Land Conservation Planner, responded:

The October meeting is invitation only, and we, again, are told by law who we're allowed to bring. That meeting is a group of stakeholders, and we have one representative from as many stakeholder groups as we can think of, and that includes a hunter, adjacent land owner, DEP, Water Management District, Forest Service, horseback groups, Audubon Native Plant Society; one representative from all these groups to give us a broad range of ideas.

For this meeting we advertised in the local newspaper, which was the Sumter county paper I believe, we also advertised in the Florida Administrative Registrar. And we have a press release that goes out, and advertisement on our Facebook page; we have a number of ways, but it never seems to be enough - but we try the best we can to get the word out.

Public Response: The same unidentified member of the audience continued this line of comments and questions:

I was trying to figure out where to go to and to navigate to stay on top of it.

FWC Response: Mr. Lance Jacobson, Land Conservation Planner, responded:

For all state issues, the Florida Administrative Registrar is the way to go. Setting up your email alerts can be challenging, but once you do you can choose from all state agencies and specific subjects that you're interested in and specific portions of the state you're interested in.

Adjournment:
Mr. Lance Jacobson asked if there were any other members of the public that wished to give public testimony.

No other speakers offered further comments.

Then Mr. Jacobson declared the public hearing adjourned.

12.4 Soil Series Descriptions

Map Unit Description

Citrus County, Florida

[Minor map unit components are excluded from this report]

Map unit: 37 - Matlacha, limestone substratum-Urban land complex

Component: Matlacha (50%)

The Matlacha component makes up 50 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats, coastal plains. The parent material consists of sandy mine spoil or earthy fill. Depth to a root restrictive layer, bedrock, lithic, is 40 to 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 30 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 0 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Component: Urban land (25%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

Map unit: 49 - Terra Ceia-Okeelanta association, very frequently flooded

Component: Terra Ceia (65%)

The Terra Ceia component makes up 65 percent of the map unit. Slopes are 0 to 1 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of herbaceous organic material. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is very high. Shrink-swell potential is low. This soil is very frequently flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, May, June, July, August, September, October, November, December, December. Organic matter content in the surface horizon is about 80 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a slightly sodic horizon within 30 inches of the soil surface.

Component: Okeelanta (20%)

The Okeelanta component makes up 20 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 high. Shrink-swell potential is low. This soil is very frequently flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, May, June, July, August, September, October, November, December, December. Organic matter content in the surface horizon is about 73 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 slightly sodic horizon within 30 inches of the soil surface.

Map unit: 51 - Boca-Pineda, limestone substratum complex

Component: Boca, non-hydric (55%)

The Boca, non-hydric component makes up 55 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 over limestone. Depth to a root restrictive layer, bedrock, lithic, is 24 to 40 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 January, February, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 2 percent. This component is in the R154XY003FL 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 slightly sodic horizon within 30 inches of the soil surface.

Component: Pineda, non-hydric (20%)

The Pineda, non-hydric component makes up 20 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,

Map Unit Description

Citrus County, Florida

Map unit: 51 - Boca-Pineda, limestone substratum complex

Component: Pineda, non-hydric (20%)

bedrock, lithic, is 40 to 80 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, October, November. Organic matter content in the surface horizon is about 4 percent. This component is in the R154XY003FL South Florida Flatwoods ecological site. Nonirrigated land capability classification is 5w. 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.

Component: Boca, hydric (10%)

The Boca, hydric component makes up 10 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 over limestone. Depth to a root restrictive layer, bedrock, lithic, is 24 to 40 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 6 inches during January, February, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 2 percent. This component is in the R154XY003FL 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 slightly sodic horizon within 30 inches of the soil surface.

Component: Pineda, hydric (10%)

The Pineda, hydric component makes up 10 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, bedrock, lithic, is 40 to 80 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 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 R154XY003FL South Florida Flatwoods ecological site. 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 slightly sodic horizon within 30 inches of the soil surface.

Map unit: 63 - Paisley fine sand

Component: Paisley, non-hydric (50%)

The Paisley, non-hydric component makes up 50 percent of the map unit. Slopes are 0 to 1 percent. This component is on flats 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 poorly drained. Water movement in the most restrictive layer is very low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 15 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 3 percent. This component is in the R154XY005FL Cabbage Palm 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 slightly sodic horizon within 30 inches of the soil surface.

Component: Paisley, hydric (30%)

The Paisley, hydric component makes up 30 percent of the map unit. Slopes are 0 to 1 percent. This component is on flats 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 poorly drained. Water movement in the most restrictive layer is very low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 3 percent. This component is in the R154XY005FL Cabbage Palm 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 slightly sodic horizon within 30 inches of the soil surface.

Map Unit Description

Citrus County, Florida

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

Marion County Area, Florida

Map unit: 26 - Electra sand, 0 to 5 percent slopes

Component: Electra (80%)

The Electra component makes up 80 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 and loamy 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 July, August, September, October. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Map unit: 40 - Holopaw sand

Component: Holopaw (80%)

The Holopaw component makes up 80 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 very low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 3 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Map unit: 61 - Pomona sand

Component: Pomona, non-hydric (60%)

The Pomona, non-hydric component makes up 60 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 May, June, July, August, September, October, November. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Pomona, hydric (20%)

The Pomona, hydric component makes up 20 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 6 inches during May, June, July, August, September, October, November. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Map Unit Description

Sumter County, Florida

Map unit: 6 - Kendrick fine sand, 0 to 5 percent slopes

Component: Kendrick (80%)

The Kendrick component makes up 80 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 loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is 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. 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 R154XY002FL Longleaf Pine-turkey Oak Hills ecological site. Nonirrigated land capability classification is 2e. 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: 9 - Paisley fine sand, bouldery subsurface

Component: Paisley (80%)

The Paisley component makes up 80 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 clayey 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 high. Shrink-swell potential is high. This soil is rarely flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 3 percent. This component is in the R154XY008FL Upland Hardwood Hammocks 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: 10 - Sparr fine sand, 0 to 5 percent slopes

Component: Sparr (80%)

The Sparr component makes up 80 percent of the map unit. Slopes are 0 to 5 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 and loamy 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 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 23 inches during June, July, August, September. Organic matter content in the surface horizon is about 2 percent. This component is in the R154XY008FL 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: 11 - Millhopper sand, 0 to 5 percent slopes

Component: Millhopper (85%)

The Millhopper 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 and loamy 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 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 57 inches during June, July, August, September. Organic matter content in the surface horizon is about 1 percent. This component is in the R154XY008FL Upland Hardwood Hammocks 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: 15 - Adamsville fine sand, bouldery subsurface

Component: Adamsville, bouldery subsurface (85%)

The Adamsville, bouldery subsurface 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, 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 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

Map unit: 15 - Adamsville fine sand, bouldery subsurface

Component: Adamsville, bouldery subsurface (85%)

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 R154XY008FL 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: 18 - Okeelanta muck

Component: Okeelanta (85%)

The Okeelanta component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of herbaceous organic material over sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is very high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 75 percent. This component is in the R154XY010FL 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: 21 - EauGallie fine sand, bouldery subsurface

Component: EauGallie, non-hydric (60%)

The EauGallie, non-hydric component makes up 60 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 3 percent. This component is in the R154XY003FL 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.

Component: EauGallie, hydric (20%)

The EauGallie, hydric component makes up 20 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 3 inches during June, July, August, September. Organic matter content in the surface horizon is about 3 percent. This component is in the R154XY003FL South Florida Flatwoods 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: 22 - Smyrna fine sand

Component: Smyrna, non-hydric (60%)

The Smyrna, non-hydric component makes up 60 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 R154XY003FL 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: 22 - Smyrna fine sand

Component: Smyrna, hydric (25%)

The Smyrna, hydric component makes up 25 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 3 inches during June, July, August, September. Organic matter content in the surface horizon is about 3 percent. This component is in the R154XY003FL South Florida Flatwoods 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: 26 - Wabasso fine sand, bouldery subsurface

Component: Wabasso, non-hydric (70%)

The Wabasso, non-hydric component makes up 70 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 moderate. Shrink-swell potential is moderate. 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 R154XY003FL 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.

Component: Wabasso, hydric (15%)

The Wabasso, hydric component makes up 15 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 moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during July, August. Organic matter content in the surface horizon is about 6 percent. This component is in the R154XY003FL South Florida Flatwoods 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: 27 - Sumterville fine sand, bouldery subsurface, 0 to 5 percent slopes

Component: Sumterville, bouldery subsurface (80%)

The Sumterville, bouldery subsurface component makes up 80 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 and clayey 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 low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 23 inches during July, August, September, October. Organic matter content in the surface horizon is about 2 percent. This component is in the R154XY008FL Upland Hardwood Hammocks ecological site. Nonirrigated land capability classification is 2w. 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: 28 - Seffner fine sand

Component: Seffner (80%)

The Seffner component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains, 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 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, November. Organic matter

Map unit: 28 - Seffner fine sand

Component: Seffner (80%)

content in the surface horizon is about 3 percent. This component is in the R154XY008FL 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: 33 - Sparr fine sand, bouldery subsurface, 0 to 5 percent slopes

Component: Sparr, bouldery subsurface (80%)

The Sparr, bouldery subsurface component makes up 80 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 and loamy 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 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 23 inches during June, July, August, September. Organic matter content in the surface horizon is about 2 percent. This component is in the R154XY008FL 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: 36 - Floridana mucky fine sand, depressional

Component: Floridana, depressional (85%)

The Floridana, 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 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 frequently ponded. A seasonal zone of water saturation is at 6 inches during January, February, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 11 percent. This component is in the R154XY010FL 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: 39 - Mabel fine sand, bouldery subsurface, 0 to 5 percent slopes

Component: Mabel, bouldery subsurface (80%)

The Mabel, bouldery subsurface component makes up 80 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, loamy, and clayey 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 low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is high. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during June, July, August, September. Organic matter content in the surface horizon is about 2 percent. This component is in the R154XY008FL Upland Hardwood Hammocks ecological site. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 10 percent. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 44 - Oldsmar fine sand, bouldery subsurface

Component: Oldsmar, non-hydric (70%)

The Oldsmar, non-hydric component makes up 70 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 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. Organic matter content in the surface horizon is about 3 percent. This component is in the R154XY003FL 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

Sumter County, Florida

Map unit: 44 - Oldsmar fine sand, bouldery subsurface

Component: Oldsmar, hydric (15%)

The Oldsmar, hydric component makes up 15 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 3 inches during July, August. Organic matter content in the surface horizon is about 3 percent. This component is in the R154XY003FL South Florida Flatwoods 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: 45 - Electra fine sand, bouldery subsurface

Component: Electra, bouldery subsurface (85%)

The Electra, bouldery subsurface component makes up 85 percent of the map unit. Slopes are 0 to 3 percent. This component is on rises on marine terraces on coastal plains, ridges 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 somewhat 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 33 inches during July, August, September, October. Organic matter content in the surface horizon is about 2 percent. This component is in the R154XY003FL South Florida Flatwoods 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: 46 - Ft. Green fine sand, bouldery subsurface

Component: Ft. Green, non-hydric (70%)

The Ft. Green, non-hydric component makes up 70 percent of the map unit. Slopes are 0 to 3 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 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 2 percent. This component is in the R154XY008FL 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.

Component: Ft. Green, hydric (15%)

The Ft. Green, hydric component makes up 15 percent of the map unit. Slopes are 0 to 3 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 3 inches during June, July, August, September. Organic matter content in the surface horizon is about 2 percent. This component is in the R154XY008FL Upland Hardwood Hammocks 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 - Malabar fine sand, frequently flooded

Component: Malabar (80%)

The Malabar component makes up 80 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 6 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria. There are no saline horizons within

Map unit: 48 - Malabar fine sand, frequently flooded

Component: Malabar (80%)

30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 54 - Monteocha fine sand, depressional

Component: Monteocha (80%)

The Monteocha component makes up 80 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 January, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 8 percent. This component is in the R154XY010FL 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: 55 - 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, 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 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. Organic matter content in the surface horizon is about 1 percent. This component is in the R154XY003FL South Florida Flatwoods 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: 56 - Wabasso fine sand, depressional

Component: Wabasso (80%)

The Wabasso component makes up 80 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 moderate. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 6 inches during January, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 6 percent. This component is in the R154XY010FL 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: 57 - Gator muck, frequently flooded

Component: Gator (80%)

The Gator component makes up 80 percent of the map unit. Slopes are 0 to 1 percent. This component is on flood plains on marine terraces, coastal plains. The parent material consists of herbaceous organic material over loamy and sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very high. 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 January, February, March, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 68 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map Unit Description

Sumter County, Florida

Map unit: 63 - Floridana-Basinger association, frequently flooded

Component: Floridana (65%)

The Floridana component makes up 65 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is moderate. 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. Organic matter content in the surface horizon is about 11 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Basinger (20%)

The Basinger component makes up 20 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 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 frequently flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 2 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: 64 - Gator muck

Component: Gator (85%)

The Gator component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of herbaceous organic material over loamy and sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately low. 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 6 inches during June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 70 percent. This component is in the R154XY010FL 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.

12.5 FNAI Element Occurrence Data Usage Letter

FLORIDA
Natural Areas
INVENTORY

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

12.6 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.

12.7 Land Management Review Report

2019 Land Management Review Team Report for Half Moon Wildlife Management Area

Table of Contents

1. Introduction 2
   1.1. Property Reviewed in this Report 3
   1.2 Property Map 3
   1.3. Overview of Land Management Review Results 4
      1.3.1 Consensus Commendations for the Managing Agency 4
      1.3.2. Consensus Recommendations to the Managing Agency 4
2. Field Review Details 4
   2.1 Field Review Checklist Findings 5
   2.2. Items Requiring Improvement Actions in the Field 6
   2.3. Field Review Checklist and Scores 6
3. Land Management Plan Review Details 6
   3.1 Items Requiring Improvements in the Management Plan 8
   3.2 Management Plan Review Checklist and Scores 9
Appendix A: Scoring System Detail 12

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: Half Moon Wildlife Management Area
Managed by: Fish & Wildlife Conservation Commission
Acres: 9,554.00 (5,533.00 BOT; 4,021 SWFWMD) **Counties:** Sumter
Purpose(s) for Acquisition: To be managed as a wildlife management area and for protection of the Withlacoochee River and Gum Slough.
Acquisition Program(s): CARL/SOR **Original Acquisition Date:** 8/15/89
Area Reviewed: Entire Property **Last Management Plan Approval Date:** 8/20/12
Review Date: 10/23/19

Agency Manager and Key Staff Present:

- Chris Green, Manager
- Hana Brinkley

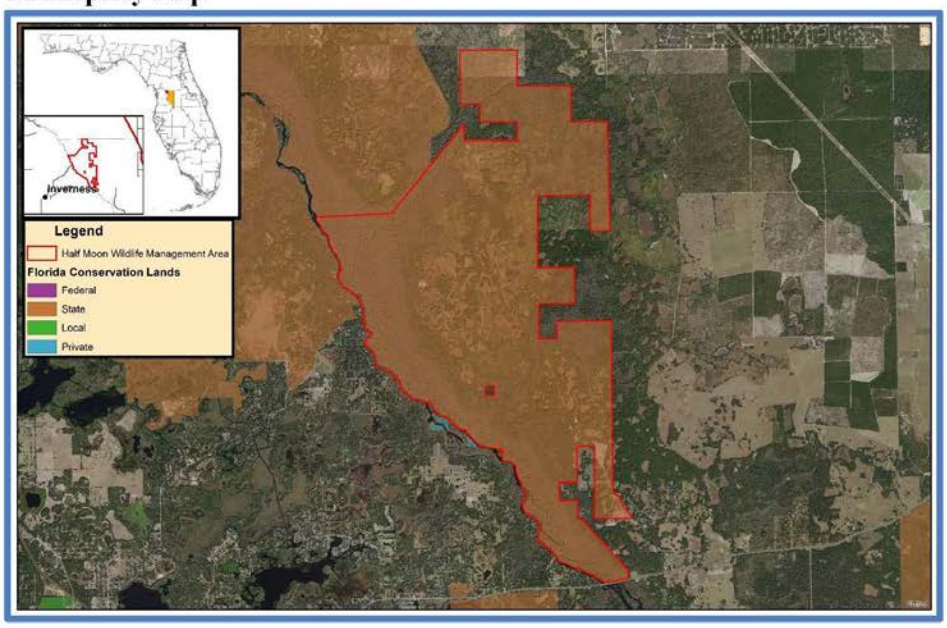
Review Team Members Present (voting)

- Tracy Muzyczka, DRP District
- Local Gov't., None
- Scotland Talley, FWC
- Samantha Daniel, DEP District
- Michael Edwards, FFS
- WMD, None
- Grace Howell, Cons. Organization
- Private Land Manager, None

Other Non-Team Members Present (attending)

- Keith Singleton, DEP/DSL
- Andrew Lawrence, FWC/IPM
- Dylan Imlah, FWC

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 = 5, No = 0

Are the management practices, including public access, in compliance with the management plan?

Yes = 5, 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 1: Results at a glance.

Major Land Management Categories	Field Review	Management Plan Review
Natural Communities / Forest Management	4.76	4.36
Prescribed Fire / Habitat Restoration	4.77	4.60
Hydrology	4.40	4.27
Imperiled Species	4.67	4.67
Exotic / Invasive Species	4.26	4.03
Cultural Resources	4.40	4.40
Public Access / Education / Law Enforcement	4.71	3.99
Infrastructure / Equipment / Staffing	4.80	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 groundcover restoration efforts in the pasture area. It is clear that staff is using adaptive management to fine tune a challenging process. (5+, 0-)
2. The team commends the FWC providing both a comprehensive historical perspective of land ownership and a detailed account of how the land managers have accomplished previous objectives in the management plan. (5+, 0-)
3. The team commends the FWC for the prescribed burn program. The number of acres, fire frequency, and quality of burns are reaching the manager's goals. (5+, 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 that the FWC include more details about desired future conditions, maybe providing more detail about OBVM process in the management plan. (5+, 0-)

   Managing Agency Response: *In section 5.3 of the current management plan for the Half Moon Wildlife Management Area (HMWMA) there is currently a thorough discussion of the OBVM process. The management plan also includes objectives in section 6.1 to continue to maintain the communities on the area based on the information provided in the OBVM report. Currently, since the OBVM report is updated multiple times during a planning period, the report is not included in the final*

management plan. However, the HMWMA management plan is currently in the process of being updated and FWC staff will explore the feasibility of adding more details regarding the desired future conditions of the area.

2. The team recommends that the FWC provide additional protection (hog exclusion) from cultural sites (cemetery). (5+, 0-)

   Managing Agency Response: *As mentioned in the previous response, the HMWMA management plan is currently in the process of being updated. FWC staff have included an objective in the plan update addressing protection for the cultural sites on the area, this includes the installation of a hog proof fence around the cemetery located on the area.*

3. The team recommends that FWC place an interpretive sign where the trail intersects the southern groundcover restoration area. (5+, 0-)

   Managing Agency Response: *As mentioned, the HMWMA management plan is currently in the process of being updated. FWC staff have included an objective in the plan update to include the installation of interpretaive signage for the groundcover restoration area.*

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 scrubby flatwoods, sandhill, xeric hammock, mesic hammock, floodplain forest, mesic flatwoods, basin/depression marsh, wet flatwoods, hydric hammock, blackwater stream, dome/basin swamp, and spring-run stream.**
2. **Listed species, animals and plants in general, and specifically scrub jay.**
3. **Natural resource survey/monitoring resources, specifically listed species or their habitat monitoring, other non-game species or their habitat monitoring, fire effects monitoring, other habitat management effects monitoring, and invasive species survey and monitoring.**
4. **Cultural resources, specifically protection and preservation.**
5. **Resource management (prescribed fire), specifically area being burned, frequency, and quality.**
6. **Restoration, specifically groundcover, oak control, and longleaf reintroduction.**
7. **Forest management, specifically timber inventory, timber harvesting, and reforestation/afforestation.**
8. **Non-native, invasive, and problem species, specifically prevention and control of plants and animals, and control of pests/pathogens.**
9. **Hydrologic/geologic function, specifically roads and culverts, and ditches.**
10. **Ground Water Monitoring, specifically quality and quantity.**
11. **Resource protection, specifically boundary survey, gates and fencing, signage, and law enforcement presence.**
12. **Adjacent property concerns, land use, specifically inholdings and additions.**
13. **Public access, specifically roads and parking.**

14. **Environmental education and outreach, specifically wildlife, invasive species, habitat management activities, interpretive facilities and signs, recreational opportunities, and management of visitor impacts.**
15. **Management resources, specifically waste disposal, sanitary facilities, 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**:

The review team scores did not identify items requiring improvement in the field.

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)										
Scrubby Flatwoods	I.A.1	5	5	5	5	5				5.00
Sandhill	I.A.2	4	4	5	5	5				4.60
Xeric Hammock	I.A.3	5	5	5	4	5				4.80
Mesic Hammock	I.A.4	5	5	5	5	5				5.00
Floodplain Forest	I.A.5	5	5	5	5	5				5.00
Mesic Flatwoods	I.A.6	4	5	5	5	4				4.60
Basin/Depression Marsh	I.A.7	5	5	5	5	5				5.00
Wet Flatwoods	I.A.8	4	5	5	5	4				4.60
Hydric Hammock	I.A.9	4	5	5	x	5				4.75
Blackwater Stream	I.A.10	5	5	5	5	5				5.00
Dome/Basin Swamps	I.A.11	5	5	5	5	5				5.00
Spring-Run Stream	I.A.12	5	5	5	x	5				5.00
									Natural Communities Average Score	4.86
Listed species: Protection & Preservation (I.B)										
Animals	I.B.1	5	4	5	5	5				4.80
Scrub Jay	I.B.1.a	4	4	5	5	5				4.60
Plants	I.B.2	4	4	5	5	5				4.60
									Listed Species Average Score	4.67
Natural Resources Survey/Management Resources (I.C)										
Listed species or their habitat monitoring	I.C.2	4	4	5	5	5				4.60
Other non-game species or their habitat monitoring	I.C.3	4	4	5	5	5				4.60
Fire effects monitoring	I.C.4	5	4	5	5	3				4.40

Other habitat management effects monitoring	I.C.5	4	4	5	5	4				4.40
Invasive species survey / monitoring	I.C.6	5	4	5	5	5				4.80
Cultural Resources (Archeological & Historic sites) (II.A, II.B)										
Cultural Res. Survey	II.A	4	4	5	5	4				4.40
Protection and preservation	II.B	4	4	5	5	4				4.40
									Cultural Resources Average Score	4.40
Resource Management, Prescribed Fire (III.A)										
Area Being Burned (no. acres)	III.A.1	5	5	5	5	5				5.00
Frequency	III.A.2	5	5	5	5	5				5.00
Quality	III.A.3	4	5	5	5	5				4.80
									Resource Management, Prescribed Fire Average Score	4.93
Restoration (III.B)										
Groundcover	III.B.1	5	4	5	5	4				4.60
Oak Control	III.B.2	5	4	5	5	4				4.60
Longleaf Reintroduction	III.B.3	5	4	5	5	4				4.60
									Restoration Average Score	4.60
Forest Management (III.C)										
Timber Inventory	III.C.1	4	4	4	5	5				4.40
Timber Harvesting	III.C.2	4	x	5	5	5				4.75
Reforestation/Afforestation	III.C.3	5	4	5	5	5				4.80
									Forest Management Average Score	4.65
Non-Native, Invasive & Problem Species (III.D)										
Prevention										
prevention - plants	III.D.1.a	5	4	5	5	5				4.80
prevention - animals	III.D.1.b	4	4	4	5	3				4.00
prevention - pests/pathogens	III.D.1.c	3	4	4	4					3.75
Control										
control - plants	III.D.2.a	5	4	5	5	5				4.80
control - animals	III.D.2.b	4	4	5	5	3				4.20
control - pest/pathogens	III.D.2.c	3	4	5	4	4				4.00
									Non-Native, Invasive & Problem Species Average Score	4.26
Hydrologic/Geologic function Hydro-Alteration (III.E.1)										
Roads/culverts	III.E.1.a	5	4	5	4	4				4.40
Ditches	III.E.1.b	5	4	5	5	5				4.80
									Hydrologic/Geologic function, Hydro-Alteration Average Score	4.60
Ground Water Monitoring (III.E.2)										
Ground water quality	III.E.2.a	5	4	5	5	5				4.80
Ground water quantity	III.E.2.b	5	4	5	5	5				4.80
									Ground Water Monitoring Average Score	4.80
Surface Water Monitoring (III.E.3)										
Surface water quality	III.E.3.a	3	3	5	5	3				3.80
Surface water quantity	III.F.3.b	3	3	5	5	3				3.80
									Surface Water Monitoring Average Score	3.80

Resource Protection (III.F)										
Boundary survey	III.F.1	5	4	5	5	5				4.80
Gates & fencing	III.F.2	5	4	5	5	4				4.60
Signage	III.F.3	5	x	5	5					5.00
Law enforcement presence	III.F.4	5	5	5	5	5				5.00
									Resource Protection Average Score	4.85
Adjacent Property Concerns (III.G)										
Land Use										
Inholdings/additions	III.G.2	4		5	4	5				4.50
Public Access & Education (IV.1, IV.2, IV.3, IV.4, IV.5)										
Public Access										
Roads	IV.1.a	4	4		4	5				4.25
Parking	IV.1.b	4	4		5	5				4.50
Environmental Education & Outreach										
Wildlife	IV.2.a	5	4		5	5				4.75
Invasive Species	IV.2.b	3	3		5	5				4.00
Habitat Management Activities	IV.2.c	5	4		5	5				4.75
Interpretive facilities and signs	IV.3	5	4		5	5				4.75
Recreational Opportunities	IV.4	5	4		5	5				4.75
Management of Visitor Impacts	IV.5	5	4		5	5				4.75
									Public Access & Education Average Score	4.56
Management Resources (V.1, V.2, V.3. V.4)										
Maintenance										
Waste disposal	V.1.a	5	4	5	5	5				4.80
Sanitary facilities	V.1.b	5	4	5	5	5				4.80
Infrastructure										
Buildings	V.2.a	5	4	5	5	5				4.80
Equipment	V.2.b	5	4	5	5	5				4.80
Staff	V.3	5	4	5	5	5				4.80
Funding	V.4	5	4	5	5	5				4.80
									Management Resources Average Score	4.80

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:

The review team scores did not identify items requiring improvement in the management plan.

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)										
Scrubby Flatwoods	I.A.1	4	5	5	5	4				4.60
Sandhill	I.A.2	4	5	5	5	4				4.60
Xeric Hammock	I.A.3	4	5	5	4	4				4.40
Mesic Hammock	I.A.4	4	5	5	5	3				4.40
Floodplain Forest	I.A.5	4	5	5	5	3				4.40
Mesic Flatwoods	I.A.6	4	4	5	5	4				4.40
Basin/Depression Marsh	I.A.7	4	4	5	5	3				4.20
Wet Flatwoods	I.A.8	4	4	5	5	4				4.40
Hydric Hammock	I.A.9	4	4	5	5	3				4.20
Blackwater Stream	I.A.10	4	4	5	5	2				4.00
Dome/Basin Swamps	I.A.11	4	4	5	5	4				4.40
Spring-Run Stream	I.A.12	4	4	5	5	2				4.00
									Natural Communities Average Score	4.33
Listed species: Protection & Preservation (I.B)										
Animals	I.B.1		5	5	5	4				4.75
Scrub Jay	I.B.1.a	5	5	5	5	5				5.00
Plants	I.B.2		5	5	5	2				4.25
									Listed Species Average Score	4.67
Natural Resources Survey/Management Resources (I.C)										
Listed species or their habitat monitoring	I.C.2	5	4	5	5	4				4.60
Other non-game species or their habitat monitoring	I.C.3	4	4	5	5	4				4.40
Fire effects monitoring	I.C.4	4	4	5	5	4				4.40
Other habitat management effects monitoring	I.C.5	4	4	5	5	4				4.40
Invasive species survey / monitoring	I.C.6	4	4	5	5	4				4.40
Cultural Resources (Archeological & Historic sites) (II.A, II.B)										
Cultural Res. Survey	II.A	4	4	5	5	4				4.40
Protection and preservation	II.B	4	4	5	5	4				4.40
									Cultural Resources Average Score	4.40
Resource Management, Prescribed Fire (III.A)										
Area Being Burned (no. acres)	III.A.1	5	4	5	5	4				4.60
Frequency	III.A.2	5	4	5	5	4				4.60
Quality	III.A.3	5	4	5	5	4				4.60
									Resource Management, Prescribed Fire Average Score	4.60

Page **9** of **12**

Restoration (III.B)										
Groundcover	III.B.1	5	4	5	5	4				4.60
Oak Control	III.B.2	5	4	5	5	4				4.60
Longleaf Reintroduction	III.B.3	5	4	5	5	4				4.60
									Restoration Average Score	4.60
Forest Management (III.C)										
Timber Inventory	III.C.1	4	4	3	5	5				4.20
Timber Harvesting	III.C.2	4		5	5	5				4.75
Reforestation/Afforestation	III.C.3	4	4	3	5	5				4.20
									Forest Management Average Score	4.38
Non-Native, Invasive & Problem Species (III.D)										
Prevention										
prevention - plants	III.E.1.a	3	4	4	5	4				4.00
prevention - animals	III.E.1.b	4	4	4	5	4				4.20
prevention - pests/pathogens	III.E.1.c	3	4	3	4	4				3.60
Control										
control - plants	III.E.2.a	5	4	4	5	4				4.40
control - animals	III.E.2.b	4	4	4	5	4				4.20
control - pest/pathogens	III.E.2.c	3	4	4	4	4				3.80
									Non-Native, Invasive & Problem Species Average Score	4.03
Hydrologic/Geologic function, Hydro-Alteration (III.E.1)										
Roads/culverts	III.F.1.a	5	4	5	5	4				4.60
Ditches	III.F.1.b	5	4	5	5	4				4.60
									Hydrologic/Geologic function, Hydro-Alteration Average Score	4.60
Ground Water Monitoring (III.E.2)										
Ground water quality	III.F.2.a	4	4	4	5	4				4.20
Ground water quantity	III.F.2.b	4	4	4	5	4				4.20
									Ground Water Monitoring Average Score	4.20
Surface Water Monitoring (III.E.3)										
Surface water quality	III.F.3.a	4	3	4	5	4				4.00
Surface water quantity	III.F.3.b	4	3	4	5	4				4.00
									Surface Water Monitoring Average Score	4.00
Resource Protection (III.F)										
Boundary survey	III.G.1	5	3	5	5	4				4.40
Gates & fencing	III.G.2	1	3	5	5	1				3.00
Signage	III.G.3	1	3	5	5	1				3.00
Law enforcement presence	III.G.4	4	4	5	5	2				4.00
									Resource Protection Average Score	3.60
Adjacent Property Concerns (III.G)										
Land Use										
Inholdings/additions	III.H.2	4	3	5	4	4				4.00
Discussion of Potential Surplus Land Determination	III.H.3	5	4	5	5	5				4.80
Surplus Lands Identified?	III.H.4	5	4	5	5	5				4.80

Page **10** of **12**

Public Access & Education (IV.1, IV.2, IV.3, IV.4, IV.5)										
Public Access										
Roads	IV.1.a	3	4	5	5	4				4.20
Parking	IV.1.b	4	4	5	5	4				4.40
Environmental Education & Outreach										
Wildlife	IV.2.a	5	3	5	5	4				4.40
Invasive Species	IV.2.b	3	3	5	5	4				4.00
Habitat Management Activities	IV.2.c	5	3	5	5	4				4.40
Interpretive facilities and signs	IV.3	5	4	5	5	4				4.60
Recreational Opportunities	IV.4	5	4	5	5	4				4.60
Management of Visitor Impacts	IV.5	5	3	5	5	4				4.40
									Public Access & Education Average Score	4.38
Managed Area Uses (VI.A, VI.B)										
Existing Uses										
Apiary Lease	VI.A.1	5	4	5	4	4				4.40
Cattle Grazing	VI.A.2	2	3	3	5	3				3.20
Silviculture	VI.A.3	4	2	5	4	5				4.00
Hunting	VI.A.4	4	4	5	5	3				4.20
Horseback Riding	VI.A.5	3	4	5	5	4				4.20
Trail Use	VI.A.6	5	4	5	5	4				4.60
Wildlife Observation	VI.A.7	5	4	5	5	5				4.80
Geocaching	VI.A.8	4	3	5	5	3				4.00
Proposed Uses										
Astronomy	VI.B.1	5	4	5	5	5				4.80
Environmental Education	VI.B.2	5	5	5	5	5				5.00

Color Code:	Excellent	Above Average	Below Average	Poor	See Appendix A for detail
		Missing Vote	Insufficient Information		

Page **11** of **12**

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*

12.8 Prescribed Burn Plan

PRESCRIBED BURNING PLAN
for
HALF MOON WILDLIFE MANAGEMENT AREA

Prepared by:
William O. Sermons, Jr., Stephen L. Jester and Nancy Dwyer
Florida Fish & Wildlife Conservation Commission 2012
Updated by:
Chris Green Florida Fish & Wildlife Conservation Commission 2020

TABLE OF CONTENTS

I.	INTRODUCTION	2
	Background	2
	Goals	2
II.	AREA DESCRIPTION	2
	Acquisition	2
	History and Location	3
	Topography	3
	Soils	3
	Climate	4
	Vegetation	4
	Fire Management History	4
III.	PROPOSED BURNING PROGRAM	5
	General	5
	Firelines	5
	Size and Arrangement of Compartments	6
	Burning Schedule	8
	Firing Techniques	9
	Season and Time of Day	9
	Optimal Weather Conditions	9
	Special Considerations	10
IV.	SMOKE MANAGEMENT	10
V.	PERSONNEL AND EQUIPMENT NEEDED	10
	Personnel	10
	Equipment	11
VI.	PERMITS AND NOTIFICATIONS	12
VII.	EVALUATION OF BURN	12
VIII.	LITERATURE CITED	12
IX.	Appendix A: Sample Burn Prescription	14

I. INTRODUCTION

Background

Few plant communities are as fire-dependent and pyrogenic as those of the southeastern U.S. Shantz (1947) estimated that one-third of the natural vegetation of earth's land surface has been affected by fire. However, in southeastern Georgia, Eldridge (1935) observed that 85% of land under forests of all types and 91% occupied by pines displayed evidence of fire history. Fire continues to be an important factor in determining what biota occur in many areas (Stoddard 1931). Fire is the primary ecological force that determines the structure and composition of native plant communities in Florida.

With clear-cutting of southeastern pine forests in the early twentieth century, a need for roundwood regeneration, and growing public disdain for open burning, fire suppression pervaded the increasingly industrialized region (Pyne 1982). Widespread use of fire in woodlands slowly reemerged several decades later as prescribed burning. In 1942, the Florida Forest Service (FFS) implemented a policy permitting the use of fire to eradicate heavy accumulations of understory growth in pine plantations, provided no more than one-half of the crown would be scorched.

Since then, fire has been refined and used increasingly as a management tool by land managers to improve forest regeneration and maintenance, and to enhance wildlife habitat, cattle range, and aesthetics (Wade and Lunsford 1989). New challenges now confront natural resource managers. Social attitudes, habitat fragmentation, species isolation, air quality, and the buildup of fuel loads require innovative approaches to management, especially prescribed burning, of natural communities.

Goals

The primary goal of prescribed burning on Half Moon Wildlife Management Area is to apply fire in a carefully organized manner, using a team approach to develop effective prescriptions, so that predetermined goals are safely and effectively met for each burn unit. Objectives are as follows:

1. Restore and Maintain Natural Communities: maintain the physiognomy and composition of extant natural communities and restore altered landscapes to resemble pre-settlement plant communities.
2. Maintain and Restore Florida Scrub-Jay Habitat: maintain the appropriate habitat structure, spatial distribution, and plant composition of areas occupied by Florida Scrub-jays (*Aphelocoma coerulescens*) and restore altered, former habitats to conditions suitable for occupancy by jays.
3. Increase Heterogeneity Within and Among Community Types: maintain or increase plant-species and foliage-height diversity within native communities by varying fire regimes within and among community types.
4. Reduce Wildfire Fuel Hazard: reduce fuel buildup to diminish the probability and spread of wildfire.
5. Control Exotic Flora: eradicate or control abundance and distribution of fire-intolerant exotic vegetation.

II. AREA DESCRIPTION

Acquisition

The Carlton Half Moon Ranch project qualified for purchase by the State under ‘other lands’ criteria of the Conservation and Recreation Lands (CARL) program. On August 15, 1989, W. Albert and Barbara C. Carlton conveyed title to Carlton Half Moon Ranch to the Board of

Trustees of the Internal Improvement Trust Fund of the State of Florida with the purpose of protecting local water resources, providing public recreation, restoring altered ecosystems, and preserving archaeological and historical sites.

The 4,458-acre Carlton tract was the largest single acquisition of the 11,500-acre project. The primary objective of the purchase was to preserve water quality of the Withlacoochee River, Gum Slough, and their proximal tributaries and to establish a wildlife management area. Three additions totaling 1,036 acres and 4,021 acres owned by Southwest Florida Water Management District now make up the 9,515-acre Half Moon Wildlife Management Area (HMWMA).

History and Location

HMWMA lies along the Withlacoochee River near Rutland in northwestern Sumter County, approximately 25 miles south-southwest of Ocala. Public access is available from County Road 247, off State Road 44, about 7 miles west of Interstate 75 and the Florida Turnpike.

HMWMA has a long history of human use, although prehistoric people primarily used the western (opposite) bank of the Withlacoochee River. Pioneers lived on HMWMA in the 19th and 20th centuries. Longleaf pine was extracted, land was cleared, and crops were planted. Railroad trams were constructed adjacent to the river swamp to facilitate removal of cypress; many of these trams now provide access for recreation. From the 1960s to the 1980s, HMWMA was a working cattle ranch and was leased for hunting.

Topography

Straddling the north-south trending Tsala Apopka Plain and Western Valley physiographic provinces, topography of HMWMA is comparatively flat. Conspicuous relief occurs only near margins of paludal depressions and crests of widely dispersed, relic dunes. Land surface altitudes range from 40 to 60 feet above mean sea level and increase generally from the Tsala Apopka Plain in the west to the Western Valley in the east.

Soils

Much of HMWMA lies over thick limestone formations that include chert and dolomite. Crystal River and Lower Ocala Group limestone formations give rise to 68 soil types in Sumter County, 23 of which, representing 7 soil orders, occur on HMWMA (Yamataki et al. 1988). The majority of the upland soils on the area are poorly drained or somewhat poorly drained fine sands. Most of HMWMA's soils can be placed the following 4 series:

> Gator Muck - a wetland series formed by decomposition of hydrophytic plants and underlain by beds of loamy and sandy marine sediment; 55-85% organic; pH 6.1-8.4 (at 25 inches); permeability: 6 inches/20 hours; available water capacity: .30 inches of water/.40 inches of soil;
>
> EauGallie fine sand - poorly drained, mineral soil; organic matter 1-4%; water permeability: 6 inches/20 hours; water capacity: .03 inches/.08 inches of soil;
>
> Vero sands (depressional and bouldery) - nearly level, poorly drained mineral soil; pH 5.6-8.4; available water capacity: .10 inches/.15 inches of soil;

Sparr fine sand - nearly level to gently sloping and somewhat poorly drained; organic matter <3%; permeability: 6 inches/20 hours; water capacity: .05 inches/.08 inches of soil.

Climate

The climate of Sumter County is characterized as subtropical with long, warm, and relatively humid summers and dry, mild winters. About 55% of the annual precipitation occurs from June through September in the form of intense late afternoon thunderstorms which develop as a result of convective land air masses mixing with cool, encroaching sea breezes. Winter and spring precipitation generally result from less intense, longer lasting continental frontal systems.

Data collected by Southwest Florida Water Management District shows that an average of 52 inches of rain fell annually from 1915-2010. Average monthly precipitation levels during that time were highest in June, July and August with 7.4, 8.0 and 7.4 inches of rainfall, respectively. In contrast, rainfall of November, December, January and February averaged 1.9, 2.5, 2.7 and 3.0 inches, respectively.

Summer temperatures regularly exceed 90° F, especially during July and August which are the two hottest months of the year. Winter temperatures can vary widely, but usually average 50° F to 60° F from December through February. Sub-freezing temperatures, greater than 20° F, can be expected once each winter.

Vegetation

Vegetation on HMWMA consists of a mosaic of freshwater wetlands closely interspersed among flatwoods, hammocks, and old improved pastures. Wetlands cover about 46% of the total area. Human influences during the last 100 years have altered and reshaped the landscape. Alterations have included the ditching and draining of wetlands, pasture development, cultivation of row crops, continuous grazing, selective logging, and exploitation of gum and wood navel stores. Almost all forested wetlands have been logged. Portions of at least 15 marshes were excavated to provide permanent sources of surface water for cattle. The Florida Natural Areas Inventory (FNAI) identified and delineated the floral communities as part of the FWC's Objective Based Vegetation Monitoring project (OBVM). FNAI also denoted the historical natural community on presently occurring ruderal areas such as old improved pasture. Important natural and altered communities are further described in the Half Moon WMA Management Plan.

Fire Management History

All natural communities on the area are fire-based, dependent on periodic yet irregular disturbances for maintenance of biological diversity and relative stability. Evidence of previous fires conspicuously pervades all community types and stands except the interiors of some larger, forested wetlands. However, fire management history of the area is largely unknown until 1989. Recent, previous owners and managers periodically burned pastures, flatwoods, and emergent wetlands during winter to improve cattle forage. Scrubby flatwoods were burned on average "every several years during winter to reduce scrub oaks" (J. Taylor - pers. comm.).

III. PROPOSED BURNING PROGRAM

General

Restoration of a pre-Columbian landscape is impractical and, perhaps, impossible on Half Moon WMA due to the area's comparatively small size and its history of human alterations. In addition, accounts of pre-settlement communities are vaguely descriptive and based largely on general inferences from post-settlement communities and preclude measurable replication. Nevertheless, some attributes of former communities can probably be restored by mimicking natural fire regimes under present environmental conditions.

To achieve broad goals of ecological restoration and maintenance of native plant communities, no single or fixed fire regime will be applied across plant communities or burn units. Instead, fire frequency, its intensity, season of application, pattern of spread, and regularity will be varied among and within burn units.

Maintenance of suitable structure and composition of habitat, while avoiding disruption of jay recruitment, are paramount objectives in stands occupied by scrub-jays. Present population size, increasing insularity, and isolation from other populations necessitate intensive management.

Although scrub-jay management objectives usually can be accomplished collaterally with other goals, deviations from ecological prescriptions may be necessary occasionally. Specific instances are discussed below.

Firelines

About 16.7 miles of perimeter firelines, measuring 10 to 15 feet wide, were developed or re-established during late spring 1991 to facilitate fire control. Perimeter firebreaks, separating stands adapted to frequent fire, require annual maintenance, generally discing, to exclude wildfire and contain prescribed fire. Forested and riverine wetlands will provide natural fire breaks along approximately 5 miles of area boundary.

Fireline placement (Figure 1) resulted from an effort to use natural firebreaks, existing firelines, public use roads and other previously disturbed sites, especially bahiagrass pastures. No firelines have been routed through communities that have not been disturbed recently or altered significantly. Pre-existing firebreaks (e.g., roads, perimeter firelines) comprise nearly 90% of all artificial firebreaks and the remainder were established in ruderal sites and aligned so as to avoid existing natural ecotones. Further, natural firebreaks such as ponds, swamps and hydric hammocks will be used for fire containment when possible. The use of black lines to contain fire will be explored when burning units containing communal arrays, particularly those adapted to widely differing fire frequencies. However, their use in large continuous stands of scrubby flatwoods jeopardizes safety. Area fuel types preclude use of black lines as a sole source of fire containment in most units, but black lines may serve to widen existing firebreaks on units bounded by fine fuels.

All firelines requiring soil disturbance will receive final treatment with a tractor and offset disc before each fire. This allows for removal of vegetation while retaining soil in its initial location, and therefore, should not impact pre-treatment rates of water flow or direction. Further, disced interior firelines will be allowed to revegetate in order to help stabilize the soil during times when burning activities are not being implemented. Perimeter firelines abutting scrubby flatwoods may require pre-burn widening by mowing or roller-chopping to reduce spotover hazard and liability.

Half Moon WMA Management Units

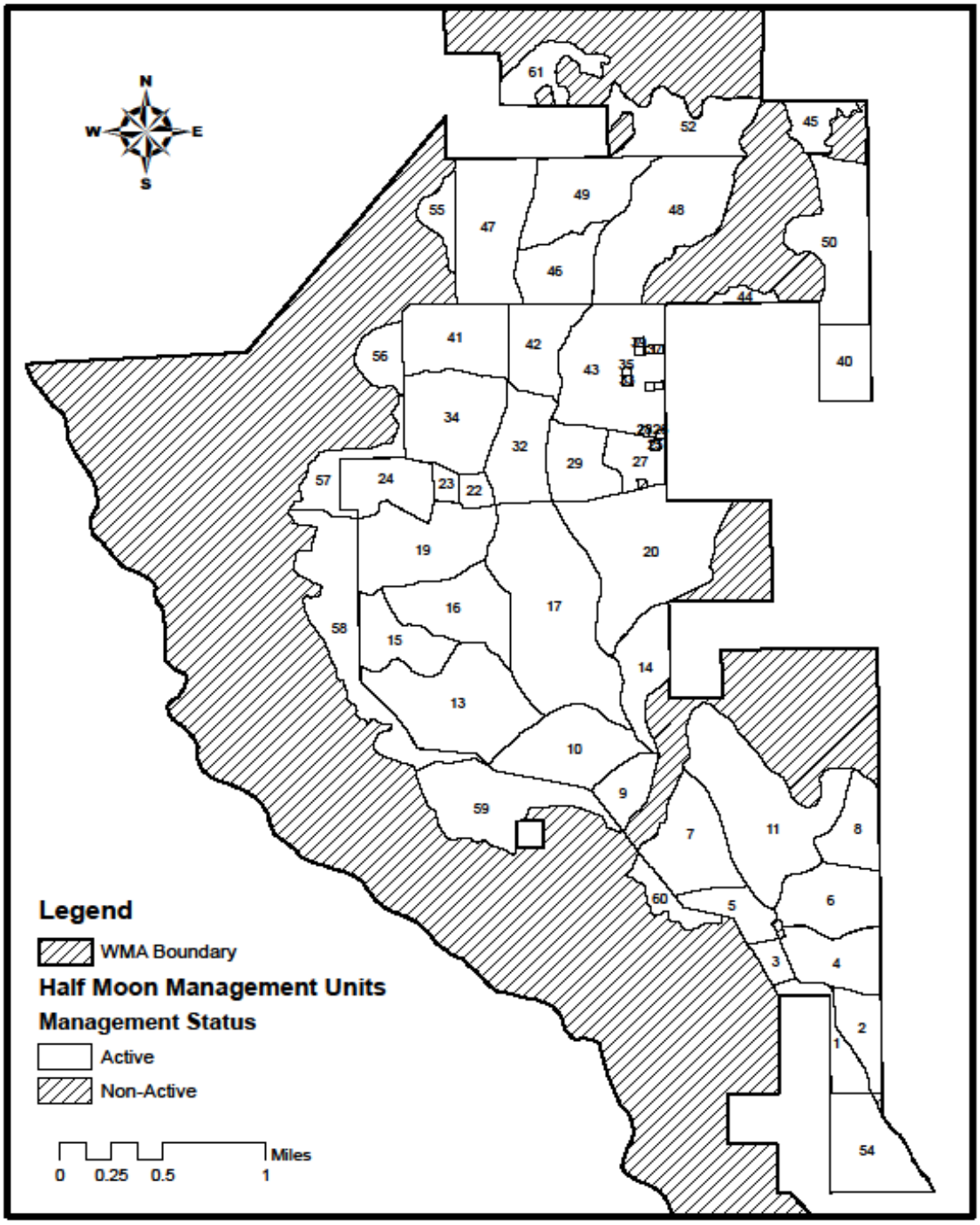


Table 1. Management unit names and acreages for Half Moon WMA.

OBVM Id#	Acres	Former Unit Id	Management Status		OBVM Id#	Acres	Former Unit Id	Treatment
1	42	MCS-2	Active		21	1.3	AMS 12	Mow
2	51	MCS-3	Active		25	1.3	AMS 11	Control
3	19	MCS-4	Active		26	1.3	AMS 9	Winter burn
4	83	MCS-10	Active		28	1.3	AMS 10	Summer burn
5	48	MCS-5	Active		30	1.3	AMS 6	Winter burn
6	98	MCS-9	Active		31	1.3	AMS 5	Mow
7	115	MCS-6	Active		33	1.3	AMS 7	Summer burn
8	64	MCS-8	Active		35	1.3	AMS 8	Control
9	45	MCN1-2	Active		36	1.3	AMS 3	Winter burn
10	126	MCN1-3	Active		37	1.3	AMS 2	Summer burn
11	243	MCS-7	Active		38	1.3	AMS 1	Mow
13	197	MCN1-4	Active		39	1.3	AMS 4	Control
14	76	MCN1-1	Active					
15	76	MCN1-5	Active					
16	116	MCN1-9	Active		12	378	NM1	Non-Active
17	302	MCN1-10	Active		18	94	NM2	Non-Active
19	150	MCN1-6	Active		51	317	NM3	Non-Active
20	247	MCN1-11	Active		53	668	NM4	Non-Active
22	17	MCN2-2	Active					
23	14	MCN2-10	Active					
24	77	MCN2-1	Active					
27	44	MCN2-7	Active					
29	75	MCN2-8	Active					
32	96	MCN2-9	Active					
34	142	MCN2-3	Active					
40	62	MCN3-7	Active					
41	115	MCN2-4	Active					
42	83	MCN2-5	Active					
43	190	MCN2-6	Active					
44	13	MCN3-8	Active					
45	38	none	Active					
46	81	MCN3-3	Active					
47	161	MCN3-1	Active					
48	199	MCN3-4	Active					
49	121	MCN3-2	Active					
50	146	MCN3-5 & 6	Active					
52	120	MCN3-10	Active					
54	112	MCS-1	Active					
55	30	WMD-1	Active					
56	41	WMD-2	Active					
57	55	WMD-3	Active					
58	173	WMD-4	Active					
59	146	WMD-5	Active					
60	33	WMD-6	Active					
61	57	none	Active					
Total	**4554**							

Size and Arrangement of Compartments

An estimated 4,566 acres of fire-maintained communities exists on HMWMA. This figure may differ within and among years with changes in weather, hydroperiods, fuel accumulations, and other factors. Half Moon was initially divided into 4 burn zones and 37 burn units. The zones were Mill Creek South (MCS), Mill Creek North 1 (MCN1), Mill Creek North 2 (MCN2), and Mill Creek North 3 (MCN3). Units have since been refined and added, as when FWC began managing the SWFWMD portion of the area in 2008, resulting in the current configuration of 61 burn units and 4 managements units that are not managed with fire (Figure 1). Ten of these units are 0.5-hectare study plots in scrubby flatwoods. Excluding these study plots, burn units average 101 acres (R:13-302). OBVM identification numbers are now used rather than the original alpha-numeric system based on the 4 zones (Table 1).

Configurations and minimum sizes of burn units are limited by the availability of natural (e.g., forested wetlands) and pre-existing (e.g., road networks) firebreaks, but tempered by efficiency demands and general goals of ecological restoration. Average size and upper limits reflect mitigating constraints imposed by stringent smoke management statutes and safety guidelines. Erratic fire behavior and unpredictable weather changes will require exacting, perhaps unrealistic, prescriptions (e.g., narrow acceptable wind directions) when burning larger units during the growing season.

Maximum sizes of approximately one-half of all burn units are limited by abutment with property boundaries and public use roads. Consolidation of these units with adjacent ones would confer no appreciable ecological benefit, as marginal, "artificial" ecotones would persist. Instead, overall heterogeneity would likely diminish if presently arranged units are consolidated with adjacent units.

Burn unit sizes were restricted further by management needs and habitat requirements of scrub-jays. Where possible, unit configurations were designed to bisect jay territories so as to ensure continual access and availability of suitable post-burn foraging habitat, nest sites, and escape cover. Because several territories overlap adjacent properties, this was often accomplished by perimeter firelines alone.

Burning Schedule

After initial fuel hazard reduction burns, all units will be burned using irregular fire return intervals, within adapted ranges, for each association or community type. Each unit will be classified broadly as scrubby flatwoods, mesic flatwoods, or sandhill, according to the predominate natural association or relict plant species within its uplands. Growing season (summer) burns are preferred over dormant season (winter) fires in units dominated by these natural plant communities because May and June are when most natural fires occur. Units dominated by improved pasture may require dormant season burns in order for fire to carry through the unit. Wetlands will burn in conjunction with fire application to more pyrogenic surrounding communities, but efforts will be made to burn wetlands whenever fire will carry across them.

Fire return intervals will be selected based on community-specific ranges of fire frequencies: mesic flatwoods will be burned every 2 to 5 years and sandhill every 1 to 4 years. Scrubby flatwoods will be burned every 3 to 8 years to allow for oak structure conducive to scrub-jay nesting.

Deviations from these burn schedules may be necessary in specific instances. Should

drought render natural firebreaks ineffective or increase the likelihood of peat/muck fires in wetlands, fire return intervals will be delayed until the next safe opportunity to burn within prescriptions. In addition, scrub-jay management efforts may supersede scheduling of ecological burns in some units. For example, should oak patches approach or exceed dimensions tolerated by jays or burn schedules of contiguous units, including adjacent property, nearly coincide, fire return intervals will be changed to meet specific objectives of jay habitat management.

Firing Techniques

A variety of firing techniques will be used within and among burns, varying with burn unit size, specific objectives, and fuel and weather conditions, to regulate fire intensity and emissions. Usually, initial backfires will be used to secure the downwind part of the unit. Ground and aerial ignitions will continue to be used.

Season and Time of Day

Within safety limits, prescribed burns will be conducted throughout the year to encompass a broad range of weather conditions and phenological stages of flora. Recognizing that fire may produce different results when applied at different times within seasons, efforts will be made to avoid burning repeatedly during the same period within a season. However, peak periods of public recreational use, particularly controlled hunts, may briefly curtail prescribed burning during intervals of some seasons.

Dormant season burns may be needed in some units to reduce heavy fuel loads before subsequent ecological burns. More stable weather conditions, particularly wind speed and direction, during winter permit lower fire intensities and diminish spot-over probability (Bunting and Wright 1974). However, growing season burns will be prescribed for all burn units where fuel loads, ground cover and safety considerations permit their use.

Scrub-jay management objectives may determine season of burn in some areas. To avoid adversely impacting recruitment through increasing the vulnerability of or directly destroying nests, nestlings, or fledglings, spring burns will be avoided in units occupied by scrub-jays.

Generally, burning will occur during daylight hours, preferably after the dew evaporates from fine fuels. No burning will be initiated prior to 9:00 A.M. (F.A.C. 5I-2.06). Every attempt will be made to complete all burning activities by 5 P.M., or at least 1 hour before sunset (F.A.C. 5I-2.06). In cases that merit burning into the night, a permit may be requested from the FFS.

Optimal Weather Conditions

Ideal weather conditions for dormant season burning occur within 1 to several days after the passage of a cold front which has brought 1/4 to 3/4 inches of rainfall. Weather associated with this period generally produces persistent winds with a steady direction, cool temperatures, low relative humidities and sunny days (Wade and Lunsford 1989). Preferred temperatures range from 40° F to 70° F. Preferred relative humidities will vary depending on unit objectives but are considered ideal when between 30% and 60%.

Relative humidities of 35-60% are also preferred for growing season burns. Wind direction should be generally steady with surface wind speeds of 3-12 miles per hour and temperatures of <95 degrees F. Growing season burns will be conducted no more than 15 days after rainfall.

Night-time burning will be conducted only when the stagnation index permits effective dispersion of smoke. For safe and effective night burning, relative humidities must be in the 20

to 75% range for the 5-hour period following the start of the burn, wind speeds at 20 feet must be between 5 and 20 m.p.h., and wind direction must stay within 45 degrees of the starting direction (Lamb 1969).

Critical smoke sensitive areas will always be considered regarding wind speed and direction. Steady in-stand wind speeds (measured at eye-level) of 1 - 3 mph are preferred for control of fire intensity. Specific prescriptions will be developed with these levels in mind but may be altered somewhat to meet unit goals if safety can be maintained.

Special Considerations

Plantings of pines, xerophytic oaks, shrubs, grasses, and forbs may require brief intervals of fire exclusion. Burning units containing artificially regenerated stands will be delayed as needed to ensure protection and establishment of planted flora. Where fire delay is impractical, narrow disc lines can be used to exclude fire from vulnerable plots. Cattle and cattle lease accoutrements require no special considerations but apiary sites, if present, will be protected from fire.

IV. SMOKE MANAGEMENT

HMWMA lies in a rural location, yet smoke screening radii encompass numerous structures and populated areas sensitive to airborne particulate matter that are a product of fire. These include several cities or towns, dense, unincorporated residential developments, county roads, state and federal highways, an interstate highway, hospitals, and airports. Critical smoke sensitive areas near the periphery of the area will necessitate use of narrow wind direction prescriptions and may alter desired firing techniques.

Before developing burn prescriptions, each unit must pass a smoke screening test to determine if burning can be conducted without impacting the areas of concern. Prescriptions will be modified, as needed, to meet considerations of the smoke screening process. Ideal conditions needed to safeguard against problem smoke are a neutral or slightly unstable atmosphere, a mixing height of 1,700-6,500 feet above the ground and transport wind speeds exceeding 9 mph, but below 20. These conditions should promote convection, thereby forcing smoke-filled air straight upward into the transport winds with a high level of dissipation.

V. MOP UP AND MONITORING

After the initial ignition/suppression phase has been completed the burn mop-up standards will be as follows: Mop-up any burning snags, trees or anything that may threaten the fire line within 50’ along the entire perimeter of the burn unit. If necessary, snags will be felled away from the fire line. Any burning logs that may threaten the fire line will be moved further inside the burn unit to a safe location. Pockets of unburned fuel adjacent to the fire line will be burned out or isolated. All areas adjacent to the burn unit will be closely inspected to ensure that fire has not escaped. Monitor continually while any active combustion is present in block. Monitoring the burn unit will continue daily until the fire can be declared out. The unit will be checked in the morning and during peak fire activity periods on the days following the burn and any additional mop-up within 50’ of the perimeter will be conducted if necessary. If needle cast begins to occur before fire is declared out, refresh perimeter fire lines as needed. On the days following the burn inspect all wetland edges for potential duff/ muck fire, if prolonged combustion is present apply

suppression daily until block can be declared out.

VI. PERSONNEL AND EQUIPMENT NEEDED

Personnel

The size of the burning crew will depend on fuel types, fuel accumulations and fire weather. However at least 1 person, who has been certified by the Florida Forest Service of the Department of Agriculture and Consumer Services, will be in attendance at all times on each of the burns in order to meet the requirements listed in F.S. 590.026(5).

A minimum of 4 experienced crew members will be required for burning in light flashy fuels. Five or 6 crew members are needed in the larger units and areas with heavy rough. Training required by crew members is described in Prescribed Burning and Wildfire Suppression Standards policy adopted in March 2011.

Equipment

The following equipment will be readily available and operational on all prescribed burns. In addition, an operational water delivery system and at least 5 gallons water shall be installed on all mobile equipment used in the interior of a burn unit.

-- drip torches (7+)
-- pre-mixed burn fuel (15 gallons)
-- matches or lighter (2+)
-- portable, hand-held radio (6+)
-- ATVs (3+)
-- ATV-mounted water pump, 10+ gallon capacity (3+)
-- backpack water pump (1+)
-- truck-mounted water pump, 200+ gallon capacity (1+)
-- reserve suppression water (10+ gallons)
-- water for personal consumption
-- shovels (2+)
-- fire flaps (3+)
-- first aid kits (2+)
-- an ABC fire extinguisher in all mobile equipment
-- a winch on any vehicle used inside the fire lines

Pending specific prescriptions, vagaries of fire weather, fuel loading, and special safety precautions, the following additional equipment may be needed.

-- bulldozer/plow unit - FFS standby
-- tractor-mounted water pump, 75+ gallon capacity
-- fire-retardant foam
-- leaf blower

The following personal protection equipment is needed by all personnel.

-- flame resistant shirt and pants, or jumpsuit

-- wildland fire hard hat
-- leather gloves
-- leather boots - 8” lace-up
-- eye protection (face shield or goggles)
-- bandana or dust mask
-- hand held radio
-- fire shelter

VII. PERMITS AND NOTIFICATIONS

If any potential for smoke on major roads exists, the Florida Department of Transportation will be advised of a scheduled prescribed fire and requested to temporarily install "FOG/SMOKE" warning signs at recommended locations. A burn permit will be obtained each burn day from the FFS Withlacoochee Center. The required burn prescription will include all necessary information and contingencies (sample prescription Appendix A). Courtesy/safety notifications will be made to nearby landowners, law enforcement agencies, and media. To alert area recreationists, a caution sign will be placed near the entrance to the area during prescribed burning.

AGENCY	PHONE
1) Florida Forest Service	352-754-6757
2) Local radio station (WKTK-FM 98.5)	352-377-0985
3) Local newspaper (Sumter County Times)	352-793-2161
4) Sumter County Fire and Rescue Dispatch Office	352-569-1011
5) Citrus County Fire Dispatch	352-746-2555
6) Marion County Fire Dispatch	352-369-6779
7) DOT-Leesburg	352-315-3100
8) Ventura Ranch (Scott Stephens)	352-303-7305
9) Seven Springs Ranch (Judy Smith 352-454-0735)	352-237-2836
10) Residences along CR 247	various/use letter
11) Southwest Florida Water Management District	352-796-7211

VIII. EVALUATION OF BURN

An initial post-burn evaluation will be conducted on each unit immediately after the fire to determine if unit prescriptions met predetermined objectives. This evaluation will be entered on the unit prescription and include: percent crown scorch, bark char (height), fuel consumption, flame height, fire behavior, smoke dispersion, any escape, adverse publicity, progress toward objectives and other observations. A follow-up evaluation will be completed within one month and will include crown scorch, understory kill, adverse insect activity and other observations. These observations will be incorporated into future burn prescriptions. Photopoints will also help to compare pre- and post-burn conditions.

IIX. LITERATURE CITED

Bunting, S. C., and H. A. Wright., 1974. Ignition capabilities on nonflaming firebrands. J. For. 72:646-649.

Eldridge, I. F., 1935. Administrative problems in fire control in the longleaf-slash pine region of the South. J. For., 33:342-345.

Healy, H. G., 1975. Terraces and shorelines of Florida. Florida Bureau of Geology, Map Series No. 71.

Lamb, R. C., 1969. Nights available for prescribed burns in the lower Georgia piedmont. USDA- FS Res. Note SE-121. SE For. Expt. Sta., Ashville, N.C.

Pyne, S. J., 1982. Fire in America: A Cultural History of Wildland and Rural Fire. Princeton Univ. Press, Princeton, N.J.

Shantz, H. L., 1947. The use of fire as a tool in the management of the brush ranges of California. Cal. State Bull. of Forestry in: Moore, W. H. 1957. Effects of certain prescribed fire treatments on the distribution of some herbaceous quail food plants in loblolly-shortleaf pine communities of the Alabama upper-coastal plain. Proc. S.E. Assoc. Game and Fish Comm. 11:349-351.

Stoddard, H. L., Sr., 1931. The Bobwhite Quail: Its Habits, Preservation and Increase. Scribner's, New York. 559 pp.

Wade, D. D., and J. D. Lunsford., 1989. A Guide for Prescribed Fire in Southern Forests. U.S. For. Serv. Southern Region Tech. Pub. R8-TP 11.

White, W. A., 1970. Geomorphology of the Florida peninsula. Florida Bureau of Geology. Bull. No. 51, 164 pp.

Yamataki, H., A. O. Jones, D. E. Leach, W. E. Puckett, and K. J. Sullivan., 1988. Soil survey of Sumter County, Florida. USDA Soil Conserv. Serv.

12.9 Wildlife Conservation and Prioritization and Recovery Program Strategy (WCPR)

Half Moon
Wildlife Management Area
Wildlife Management Strategy

May 2019

Florida Fish and Wildlife Conservation Commission
Division of Habitat and Species Conservation
Wildlife and Habitat Management Section

Executive Summary

The Florida Fish and Wildlife Conservation Commission's (FWC) Wildlife and Habitat Management Section (WHM) takes a proactive, science-informed approach to wildlife management on lands in the Wildlife Management Area (WMA/WEA) system. This approach uses information from statewide models, in conjunction with input from species experts and local staff, to create a Wildlife Management Strategy for the area. The FWC intends for this Strategy to (1) provide land managers with information on management and monitoring actions that should be taken, provided the necessary resources are available, (2) promote the presence and facilitate the persistence of wildlife species on the area, and (3) provide measurable objectives that can be used to evaluate the success of wildlife management on the area.

This document presents the results of a science-informed process for evaluating the needs of locally important species on Half Moon Wildlife Management Area (HMWMA). The basis of FWC's management is an understanding of natural communities of plants and animals. By restoring and maintaining natural communities, management will benefit the greatest suite of native species reliant upon those natural communities. Monitoring select species verifies whether natural community management is having the desired effect on wildlife. To maximize the potential wildlife conservation benefit, staff considers the role of HMWMA in regional and statewide conservation initiatives throughout the process.

Section 1 introduces the reader to the Strategy.

Section 2 describes historic and ongoing habitat management and monitoring actions on the property.

Section 3 provides an assessment of the area's role in the conservation of locally important species. This section includes habitat management, monitoring, coordination recommendations, and measurable objectives identified.

Section 4 identifies coordination and "beyond the boundaries" opportunities that will assist in conserving these species.

Continuation of resources at current levels would be required to provide for most of the land management recommended in this document. Some of the monitoring recommendations may require additional resources, while FWC can accomplish others with continuation of existing resources.

Acknowledgements

The WCPR Strategy development process is intended to be a collaborative effort between multiple Divisions and Sections within the agency, and coordination with experts beyond the FWC. Without the support of these experts, we would not have successfully prioritized our management, monitoring, and coordination efforts for areas like the HMWMA. As such, we would like to highlight the agency, local, and statewide experts that helped shape the discussion on HMWMA, including Blair Hayman, Andrew Cox, Terry Doonan, Emily Evans, Kevin Enge, Anna Farmer, Jeff Gore, Craig Faulhaber, Adrienne Doyle, Dan Hipes, Corey Morea, Brooke Talley, Brad O'Hanlon Dave Telesco, Chris Tucker, Samantha Cobble, Joe Vaughn, Yasmin Serajfar and many others. Thank you for taking the time and effort to consider our management lands within context of the conservation needs for the region, as well as the State of Florida.

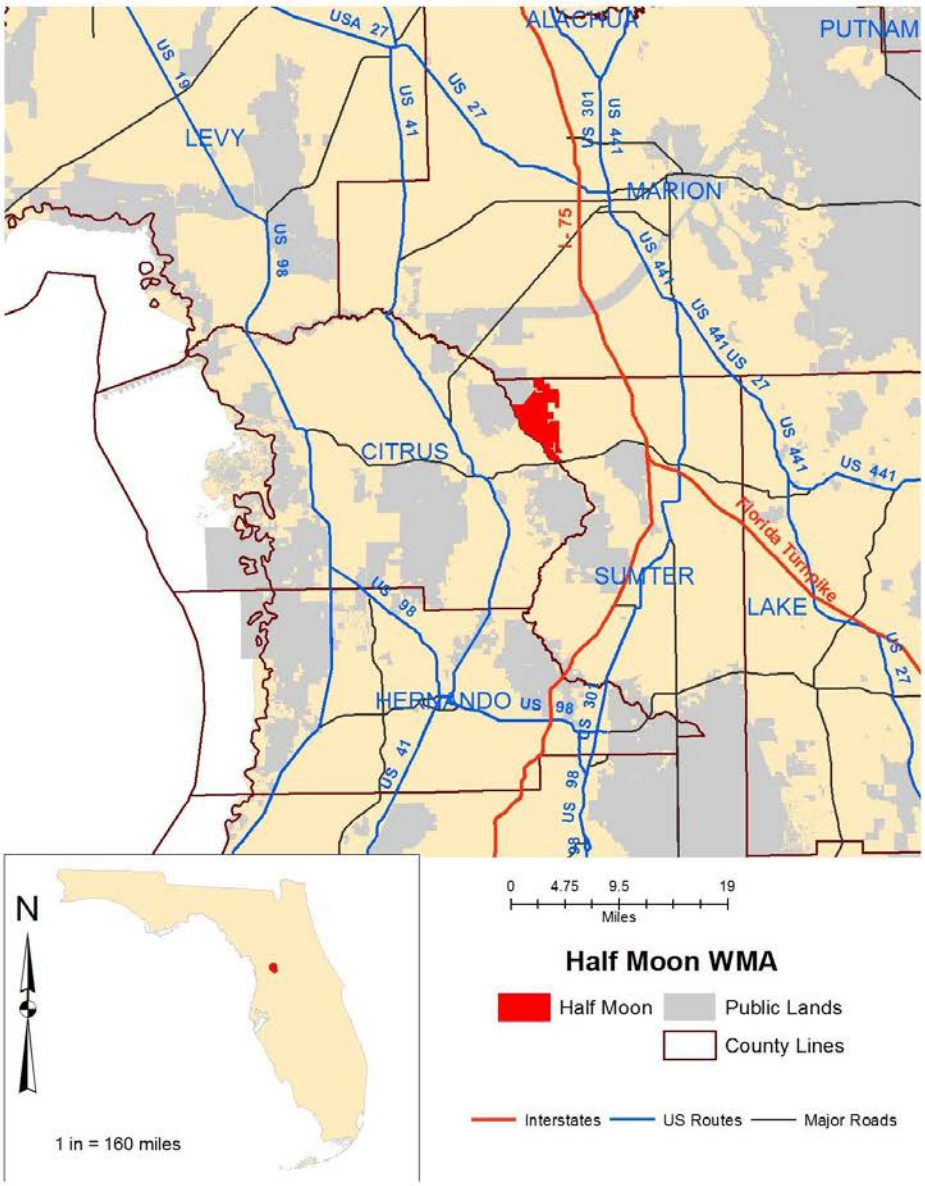
Table of Contents

Executive Summary i
Acknowledgements i
Acronym List iii
Locator Map iv
Section 1: Introduction 1
Section 2: Historic, Current, and Planned Management 1
2.1: Habitat Management 2
2.2 Strategic Management Areas 5
2.3: Monitoring 9
Section 3: Species Assessments 11
3.1: Gopher Frog 11
3.2: Striped Newt 13
3.3: Eastern Indigo Snake 13
3.4: Gopher Tortoise 14
3.5: Bachman's Sparrow 15
3.6: Brown-headed Nuthatch 16
3.7: Florida Sandhill Crane 17
3.8: Florida Scrub-jay 18
3.9: Limpkin 19
3.10: Southeastern American Kestrel 20
3.11: Wading Birds 21
3.12: Colonial Bats 22
3.13: Florida Black Bear 23
3.14: Florida Mouse 24
3.15: Homosassa Shrew 25
3.16: Southern Fox Squirrel 25
3.17: White-tailed Deer 26
Section 4: Coordination and Beyond the Boundaries Considerations 27
Appendix 1. HMWMA Natural community map with GIS-based acreages. 29
Appendix 2. HMWMA locally important species. 30

Acronym List

Acronym	Description
BA	Basal Area
BMPs	Best Management Practices
BMU	Bear Management Unit
BSR	Biological Status Review
DMU	Deer Management Unit
FNAI	Florida Natural Areas Inventory
F.S.	Florida Statutes
FWC	Florida Fish & Wildlife Conservation Commission
FWRI	Fish & Wildlife Research Institute (Subsection)
HMWMA	Half Moon Wildlife Management Area
ISMP	Imperiled Species Management Plan
MU	Management Unit
OBVM	Objective Based Vegetation Management
SaMP	Survey and Monitoring Protocol (System)
SAP	Species Action Plan
SFA	Squirrel Focal Area(s)
SMA	Strategic Management Area
WCPR	Wildlife Conservation, Prioritization and Recovery (Program)
WHM	Wildlife & Habitat Management (Section)
WMA	Wildlife Management Area

Locator Map



iv

Section 1: Introduction

FWC manages the lands in the Wildlife Management Area (WMA) system using a science-informed, proactive approach, which includes an understanding of natural communities of plants and animals. As applied by FWC, natural community management starts by classifying lands into distinct natural communities that we then manage in a way to maintain or enhance the communities' unique structure and function. Land management that has a positive influence on natural community conditions benefits the wildlife living in these habitats.

While natural community management provides benefits to a host of species reliant upon these natural communities, imperiled species sometimes require specific attention. Additionally, subsection 253.034(5) of the Florida Statutes (F.S.) requires all land management plans to include an analysis of the property to determine if significant natural resources, including listed species, occur on the property. If significant natural resources occur, the plan shall contain management strategies to protect the resources. The Florida Forever Act (s. 259.105, F.S.) adds that all State lands that have imperiled species habitat shall include restoration, enhancement, management, and repopulation of such habitats as a consideration in the management plan.

FWC's Wildlife Conservation Prioritization and Recovery Program (WCPR) created this Wildlife Management Strategy for Half Moon Wildlife Management Area (HMWMA) to document the area's role in wildlife conservation, to ensure the management needs for wildlife diversity on the WMA system are met, and to identify the appropriate species monitoring for the area. This Strategy (1) provides land managers with information on management and monitoring actions that should be taken, provided the necessary resources are available, (2) facilitates the persistence of locally important wildlife species on the area and (3) provides measurable objectives that can be used to evaluate the success of wildlife management on the area. By implementing the actions in this Strategy, FWC believes that management will promote the persistence of locally important species, aid in the recovery of imperiled species, and ensure staff are managing all wildlife species on the area for their long-term well-being and for the benefit of people.

Section 2: Historic, Current, and Planned Management

The State of Florida acquired HMWMA through several purchases occurring between 1989 and 1996. The initial 4,458-acre purchase was through the Conservation and Recreational Lands program, and the purpose of acquisition was for protecting the water quality and the natural floodplain, and restoration of altered ecosystems. Subsequent purchases of the Seven Springs/Smith Tract (878 acres in 1992) and the Potter property (122 acres in 1996) were added under the same program. The Southwest Florida Water Management District purchased an additional 4,056 acres of riverine corridor and associated uplands under the Save Our Rivers program and granted lead management responsibility to FWC in 2008, bringing the current acreage for HMWMA to 9,554 acres. For more details on acquisition, the see the Half Moon WMA Management Plan.

Prior to state acquisition, HMWMA was managed primarily for cattle production. Grazing on 4,290 acres continues under a lease agreement with a local livestock operation. Management practices included land clearing and conversion to improved pasture. This conversion transformed much of the mesic flatwoods and some sandhill to bahiagrass (*Paspalum notatum*) pasture. Management units (MU) that are primarily in semi-improved or improved pasture are difficult to burn during the growing season due to the spring flush of bahiagrass. Staff burn these MUs in the dormant season when burns are not as effective at controlling hardwood encroachment. Grazing often reduces fuels making it difficult to carry fire with sufficient intensity to control woody species. These alterations to the native plant communities have reduced the suitability and amount habitat available to several species addressed in this document.

2.1: Habitat Management

Actively managed natural communities include mesic flatwoods, scrubby flatwoods, wet flatwoods, and sandhill, and account for approximately 1,599 acres (Appendix 1). Other upland communities actively managed on the area include semi-improved pasture (227 acres), improved pasture (991 acres), and pine plantation (20 acres). Staff manage these communities with prescribed fire, grazing, and mechanical and chemical vegetation control.

In addition to prescribed fire, game management on HMWMA includes planting of a dove field, food plots for deer and turkey, and mowing or disking permanent wildlife openings. The dove field is 22 acres and the first planting occurs in early July to ensure the field is ready for the beginning of dove season. Staff plant small grains such as sorghum, browntop millet, or proso millet, although sunflowers, corn and benne can be planted in strips within the field. As the first planting is ripening in late August or early September, staff mow strips to distribute seed on the ground and the strips are replanted to produce a second crop and extend seed availability later into the dove season. Staff maintain several 1-9 acre food plots, which they plant each year in spring and fall with a total 20-25 acres planted each year. Spring plantings include iron clay peas, sorghum, or small grains, while fall plantings include winter greens, clover, and winter wheat. Additionally, 20-30 acres of permanent wildlife openings are maintained by mowing or disking each year.

Timber thinning has been conducted on about 400 acres of HMWMA since 2009 primarily in the mesic and scrubby flatwoods community. Additional thinning will occur as needed to open the canopy and provide sunlight for herbaceous ground cover improvement. Mesic flatwoods stands warrant thinning as they approach 90-100 ft^2/acre basal area (BA) and are reduced to 50-60 ft^2/acre BA when thinned, while stands managed for scrubby flatwoods will be thinned to 30-40 ft^2/acre BA.

Mechanical treatments are an important component of habitat management on the area. Staff used roller chopping to manage saw palmetto (*Serenoa repens*) and oak (*Quercus sp.*) encroachment on approximately 660 acres since the drafting the 2009 WCPR Strategy. Staff applied mowing and mulching equipment to treat shrub encroachment on over 1,300 acres since 2009. Chainsaw felling water oaks (*Q. nigra*) and laurel oaks (*Q. hemisphaerica*)

on 590 acres have been effective in reducing oak encroachment. These treatments will continue in areas that are open to grazing and dominated by bahiagrass since it will be difficult to effectively apply fire.

Staff use herbicides to control excessive or site-inappropriate oaks and invasive non-native species as well as bahiagrass in old pastures; however, invasive species are limited to scattered small infestations and are a manageable problem on HMWMA. Staff treat scattered, small infestations of tropical soda apple (*Solanum viarum*), Japanese climbing fern (*Lygodium japonicum*), Chinaberry (*Melia azedarach*), skunk vine (*Paederia foetida*), cogon grass (*Imperata cylindrica*), camphor tree (*Cinnamomum camphora*), Caesarweed (*Urena lobata*), and Chinese tallow (*Triadica sebifera*) as needed. Since 2009, staff have treated 250 acres of invasive exotic plants.

A 4,290-acre cattle grazing lease is in effect through October 2022. Stocking rates are one-half the animal units recommended by United States Department of Agriculture Natural Resources Conservation Service grazing specialists and result in about 59 acres per animal unit. The current lease does not require a rotational grazing strategy or restrict grazing spatially or temporally within the lease area. This imposes some limitations on management including limiting opportunities for natural community restoration and reducing the effectiveness of prescribed fire in areas where grazing significantly reduces fuels. Further, while pasture is a community that many locally-important species, such as gopher tortoise (*Gopherus polyphemus*), use on HMWMA, pasture is typically less suitable for these species and results in the species occurring in lower densities than could be supported if the historic natural community were restored.

Staff have initiated or completed native herbaceous ground cover restoration on 115 acres. In 2005, restoration of 23 acres of improved pasture began with fencing cattle out and applying a broad-spectrum herbicide (Glyphosate) to control bahiagrass. After controlling the bahiagrass, staff tilled the site and planted a mix of native seeds collected from a donor site. While this effort was ultimately successful, several years of spot spraying bahiagrass was required, and the effort was expensive and extremely labor intensive. According to the 2016 monitoring report for the 23-acre site, characteristic bunchgrasses, especially wiregrass (*Aristida stricta*), continue to increase and are nicely distributed throughout the field. There is good cover of graminoids/forbs, although pioneer species still dominate the cover. The report recommended continued efforts to control bahiagrass by spot spraying with a selective herbicide (Imazapic), reduce coverage of blackberry (*Rubus spp.*) with a selective herbicide (Tryclopyr), and mow hairy indigo (*Indigofera hirsute*) patches in late summer prior to setting seed.

Subsequent restoration efforts have focused on areas not included in the grazing lease, eliminating the cost of fencing out cattle. The use of more selective herbicides to target bahiagrass and direct seeding without tilling the seedbed has reduced costs and been very successful. Because the selective herbicides and elimination of tillage retained more forbs, these restoration areas have greater diversity than pasture and carry growing season

fire enhancing the ability of staff to control unwanted shrub and hardwood encroachment. Staff will continue spot spraying to control bahiagrass as necessary, but prescribed fire will be the primary tool for maintaining these areas. Staff may choose to remove oaks manually, specifically along pasture areas where fire doesn't run hot enough to burn into the hammock.

Over the next 10 years, maintenance and enhancement of current sandhill, and the mesic and scrubby flatwoods communities will be the focus of habitat management on HMWMA. Some restoration of altered communities will occur in areas where cattle are currently excluded. Upon the expiration of the current cattle lease, staff can conduct an assessment of potential restoration areas to exclude from subsequent leases. If new areas are removed from the grazing program, staff will develop a restoration plan to guide restoration efforts. The actions outlined below will improve habitat for several listed and locally important species that use mesic and scrubby flatwoods, including Bachman's sparrow (*Peucaea aestivalis*), Florida scrub-jay (*Aphelocoma coerulescens*), gopher tortoise, and striped newt (*Notophthalmus perstriatus*).

Timber Management

- When planning timber activities, staff or contractors will continue thinning pine plantations using 3rd row thin and logger select thin of leave rows to achieve a residual BA of 50-60 ft^2 in mesic flatwoods and sandhill.
- Staff will plant longleaf pine (*Pinus palustris*) in ground cover restoration areas after native ground cover is adequately established and turf grasses are controlled.
- In addition, staff will continue planting longleaf in areas with native ground cover where BA is below desired levels.

Mechanical Treatments

- Staff or contractors will utilize understory brush mowing and/or light-drum roller chopping, especially in areas of low pine BA, to reduce height and coverage of woody species and saw palmetto, to favor herbaceous species. Areas supporting a desirable cover of wiregrass, especially natural sandhill, will only be mechanically treated if management objectives cannot be met with prescribed fire or other methods. Excessive or repeated disturbance may result in reduction of this ecologically important species. As all mechanical treatments need to be followed by prescribed fire, staff will not mechanically treat more than can be burned.
- Staff will continue mowing brush along firebreaks where fire shadows occur due to lack of heat.
- Staff will mow and burn oak encroached areas to prepare sites for ground cover restoration.
- Staff or contractors will utilize heavy equipment or chainsaws to keep hammocks from spreading, and where appropriate, reduce hammocks that occur on historic sandhill.

Chemical Treatments

- As needed, staff will utilize herbicide treatments to control invasive non-native vegetation (Japanese climbing fern, tropical soda apple, Caesarweed, etc.).
- Staff plan to utilize herbicide treatments to prepare sites for native seed introduction to restore ground cover.
- Staff will continue herbicide treatments in native ground cover areas with localized turf grasses.
- Staff or contractors will utilize herbicide treatments to keep hammocks from spreading, and where appropriate, reduce hammocks that occur on historic sandhill.

Direct Seeding (Ground Cover Restoration)

- Staff plan to plant native seed mixes to establish native grasses and forbs in areas converted to turf grass pasture.
- Staff will plant native grass plugs in areas where direct seeding is impractical, and to supplement specific species in direct seeded areas.

Prescribed Fire

- Staff will continue to burn improved pasture, depression marshes, sandhill and flatwoods, alone or in combination with one or more of the above actions, on a <3-year rotation.
- Managers will strive for a 2-year average fire return interval that incorporates dormant and growing season fire in mesic flatwoods.
- As part of the Strategic Management Area, staff will plan to burn stands managed as scrubby flatwoods for Florida scrub-jays on a 4-5-year rotation.

Ephemeral Wetlands

- To facilitate burns carrying through wetland basins, staff plan to reduce shrub encroachment around the edges. Work will include hand clearing, cut-stump herbicide treatments, and foliar herbicide treatments.
- Staff plan to remove pine regeneration established in and around the wetland basin.

2.2 Strategic Management Areas

The 2009 WCPR Strategy established Strategic Management Areas (SMAs) to improve habitat for the Bachman's sparrow, striped newt, and Florida scrub-jay. The MUs designated for these SMAs did overlap to some degree, but the prescribed management actions for each species were unique. Frequent use of prescribed fire was one management practice common to all the SMAs and monitoring for the target species is used to evaluate progress.

The Striped Newt SMA focused on assessing ephemeral wetlands, conducting restoration actions as needed, and ensuring prescribed fire was applied as needed in the upland and wetland habitat. Staff largely accomplished these recommendations within 10 years of the Strategy's implementation. The wetlands have had sufficient water to conduct dip-net surveys in 3 of the past 9 years, but striped newts have not been detected. Gopher frog (*Lithobates capito*) tadpoles were observed during surveys conducted in FY 13-14 within the SMA. Staff will continue to monitor for striped newts, and planned habitat management will maintain the improvements made since 2009, so the SMA designation is no longer necessary for this purpose.

The strategy for the Bachman's Sparrow SMA was to focus on frequent prescribed fire, initiate groundcover restoration, and conduct timber thinning where needed. Staff initiated these actions, but this work is ongoing and will continue for the term of the updated WCPR Strategy. Bachman's sparrow call surveys began in 2012 and continue to be conducted annually across the WMA; 7 of the survey stations are within the SMA.

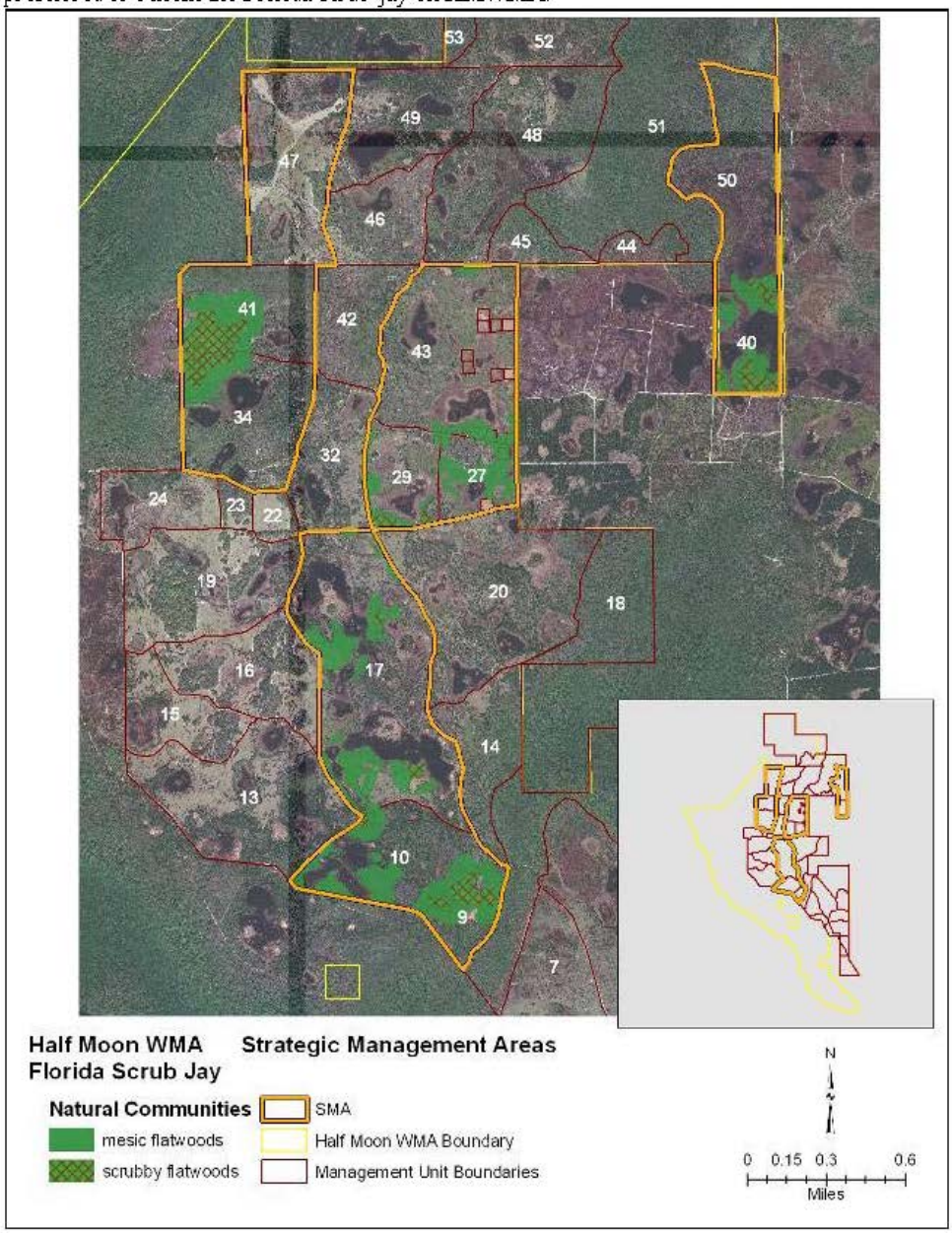
Surveyors detected Bachman's sparrows at 5 of the 7 survey stations at least once, and sparrows are consistently detected at 2 or more stations in the SMA each year. Staff will continue monitoring for Bachman's sparrow, and planned habitat management will sustain the improvements made since 2009 with the purpose of the SMA achieved, there is no need to continue the Bachman's sparrow SMA.

The Florida Scrub-Jay SMA focused on maintaining the occupied habitat on HMWMA, while attempting to expand the available habitat by managing some mesic flatwoods to resemble scrubby flatwoods in structure. This was intended to both increase the available habitat and to improve connectivity between isolated pockets of scrubby flatwoods with occupied habitat. We evaluated habitat management success by using Objective Based Vegetation Management (OBVM) monitoring, applying the structural characteristics of scrubby flatwoods to the mesic flatwoods within the SMA, thus quantifying whether the habitat management objectives were achieved. Staff have accomplished the SMA recommendations for the most part, as reported in 2016 OBVM monitoring which showed that mesic flatwoods within the SMA had similar structural conditions as scrubby flatwoods. Some loss of habitat has occurred on adjacent private lands next to some MUs in the SMA contributing to the challenge of maintaining sufficient habitat to support scrub-jays.

When we established the SMA, monitoring and banding of scrub-jays had been underway since at least 2001. In 2001, HMWMA supported 8 family groups consisting of approximately 35-40 scrub jays. Since 2009, the population has declined and few fledglings have been produced. Staff discontinued banding in 2014 to avoid unnecessary stress on the remaining birds. No fledglings have been observed in the last few years and only one or two family groups have been detected. While banding has been discontinued, monitoring by Jay Watch program volunteers with assistance from staff will continue. Additionally, staff will continue to document scrub-jays observed outside of the structured Jay Watch surveys.

The current habitat management effort within the SMA to manage mesic flatwoods toward a scrubby flatwoods structure will continue. The OBVM program will continue to evaluate the mesic flatwoods within the SMA using the structural attributes associated with the scrubby flatwoods natural community. The SMA designation (Figure 1) will be maintained and will be reevaluated when the WCPR Strategy is revised in 2028.

Figure 1. Management units and natural communities in which specific actions are prescribed to benefit the Florida scrub-jay on HMWMA.



8

2.3: Monitoring

Monitoring recommendations in the 2009 Strategy included: conducting avian point counts for Bachman's sparrow, brown-headed nuthatch (*Sitta pusilla*), and northern bobwhite (*Colinus virginianus*): monitoring limpkins (*Aramus guarauna*) on Mill Creek with a protocol that broadcasts calls; conducting gopher tortoise surveys; dip-netting wetlands identified by Fish and Wildlife Research Institute (FWRI) as potential breeding sites for striped newt and gopher frogs; monitoring nest boxes for southeastern American kestrel (*Falco sparverius paulus*), trapping to detect Florida mouse (*Podomys floridanus*); monitoring bat houses; and opportunistically monitoring other species of interest. Except for the limpkin surveys, staff accomplished these monitoring recommendations during the 10-year lifetime of the Strategy. The limpkin survey of Mill Creek proved to be a logistic challenge due to low water levels, but staff did participate in limpkin surveys along the Withlacoochee River which is the western boundary of the WMA.

In addition to monitoring actions outlined in the Strategy, staff annually conduct spotlight line distance surveys for white-tailed deer (*Odocoileus virginianus*), maintain 10 wood duck and 26 eastern bluebird (*Sialia sialis*) nest boxes on the WMA, and operate check stations for 52 days during deer, Osceola turkey (*Meleagris gallopavo osceola*), and small game seasons. Staff maintain harvest data on all animals hunted on HMWMA, including feral hogs (*Sus scrofa*).

Species Specific Monitoring

Some species warrant dedicated monitoring for one or more reasons. Imperiled species that are rare or declining may justify a dedicated effort to monitor local populations. In other cases, the species being monitored fulfills a role of an indicator species, a species whose presence indicates well managed natural communities that will also benefit other species. Some species exist as both imperiled and as an indicator. The Area-Specific Species Assessments (Section 3) contain more details about these monitoring actions. Species that will continue to be monitored specifically are:

- Striped newt
- Gopher tortoise
- Bachman's sparrow
- Brown-headed nuthatch
- Florida scrub-jay
- Southeastern American kestrel
- White-tailed deer

Inventory-Style Monitoring

Conducting periodic inventories on lands within the WMA system accomplishes several purposes. Inventories enable staff to provide an up-to-date species list for the area and enhance species lists for cryptic, fossorial, or nocturnal species that may not be documented on the area by opportunistic observations. Additionally, conducting an

inventory may be a more efficient way to document species occurrence than other methods, such as opportunistic monitoring.

During the 10-year lifetime of this Strategy, staff will conduct taxa inventory surveys for the main terrestrial vertebrate species as resources allow, with a goal to repeat at approximately 10-year intervals. Surveys on HMWMA will include a drift fence array for reptiles and amphibians, small mammal trapping, and an acoustic bat survey. For species identified as unlikely to be captured by current methods, cryptic species and other special cases modifications or enhancements to existing survey methodologies will be considered.

Document Occurrence

To improve the area-specific documented species list, staff document opportunistic observations of species as they are encountered. While staff only need enter opportunistic observations for common species on an occasional basis, there are other species for which staff should document every encounter. Collecting this information will help further our understanding of species' ranges statewide as well as the area's role in the conservation of these species. Record observations of these species when encountered using WHM's Opportunistic Observations for Wildlife protocol and enter the data into the Survey and Monitoring Protocol (SaMP) database so it will be available to other FWC sections and divisions, as well as cooperating agencies and organizations. It is not necessary to fill out the opportunistic monitoring form if data on these species is collected as part of another monitoring effort (e.g., herp arrays). Species identified for opportunistic monitoring are:

- Ornate chorus frog (*Pseudacris ornata*)
- Eastern diamondback rattlesnake (*Crotalus adamanteus*)
- Eastern indigo snake
- Florida pine snake (*Pituophis melanoleucus mugitus*)
- Suwannee cooter (*Pseudemys concinna suwanniensis*)
- Brown-headed nuthatch (in novel locations)
- Burrowing owl (*Athene cunicularia*)
- Florida sandhill crane (nests or dependent young)
- Florida scrub-jay
- Imperiled wading birds (nesting colonies)
- Limpkin (nests or dependent young)
- Short-tailed hawk (*Buteo brachyurus*)
- Southeastern American kestrel (breeding season, mid-March to May)
- Southern bald eagle (*Haliaeetus leucocephalus*)
- Swallowed-tailed kite (*Elanoides forficatus*) (nests only)
- Eastern spotted skunk (*Spilogale putorius*)
- Florida black bear (sows with cubs)
- Florida long-tailed weasel (*Mustela frenata peninsulae*)
- Homosassa shrew (*Sorex longirostris eionis*)

Section 3: Species Assessments

Creating species assessments for locally important species on HMWMA involved several steps. First, WCPR staff created a list of locally important species for the area (Appendix 2), starting with the listed and recently delisted species in the Imperiled Species Management Plan (ISMP) that are known to occur or could potentially occur on the area. Staff then considered adding additional species to this list, including: species that were identified in the area's purpose for acquisition; species for which staff conduct significant monitoring or management for conservation, recreation, or public-viewing purposes; candidates for federal listing; species recognized as habitat management indicators, keystone species, or umbrella species; and species for which occurrence data is lacking. In addition to the ISMP, references staff used when creating the list included: statewide potential habitat models, created by FWC's FWRI using Cooperative Land Cover V.3.2; agency documents such as the previous WCPR Strategy and the area's Management Plan; and input from local staff and species experts.

After creating the species list, WCPR staff drafted assessments outlining proposed management actions for each species (except those for which documenting occurrence was the only needed action identified by experts). Then staff conducted a workshop, held August 15-16, 2018, at which area managers, species experts, and section leaders reviewed the draft species assessments and discussed HMWMA's potential role in the conservation of locally important species. To determine management actions needed for each species, workshop participants considered the species' status on the area; the current condition of the area's natural communities; the amount and spatial arrangement of the species' potential habitat on the area and adjacent lands; the species' response to management; and any local overriding factors (e.g., status of species in the region, local declines or extirpations). Additionally, staff considered management actions identified in FWC's Species Action Plans (SAPs), Regional Assessments, and the area's Management Plan. Using the information from the workshop, staff drafted the Strategy and sent it to species experts and other stakeholders for review. Following the review, the Strategy was finalized and implemented.

This section summarizes the assessment for each species discussed in the workshop and the actions agreed on by workshop participants. Each assessment outlines the species' status on the area and the current condition of its habitat, planned habitat management actions, planned monitoring actions, and the area's role in conservation of the species. In addition, some assessments may identify species management recommendations, which refer to actions such as translocation, restocking, or installing artificial cavities.

3.1: Gopher Frog

Current Condition: FWC removed gopher frogs from the list of Species of Special Concern with the development of a Gopher Frog SAP and the adoption of the ISMP in 2016. Staff first documented on HMWMA during a 1998 drift fence survey with over 50 captures. Since the implementation of the 2009 WCPR Strategy, no drift fence surveys have been conducted, but gopher frogs were detected during dip-net surveys in 2014 and documented in

burrows during a gopher tortoise survey in 2016. This species is management responsive, and the interspersion of upland and ephemeral wetland habitat on the area makes HMWMA a good candidate for maintaining and enhancing habitat for gopher frogs. While gopher frogs can use some pasture, past alteration of the xeric natural communities has decreased suitability for this species on HMWMA.

For breeding, gopher frogs rely on ephemeral to semi-permanent, grass-dominated wetlands that lack predatory fish. After tadpoles metamorphose, frogs move into uplands and most often occupy gopher tortoise burrows and are also found in rodent burrows and crayfish holes. This species rarely moves >1 mile from their breeding habitat. Gopher frogs primarily inhabit xeric habitats like sandhill, scrubby flatwoods, and scrub, but have been documented in mesic flatwoods, upland pine and improved pastures. Staff will improve habitat conditions for gopher frogs through ongoing prescribed fire application in upland communities, increasing the frequency of fire in ephemeral wetlands, and restoring natural communities where practical.

In 2009, the Coastal Plains Institute conducted an inventory of wetlands on HMWMA and found that 61% of inventoried wetlands had impacts from grazing cattle. Additionally, 40% of inventoried wetlands were affected by woody encroachment. Since 2009, staff made progress reducing woody encroachment, but the grazing lease is still in place.

Habitat Management: Frequent growing season fire conducted every 1-3 years in both upland and wetland habitat will improve conditions for this species. To the greatest extent practical, staff will prioritize management units with priority wetlands for the application of prescribed burns in late spring or early summer when wetlands are dry so that fire carries through the basins. Staff will continue efforts to reduce the hardwood midstory in the uplands surrounding potential breeding wetlands through a combination of mechanical treatments and prescribed fire. They will continue to avoid placing fire-breaks along wetland ecotones, as this can alter or destroy the herbaceous component preferred by this and other amphibians, as well as prevent fire originating in the uplands from reaching the wetlands. If necessary, wet-lining can be an alternative to mineral firebreaks.

A combination of mechanical treatments, herbicide treatments, and prescribed fire is necessary in overgrown sites where the use of fire alone is not effective. When using these methods, take precautions to prevent soil rutting and overspray from herbicides that could damage desirable herbaceous vegetation.

Monitoring: Gopher frogs can be documented during drift fence surveys, dip net surveys, and gopher tortoise surveys that include burrow scoping. Because inventory-style monitoring and other protocols are likely to detect this species, staff do not need to conduct species-specific monitoring on HMWMA.

Area's Role: The role of HMWMA in the conservation of the gopher frog is to provide suitable breeding and foraging habitat to support the local population. Staff will ensure the area fulfills this role by applying the above natural community management in

order to emphasize frequent, growing season fire (where practicable), and ensure the fire carries through priority wetland basins.

3.2: Striped Newt

Current Condition: Striped newts were first documented on HMWMA during a 1998 drift fence survey. Dip-net surveys have been conducted three times since the 2009 Strategy was implemented, but surveyors did not detect striped newts. The striped newt is a species of conservation concern due to the loss of habitat from agriculture, intensive silviculture and development, and degradation of habitat due to fire suppression and alteration of breeding ponds. Prior to acquisition, significant acres of HMWMA's sandhill that were likely suitable for striped newt were altered by fire suppression and pasture creation. While staff have undertaken actions to improve a number of these communities onsite, the area currently has less potential for the species.

Striped newts rely on ephemeral to semi-permanent, grass-dominated wetlands that lack predatory fish for their breeding habitat. After larvae metamorphose, terrestrial efts move into xeric uplands, primarily sandhill, where little is known about their natural history. This species rarely moves >1 mile from their breeding habitat.

Habitat Management: Due to the need for conservation of this species and its historic presence on HMWMA, the previous WCPR Strategy designated a SMA for this. The SMA included MUs where newts were previously captured, adjacent xeric uplands and potential breeding ponds within dispersal distance of the xeric uplands. Staff implemented all the habitat management recommendations for the SMA, and dip net surveys will continue in partnership with FWRI staff. Therefore, the SMA designation is no longer necessary. However, staff will continue applications of prescribed fire in upland communities and emphasize their efforts to increase the frequency of fire to a ≤ 3-year rotation in ephemeral wetlands. These actions will improve habitat conditions.

Monitoring: FWRI has established a statewide monitoring program for striped newts. Staff will continue dip net surveys in partnership with FWRI and conduct a general drift fence survey of herpetofauna approximately every 10 years to maintain an accurate species list for HMWMA, as this will likely detect striped newts on the area should they occur.

Area's Role: The role of HMWMA in the conservation of the striped newt is to provide suitable breeding and foraging habitat to support the local population. Staff will fulfill this role by continuing apply prescribed fire on a ≤ 3-year rotation in upland communities, ensuring fire carries through ephemeral wetlands. Planned and ongoing management will meet the needs of the striped newt, and should be confirmed by documenting the species on-site, should they ultimately occur.

3.3: Eastern Indigo Snake

Current Condition: The Eastern indigo snake (*Drymarchon couperi*) is federally listed as threatened. Since the implementation of the 2009 WCPR Strategy, staff documented eastern indigo snakes on HMWMA on several occasions. Eastern indigo snakes

are commonly associated with sandhill and scrubby flatwoods, but they also use other habitats including mesic flatwoods, hardwood hammocks, marsh edges, and pasture. Gopher tortoise burrows are important refuge sites for indigo snakes and provide protection from cold and desiccation. Indigo snakes will also use armadillo burrows, hollowed tree stumps, ground litter, trash piles, and rock piles for refuge.

Habitat Management: Management actions that maintain or enhance habitat for this species include prescribed fire and mechanical treatments that restore natural community structure and function. Stump removal may be damaging to indigo snakes as it removes an alternative refugia for smaller snakes, especially in areas without gopher tortoises. Staff will continue to retain stumps and other coarse woody debris during land management activities as potential indigo snake refuge sites. When pile burning, managers will light piles from only one side to allow snakes to escape. Managers plan to use low intensity site preparation (i.e., prescribed fire, light mechanical work) over more intensive actions like root raking. Because indigo snakes evolved in a landscape that historically burned, they will benefit from habitat management that includes prescribed fire. Staff will therefore plan natural community management that mimics the natural fire regime for the natural community. By thinning pine plantations or pine flatwoods is beneficial to indigo snakes, staff will ensure management opens the canopy to promote understory development. Staff will plan timber management to shift towards longer rotations and the establishment of site-appropriate species.

Monitoring: Because there is no adequate species-specific monitoring technique available, opportunistic monitoring is recommended. General herpetological drift-fence surveys should be conducted every 10 years on HMWMA. When planning drift fence arrays in upland habitats, surveyors should include large box traps in addition to funnel and pit-fall traps, as this type of trap is more likely to capture large snakes like the indigo snake. Eastern indigo snakes may be documented using gopher tortoise burrows also during future burrow-scoping surveys. While these surveys will not provide population-level information, they can indicate that the site is being used by indigo snakes and contributing to its conservation.

Area's Role: The role of HMWMA is to enhance and maintain the suitability of habitat to support indigo snakes. Staff will ensure the area fulfills this role by continuing to restore pine communities through prescribed fire on a ≤ 3-year rotation, thin timber as needed, and conduct mechanical and chemical treatments to reduce hardwood midstory. However, even if FWC management continues to accommodate the needs of this species, the persistence of indigo snakes likely depends on management actions occurring on adjacent public and private lands.

3.4: Gopher Tortoise

Current Condition: The gopher tortoise is State-listed Threatened and a candidate for federal listing, making it a high statewide priority. The gopher tortoise is common on HMWMA and surveys completed by staff of the Florida Natural Areas Inventory (FNAI) in 2008 and 2016 indicate a stable population that meets the criteria for a viable population.

The current population is estimated at approximately 820 individuals distributed over 2,400 acres. The burrows were classified by size (small, medium, large) and the size distribution indicated a healthy population with recent recruitment. Less than 160 acres are currently high quality sandhill and scrubby flatwoods habitats with the remainder being pasture, mesic flatwoods, and xeric hammock. Gopher tortoise densities in various communities varied greatly from 0.14/acre in xeric hammock to 0.3/acre in pasture to 1.0/acre in sandhill.

A large portion of the occupied habitat is pasture, and on HMWMA, gopher tortoises reach higher densities in the scrubby flatwoods and sandhill than in pasture. As pasture is restored to historic natural communities, restored habitats could support higher tortoise densities. Despite this restriction, the current prescribed fire program and ground cover restoration efforts will improve the quality and quantity of habitat for gopher tortoises.

Habitat Management: FWC's Gopher Tortoise Management Plan outlines actions to improve the status of the species. The plan recommends managing potential tortoise habitat primarily with prescribed fire to achieve the conditions identified for FNAI reference sites. The natural community management described in Section 2.1 is in accordance with this guidance, and staff will continue to follow the recommended management practices.

Additionally, staff plan actions to prevent direct mortality and collapsing burrows during management activities, such as flagging burrows in advance of mechanical treatments that use heavy equipment. Since gopher tortoises are generally less active and remain in burrows during the winter months, staff will also avoid mechanical treatments that use heavy equipment (e.g., roller chopping, timber harvesting) during the winter in sites where tortoises occur. In accordance with recommended management practices, staff will continue to conduct activities during the winter to avoid disturbing burrow aprons during the time when eggs or hatchlings are most likely present (May-September), and when hatchlings are most abundant (September-October). However, they also consider how timing of the treatment will affect management results, as growing season treatments are frequently more successful in creating the diverse groundcover required by tortoises. When using contractors to conduct mechanical treatments, staff will ensure they take precautions for tortoises and burrows.

Monitoring: HMWMA staff will continue to monitor the gopher tortoise population at a ten-year interval to ensure management efforts result in a stable or growing population.

Area's Role: By continuing efforts to enhance or restore the structure and function of natural communities to better suit the gopher tortoise, HMWMA will fulfill the area's role in the recovery of this species. The area goal is to increase the tortoise population as natural communities improve and altered communities are restored to tortoise-preferred conditions. As staff apply management to improve habitat quality, we expect to see an in increase the population of gopher tortoises on the area.

3.5: Bachman's Sparrow

Current Condition: Bachman's sparrows are recognized as 'indicator species' whose continued presence indicates well-managed pine-grassland savannas. Since 2010, HMWMA staff have conducted avian point counts annually at 35 stations. During these surveys, staff

documented Bachman's sparrows in all years ranging from only 1 station in 2010 to 17 stations in 2012 with an average of 8.4 stations per year. Bachman's sparrows have been recorded at 26 of the stations in at least one year, and at 5 of 7 stations within the Bachman's Sparrow SMA. Regionally, the public has entered Bachman's sparrow sightings into eBird.org for HMWMA and most of the public lands nearby.

The Bachman's sparrow is a habitat specialist that is closely associated with natural communities containing diverse herbaceous groundcover maintained by frequent fire (≤ 3-year rotation). The species requires open spaces between grass clumps since it spends most of its time on the ground. Potential habitat for this species on HMWMA consists of sandhill, mesic flatwoods, scrubby flatwoods, and improved pastures that were historically one of these communities. Therefore, ongoing and planned actions to improve and restore these communities will improve habitat for Bachman's sparrows. Staff have implemented all the habitat management recommendations for the SMA and surveys will continue; therefore, the SMA designation is no longer necessary.

Habitat Management: Frequent (≤ 3-year rotation) use of prescribed fire improves habitat quality for Bachman's sparrows, and is the primary land management tool used to restore and maintain habitat for the species. Fire is critical to sustaining this species, as use of an area by Bachman's sparrows declines rapidly around 18 months post-fire, and the species may abandon habitat if fire is excluded for >3 years. Since males use small shrubs as singing perches, staff plan mechanical treatments to retain some small patches of shrubs. Staff will continue to follow mechanical treatments with a prescribed burn to stimulate growth of grasses and forbs, and the natural community management discussed in Section 2.1 is compatible with the needs of this species.

Monitoring: Since the Bachman's sparrow can serve as a habitat indicator, continued monitoring will help gauge the effectiveness of management efforts. We expect distribution and relative abundance trends will increase over time as habitat improves. Therefore, we identified the following objective related to monitoring:

Objective 1: Continue to monitor the Bachman's sparrow population to ensure management is resulting in a stable or growing population.

Area's Role: The role of HMWMA in the conservation of the Bachman's sparrow is to provide suitable breeding and foraging habitat to support the regional population. The goal for this species is to maintain a viable, self-sustaining population that has the potential to function as part of a larger regional population. Staff will fulfill this role by continuing to restore pine communities through prescribed fire on a ≤ 3-year rotation, timber harvests to thin pines as needed, and mechanical and chemical treatments to reduce hardwood midstory.

3.6: Brown-headed Nuthatch

Current Condition: Brown-headed nuthatches are identified as 'indicator species' whose continued presence indicates well-managed pine communities, especially more mature pine communities. Since the implementation of the 2009 WCPR Strategy, the brown-headed nuthatch has been documented on HMWMA occasionally during the annual spring

Bachman's sparrow surveys and opportunistically. These records occur just north of Mill Creek in MUs 9, 10, and 13. This corresponds to some of the best mesic flatwoods habitat with mature pines and open midstory. Much of the potential habitat on HMWMA has younger stands of pine or lack pines, and as these pines mature, many of the areas currently supporting Bachman's sparrow could also support brown-headed nuthatches.

This primary cavity nester prefers open stands of mature pines managed with frequent fire. Older pine forests (>35 years for longleaf or slash pine) and stands with BA between 35–50 ft^2/acre are suitable, although nuthatches can use pine stands with younger trees and higher BA. Brown-headed nuthatches are weak excavators and they occasionally use cavities excavated by other species. This species prefers old decaying oaks with a diameter at breast height (dbh) of <10 inches for cavity excavation. Snag protection during management activities can maintain suitable cavity trees for this species to excavate. As timber is thinned and remaining trees mature, habitat conditions will improve for this species.

Habitat Management: Brown-headed nuthatches prefer snag-rich communities, maintained by prescribed fire on a ≤ 3-year rotation. Staff will continue efforts to restore pine communities through prescribed fire on a 1-3-year rotation, timber harvests to thin pines as needed, and mechanical and chemical treatments to reduce excess hardwood midstory, while retaining some hardwoods to provide for future snags. Snags will generally be produced by prescribed fire activity, but if necessary, staff may choose to either girdle or use herbicide on select hard-woods to create new snags.

Monitoring: Staff will track trends in the distribution and relative abundance over time using established callback protocol. Currently, staff broadcast brown-headed nuthatch calls at a subset of the Bachman's sparrow survey stations and as pines mature and habitat for brown-headed nuthatch improves additional stations will be surveyed for both species. Staff will use the opportunistic documentations of brown-headed nuthatches in novel areas to plan future stations at which they will include the playback on station visits.

Area's Role: The role of HMWMA in the conservation of the brown-headed nuthatch is to provide suitable breeding and foraging habitat to support the regional population. Staff will fulfill this role by continuing to apply community appropriate prescribed fire, thinning pines as needed, and using mechanical and chemical treatments to reduce hardwood midstory while retaining some oaks to provide future snags.

3.7: Florida Sandhill Crane

Current Condition: Florida sandhill cranes (*Grus canadensis pratensis*), a State-listed Threatened species, are commonly observed on HMWMA and nest in wetlands on or near the area. According to the Florida Sandhill Crane SAP, cranes use a variety of upland habitats that are relatively open with a majority of the vegetative cover ≤20 inches in height. Standing water is an important component of nesting habitat for Florida sandhill cranes. Nests consist of herbaceous plant material mounded in shallow water or in marshy areas. Home ranges for adult pairs are approximately 1,000 acres and consist of a mosaic of emergent palustrine wetlands and open uplands such as pasture, prairie, and open pinelands.

There is a large amount of potential habitat on lands surrounding the area, and HMWMA plays a role in supporting the regional population of Florida sandhill cranes. It is possible the past creation of pasture on HMWMA increased the potential for this species.

Habitat Management: Planned management activities such as prescribed burning and using mechanical treatments to reduce woody encroachment around wetland edges benefits the Florida sandhill crane. While area staff strive to protect nesting cranes from disturbance, the SAP states that the application of land management activities should take precedence over protecting individual nests. The SAP also recommends maintaining grazing pastures as a management tool for maintaining habitat for cranes. As such, the planned natural community management described in Section 2.1 should benefit this species.

Monitoring: HWMA staff will opportunistically monitor sandhill crane nesting activity and juvenile presence, documenting active nest ponds to avoid direct disturbance.

Area's Role: The role for the area is to continue to support the regional population. It is unlikely HMWMA could independently sustain a population of sandhill cranes. However, by providing suitable forage and nesting sites, the area can fulfill its role in the conservation of the species.

3.8: Florida Scrub-jay

Current Condition: The USFWS lists the Florida scrub-jay as threatened. Since 2009, Florida scrub-jays have been declining in number on HMWMA and in 2018, only a few birds were observed. The population in 2008 consisted of 8 to 10 family groups and approximately 40 individuals. Over 120 individuals were banded from 2001 to 2013. As the number of birds observed by staff and during Jay Watch surveys and number of fledglings declined, banding ceased due to concerns about the stress on these few remaining birds. In recent years few birds observed on HMWMA have bands, so it cannot be determined if they are transients or young local birds. When the 2009 WCPR Strategy was drafted, the area's historic population was estimated to be 17 family groups and the possibility of increasing the population by 5-8 family groups was considered reasonable. Unfortunately, despite aggressive management of the available habitat on HMWMA, habitat changes on lands outside the WMA and other unknown factors have led to a decline. In the last few years, Jay Watch volunteers or area staff have observed < 10 birds and no fledglings.

The public has entered scrub-jay reports into eBird.org in the general area, but most of these are from 2015 or earlier. Of the recent reports, only one occurs on HMWMA, and the majority are from Marion County to the north. Jay Watch data from Potts Preserve 3 miles west of HMWMA shows very few birds, but the number has been stable the last few years. Jay Watch data from Halpata Tastanaki and the Marjorie Harris Carr Cross Florida Greenway, both 10 miles to the north, shows these much larger populations are also stable over the last few years, but the small population on Ross Prairie 6 miles north has declined the last two years.

Ideal habitat for Florida scrub-jays is oak-dominated scrub predominantly 3 to 5.5 feet tall with an average of < 1 pine per acre. Increased pine densities and decreased distance

to forest edge will decrease habitat suitability for scrub-jays by providing cover and perches for predators. Small patches of taller scrub (6-9 feet) cumulatively comprising no more than an acre per territory provide habitat heterogeneity and possibly increase acorn production. HMWMA has no scrub and occupied habitat is scrubby and mesic flatwoods managed with a reduced pine canopy and a scrub oak shrub layer. Some pasture with clumps of scrub oaks has been used by jays and staff will manage these oak clumps to ensure that acorn production continues without becoming too tall will also supplement the available habitat.

Habitat Management: Only 80 acres of scrubby flatwoods occurred historically on HMWMA, so management efforts in the mesic flatwoods are necessary to provide more habitat. Literature suggests approximately 25 acres are needed to support one family group with a minimum of 10 family groups needed to increase the probability of population persistence. In the 2009 Strategy an SMA was created to maximize available habitat and to open some corridors to connect patches of scrubby flatwoods with the hope of expanding the population. Staff have completed habitat management efforts, but the scrub-jays have not responded as hoped. The SMA designation in these MUs will continue and be reevaluated in the next Strategy update in 2028. Staff will use a combination of mechanical treatments and prescribed fire as their primary tools for maintain habitat in the SMA, though they may also consider planting patches of scrub oaks in improved pasture within the SMA. Staff will apply prescribed fire within the SMA at a longer fire rotation to ensure acorn production from oaks. Staff will plan mechanical treatments to reduce areas of hardwood midstory, particularly along edges of pastures where fire would not get hot enough to reduce this midstory naturally, and can cut older less productive oaks in pastures in an effort to increase acorn production. As long as the species is still present on the WMA, area staff will continue to maintain the habitat in suitable condition for scrub-jays.

Monitoring: The Jay Watch program will continue to monitor Florida scrub-jays, but banding is not necessary unless the population of birds on HMWMA rebounds and exceeds 5 family groups. Staff will document observations outside of the Jay Watch period as well, especially any nesting activity or juvenile birds observed.

Area's Role: Due to its location between several known populations on private and public lands in Citrus, Marion, and Sumter counties, the role of HMWMA for Florida scrub-jay is enhancing the stability of the regional metapopulation by providing suitable habitat to encourage scrub jay use. Staff will fulfill this role by following the recommendations in the Florida Scrub-Jay SMA and ensuring that HMWMA provides habitat that can support scrub-jays dispersing from neighboring subpopulations.

3.9: Limpkin

Current Condition: The limpkin was recently removed from the Species of Special Concern designation by FWC, and was given a Limpkin SAP to ensure it doesn't warrant relisting in the future. The limpkin is occasionally observed on HMWMA, but reproduction has not been documented. This species is dependent on apple snails and freshwater mussels. It uses habitat types: freshwater marshes, swamps, springs and spring runs, as well as pond

and river margins. Limpkins are highly mobile and not dependent on actively managed natural communities. HMWMA is part of a block of conservation lands along the Withlacoochee River system has the potential to support the species long-term.

Habitat Management: Limpkins can inhabit a variety of aquatic habitats but require sites with apple snails, which are their primary food. Management actions that maintain habitat for limpkins include restoring natural hydrology, following Best Management Practices (BMPs) to protect water quality and prevent pollution, and treating invasive aquatic plants. While most limpkin habitat is not actively managed, if a known nest occurs near proposed management that could disturb nesting (e.g., mechanical and chemical treatments of aquatic vegetation near known nest sites), staff plan to conduct management activities outside of the breeding season. Additionally, staff will avoid damaging vegetation in which known nests occur. As staff are following BMPs, management should have a positive influence on this species.

Monitoring: Staff will document limpkin observations, particularly observations of nests or dependent young. The Limpkin SAP recommends implementing a statewide limpkin monitoring protocol, and staff will cooperate if HMWMA is identified as a priority by species experts.

Area's Role: The role of HMWMA in the conservation of the limpkin is to provide suitable breeding and foraging habitat to support the regional population. Staff will achieve this role by following BMPs to protect water quality in the Withlacoochee River, Gum Slough, and Mill Creek watersheds as well as protecting the surrounding uplands. Additionally, limpkins using the area will benefit from the protections to water quality provided by HMWMA and neighboring conservation lands.

3.10: Southeastern American Kestrel

Current Condition: The southeastern American kestrel is state-listed Threatened, with an FWC-approved Southeastern American Kestrel SAP. HMWMA falls within Kestrel Management Unit 3 as proposed in the SAP. Staff have not observed kestrels on HMWMA during the nesting season, but kestrels are observed occasionally after the nesting season when it is not possible to distinguish between subspecies. Breeding has been documented nearby on Lake Panasoffkee, as well as on private agricultural lands to the east.

Southeastern American kestrels prefer open habitat types for foraging and snags for nesting or perching. Old fields and low density sandhill forests with scattered clumps of shrubs or brush piles that harbor small mammals, lizards, snakes and other prey is ideal habitat for kestrels. Ideally, ground cover height should be heterogeneous and < 1 foot in height with patches of bare ground and shrubs interspersed. Kestrels will use pasture that was historically sandhill, but closely-grazed pasture tends to lack sufficient prey and is marginal habitat for kestrels. Past management that reduced the amount of large, mature pines and converted sandhill to pasture likely decreased the potential of HMWMA for this species.

As a secondary cavity nester, southeastern American kestrels use previously excavated cavities in large snags. The SAP for this species recommends installation of nest boxes within preferred natural communities, such as sandhill, that are not abundant in the WMA. Kestrel nest boxes first erected on HMWMA in 1998 have not been utilized. Staff have added additional boxes to habitat considered more suitable, but there have been no nesting attempts by southeastern American kestrels in boxes on the area.

Habitat Management: Ongoing efforts to restore HMWMAs natural community structure and function may improve the habitat suitability for kestrels. Management actions that maintain or enhance habitat for this species include prescribed fire on a ≤ 3-year rotation, natural community restoration, and timber harvests to thin pines as needed while emphasizing management that favors mature stands of longleaf pine. As such, the management described in Section 2.1 is compatible with the needs of this species.

Monitoring: Because kestrels have not used the nest boxes, there are no plans to add new boxes or replace existing boxes as they deteriorate. Staff will annually clean existing boxes for their remaining usable life, and remove when they are no longer in good condition. Staff will document opportunistic observations of southeastern American kestrel during the breeding season (mid-March to May). If kestrels are observed on the area during the breeding season, we will reconsider installing nest boxes.

Area's Role: The role of HMWMA is to provide suitable habitat for southeastern American kestrels to potentially contribute to conservation of the regional population. Staff will fulfill this role by continuing to restore pine communities through prescribed fire, managing for mature pine stands, and reducing hardwood midstory.

3.11: Wading Birds

Current Condition: Several wading bird species are known to forage and potentially nest on HMWMA. The Withlacoochee River, Gum Slough, Mill Creek, and the numerous wetlands on the area provide a variety of foraging and potential nesting areas for wading birds. Several documented colonies of nesting wading birds along the Withlacoochee River are within 5 miles of HMWMA. The great egret (*Ardea albus*), snowy egret (*Egretta thula*), little blue heron (*E. caerulea*), and white ibis (*Eudocimus albus*) are commonly observed species, while the wood stork (*Mycteria americana*), roseate spoonbill (*Platalea ajaja*), and tricolored heron (*Egretta tricolor*) are occasionally seen on HMWMA. A little blue heron breeding colony has been reported on the area in the past, but not in recent years. The ISMP included a Wading Bird SAP, designating the little blue heron, roseate spoonbill, and tricolored heron as state-Threatened species, while wood storks are federally threatened. Ongoing natural community management including actions to restore hydrology and the use of prescribed fire in appropriate wetlands will benefit these species.

Habitat Management: Natural community management, especially when conducted following wildlife BMPs, will benefit these species. However, management actions (e.g., prescribed fire, timber harvest) could have negative impacts on wading birds if these activities disturb birds while they are nesting or reduce the suitability of nest sites. With the

large acres of floodplain forests available, it is unlikely wading birds will nest in the actively managed communities. However, should this occur, staff will conduct mechanical and chemical treatments near colonies during the non-breeding season, and avoid damaging the vegetation in which the birds construct their nests. In addition, staff will maintain a 330-ft buffer around active colonies to protect them from disturbance if it is not possible to accomplish management activities when the colony is inactive.

Monitoring: Staff will continue to document observations of listed wading birds, particularly observations of nesting or dependent young.

Area's Role: The role of HMWMA for wading bird conservation is to continue to protect and maintain habitat to support the regional population. Staff will achieve this role by maintaining and restoring natural communities while protecting any nesting colonies that are discovered. Current and planned actions to restore natural communities, including hydrologic restoration, exotic plant control, and prescribed fire, are compatible with recommended management practices in the SAP. Additionally, wading birds using the area will benefit from the protections to water quality provided by HMWMA and neighboring conservation lands.

3.12: Colonial Bats

Current Condition: There are 8 species of bats in Florida that are considered colonial, gathering in groups to form maternity and/or hibernation colonies. Six of these species are potentially found on HMWMA. The area occurs in proximity to Withlacoochee Caves Critical Wildlife Area in Citrus County, which supports both maternity colonies of southeastern myotis (*Myotis austroriparius*) and hibernation colonies of tri-colored bats (*Perimyotis subflavus*). Marion County also has several known maternity roosts for southeastern bats. Rafinesque's big-eared bat (*Corynorhinus rafinesquii*), big brown bat (*Eptesicus fuscus*), Brazilian free-tailed bat (*Tadarida brasiliensis*), and evening bat (*Nycticeius humeralis*) potentially occur on the WMA.

Different species of bats have different foraging preferences. Foraging habitat on HMWMA includes the many wetlands, open pinelands, and bottomlands along the Withlacoochee River, Mill Creek, and Gum Slough. This variety of habitats provides foraging opportunities for a diverse assemblage of species on the area.

While no known caves are available on site, there is 1 bat house on the area occupied by bats of unknown species. HMWMA is in an area of karst geology, so undocumented cave roosts may occur in the vicinity. Large hollow trees in the river bottom and along Mill Creek and other cavity trees present on the WMA could provide potential roost sites, and bats occasionally use culverts, bridges or old abandoned sheds for roosts.

Habitat Management: Bats use a variety of natural communities, many of which are not actively managed. These habitats in unmanaged natural communities provide much of the foraging habitat for bats, but some species do prefer natural communities that are more open and actively managed with prescribed fire. Many non-colonial bats roost under bark, in Spanish moss, or leaf litter on the ground on extremely cold nights and some bat experts

recommend delaying prescribed fire on extremely cold mornings until the air temperatures have warmed to 50°F for the bats to become active.

Staff will continue to make protecting roosting habitat and known roosts a priority during management activities, as well as protecting large hollow trees, particularly hardwoods or cypress in the hydric hammock, as potential roost sites.

Monitoring: Staff will use inventory-style monitoring to generate a list of bat species that occur on the area, and this information will help inform managers about HMWMA's role in bat conservation. While no one survey methodology is best for all species, a survey using acoustic monitoring devices is likely the most cost-effective approach to developing an area species list. Acoustic monitoring surveys should be repeated on at least a 10-year interval to ensure the roster of known species is accurate. When appropriate, surveyors may use mist-netting to reinforce acoustic monitoring as a way of better defining which species are using HMWMA's habitats, and to confirm identification of species for which auto-ID software is inconclusive.

Area's Role: The area's role is to provide foraging and roosting habitats for bats. Staff will achieve this role by continuing to provide suitable habitat for foraging bats through frequent fire, protect any roosting colonies that may be discovered on the area, and protecting cavity trees or other potential roost sites. With the proximity to known roosts and a major river on the western boundary, HMWMA likely has a significant role in bat conservation.

3.13: Florida Black Bear

Current Condition: The Florida black bear (*Ursus americanus floridanus*) occurs regularly on HMWMA and sightings of bears or their sign have been increasing over the last decade. A sow with cubs has been documented during the hunting season, however, denning has not been documented on HMWMA. The area is within the Common Range portion of the Central Bear Management Unit (BMU), as described in FWCs Bear Management Plan. In 2014, the Ocala St. Johns population found in the Central BMU was estimated at 1,200 bears. HMWMA is part of a complex of public lands along the Withlacoochee River that facilitates bear dispersal and connectivity between the Central and Big Bend BMUs. The Big Bend BMU has a very low-density population of bears, with the largest concentration in the Chassahowitzka WMA area, estimated as low as 12 bears.

Habitat Management: Bears depend on a mosaic of natural communities that produce a variety of foods throughout the year. Habitat in this area, particularly in the hydric hammock along the river, is of high quality. Some of the ongoing management actions such as saw palmetto reduction and frequent fire in the mesic flatwoods may have a temporary negative effect on Florida black bears by reducing available forage and denning habitat during and soon after the burns. However, some plant communities that bears depend on benefit from prescribed fire at regular intervals, and bears take advantage of new growth resulting from prescribed burns. While staff use dormant season fire on the WMA, they generally applied in areas of former or current pasture and not good quality foraging or

suitable denning habitat for bears. Most of the current good quality bear habitat is in areas that are targeted for growing season burns or are not fire managed communities.

Monitoring: Because FWRI monitors this species, staff are not required to monitor this species beyond making opportunistic documentation of sows with cubs. Staff will also participate in statewide monitoring efforts as needed and as work schedules allow.

Area's Role: The role of HMWMA in the conservation of the Florida black bear is to provide suitable habitat to support the Ocala subpopulation and contribute to population expansion into the Big Bend BMU. Bears will likely continue to traverse HMWMA due to the area's diversity of natural communities maintained by varying fire-return intervals. By conducting management that provides a variety of forage types and cover, HMWMA staff will continue to provide habitat for bears.

3.14: Florida Mouse

Current Condition: Staff documented the Florida mouse on HMWMA just prior to implementation of the 2009 WCPR Strategy, which recommended a baseline survey to determine the extent of occupied habitat on HMWMA and follow up surveys to determine in changes in distribution. Multiple surveys conducted from 2009 to 2012 documented Florida mice in virtually all MUs that had scrubby flatwoods, sandhill, xeric hammock, or pasture. Researchers documented mice in only 1 of 4 transects in 2017 but used a different methodology and fewer total trap-nights of effort. In 2016, FWC removed Florida mouse from the list of Species of Special Concern with the development of a Florida Mouse SAP and adoption of the ISMP.

Generally considered to be an inhabitant of sandhill, scrubby flatwoods, and scrub natural communities, they are known to use xeric hammock and pasture that are found in association with these natural communities on HMWMA. Florida mice are most abundant in areas supporting early-successional vegetation shortly after fires. Populations decline as natural communities become more densely vegetated, shadier, and more mesic.

Habitat Management: The Florida mouse is considered an obligate commensal of the gopher tortoise and may not be able to persist on sites where tortoises are absent. Florida mice have habitat requirements compatible with those of the gopher tortoise, Florida scrub-jay, and other imperiled species. Therefore, planned management activities such as prescribed fire and natural community restoration will benefit Florida mice.

Monitoring: While we do not recommend specific monitoring for the Florida mouse, they will likely be confirmed by conducting small mammal surveys once every 10 years.

Area's Role: The role of HMWMA in the conservation of the Florida mouse is to provide suitable breeding and foraging habitat to support the local population. Staff will fulfill this role by continuing to restore pine communities through prescribed fire on a $\leq$ 3-year rotation, timber harvests to thin pines as needed, and mechanical and chemical treatments to reduce hardwood midstory, while retaining some oaks to provide acorns.

3.15: Homosassa Shrew

Current Condition: The Homosassa shrew is a sub-species of the southeastern shrew that has not been documented on HMWMA. Previously thought to be limited to a small range, researchers originally believed the sub-species was restricted to mesic communities in Citrus County. However, one study suggested this species has a larger range throughout the northern peninsula, south of the Suwannee River. A 2011 biological status review (BSR) determined the subspecies does not warrant listing on the FWC's imperiled species list. However, due to concern regarding the available data, the FWC retained the Homosassa shrew as a Species of Special Concern in the ISMP adopted in 2016. The first Homosassa Shrew SAP addressed research and monitoring actions needed to resolve the uncertainty of its conservation status. Because of new survey data published in 2015, a new BSR in 2017 determined that the Homosassa shrew did not warrant listing as threatened. The revised Homosassa Shrew SAP addresses the ongoing need for more information about the status, distribution, and natural history of the species.

Habitat Management: Shrews forage and nest in leaf litter and downed woody debris that is abundant in forested communities. Shrews have been captured in a wide-range of pine and hardwood dominated forest habitat types from hydric to xeric. Their primary prey is earthworms, spiders, and other invertebrates. Management actions that would substantially reduce down woody debris or lead to excessive drying of soils are detrimental to shrews.

Planned habitat management activities on HMWMA are compatible with the recommendations in the SAP and should benefit the Homosassa shrew.

Monitoring: Staff or researchers will report any observations or specimens captured during small mammal surveys or drift fence herpetofauna surveys to the SCP mammal taxa coordinator.

Area's Role: The role of HMWMA in the conservation of the Homosassa shrew is to provide suitable habitat to support the local population. Staff will fulfill this role by applying the natural community management described in Section 2.1.

3.16: Southern Fox Squirrel

Current Condition: At the time of the drafting of the 2009 HMWMA WCPR Strategy, taxonomists considered the Sherman's fox squirrel (*Sciurus niger shermani*) a valid subspecies, which the FWC listed as a Species of Special Concern. The 2013 Fox Squirrel SAP recommended the species be retained as a Species of Special Concern until data on distribution and taxonomy could be resolved, and FWC prioritized the collection of this information. Once the results were available, the FWC assembled a group to conduct a Biological Status Review (BSR) considering the new information. The 2017 BSR found that based on the new information, the Sherman's fox squirrel is no different from the Southern fox squirrel (*Sciurus niger niger*), the Southern fox squirrel did not meet the criteria for listing, and they recommended the subspecies be removed for the imperiled species list.

A revised Fox Squirrel SAP proposes the creation of species focal areas (SFA) to focus fox squirrel conservation efforts. HMWMA falls within the proposed Brooksville

Ridge SFA, but HMWMA is east of the Withlacoochee River and is isolated from the larger tracts of conservation land within this SFA. Area staff suggest fox squirrels are frequently observed throughout HMWMA. Experts presently do not know the size and status of the regional population on HMWMA and adjacent private properties, however, it is likely the past alterations to the natural communities decreased the suitability of habitat for this species.

Habitat Management: Suitable habitat for fox squirrels includes longleaf pine sandhills or flatwoods with the best habitat in areas with a mixture of pines and oaks, such as along the edges of longleaf pine savannas and live oak forests. Staff plan to conduct management actions that maintain or enhance habitat for this species, including prescribed fire on a < 3-year return interval, natural community restoration, and management that favors mature stands of longleaf pine with the retention of a mature oak component. It is unlikely the management area could independently sustain a population, so the long-term viability of the southern fox squirrel on HMWMA is dependent on land use choices made by surrounding land managers.

Monitoring: Experts did not identify HMWMA as a high priority for squirrel monitoring, although they did recommend enhanced techniques for local-squirrel surveys that could be applied to inventory-style monitoring. Staff should document opportunistic observations of southern fox squirrel nests, with juveniles, or in novel areas, particularly north of Mill Creek.

Area's Role: The role of HMWMA for Southern fox squirrel is to provide appropriate habitat to help support the regional population. HMWMA staff will fulfill this role to support the regional conservation of squirrels by applying the natural community based managed described in Section 2.1.

3.17: White-tailed Deer

Current Condition: White-tailed deer are the featured game species on HMWMA, and the mosaic of plant communities available on HMWMA is well suited to the needs of the species. Half Moon WMA has a single public access road, is bordered to the west by the Withlacoochee River, and the north and east boundaries are primarily large private properties with limited access and well managed deer hunting. This situation provides the ability to manage for high quality deer hunting by using conservative quotas and limiting total hunting days. Beginning with the 2003-04 hunting season, FWC imposed antler point restrictions (APR) requiring bucks harvested to have at least one antler to have at least 3 antler points. In 2015, FWC established deer management units (DMU) throughout Florida and HMWMA falls within DMU C4, which requires a minimum of 3 points on a side or a 10-inch main beam. These antler restrictions are designed to prevent the harvest of 1.5-year-old bucks and have been successful. On HMWMA, most harvested bucks are in the 2.5 to 3.5-year age classes.

Habitat Management: White-tailed deer are habitat generalists and thrive where different natural community types are interspersed and there are extensive ecotones or "edge" habitat. Deer are attracted to areas of disturbance where tender new shoots are available for

forage. Deer are primarily browsers, eating a wide variety of leaves, buds, hard and soft mast, and forbs, so they coexist well with the cattle, which primarily graze on grasses. The natural community management described in Section 2.1 will continue to maintain high quality habitat for deer.

Monitoring: Antlerless harvest quotas are based on data derived from annual spotlight surveys conducted in late summer. These surveys provide a population estimate and demographic data on buck:doe ratio and fawn:doe ratio. Antlerless quota permits are generally issued to 15-20% of total quota permit holders, but antlerless deer harvest ranges from 25-45% of total harvest.

Harvest Management: Deer season on HMWMA is limited to two 3-day archery hunts, one 3-day muzzleloading gun hunt, and two 3-day general gun hunts. Beginning in 1993, FWC (then GFC) issued 75 quota permits for each hunt. During the 2009-10 hunt year, FWC changed the quota system to eliminate the transfer of quota hunt permits but allow each permit holder a guest, which essentially doubled the potential number of hunters on any quota. In the 2014-15 season, FWC reduced the quota from 75 to 50 permits for each hunt. This reduction in quotas was primarily in response to hunter feedback that the quality of the hunt experience had declined due to the number of guest hunters. The reduction in quota permits has resulted in a slight decline in harvest, but this is primarily due to a reduction in the antlerless deer harvest.

Area's Role: The role of HMWMA in white-tailed deer conservation is to provide suitable habitat to support a stable deer population, and to manage harvest to provide sustainable public recreational hunting opportunities. Staff will fulfill this role by continuing to restore natural communities with prescribed fire, timber harvests to thin pines as needed, and mechanical and chemical treatments to reduce hardwood midstory, while retaining some oaks and other hardwoods to provide mast. Staff will also monitor feedback during hunts at the check station and consider adjustments to area regulations if necessary to maintain hunter satisfaction.

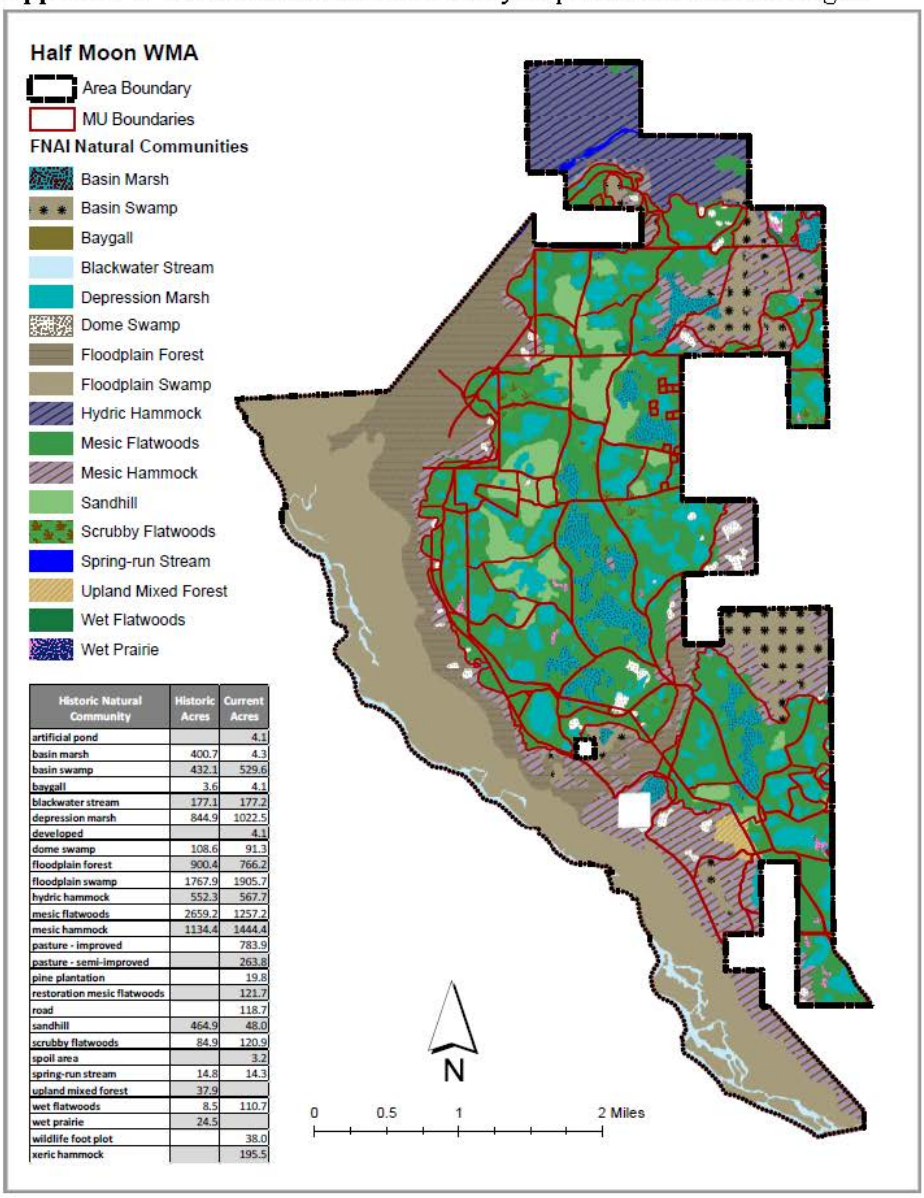
Section 4: Coordination and Beyond the Boundaries Considerations

As discussed in the above assessments, several locally important species could potentially disperse between HMWMA and neighboring conservation lands. While HMWMA and the current condition and management of neighboring lands provides an opportunity to further the conservation of many focal and imperiled species, significant changes in management or land use beyond the boundaries may a have significant impact on some species. Species that require large home ranges or are dependent on dispersal for maintaining a population are particularly affected by adjacent land management. Many of the species that inhabit xeric uplands depend on the availability of suitable habitat on adjacent private lands. As such, the actions of adjacent landowners will determine if some of these focal species persist on HMWMA. Area staff should make every effort to establish cordial relationships with adjacent private landowners. Those landowners interested in

cooperating with conservation of wildlife species will be introduced to staff of the Office of Conservation Planning Services.

HMWMA staff currently coordinate with staff from various FWC Divisions and Sections, including the Fish and Wildlife Research Institute, Hunting and Game Management, Species Conservation Planning, and Invasive Plant Management to conduct surveys, manage hunt regulations, obtain species management technical assistance and manage invasive exotic plant infestations as needed. Other partners are the Florida Forest Service, the Southwest Florida Water Management District, Jay Watch Program, and the Florida Natural Areas inventory. These partners provide valuable assistance with surveys, timber sales, prescribed burning, and other technical assistance.

Appendix 1. HMWMA Natural community map with GIS-based acreages.



Historic Natural Community	Historic Acres	Current Acres
artificial pond		4.1
basin marsh	400.7	4.3
basin swamp	432.1	529.6
baygall	3.6	4.1
blackwater stream	177.1	177.2
depression marsh	844.9	1022.5
developed		4.1
dome swamp	108.6	91.3
floodplain forest	900.4	766.2
floodplain swamp	1767.9	1905.7
hydric hammock	552.3	567.7
mesic flatwoods	2659.2	1257.2
mesic hammock	1134.4	1444.4
pasture - improved		783.9
pasture - semi-improved		263.8
pine plantation		19.8
restoration mesic flatwoods		121.7
road		118.7
sandhill	464.9	48.0
scrubby flatwoods	84.9	120.9
spoil area		3.2
spring-run stream	14.8	14.3
upland mixed forest	37.9	
wet flatwoods	8.5	110.7
wet prairie	24.5	
wildlife foot plot		38.0
xeric hammock		195.5

Appendix 2. HMWMA locally important species.

Species	Location in Document
Bachman's sparrow (*Peucaea aestivalis*)	Species Assessments
Brown-headed nuthatch (*Sitta pusilla*)	Species Assessments
Burrowing owl (*Athene cunicularia)*	Document Occurrence
Colonial bats (multiple species)	Species Assessments
Eastern bluebird (*Sialia sialis*)	Monitoring
Eastern diamondback rattlesnake (*Crotalus adamanteus*)	Document Occurrence
Eastern indigo snake (*Drymarchon couperi*)	Species Assessments
Eastern spotted skunk (*Spilogale putorius*)	Document Occurrence
Florida black bear (*Ursus americanus floridanus*)	Species Assessments
Florida long-tailed weasel (*Mustela frenata peninsulae*)	Document Occurrence
Florida mottled duck (*Anas fulvigula*)	Document Occurrence
Florida mouse (*Podomys floridanus*)	Species Assessments
Florida pine snake (*Pituophis melanoleucus mugitus*)	Document Occurrence
Florida sandhill crane (*Grus canadensis pratensis*)	Species Assessments
Florida scrub-jay (*Aphelocoma coerulescens*)	Species Assessments
Gopher frog (*Lithobates capito*)	Species Assessments
Gopher tortoise (*Gopherus polyphemus*)	Species Assessments
Homosassa shrew (*Sorex longirostris eionis*)	Species Assessments
Limpkin (*Aramus guarauna*)	Species Assessments
Mourning dove (*Zenaida macroura*)	Habitat Management
Ornate chorus frog (*Pseudacris ornata*)	Document Occurrence
Short-tailed hawk (*Buteo brachyurus*)	Document Occurrence
Southeastern American kestrel (*Falco sparverius paulus*)	Species Assessments
Southern fox squirrel (*Sciurus niger*)	Species Assessments
Southern bald eagle (*Haliaeetus leucocephalus*)	Document Occurrence
Suwannee cooter (*Pseudemys concinna suwanniensis*)	Document Occurrence
Striped newt (*Notophthalmus perstriatus*)	Species Assessments
Swallow-tailed kite (*Elanoides forficatus*)	Document Occurrence
Wading birds (multiple species)	Species Assessments
White-tailed deer (*Odocoileus virginianus*)	Species Assessments
Wood duck (*Aix sponsa*)	Monitoring

12.10 Timber Assessment

Half Moon Wildlife Management Area

Timber Management Assessment

Prepared By:
Butch Mallett
Senior Forester
Florida Division of Forestry

January 3, 2000

HISTORY

The land now included in the Half Moon Wildlife Management Area (HMWMA) has changed greatly since European settlement of the area in the early to mid 1800's. Almost all of the native longleaf pine timber was cut for lumber. Only trees too small to cut for timber were left to regenerate the forest. Also left uncut were the slash, loblolly and pond pines that grew in inaccessible wet areas. Seedling slash pine, loblolly pine and pond pine are easily killed by fire. It is likely that lightning induced wildfires frequently burned over most of what is now HMWMA. That is why these three species were primarily confined to wetter sites.

Beginning in the late 1920's, wildfires were aggressively fought and extinguished. Longleaf pine seeds need bare mineral soil to germinate and survive. Burning of accumulated leaf litter normally provides the bare soil. Exclusion of fire from these lands and the subsequent buildup of organic matter on the soil inhibited longleaf pine regeneration. Conversely, fire suppression allowed the other pines to become more firmly established in areas close to their seed source.

Portions of the palmetto flatwoods were cleared of all vegetation and cultivated. Later, those same fields and others were turned into improved pastures for cattle production. From March of 1992 through February of 1998, the Florida Fish and Wildlife Conservation Commission (FWC) planted 170 acres of improved pasture with longleaf pine seedlings. Survival rates have been mixed; however, most have been less than 50%. Presently there are approximately 1,000 acres of open pasture remaining in the HMWMA. Close to 150 acres of these disturbed sites are being mowed to maintain wildlife openings.

The result of all of the above-mentioned activities is a landscape that has scattered stands of pine timber. There is, however, one overstocked slash pine plantation covering approximately 150 acres on the north end of the tract. It needs thinning in the very near future to improve stand vigor and lessen the likelihood of serious insect or disease attack. There are also a few small strands of mixed slash, loblolly and pond pine that either need thinning, sanitation cuts, or group selection harvests and replanting to longleaf pine.

Local resource managers have done an excellent job of identifying and designating burn (prescribed fire) units on HMWMA. However, acreage figures for Florida Natural Area Inventory (FNAI) natural community types as related to their management needs is not currently available. A timber stand description is needed that groups areas within the tract into stands of

similar species composition, age, stocking levels, growth and management needs. Information necessary for proper wildlife and ecosystem management is also gathered and compiled in this process. For proper planning and management of the timber resource, this should be completed within the next five years.

RESTORATION AND SILVICULTURAL MANAGEMENT GUIDELINES

OBJECTIVES

The primary goal of HMWMA is to provide public outdoor recreational opportunities while conserving and protecting natural and historic resources. As part of this goal, the reestablishment of native ecosystems is a high priority. Timber management is a valuable tool in the restoration and maintenance of forested ecosystems.

Efforts will be made to reestablish native species at densities and compositions believed to have existed prior to site alteration. Historically, longleaf was the most prevalent pine species in many areas due to the frequency of wildfires. Planting of longleaf pine seedlings in existing openings will help reintroduce this valuable species to these disturbed mesic flatland communities. Likewise, group selection cuts in offsite slash/loblolly/pond pine stands will provide opportunities to reestablish longleaf pine along with the added benefit of creating wildlife openings.

Frequent, low to medium intensity fires must be used to maintain these communities in a healthy condition. In areas not subject to prolonged flooding, longleaf is the most desirable of the pine tree species to be planted to assure a vigorous ecosystem. These hardy pine seedlings can be prescribe burned within one to two years after planting without suffering severe losses. This ability to withstand fire at a very young age differentiates longleaf from other pine species. Slash and loblolly pine regeneration must be protected from fire for up to10 years or more depending on fuel loading. This delay in reintroducing fire can have a negative impact on fire dependent plants and animals from the ecosystem. Planting longleaf pine seedlings helps minimize disruption of the prescribed fire cycle.

Natural regeneration of pine stands will be encouraged whenever possible. However, an inadequate seed source will likely require artificial regeneration in most instances. Longleaf pine seedlings occur naturally in dense stands that are thinned out over a period of years by fire or competition for growing space. To simulate this process, longleaf pine seedlings are densely planted at 600 to 726 trees per acre and later thinned out through timber harvests when they get too crowded. Planting them in improved pastures has the added benefit of helping to shade out the nonnative grasses. When the trees are thinned out, native ground cover can be more easily reestablished. Longleaf pine seedlings from a nearby Withlacoochee State Forest seed source are available from the Division of Forestry's Andrews Nursery in Chiefland.

EXISTING CONDITIONS AND MANAGEMENT PRESCRIPTIONS

Exact acreage figures for each forest or community type are unavailable at this time. A comprehensive timber stand description is needed to provide these numbers. The following are general observations and management options for various stands observed on HMWMA.

Improved Pastures - Most of the improved pastures were created in former mesic or scrubby flatwoods communities. Small portions of these pasturelands are being mowed to maintain them as wildlife openings. This leaves many acres of non-native grasses that will not be perpetuated. Some of these pastures have oaks and wax myrtles encroaching. Other blocks are relatively open.

Longleaf pine seedlings should be planted in areas between wildlife openings and along roads as a visual screen (with breaks for wildlife viewing). They should also be planted in narrow, meandering strips on the edges of wildlife openings adjacent to existing stands of other pines to reintroduce longleaf to those ecosystems. Blocks with previously established oaks may have pine seedlings planted in the larger openings where competition for sunlight will not be a problem.

Stands with scrub oak, wax myrtle and saw palmetto encroachment that are not going to be managed for scrub jay habitat may need a single pass with a straight roller-drum chopper. This, followed by a growing season prescribed burn, will usually allow longleaf pine seedlings to be successfully planted.

To successfully plant longleaf pine seedlings in improved pasture, the sod must be removed or killed in a zone wide enough to eliminate competition for soil moisture. Past planting failures were likely due to inadequate site preparation combined with droughty soil moisture conditions. Containerized (tubeling) seedlings may be substituted for bareroot in any of the following prescriptions. Using tubelings extends the planting season to include July and August as well as December and January. However, the cost is approximately two times as much as bareroot seedlings. Also, contract hand planting is difficult to arrange and up to twice as expensive as machine planting.

Restoration Alternatives

- Allow strips (18” to 36” wide by 12' apart) of sod to be harvested by a commercial operator. Plant bareroot or containerized longleaf pine seedlings at approximately 5' X 12' spacing (726 trees per acre). It is likely that a sod cutter would require the grass to be mowed, fertilized and possibly herbicided for two years prior to cutting. This method would delay the planting of seedlings (planting may be difficult to accomplish anyway without at least 18 to 24 months of lead-time). Killing of the woody brush by herbicide application and mowing would have a negative impact on wildlife cover over the short term. However, the sale of sod should produce some income to be used for other management needs, ensure that the seedling and planting expenses are not wasted and allow native species to be more quickly established. Research should be done as to the ability of sod cutting machines to cut a curved swath (will be necessary if seedlings are to be planted in a meandering fashion). Approximate cost - $100 per acre (no herbicide)

- Herbicide meandering strips approximately 24” wide by 12' apart using Roundup or other grass killer. Plant as above. This site prep method can be expensive (currently up to $50 per acre), but it helps insure greater survival of expensive seedlings than with no site preparation. Approximate total cost - $150 per acre.

- Scalp meandering strips approximately 24” wide by 12’ apart. Scarring of the land can be kept to a minimum if the scalper is set to a depth of no more than 2” to 3”. This will retard the sod, but not disturb too much soil. Plant as above. Scalping is the preferred method of tree planting where depth of sod, soil moisture and vegetative competition is a concern. Approximate total cost - $150 per acre.

- Care should be exercised to maintain cattle at reasonable levels until stands are well established. It would be best to exclude all cows until the seedlings are in the grass stage. Some cattle rubbing damage has been observed in advanced seedling stands. However, the current low cow-stocking rate seems to be keeping breakage and bending to acceptable levels. Consult the Natural Resource Conservation Service (NRCS) for recommendations.

- The number of surviving seedlings should be determined after the first and second growing seasons. If survival rates are less than 50%, a decision will have to be made whether re-planting is necessary. Is it better to fill in the holes in the stand through supplemental planting or to live with lower tree densities through the first thinning? The answer will depend on the total number of seedlings surviving and their spatial arrangement. Large holes in a stand lend themselves to replanting.

Thinning Alternatives

- To maintain healthy, vigorously growing trees and assuming 50% or greater survival, the planted longleaf pines should be thinned to 70 - 80 sq. ft. of basal area per acre (BA) in 15 to 25 years. The first thinning should be initiated when the live crown in a majority of dominant and co-dominant trees has been reduced to approximately 1/3 of their total height. This will help insure a healthy stand of trees, open up the canopy, and allow sunlight to reach the forest floor. The added sunlight and disturbance promote wildlife forage production. Stands should continue to be thinned back to 70 - 80 sq. ft. BA each time they reach 100 sq. ft. or more.

Pine Stands - Most of the pine stands average less than 30 square feet of basal area per acre (sq. ft. BA). They consist of varying mixtures of slash, loblolly and pond pines. Due to past harvesting practices and fire exclusion, these species have encroached into mesic flatland communities formerly predominated by longleaf pine. Over the long term, none of these species will successfully regenerate itself with the reintroduction of a three to five-year fire cycle. In

these stands, it is desirable to maintain some older growth pine for wildlife and aesthetic reasons. However, it is also necessary to reintroduce longleaf pine into the fire dependent communities.

Restoration Alternatives

- Upland stands of mixed slash, loblolly, and pond pines should be burned at least once during the dormant season prior to receiving any other treatment. Next, a thinning from below is recommended to remove most of the loblolly pine; all of the pond pine; and any diseased, suppressed, overcrowded and overtopped slash pine. Residual longleaf pine should be left. Harvesting all trees (except longleaf) on up to 25% of the remaining stand should create scattered one to five-acre holes in the stand. Allow the stand to sit through at least one summer growing season following the harvest. A single pass with a roller drum chopper may be necessary to reduce the saw palmetto competition. Prescribe burn the tract to remove logging slash and help reduce vegetative competition. Meander plant bareroot longleaf pine seedlings (as above) using a combination scalper/rough-woods tree planter in December or January. Use prescribed fire again as soon as a majority of the seedlings are in the grass stage. The next burn should be undertaken when the majority of the regeneration is waist high. Use extreme caution when conducting this burn to prevent excessive mortality. Make sure there is adequate soil moisture to the seedlings protect fine roots. If fuel loads have built up to heavy levels, a cool night burn may be needed to safely reduce them. Once the longleaf are at least 10' tall, resume a normal three to five year prescribed fire regime. This type of harvest operation will create wildlife openings, maintain older growth pine timber, and provide for reintroduction of longleaf pine into the ecosystem. Stands should be revisited for thinning and cutting of openings every 10 to 20 years until most of the area has been regenerated with longleaf pine. Approximate establishment cost: roller drum chopping $50/acre : rough woods planter - $50/acre : seedlings - $50/acre or a total of $150 per acre.

- An alternative to creating scattered holes in these understocked areas is to harvest most of the existing pine (with the exception of longleaf) in each stand at one time. Leave 10 to 20% of primarily slash and longleaf pine in islands for height diversity. Then, replant with longleaf seedlings as stated above. This option would speed up return of longleaf to the ecosystem. It may be the only economically feasible solution in severely understocked stands. However, it would limit the ability to create wildlife openings at regular intervals.

- Some stands have less than 10 square feet BA of pine timber per acre. These stands need to be prescribed burned at least twice. In areas of dense understory, a single pass with a straight roller drum chopper may be necessary a month or two prior to the last burn. The final prescribed burn should be conducted in the lightning season if the site was not chopped. Then, meander plant longleaf pine seedlings using a rough-woods scalper/planter as above.

Thinning Alternatives

- Lower initial planting densities and poorer survival rates will result in fewer trees per acre in rough woods planting sites. Therefore, stocking levels will not be as high as pasture plantings. Larger tree diameters will be attained sooner, but crown closure and loss will not occur as quickly. Therefore, these stands will probably not require thinning until 20 to 25 years of age. Again, the first thinning is needed when the live crown in a majority of dominant and co-dominant trees has been reduced to approximately 1/3 of their total height. This will help ensure a healthy stand of trees, open up the canopy, and allow sunlight to reach the forest floor, which promotes wildlife forage.

Slash Pine Plantation – The only stand of planted pine on HMWMA is an approximately 150-acre block that was purchased after the original acquisition. It was planted on a heavily prepared site that originally would have had longleaf pine growing on it. The ultimate goal should be to reestablish longleaf as the predominant tree species in this stand.

The slash pine is approximately 30 years old, has never been thinned, and has 120 sq. ft. BA or more. As a result, the percent of live crown in dominant and codominant trees has been reduced to less than 25% and diameter growth has slowed down. Thinning stands of slash pine that have already lost their active growth does not usually lead to improved performance. However, reducing the BA to 60 – 70 sq. ft. per acre, whenever it reaches 100 sq. ft. or more, will maintain the health of the stand until 80 to 120 years of age.

Thinning Schedule – A series of group selection cuts should be used to reestablish longleaf in this stand while avoiding a large clearcut. To accomplish the group selection harvest, on no more than 25% of the 150 acres, cut all slash pine trees in two to five acre irregular shaped blocks. These openings in the canopy must be at least two chains (132 feet) wide to provide adequate sunlight for longleaf seedling growth. In the rest of the stand, reduce the BA to 60 to 70 sq. ft. per acre first by removing all diseased and suppressed trees. Then, thin the remaining dominant and codominant trees to alleviate crown overcrowding. Repeat this operation once the BA exceeds 100 sq. ft. per acre. At the current rate of growth, this may dictate a 15 to 20 year or more cutting cycle.

Restoration - Randomly plant 600 to 726 bareroot or containerized longleaf seedlings per acre (as above) in the group selection openings. Follow the prescribed burning schedule as previously outlined for longleaf plantings. By the time the remnant stand of slash pine is ready to be thinned again, it is likely that the young longleaf will also need thinning. This should take 15 to 20 years. At that time, new group selection openings should be cut and replanted with longleaf seedlings. Replanting may no longer be necessary after the third or fourth cut. Depending on the cone producing ability of the original longleaf plantings, they should be able to naturally reseed the openings. As soon as they can produce a seed crop, the number of openings should be reduced so that no more than five to ten percent of the total stand acreage is cleared per cutting cycle. This will ensure a steady flow of mixed timber products and new wildlife openings forever. The result of this type of harvest will be an uneven-aged stand of mixed longleaf and

slash pine that tolerates prescribed fire well. Wildlife will benefit from the periodic cutting of openings in the canopy and the ability to maintain a frequent burning schedule.

Mixed Premerchantable, Pulpwood, and Small Sawtimber Stands - Although few of these stands exist on HMWMA at the present, the ones that are there should not be ignored. Stands with basal area exceeding 100 square feet per acre are scattered across the area. They often occur in strands adjacent to flatwoods/prairie lakes or improved pastures. Most are slash pine, loblolly pine, or a combination of both.

Thinning Schedule - These stands should be thinned to approximately 60 sq. ft. of BA. Remove diseased, deformed, suppressed, and overcrowded trees to achieve the proper stocking. It is likely that these stands will have to be sold together to make them attractive on the timber market. Stands will probably need revisiting and additional thinning at 10 to 20 year intervals.

Thinning these stands will produce current revenue and ensure future income to be used for other resource management objectives. At the same time, the heavy equipment used in logging helps reduce the understory rough. This disturbance makes prescribed burning easier and safer. It also improves wildlife forage production.

Scrubby Flatwoods - A few stands, comprising a total of 550 acres, are being managed for scrub jays. These areas have very scattered longleaf pine with BA of less than 10 sq. ft. To minimize raptor perches, the overstory pines may be removed as necessary and not replanted.

Salvage Sales - On occasion, small volumes of wood may need to be removed due to fire, windstorm, insect or other damage. The decision whether or not to harvest the affected timber will depend on the threat to the surrounding stands and the volume/value of the trees involved. For example, small, isolated lightning-strike beetle kills are a natural part of a healthy ecosystem and normally would not be cut. However, if a drought caused the insect infestation to spread, the infected trees and a buffer zone might have to be removed.

SUMMARY

Saleable timber is a byproduct of good ecosystem management. Carefully designed timber harvests create openings in the tree canopy allowing sunlight to reach the forest floor, promoting herbaceous growth. These clearings and their ecotones are favorite spots used by wildlife for feeding, resting, mating, nesting and rearing of offspring. Mechanical equipment involved in timber harvests helps reduce dense understory vegetation such as palmetto, gallberry and undesirable hardwoods. This fuel reduction makes the introduction of prescribed fire easier, safer and more effective. Income from forest product sales may be used for land management and resource restoration needs as general revenue funds become more difficult to secure.

12.11 Conservation Action Strategy

A Conservation Action Strategy
Half Moon Wildlife Management Area

Sumter County, Florida

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

Table of Contents

1 Introduction 374
2 Location 374
3 Purpose for Acquisition 375
4 Acquisition History 376
5 Proximity to Other Public Conservation Lands and Florida Forever Projects 376
6 Adjacent Land Use 377
7 Florida's Changing Population 377
8 HMWMA Optimum Conservation Planning Boundary 378
9 Potential Conservation Stewardship Opportunities Adjacent to the HMWMA 378
10 The FWC Florida Forever Additions and Inholdings Acquisition List Conservation Benefits Analysis 6
11 Prioritization of Lands on the FWC Florida Forever A&I Acquisition List 379
12 Acquisition Partnership Opportunities 380
14 Recommendations for Prioritized Land Conservation Actions 380

Table of Tables

Table 1. Additions and Inholdings List for the HMWMA 17

Table of Figures

Figure 1. Vicinity Map of the HMWMA 8
Figure 2. Aerial Imagery 9
Figure 3. Optimal Conservation Planning Boundary 10
Figure 4. FWC Additions and Inholdings 11-15
Figure 5. FWC Additions and Inholdings Prioritization 16

1 Introduction

Located in Sumter County, Florida, Half Moon Wildlife Management Area (HMWMA) is a 9,554-acre composite of wetlands, hammocks, flatwoods, and improved pasture. The Withlacoochee River borders the area to the west and the privately-owned Ventura Ranch borders the HMWMA on the east. Mill Creek and Gum Slough, scenic spring-fed tributaries of the Withlacoochee River, traverse the area. Portions of the HMWMA are recharge areas for the Floridan aquifer, the source of most of Florida's drinking water. Here, limestone formations of the Upper Floridan aquifer are visible at the land surface. Excellent opportunities exist for a variety of recreational activities, including hunting, fishing, horseback riding, wildlife viewing, biking, and hiking.

The HMWMA's array of wetlands contributes significantly to floral, faunal, and habitat diversity. Both rare and imperiled wildlife species, and more commonly found species, thrive in the area's scrubby flatwoods, including the little blue heron (*Egretta caerulea*), eastern indigo snake (*Drymarchon corais couperi*), and wood stork (*Mycteria americana*). Other rare and imperiled species found on the HMWMA include the state threatened gopher tortoise (*Gopherus polyphemus*), tricolored heron (*Egretta tricolor*), as well as many rare invertebrates and amphibians.

The rich diversity of resources on the area also include significant cultural and historical resources. Small homesteads were established on what is now the HMWMA beginning in the late 1800s. Remains of some of these homesteads are still visible on the area. Additionally, the HMWMA contains a historic cemetery that was established during this period. The HMWMA also contains a few prehistoric lithic scatter sites.

As noted above, the area established as the HMWMA is approximately 9,554 acres. The title is owned by the Board of Trustees of the Internal Improvement Fund (Board of Trustees) of the State of Florida and the Southwest Florida Water Management District (SWFWMD). The Florida Fish and Wildlife Conservation Commission (FWC) has lead management authority for all resources within the established boundary. More detailed information about the HMWMA including operational and resource management goals, objectives, and baseline resource data may be found in the HMWMA Management Plan.

The HMWMA Conservation Action Strategy (CAS) has been developed as an integral component of the FWC Land Conservation Work Plan and the HMWMA Management Plan to provide recommended land conservation acquisition and stewardship actions for the HMWMA. As described in the HMWMA 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 recommending lands within the HMWMA OCPB for inclusion on the FWC Florida Forever Addition and Inholding (A&I) Acquisition List; to enhance the ongoing operational

and resource management of the HMWMA; sustain the overall conservation of wildlife within and adjacent to the HMWMA; 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 of the HMWMA Management Plan, specifically the Land Conservation and Stewardship Goal. 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 HMWMA; 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 HMWMA.

Location

The HMWMA is in northwest Sumter County, Florida. The HMWMA property boundary comprises multiple sections in Townships 18 and 19 South, in Ranges 20 and 21 East. The entrance to the HMWMA is located at the north end of County Road 247, off State Road 44 between Inverness and Wildwood. It is approximately seven miles west of I-75 and the Florida Turnpike, and 25 miles south of Ocala. The HMWMA is located approximately six miles east of Hernando and ten miles northwest of Lake Panasoffkee. Other cities near the HMWMA include Oxford (11 miles east), Wildwood (11 miles east), Belleview (12 miles North East), Inverness (8 miles west), and Floral City (9 miles southwest). The HMWMA is neither within any Area of Critical State Concern [Chapter 380.05, Florida Statutes (F.S.)], nor within or adjacent to an aquatic preserve [Chapter 18-2.018 and 18-2.021, Florida Administrative Code (F.A.C)].

The Withlacoochee River borders the area to the west and Ventura Ranch borders the HMWMA on the east. Mill Creek and Gum Slough, scenic spring-fed tributaries of the Withlacoochee River, traverse the area. Areas north of the HMWMA are privately owned land, primarily ranch land and some agricultural land. The SWFWMD monitors or directly manages conservation areas that adjoin portions of the HMWMA.

Purpose for Acquisition

The Carlton Half Moon Ranch project qualified for purchase by the State under the "other lands" criteria of the Conservation and Recreation Lands (CARL) program. Specifically, the primary objectives of the purchase were to preserve the water quality of the Withlacoochee River, Gum Slough, and their proximal tributaries; and to establish a wildlife management area. FWC has been directed 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.

The FWC implemented the Mitigation Park Program in 1988 to provide land use regulatory programs with an alternative to on-site wildlife mitigation under Section 372.074, F.S., which establishes the Fish

and Wildlife Habitat Acquisition Program (FWHAP) for the purpose of acquiring and assisting other agencies or local governments in acquiring or managing lands important to the conservation of fish and wildlife. Under this authority, the FWC, or its designee, is responsible for managing these lands for the primary purpose of maintaining and enhancing their habitat value for fish and wildlife. The HMWMA is managed by the FWC for the purpose of operating a Wildlife Management Area, providing ecological diversity, providing managed habitat for both common and imperiled wildlife, and for providing the public with fish and wildlife-oriented outdoor recreational opportunities.

The 50-year Board of Trustees of the Internal Improvement Trust Fund (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), 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 18-2.004(1)(d), F.A.C., which have been selected, developed, or approved for the protection and enhancement of the leased premises."

Acquisition History

The HMWMA is owned by the citizens of the State of Florida. Title is held by the Board of Trustees and the SWFWMD. On August 15, 1989, the State of Florida acquired Half Moon Ranch from W. Albert and Barbara C. Carlton. The original 4,458-acre tract, now commonly referred to as the HMWMA, was the largest single acquisition of the 11,500-acre Carlton Half Moon Ranch CARL project. An additional 878 acres (Seven Springs / Smith Tract) were purchased in 1992, followed by the Potter property (122 acres) acquired in 1996; both were purchased under the CARL Program. In 2008, the SWFWMD purchased the Phebus tract (35 acres). Currently, the entire the HMWMA encompasses 9,554 acres, which includes 4,021 acres leased from the SWFWMD which was purchased under the Save our Rivers program.

Proximity to Other Public Conservation Lands and Florida Forever Projects

The HMWMA is surrounded by a myriad of conservation lands including the Gum Slough Conservation Easement to the north, Potts Preserve to the west, and Flying Eagle Ranch to the south. Conservation lands near the HMWMA's boundary are shown in Figure 1.

Most of the conservation lands within the vicinity of the HMWMA are owned in full-fee by a public entity, while others are owned in full-fee by a private not-for-profit 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. These privately-owned conservation lands are owned and being managed by a private landowner while a public agency or not-for-profit organization holds a conservation easement and monitoring responsibility for the land. Others are simply owned by the private landowner, while public agencies or not-for-profit organizations manage the land. Some conservation lands may also be co-owned by multiple agencies.

The HMWMA is in the vicinity of a network of Florida Forever lands including lands managed by the SWFWMD and Florida Forest Service (FFS). Some Florida Forever projects nearby include the Annutteliga Hammock and Florida's First Magnitude Springs to the southwest, Longleaf Pine Ecosystem to the northwest, and Battle of Wahoo to the south.

6 Adjacent Land Use

The HMWMA is in the northwestern corner of Sumter County and is bordered to the north by Marion County and to the west by Citrus County. The Withlacoochee River forms the southwest border of the HMWMA and State Road 44 acts as a narrow southern boundary. Most of the private lands east of the HMWMA form Ventura Ranch. The ranch lands are zoned Agricultural, and within Sumter County's Land Development Code, a maximum density of one dwelling unit per ten acres is permitted. The remaining land to the east of the HMWMA, not included within Ventura Ranch, is also zoned Agricultural.

The area comprising the HMWMA is zoned Conservation and Agriculture. The Sumter County Land Development Code states that land zoned Conservation/Agriculture permits the following uses: agriculture and silviculture uses and related industries, natural resource conservation/preservation, and agriculture. This designation provides environmental protection, conservation, storm water management, and limited public use for publicly owned lands. Within Sumter County's Conservation zone, public or private use or development is prohibited except when otherwise consistent with the Sumter County Comprehensive Plan. The majority of the surrounding area has a future land use designation of Agricultural, 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 HMWMA and surrounding properties, the HMWMA should not face substantial development impacts or challenges in the foreseeable future. The closest cities are considered rural; apart from Inverness and Hernando, whose current proximity is not considered near enough to effect development trends or the ongoing conservation of the HWWMA during the ten-year management plan planning period (2020-2030).

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 of 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 124,935 people living in Sumter County and 342,917 people in Lake 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 175,100 people living in Sumter County, while Lake County is expected to grow to 437,200. The BEBR's medium-range population projections for the same year of the surrounding counties are as follows: Hernando – 218,300; Citrus – 161,100; Lake – 437,200; Marion – 406,200; Pasco – 619,900; and Polk – 807,900.

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 The HMWMA Optimal Conservation Planning Boundary

Several properties have been identified for inclusion in the OCPB (Figure 3), which qualifies them for potential acquisition under the auspices of FWC's Florida Forever A&I Acquisition program. 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 HMWMA and other wildlife habitat. Lands within the OCPB are important to buffer the boundaries of the HMWMA from potential adjacent incompatible developments; and to aide 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 of the continued conservation of wildlife and other natural resources.

9 Potential Conservation Stewardship Opportunities Adjacent to the HMWMA

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 HMWMA. The role and development of Land Conservation and Stewardship Partnerships is fully explained in section 5.11 and 6.10 of the HMWMA 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 The FWC Florida Forever Additions and Inholdings Acquisition List Conservation Benefits Analysis

Several properties have been identified for recommended acquisition under the auspices of the FWC Florida Forever A&I acquisition program for the HMWMA (Figures 4-8). The A&I 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. 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 30,947 acres of potential additions or privately held inholdings as essential to the long-term conservation of wildlife and to the optimal resource and operational management of the HMWMA. Parcels recommended for inclusion 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 - 8 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 HMWMA. These parcels are prioritized on the accompanying map (Figure 9), 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 fee-simple 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 the Department of Environmental Protection (DEP), SWFWMD, United States Department of Agriculture, United States Fish and Wildlife Service, and other organizations and potential grant programs.

13 Analysis of the Potential and Need for Fee vs. Less-than-Fee Acquisition

At this time, the FWC continues to recommend full-fee acquisition of the lands on the FWC Florida Forever A&I Acquisition List for the HMWMA 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 HMWMA 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. Though, it should be noted that landowner preference is also a key factor in determining whether to pursue a full-fee or less-than-fee conservation acquisition.

14 Recommendations for Prioritized Land Conservation Actions

Following are the prioritized recommendations of conservation actions for the HMWMA:

1. Acquire parcels on the FWC Florida Forever A&I acquisition list as prioritized and feasible with available funding.
2. Working with surrounding landowners and as needed, recommend addition of parcels to nearby Florida Forever projects, the OCPB, and/or the A&I acquisition list.
3. Continue to assist and support DEP/Board of Trustees with the acquisition of the lands remaining within Florida Forever projects within the vicinity of the area.
4. Continue to work with private landowners near the HMWMA 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 DEP, the FFS, the SWFWMD, Sumter County, and other non-governmental conservation organizations; and pursue potential grant program opportunities.

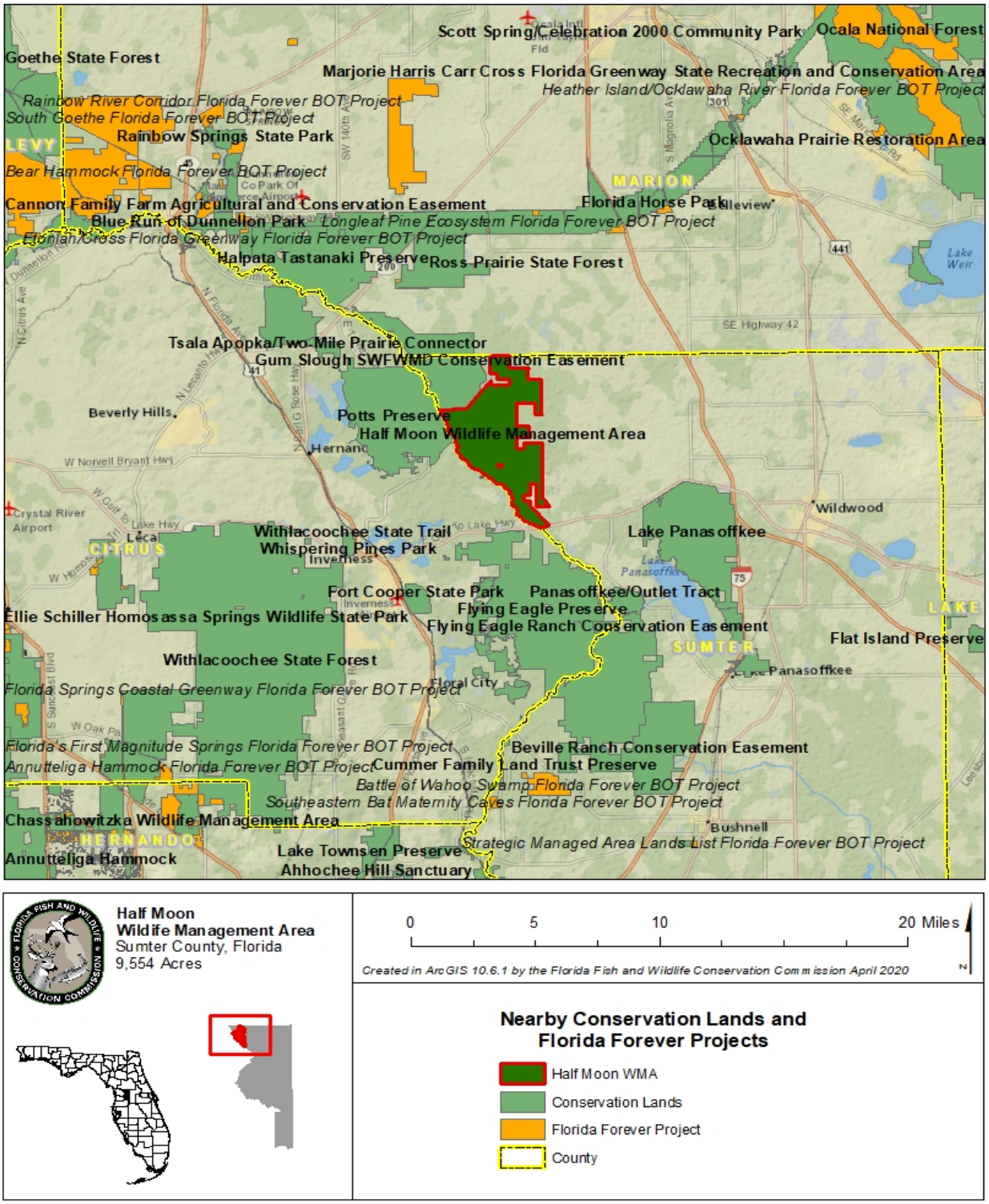


Figure 17. Vicinity Map of the HMWMA

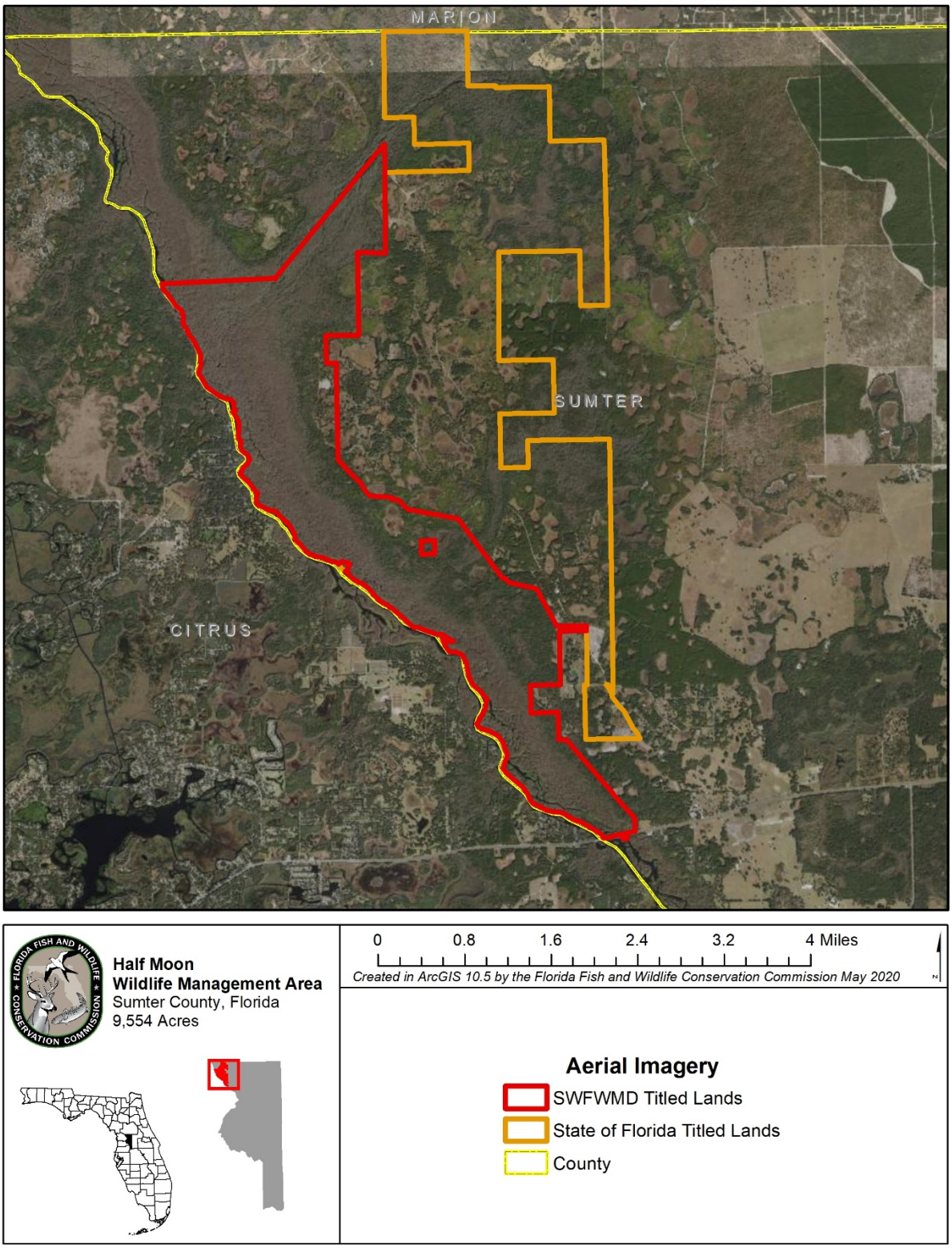

MARION
SUMTER
CITRUS
Half Moon
Wildlife Management Area
Sumter County, Florida
9,554 Acres
0
0.8
1.6
2.4
3.2
4 Miles
Created in ArcGIS 10.5 by the Florida Fish and Wildlife Conservation Commission May 2020
Aerial Imagery
SWFWMD Titled Lands
State of Florida Titled Lands
County

Figure 18. Aerial Imagery

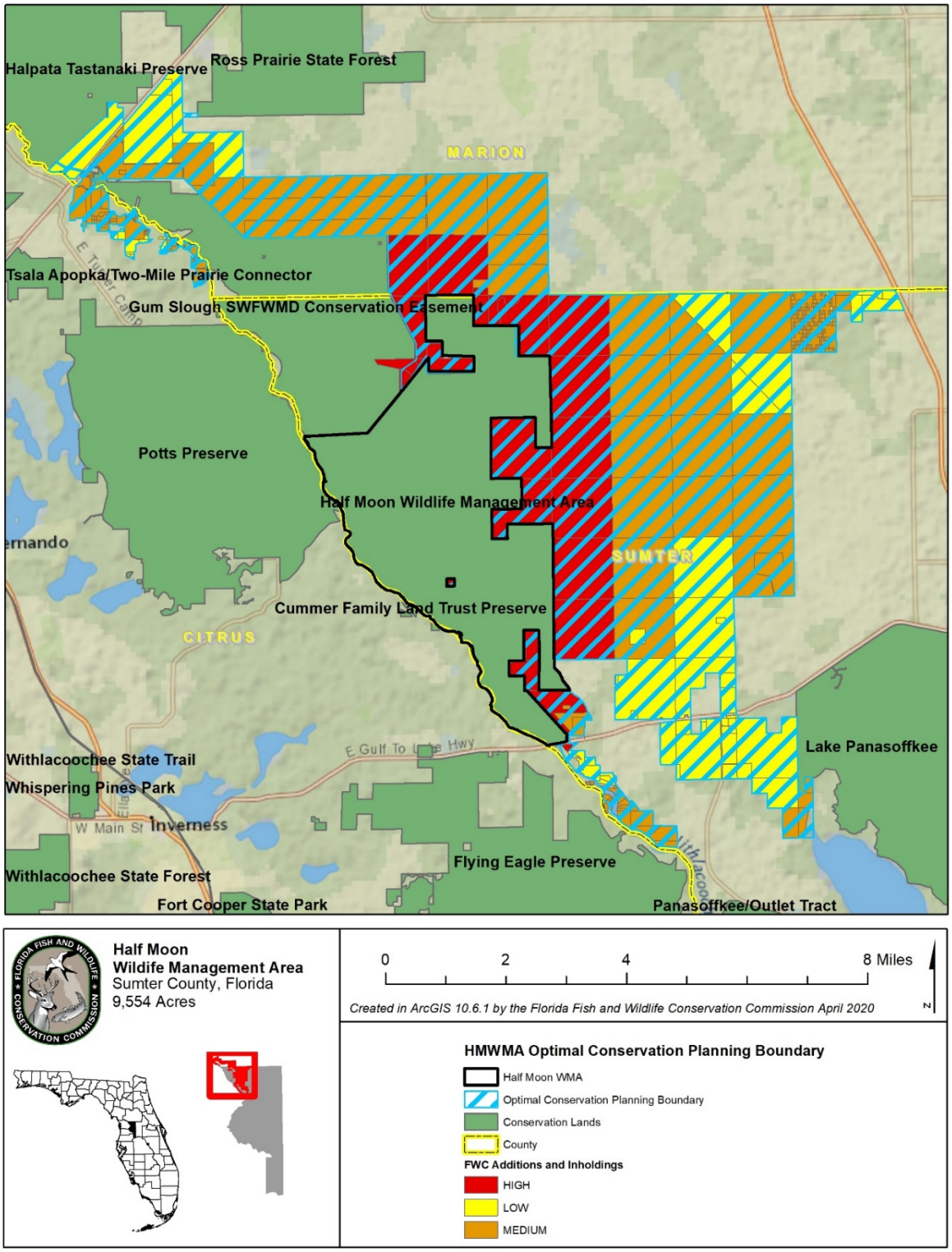


Figure 3. Optimal Conservation Planning Boundary

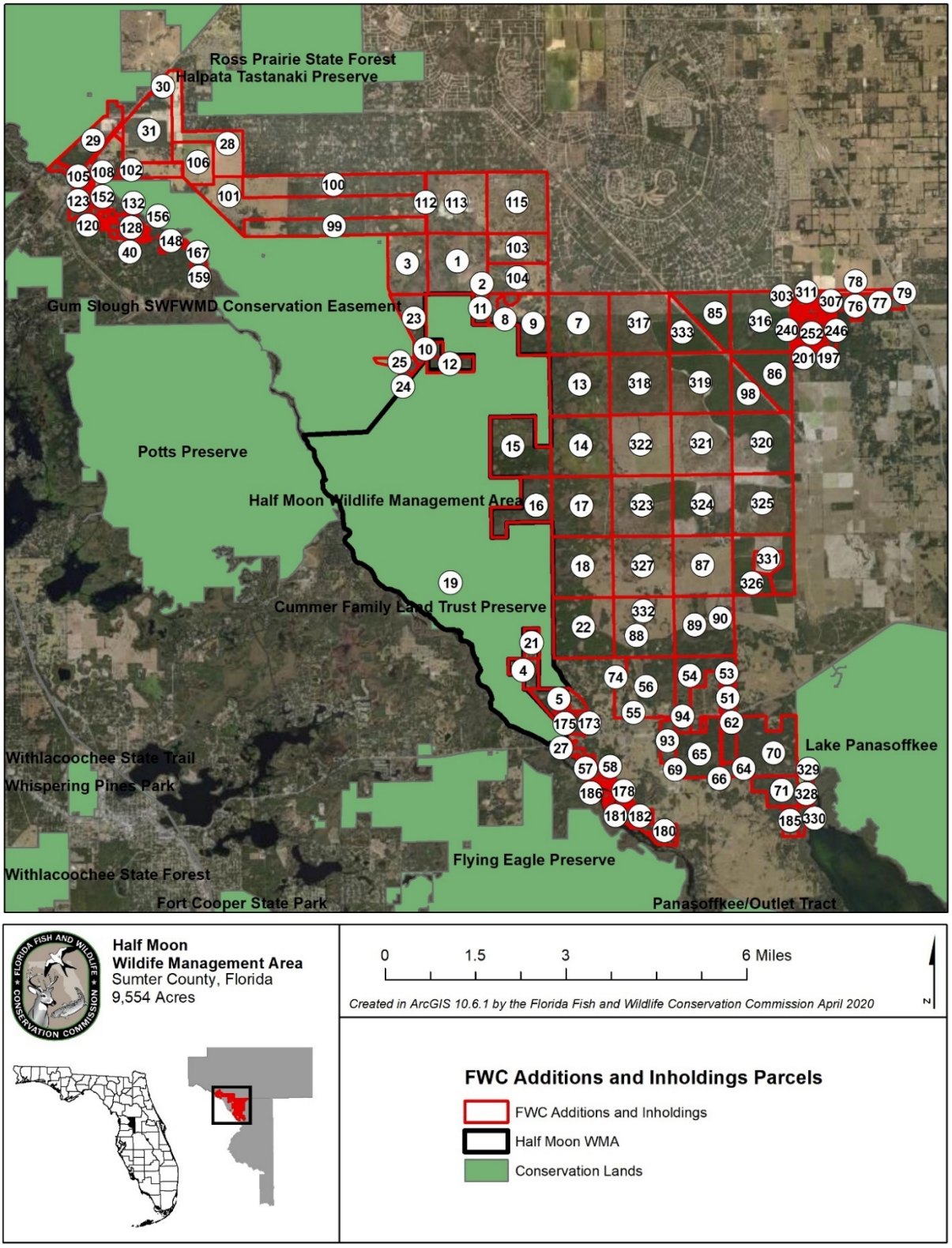


Figure 4. FWC Additions and Inholdings

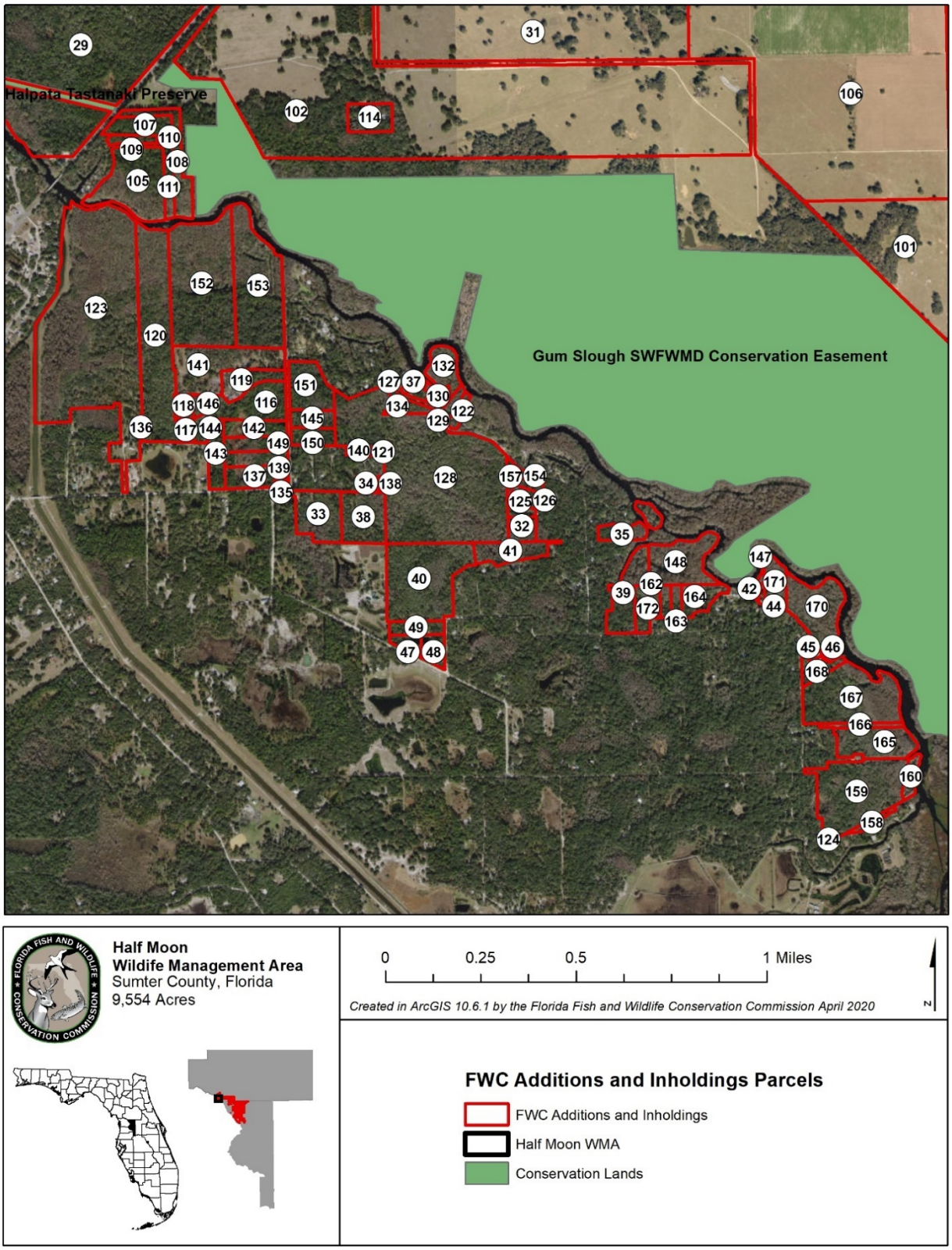


Figure 5. FWC Additions and Inholdings-Zoom In (North West)

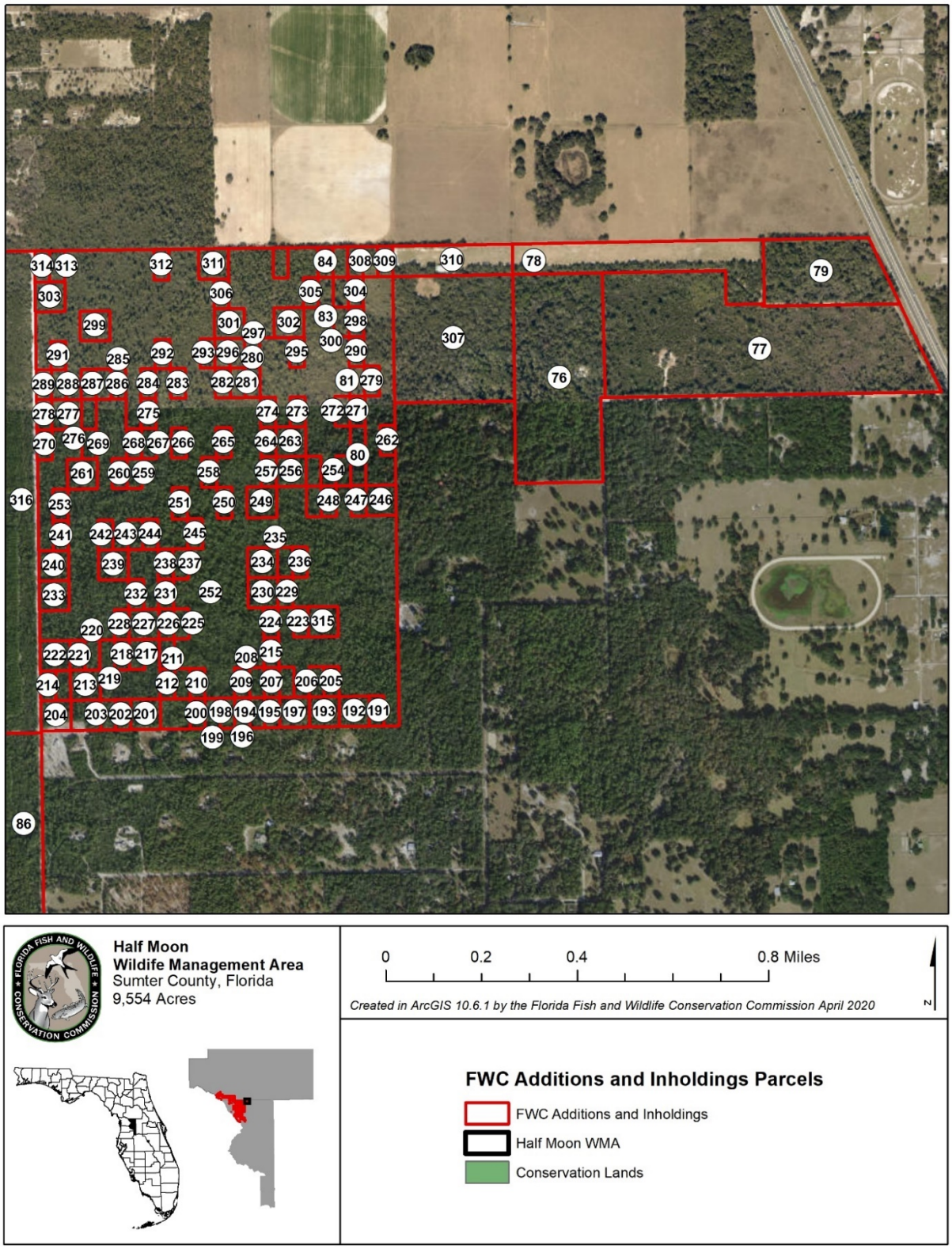


Figure 6. FWC Additions and Inholdings – Zoom In (East)

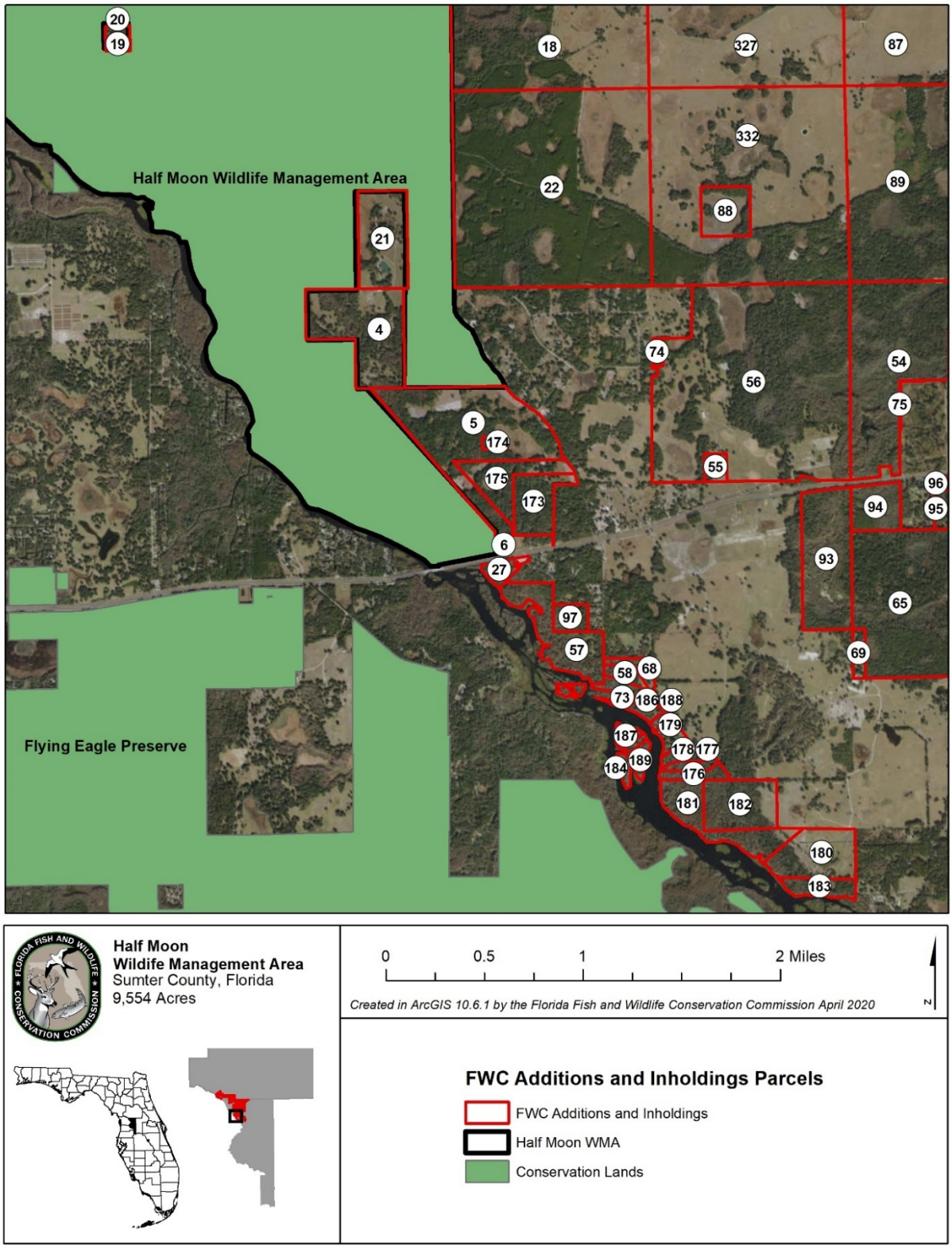


Figure 7. FWC Additions and Inholdings – Zoom In (South)

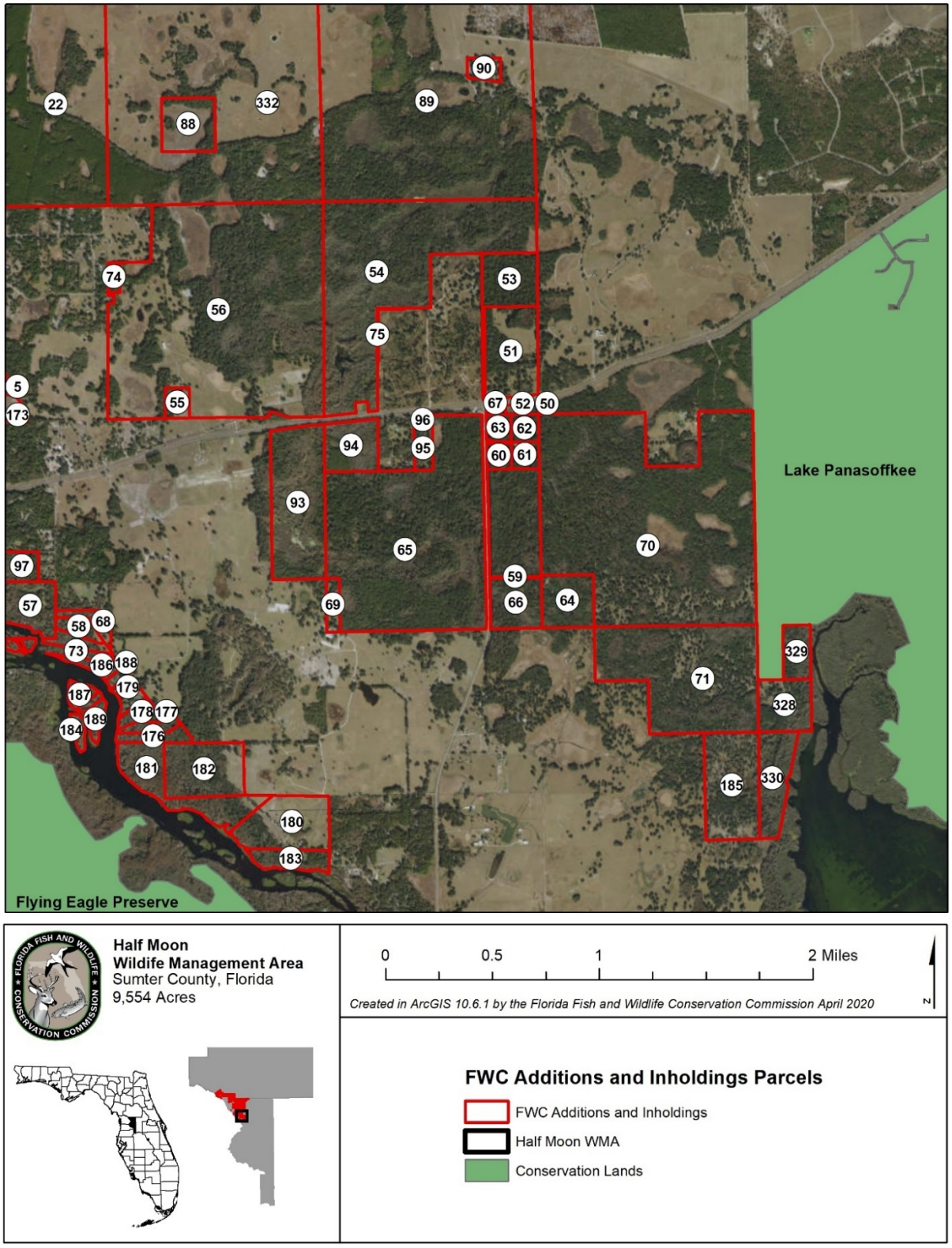


Figure 8. FWC Additions and Inholdings – Zoom In (South East)

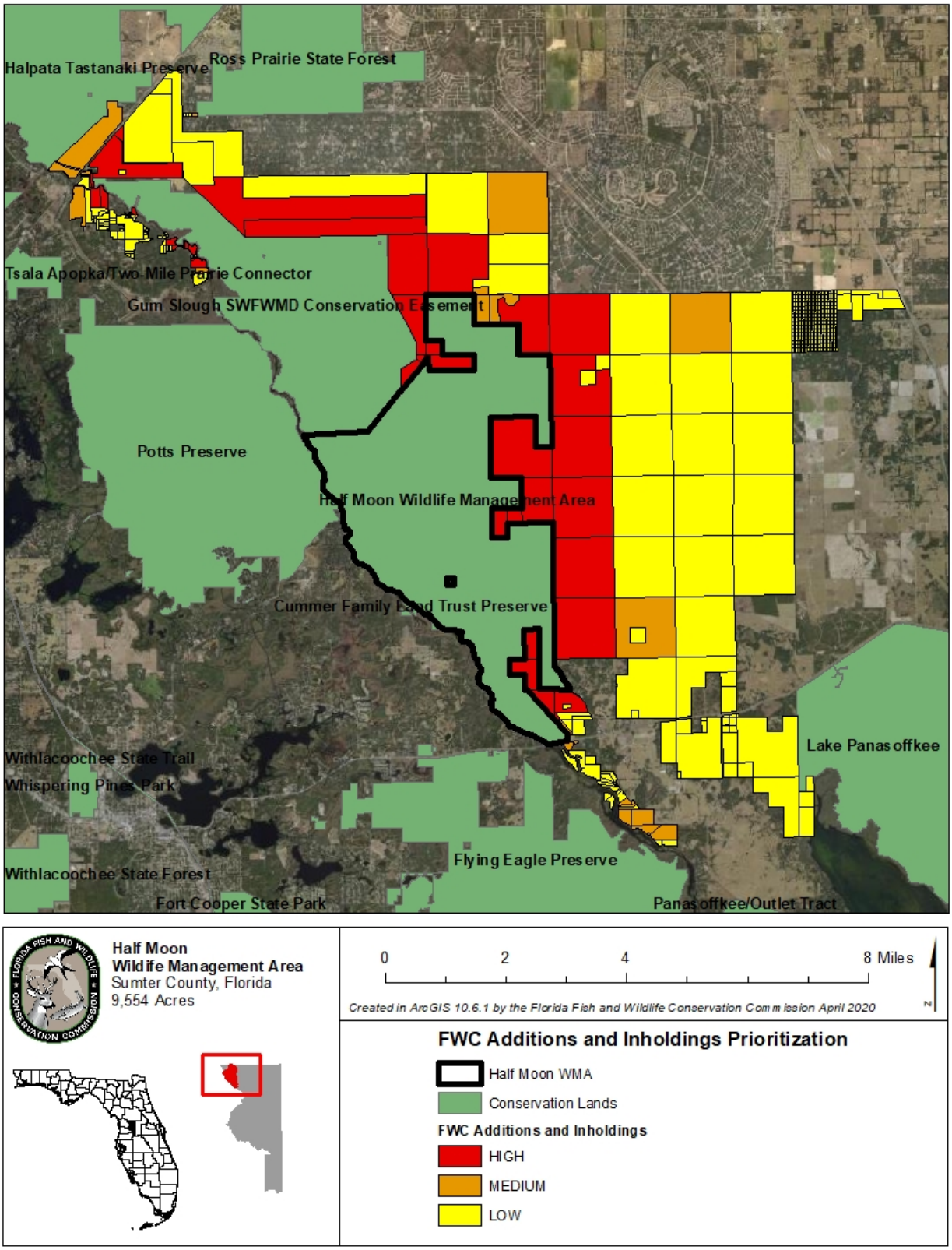


Figure 9. FWC Additions and Inholdings Prioritization

Table 12. Additions and Inholdings List for the HMWMA

Label	Parcel ID	Acres	Priority
1	41345-001-00	600.19	HIGH
2	41345-002-00	19.18	HIGH
3	41109-018-00	423.29	HIGH
4	E05-002	121.50	HIGH
5	E09-050	191.87	HIGH
6	E09-023	0.21	HIGH
7	B04-001	647.14	HIGH
8	B05-001	83.27	HIGH
9	B05-002	409.17	HIGH
10	B06-004	43.98	HIGH
11	B06-003	84.60	HIGH
12	B07-001	126.08	HIGH
13	B09-001	650.25	HIGH
14	B16-001	639.91	HIGH
15	B17-002	566.29	HIGH
16	B20-001	361.69	HIGH
17	B21-001	636.32	HIGH
18	B28-001	646.47	HIGH
19	B30-003	5.00	HIGH
20	B30-020	5.00	HIGH
21	B32-003	79.40	HIGH
22	B33-001	643.15	HIGH
23	A01-003	238.72	HIGH
24	A12-001	29.50	HIGH
25	A12-006	69.97	HIGH
26	A12-003	10.03	HIGH
27	E09-013	11.73	HIGH
28	40869-001-00	428.98	LOW
29	40867-000-00	319.70	LOW
30	40855-000-00	42.11	LOW
31	40868-000-00	520.02	LOW
32	20E17S29 3C000 006A	3.01	LOW
33	20E17S30 22300	9.89	LOW
34	20E17S30 2C000 0560	1.31	LOW
35	20E17S29 3A000 0011	4.74	LOW
36	20E17S29 3B000 1050	0.68	LOW
37	20E17S29 3B000 1060	1.24	LOW

38	20E17S30 22200	9.86	LOW
39	20E17S32 14200	9.27	LOW
40	20E17S32 44000	24.98	LOW
41	20E17S32 41440	6.14	LOW
42	20E17S32 1A000 0AB0	0.56	LOW
43	20E17S32 1A000 00C0	0.37	LOW
44	20E17S32 1A000 00D0	0.44	LOW
45	20E17S33 4D000 0010	0.38	LOW
46	20E17S33 4D000 001B	0.65	LOW
47	20E17S32 43401	2.10	LOW
48	20E17S32 43400	2.99	LOW
49	20E17S32 43410	3.33	LOW
50	E01-003	1.14	LOW
51	E02-003	67.60	LOW
52	E02-005	4.78	LOW
53	E02-010	44.15	LOW
54	E02-001	319.21	LOW
55	E03-004	10.33	LOW
56	E03-001	595.29	LOW
57	E09-012	69.37	LOW
58	E15A005	10.04	LOW
59	E11-017	0.73	LOW
60	E11-010	8.87	LOW
61	E11-012	10.43	LOW
62	E11-001	11.27	LOW
63	E11-009	9.14	LOW
64	E12-004	38.20	LOW
65	E11-002	463.34	LOW
66	E11-002	36.28	LOW
67	E02-004	2.21	LOW
68	E15A006	9.98	LOW
69	E11-006	10.06	LOW
70	E12-003	563.43	LOW
71	E13-001	205.13	LOW
72	E11-023	0.07	LOW
73	E15A004	9.93	LOW
74	E03-005	5.02	LOW
75	E02-020	1.30	LOW
76	C05-025	51.83	LOW
77	C05-020	91.11	LOW

78	C05-019	25.07	LOW
79	C05-007	22.42	LOW
80	C06-259	2.49	LOW
81	C06-348	1.24	LOW
82	C06-133	1.24	LOW
83	C06-134	1.24	LOW
84	C06-027	1.26	LOW
85	B02-002	348.77	LOW
86	B12-002	393.08	LOW
87	B26-001	635.60	LOW
88	B34-002	40.00	LOW
89	B35-002	624.96	LOW
90	B35-001	10.14	LOW
91	E02-016	0.07	LOW
92	E02-015	0.07	LOW
93	E10-001	114.50	LOW
94	E11-005	37.63	LOW
95	E11-022	10.98	LOW
96	E11-003	3.62	LOW
97	E09-032	15.68	LOW
98	B12-001	249.93	LOW
99	41109-004-00	545.00	MEDIUM
100	41109-002-00	689.78	MEDIUM
101	41109-003-00	993.39	MEDIUM
102	40866-000-00	316.09	MEDIUM
103	41346-001-00	318.63	MEDIUM
104	41345-000-00	345.72	MEDIUM
105	41109-012-00	17.56	MEDIUM
106	40869-000-00	260.90	MEDIUM
107	40865-001-00	6.23	MEDIUM
108	40866-001-00	7.35	MEDIUM
109	4111-000-000	1.81	MEDIUM
110	4111-002-010	0.20	MEDIUM
111	41109-011-00	2.60	MEDIUM
112	41109-018-01	9.66	MEDIUM
113	41344-000-00	649.92	MEDIUM
114	40866-002-00	5.41	MEDIUM
115	41343-000-00	652.42	MEDIUM
116	20E17S30 23100 0030	10.37	MEDIUM
117	20E17S30 23100 0080	1.66	MEDIUM

118	20E17S30 23100 0150	1.98	MEDIUM
119	20E17S30 23200	5.28	MEDIUM
120	20E17S30 31100	31.11	MEDIUM
121	20E17S30 2C000 0150	0.57	MEDIUM
122	20E17S29 3B000 1090	1.51	MEDIUM
123	20E17S30 31300	87.59	MEDIUM
124	20E17S32 3A000 00A0	0.53	MEDIUM
125	20E17S29 3C000 0050	1.31	MEDIUM
126	20E17S29 3C000 0040	1.26	MEDIUM
127	20E17S29 3B000 0300	0.39	MEDIUM
128	20E17S29 3C000	74.83	MEDIUM
129	20E17S29 3B000 1080	1.49	MEDIUM
130	20E17S29 3B000 107A	1.93	MEDIUM
131	20E17S29 3B000 0280	0.36	MEDIUM
132	20E17S29 3B000 1070	5.00	MEDIUM
133	20E17S29 3C000 0330	1.02	MEDIUM
134	20E17S29 3C000 0320	1.28	MEDIUM
135	20E17S30 23100 00A0	0.46	MEDIUM
136	20E17S30 31310	0.30	MEDIUM
137	20E17S30 23100 0070	5.64	MEDIUM
138	20E17S30 2C000 0650	0.43	MEDIUM
139	20E17S30 23100 0060	4.12	MEDIUM
140	20E17S30 2C000 0100	1.03	MEDIUM
141	20E17S30 24100	16.21	MEDIUM
142	20E17S30 23100 0040	4.64	MEDIUM
143	20E17S30 23410	4.99	MEDIUM
144	20E17S30 23100 0090	1.63	MEDIUM
145	20E17S30 21330	3.46	MEDIUM
146	20E17S30 23100 0140	1.31	MEDIUM
147	20E17S32 11110	0.61	MEDIUM
148	20E17S32 11100	11.78	MEDIUM
149	20E17S30 23100 0050	4.12	MEDIUM
150	20E17S30 21300	3.45	MEDIUM
151	20E17S30 21400	8.22	MEDIUM
152	20E17S30 13300	35.14	MEDIUM
153	20E17S30 13100	25.40	MEDIUM
154	20E17S29 3C000 0030	1.00	MEDIUM
155	20E17S29 3C000 0020	1.00	MEDIUM
156	20E17S29 3C000 0010	1.00	MEDIUM
157	20E17S29 3C000 0090	1.34	MEDIUM

158	20E17S32 3A000 00B0	1.28	MEDIUM
159	20E17S33 31320	23.66	MEDIUM
160	20E17S33 31301	2.05	MEDIUM
161	20E17S32 1A000 114B	1.55	MEDIUM
162	20E17S32 1A000 113B	1.55	MEDIUM
163	20E17S32 1A000 112B	1.55	MEDIUM
164	20E17S32 1A000 111B	4.53	MEDIUM
165	20E17S33 31311	10.08	MEDIUM
166	20E17S33 34144	1.68	MEDIUM
167	20E17S33 4D000 0140	21.16	MEDIUM
168	20E17S33 4D000 0150	2.78	MEDIUM
169	20E17S33 4D000 001A	0.65	MEDIUM
170	20E17S33 4D000	12.09	MEDIUM
171	20E17S33 44300	4.49	MEDIUM
172	20E17S32 1A000 1150	2.98	MEDIUM
173	E09-016	44.42	MEDIUM
174	E04-005	5.00	MEDIUM
175	E09-006	47.49	MEDIUM
176	E15A001	11.71	MEDIUM
177	E15-012	10.01	MEDIUM
178	E15A012	10.08	MEDIUM
179	E15A013	10.00	MEDIUM
180	E15-005	62.37	MEDIUM
181	E15-010	58.43	MEDIUM
182	E15-006	60.01	MEDIUM
183	E22-001	21.10	MEDIUM
184	E16-001	12.53	MEDIUM
185	E13-003	81.27	MEDIUM
186	E15A015	8.41	MEDIUM
187	E15A015	7.27	MEDIUM
188	E15A014	3.32	MEDIUM
189	E15A014	6.96	MEDIUM
190	E15A010A	1.28	MEDIUM
191	C06-346	1.25	MEDIUM
192	C06-347	2.51	MEDIUM
193	C06-327	2.51	MEDIUM
194	C06-049	1.26	MEDIUM
195	C06-266	1.26	MEDIUM
196	C06-069	1.26	MEDIUM
197	C06-328	2.52	MEDIUM

198	C06-115	1.26	MEDIUM
199	C06-200	1.26	MEDIUM
200	C06-048	1.26	MEDIUM
201	C06-476	2.52	MEDIUM
202	C06-201	1.26	MEDIUM
203	C06-118	1.26	MEDIUM
204	C06-052	2.52	MEDIUM
205	C06-322	1.25	MEDIUM
206	C06-457	1.25	MEDIUM
207	C06-341	1.25	MEDIUM
208	C06-340	1.25	MEDIUM
209	C06-116	1.25	MEDIUM
210	C06-338	1.25	MEDIUM
211	C06-337	1.25	MEDIUM
212	C06-078	1.25	MEDIUM
213	C06-475	2.50	MEDIUM
214	C06-110	1.25	MEDIUM
215	C06-265	1.25	MEDIUM
216	C06-079	1.25	MEDIUM
217	C06-070	1.25	MEDIUM
218	C06-334	1.25	MEDIUM
219	C06-099	1.25	MEDIUM
220	C06-100	1.25	MEDIUM
221	C06-101	1.25	MEDIUM
222	C06-097	2.50	MEDIUM
223	C06-264	1.25	MEDIUM
224	C06-263	1.25	MEDIUM
225	C06-227	1.25	MEDIUM
226	C06-226	1.25	MEDIUM
227	C06-095	2.50	MEDIUM
228	C06-022	1.25	MEDIUM
229	C06-260	1.25	MEDIUM
230	C06-261	2.50	MEDIUM
231	C06-192	1.25	MEDIUM
232	C06-059	1.25	MEDIUM
233	C06-225	2.50	MEDIUM
234	C06-187	2.50	MEDIUM
235	C06-259	1.25	MEDIUM
236	C06-345	1.25	MEDIUM
237	C06-358	1.25	MEDIUM

238	C06-364	1.25	MEDIUM
239	C06-258	2.50	MEDIUM
240	C06-067	2.50	MEDIUM
241	C06-085	1.25	MEDIUM
242	C06-080	1.25	MEDIUM
243	C06-256	1.25	MEDIUM
244	C06-089	1.25	MEDIUM
245	C06-184	1.25	MEDIUM
246	C06-279	5.06	MEDIUM
247	C06-222	1.27	MEDIUM
248	C06-344	1.28	MEDIUM
249	C06-180	2.58	MEDIUM
250	C06-179	1.29	MEDIUM
251	C06-178	1.30	MEDIUM
252	C06-004	284.95	MEDIUM
253	C06-061	1.31	MEDIUM
254	C06-320	1.24	MEDIUM
255	C06-267	1.24	MEDIUM
256	C06-170	2.49	MEDIUM
257	C06-171	1.24	MEDIUM
258	C06-174	1.24	MEDIUM
259	C06-331	1.24	MEDIUM
260	C06-068	1.24	MEDIUM
261	C06-076	2.49	MEDIUM
262	C06-454	1.24	MEDIUM
263	C06-451	2.48	MEDIUM
264	C06-168	1.24	MEDIUM
265	C06-167	1.24	MEDIUM
266	C06-058	1.25	MEDIUM
267	C06-363	1.25	MEDIUM
268	C06-091	1.25	MEDIUM
269	C06-102	1.25	MEDIUM
270	C06-359	1.25	MEDIUM
271	C06-242	1.24	MEDIUM
272	C06-244	1.24	MEDIUM
273	C06-207	1.24	MEDIUM
274	C06-215	1.25	MEDIUM
275	C06-018	1.25	MEDIUM
276	C06-332	1.25	MEDIUM
277	C06-357	1.25	MEDIUM

278	C06-353	1.25	MEDIUM
279	C06-247	1.24	MEDIUM
280	C06-160	1.24	MEDIUM
281	C06-245	1.24	MEDIUM
282	C06-039	1.24	MEDIUM
283	C06-158	1.25	MEDIUM
284	C06-157	1.25	MEDIUM
285	C06-103	1.25	MEDIUM
286	C06-330	1.25	MEDIUM
287	C06-104	1.25	MEDIUM
288	C06-274	1.25	MEDIUM
289	C06-449	1.25	MEDIUM
290	C06-151	1.24	MEDIUM
291	C06-041	1.18	MEDIUM
292	C06-156	1.21	MEDIUM
293	C06-155	1.22	MEDIUM
294	C06-154	1.23	MEDIUM
295	C06-030	1.24	MEDIUM
296	C06-126	1.23	MEDIUM
297	C06-008	1.24	MEDIUM
298	C06-149	1.24	MEDIUM
299	C06-031	2.49	MEDIUM
300	C06-148	1.24	MEDIUM
301	C06-144	2.49	MEDIUM
302	C06-147	2.48	MEDIUM
303	C06-452	2.49	MEDIUM
304	C06-209	1.24	MEDIUM
305	C06-210	1.24	MEDIUM
306	C06-139	1.24	MEDIUM
307	C06-009	42.43	MEDIUM
308	C06-271	1.26	MEDIUM
309	C06-272	1.27	MEDIUM
310	C06-010	10.22	MEDIUM
311	C06-128	2.53	MEDIUM
312	C06-240	1.27	MEDIUM
313	C06-002	1.30	MEDIUM
314	C06-005	1.30	MEDIUM
315	C06-001	5.00	MEDIUM
316	B01-002	642.17	MEDIUM
317	B03-001	640.51	MEDIUM

318	B10-001	648.20	MEDIUM
319	B11-001	650.25	MEDIUM
320	B13-001	648.86	MEDIUM
321	B14-001	653.59	MEDIUM
322	B15-001	655.29	MEDIUM
323	B22-001	644.35	MEDIUM
324	B23-001	640.39	MEDIUM
325	B24-001	651.33	MEDIUM
326	B25-001	547.71	MEDIUM
327	B27-001	640.81	MEDIUM
328	F18-003	39.04	MEDIUM
329	F18-004	20.75	MEDIUM
330	F18-006	43.41	MEDIUM
331	B25-002	101.59	MEDIUM
332	B34-001	601.50	MEDIUM
333	B02-001	300.67	MEDIUM

12.12 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

12.13 HMWMA Cattle Grazing Contract

AGREEMENT NUMBER 12168

AGREEMENT ROUTING REVIEW FORM

CONTRACTOR TILTON & TILTON LLC

VENDOR ID NO. F262750985001 PROCUREMENT METHOD*/BID/RFP NO. 12/13-05 BID

PROJECT TITLE TILTON HALF MOON CATTLE GRAZING AGREEMENT

ORIGINATOR/CONTACT ANTHONY PINZINO PHONE 617-9510 DIV./OFFICE/MAIL HSC/THCR

X NEW** __ AMENDMENT __ RENEWS OR EXTENDS

__ EXPENDITURE** X REVENUE __ AGREEMENT __ EASEMENT/DEED __ LEASE (INCLUDES WMA OR FMA LEASES)

AGREEMENT BEGINNING DATE ~~EXECUTION~~ 10/5/12 END DATE 5YRS AFTER EXECUTION OPTION FOR 5 YEARS

TOTAL CONTRACT AMOUNT $10,260 ANNUALLY PAYMENT AMOUNT $ VARIES AFTER YR1 BASED ON CATTLE PRICE ADJ.

BILLING PERIODS: __ MONTHLY __ QUARTERLY __ ANNUALLY X OTHER SEMI-ANNUALL

BUILDING INSURANCE TO BE INCURRED BY THE COMMISSION (LEASES) X NO __ YES (Notify Property Administrator)

****NEW EXPENDITURE CONTRACTS**: (1) Attach a copy of the State Project checklist or, for Existing State Projects, show the CSFA No. N/A
(2) Vendor/Recipient Checklist: Attached? __ Yes __ No - not a State Project per (1) Checklist

ORG. CODE	E.O.	OBJECT CODE	CATEGORY	CAT YEAR	AMOUNT	PROJECT ID			FY

Certified Minority: __ Yes __ No __ Not Available X Not Appl. Minority Category _____ (See reverse side for options)

Commodity Code _____ Federal Funds: Agcy _____ CFDA N/A

Routing Order for Approval	Approval (Signature)	Date	Comments
Project Leader	Anthony Pinzino	8/30/12	Budget Sheet is available upon request by external sources. □ Yes □ No
Budget Director (Expenditure Only)	N/A		Budget Authority: □ Existing □ New
Div./Reg./Inst./Off. Dir./Section Leader	M. Brooks	8-30-12	
Enter Contract into SCMS system	**Entered:** □ Yes □ No X N/A		**If applicable, enter contract into SCMS system in "Draft" status, as required**
Asst. Chief Financial Officer - FSAA Originals	N/A		Send to: Mail Code ID
Contracts Administrator	[illegible]	10/3/12	
Legal	[illegible]	9/13/12	
Accounting	[illegible]	9/17/2012	Funds Availability: □ Yes □ No
Exec./Div./Reg./Inst./Off. Dir. **review (check below).**	N/A		
__ Expenditure Contracts: Return to Originator for Contractor signature. __ Other documents: Send to **(circle)** Exec./Div./Reg./Inst./Off. Dir. for signature.	N/A		Expenditure Contracts: After Contractor signs, send to Exec./Div./Reg./Inst./Off. Director for signature and dating.
Exec./Div./Reg./Inst. Dir. **execute**	[illegible]	10.5.12	*NOTE: If not executed for any reason please notify the Contract Administrator and Accounting*
WITHIN THREE (3) DAYS OF CONTRACT EXECUTION THE FOLLOWING STEPS MUST BE DONE:			
Originator to FWC Contract Office	Sent: X Yes □ No	1/09/13	Email electronic (.pdf) copy of Contract & Routing Form or send hard copy
Contract Administrator	Updated: □ Yes X No		Update status in SCMS system from "Draft" to "Active"
Contract Administrator	Reported: □ Yes X No		Report non-competitively procured contracts in excess of Category 2 to DFS
Originator or Contract Administrator to Accounting	Sent: X Yes □ No	1/10/13	Mail one (1) hard copy of Contract & Routing Form

FWC 167/rev. 04/11 \SHARE\FORMS\CONROUTE.167 *See reverse for Codes/Definitions/Distribution*

Randy K. Chapman 1/10/2013

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION
DIVISION OF HABITAT AND SPECIES CONSERVATION

MEMORANDUM

Date: August 30, 2012

To: Reviewers

From: Anthony Pinzino
HSC/WHM

RE: Cattle Grazing Contract #12168 with Florida Fish and Wildlife Conservation Commission (FWC) and Payton Tilton

Included for your review are two originals of FWC Cattle Grazing Agreement Number 12168, with Payton Tilton on the Half Moon Wildlife Management Area (WMA). This agreement will allow Mr. Tilton to place up to 72 animal units (au) on the Half Moon WMA for a five year term with a renewal option for an additional five years. This revenue generating agreement will provide FWC $10,260 for the first year. The revenue due for the remaining four years of the agreement will vary due to an annual adjustment made based on yearly cattle (calf) prices.

The agreement in addition to providing cattle grazing rights requires the Contractor to maintain fencing, cattle guards, gates, and fire-lanes. The Contractor must provide FWC with a copy of his general liability insurance as well as a performance bond for $15,000.

Your prompt review and delivery to the next reviewer would be greatly appreciated. If more expeditious, please contact me so I may pick the package up and hand deliver it to the next party. Should there be any questions, please call me at 617-9510.

Thank you for your assistance.

Anthony Pinzino
HSC/WHM

Enclosures

FWC Contract # 12168

CONTRACT FOR
CATTLE GRAZING AT HALF MOON WILDLIFE MANAGEMENT AREA

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 Tilton & Tilton LLC., whose address is 154 Litzell Road, Interlachen, Florida 32148, hereinafter called the "CONTRACTOR". .

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 the Half Moon 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 Scope of Work attached as Attachment A and B. The term "Scope of Work" when used in this Contract shall include Attachments A and B and Exhibits 1, 2, 3, 4 and 5.

This CONTRACT is entered into pursuant to the COMMISSION's Invitation to Bid (ITB) FWC 12/13-05, the CONTRACTOR's Bid and the COMMISSION's Grazing Plan, of which all three are attached hereto and made an integral part of this CONTRACT. In the event of conflict between this CONTRACT and Attachments A or B the terms of this CONTRACT shall govern.

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.

3. **PROPERTY:** The property on which these activities described in this Contract will occur is described in Exhibit 1 of this Contract (the property). 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.

4. **TERM; RENEWAL:** This Contract shall begin upon execution by both parties and end five (5) years thereafter, inclusive unless terminated earlier in accordance with its term. This Contract may be renewed for up to five (5) years, or for a total term not to exceed the original Contract period, whichever is longer. The stocking rate, number of Animal Units and acreage of the Contract during any renewal period shall be determined prior to the conclusion of the initial or subsequent terms. Reference herein to the "term" of this Contract shall include any renewal. Renewal of this Contract shall be in writing and subject

to the same terms and conditions of this Contract; provided that the parties may by mutual agreement change such terms and conditions. Renewal amendments must be executed prior to the completion date of the Contract. All renewals are contingent upon satisfactory performance by the CONTRACTOR.

5. AMENDMENT 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 the parties.

6. CONTRACTOR'S RESPONSIBILITIES: In addition to the general provisions of this Contract the CONTRACTOR shall have the following specific responsibilities:

6.1 CONTRACTUAL PAYMENT SCHEDULE: The CONTRACTOR shall submit the first semi-annual payment and the $15,000 Performance Bond within ten (10) consecutive calendar days after the execution of the contract. The COMMISSION shall invoice the CONTRACTOR for subsequent semiannual payments. CONTRACTOR shall provide a Performance Bond each renewal period on or before the expiration date of the previous bond issued. 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 Performance Bond shall be submitted to the COMMISSION's Tallahassee Purchasing Office to the attention of ITB FWC 12/13-05, assigned Purchasing Agent with a copy sent to the WHM Section Leader. 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 lane disking requirement, fence 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 is 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 cost of disking

fire lanes each year (@$30.00 per mile). The performance bond number calculated will be round 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 Power of Attorney to the COMMISSION'S Tallahassee Purchasing Office to the attention of the COMMISSION'S, Contract Administrator, in order to secure the payment and performance of the CONTRACTOR'S obligations under this Contract. 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: Purchasing Office, Contract Administrator
FWC 12/13-05
620 South Meridian Street, Room 364
Tallahassee, Florida, 32399-1600

COPY OF ORIGINALS MAILED TO:
Florida Fish and Wildlife Conservation COMMISSION
Attn: HSC/WHM, Section Leader, M/S – 10
Attn: WHM Contract Manager
620 South Meridian Street
Tallahassee, Florida, 32399-1600

6.2 STOCKING RATE: The CONTRACTOR shall semi-annually pay the COMMISSION $142.50 per animal grazing unit for the first year of grazing ($5,130 semi-annually for first year total of $10,260). The grazing unit per animal will be adjusted annually as noted in Section 3.1 below. Cattle shall be stocked at a rate not to exceed 72 animal grazing units on Half Moon Wildlife Management Area as identified in Exhibit 1 attached hereto. 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.

The CONTRACTOR shall provide the project manager with an Annual Forage Assessment and Maximum Stocking Rate estimate performed by either a local NRCS extension office, or a professional rangeland consultant by January 31st each year.

6.3 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.

6.4 FENCE MAINTENANCE: The CONTRACTOR shall maintain all grazing lands, exterior and interior fences and cattle guards in good and operable condition. The CONTRACTOR shall perform necessary fence replacement and repair in accordance with specifications for fence construction detailed in Exhibits 3, 4 and 5, (attached). All fences, gates and cattle guards must be maintained in a manner to prevent egress of cattle to areas outside the contracted property. Replacement and\or repair of all posts, cattle guards, gates, 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, and cattle guards 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 fencing 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.

6.5 GRAZING ACCOUTREMENTS: The CONTRACTOR shall be required to have the COMMISSION's Project 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 interior fences in accordance with specifications in Exhibit 3, 4, and 5 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 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.

6.6 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. These restrictions do not exempt the CONTRACTOR from the annual fire lane maintenance requirement.

6.7 FIRE LANES: No less than once every 12 months between April 15 and June 15 of each calendar year, the CONTRACTOR shall disk existing fire lanes of no less than ten foot widths. Such fire lanes shall divide established burn units and completely encircle the perimeter of the contracted area as identified in Exhibit 1; Half Moon WMA has approximately 16 miles of fire lanes. Such fire lanes shall be disked two times with a minimum disked depth of six inches, while maintaining natural topography (i.e. soil remains in firelane to avoid creating a ditch). The CONTRACTOR may request from the COMMISSION, in writing, an extension of time past June 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 lanes in a different time of year. CONTRACTOR shall disk fire lanes following written acceptance of the request by the Project Manager. Such request for extension shall be made by the CONTRACTOR on or before April 30 of said calendar 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 lane maintenance shall not be unreasonably withheld. Failure of the CONTRACTOR to properly disk no earlier than April 15 of each calendar year and no later than June 15 of each 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.

6.8 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.

6.9 VEHICLES: The CONTRACTOR shall register with the PROJECT MANAGER any vehicles used by the CONTRACTOR, its agents and employees on the grazing lands and shall have a permit from the Project Manager in any such vehicle while on the grazing lands. The permit shall be displayed upon demand of the COMMISSION.

6.10 CAMPING: The CONTRACTOR shall not allow camping, except as approved in writing by the COMMISSION and at campsites designated by the COMMISSION.

6.11 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.

6.12 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.

6.13 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.

6.14 INDEMNITY: 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.

6.15 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 as 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.

6.16 RECORD KEEPING REQUIREMENTS: 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. The CONTRACTOR shall allow the COMMISSION, the State, or other authorized representatives, access to periodically inspect, review or audit such documents as books, vouchers, records, reports, canceled checks and any and all similar material. Such audit may include examination and review of the source and application of all funds whether from the state, local or federal government, private sources or otherwise. These records shall be maintained for five (5) years following the close of this Contract. In the event any work is subcontracted, the CONTRACTOR shall require each subcontractor to similarly maintain and allow access to such records for audit purposes.

6.17 EXOTIC VEGETATION: In an effort to control exotic plants such as Tropical Soda Apple, all cattle shall be held six (6) days in a quarantine pen (Tropical Soda Apple and all other exotic plants free), outside of the state lands, before being released on the Half Moon Wildlife Management Area. During that period, the quarantine pen and grazing units will be inspected at various times by the Project Manager. If it can be determined that the CONTRACTORS' cattle are spreading the Tropical Soda Apple because cattle were not held for the full required quarantined period, then the CONTRACTOR will be responsible for the elimination of the Tropical Soda Apple.

Exotic plant elimination shall be done in accordance with Exhibit 2 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.

7. 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 COMMISSION'S activities and responsibilities in regard to the Property will be as follows:

7.1 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.

7.2 WITHDRAWAL OF ACREAGE: When 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, COMMISSION shall notify the CONTRACTOR of the reduction of payments due under this Contract. Such reduction shall be determined by COMMISSION based on the price paid by the CONTRACTOR per animal unit, times the number of animal units permitted on the reduced acreage.

8. COMMISSION'S RIGHTS AND RESPONSIBILITIES

8.1 FENCE: The COMMISSION, at its discretion, may install new fencing, and shall coordinate such activities with those of the CONTRACTOR.

8.2 BURNING: All burning prescribed and otherwise shall be conducted by the COMMISSION.

8.3 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.

8.4 WILDLIFE MANAGEMENT EXCLUSIVITY: The COMMISSION shall have the right to withdraw/add certain acreage from the CONTRACT and from/to the CONTRACTORS' cattle grazing use of such acreage, when reasonably necessary or expedient or the proper management of wildlife, upon written notice to the CONTRACTOR with no fewer than 90 days prior to such withdrawal of such acreage, the COMMISSION may fence such acreage so withdrawn at its sole

expense. Withdrawal/add of such acreage shall cause the CONTRACT payment to be adjusted accordingly.

8.5 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.

8.6 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.

9. SPECIAL CONDITIONS

9.1 **CONTRACT ADJUSTMENTS:** The annual CONTRACT payment shall be adjusted in accordance to the difference of the previous two (2) years' annual average calf prices in the Annual Livestock Summary (ALS), published by the Florida Crop and Livestock Reporting Service in August. Such adjustment shall be made to the subsequent invoice. The initial annual CONTRACT payment to be paid by CONTRACTOR to the COMMISSION shall increase or decrease by the same percentage of increase or decrease indicated in the ALS as to annual average calf prices.

In addition, 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.

9.2 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.

9.3 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 for outdoor recreational purposes as herein provided, or for failing to abide by other laws and rules of the State of Florida.
d. This CONTRACT shall terminate ninety (90) 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.
f. 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 Half Moon WMA.
g. 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.
h. 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.

9.4 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:
Payton Tilton
154 Litzell Road
Interlachen FL. 32148

COMMISSION:
Nancy Dwyer
Half Moon Field Office
8864 County Road 247
Lake Panasoffkee, FL 33538

9.5 NON-DISCRIMINATION: No person, on the grounds of race, color, religion, sex, national origin, age, handicap, or marital status, shall be excluded from participation in, be denied the proceeds or benefits of, or be otherwise subjected to discrimination in performance of this Contract.

9.6 PROHIBITION OF DISCRIMINATORY VENDORS: 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 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.

9.7 PUBLIC ENTITY CRIMES: In accordance with Section 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 perform work as a grantee, contractor, supplier, subcontractor, consultant or by any other manner 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 36 months from the date of being placed on the convicted vendor list.

9.8 PROHIBITION OF UNAUTHORIZED ALIENS: The employment of unauthorized aliens by any contractor/vendor is considered a violation of Section 274A (e) of the Immigration and Nationality Act. If the CONTRACTOR knowingly employs unauthorized aliens, such violation shall be cause for unilateral cancellation of this Contract. The CONTRACTOR shall be responsible for including this provision in all subcontracts with private organizations issued as a result of this Contract.

9.9 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.

9.10 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 third party.

9.11 JURY TRIAL WAIVER: As consideration of 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.

9.12 RELATIONSHIP OF THE PARTIES: The CONTRACTOR shall perform as an independent contractor and not as an agent, representative, or employee of the COMMISSION.

9.13 PUBLIC RECORDS: 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. The COMMISSION reserves the right to unilaterally cancel this GRAZING CONTRACT 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 GRAZING CONTRACT.

9.14 MODIFICATION OR AMENDMENT OF GRAZING CONTRACT: No waiver, or modification or amendment of this GRAZING 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 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 GRAZING 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.

9.15 ENTIRE AGREEMENT: This GRAZING 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 GRAZING 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. The COMMISSION and CONTRACTOR stipulate that neither of them has made any representations except such representations specifically contained within this GRAZING CONTRACT and each party acknowledges reliance on its own judgment in entering into this CONTRACT.

Remainder of Page Intentionally Left Blank

FWC Contract # 12168

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.

PAYTON TILTON

Name: Payton Tilton

Title: Owner

Date: 9-27-12

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

By: Nick Wiley
Executive Director

Date: 10.5.12

Approved as to form and legality:

COMMISSION Attorney

Attachments and Exhibits in this Contract include the following:

Attachment	A	Scope of Work
Attachment	B	Half Moon Natural Communities Map
Exhibit	1	Total Pasture Grazing Area Map
Exhibit	2	SS-AGR-77, Tropical Soda Apple Information Bulletin
Exhibit	3 – 5	Fence Specifications

13

Scope of Work
Half Moon Wildlife Management Area
Grazing Plan
Sumter County, Florida
Attachment A

General Description & Background:
Half Moon Wildlife Management Area is 9,450 acres of flatwoods, marshes, swamps, hammocks and old pastures. It lies along the Withlacoochee River in northwestern Sumter County. Half Moon's cow/calf operation is divided into two parcels: the 3,210-acre north pasture and the 1,080 south pasture. In a 1996 assessment, the Natural Resources Conservation Service (NRCS) deemed the cattle lease area capable of producing enough forage to support 410 AUs; in 2008, NRCS recommended 165 AUs. In 2011, University of Florida's Regional Livestock Agent recommended 135 cows and 7 or 8 bulls for a total of 145 AUs. The current stocking rate of 72 AUs is half of that recommendation and is currently being offered for lease.

Objectives & Definitions:
The objectives of this grazing plan are to improve or maintain an optimum level of native forages and assist in the reduction of biomass. Grazing and prescribed burning will help maintain the old pastures in an earlier stage of succession and more open state. This will benefit wildlife and future ground cover restoration efforts.

Brood cows will presumably make up most of the herd. Bulls and heifers may be included in the herd as needed as long as the overall suggested stocking rate is not exceeded. The following AU values will be used to estimate heifer and bull numbers. The suggested bull:cow ratio is 1:20.

Cow with Calf = 1.0 AU (1,000 lbs)
Bull (Mature) = 1.35 AU (1,200-1,500 lbs)
Heifer (2 Yr.) = .80 AU (600-1,000 lbs)
Heifer (4 Yr.) = 1.0 AU (1,000 lbs)

Livestock Forage Inventory & Map:
Forage will vary due to climatic conditions and management of the grazing system. The forage inventory should be evaluated weekly to ensure proper stocking rate according to the goals listed for the site and to meet the forage requirements of the livestock. Grazing will be deferred if forage supplies and quality are inadequate to meet livestock demand. Current stocking rate is 59.6 acres of improved pasture and native plant communities per AU. (See plant community map, Attachment B)

Recommended Grazing Heights and Stocking Rates:
Grazing animals can rapidly and substantially alter the productivity and amount of forage in each pasture. Overgrazing adversely affects forage growth, water and soil conservation, and may induce more use of wetland areas in some seasons. Since improving existing forages is not a goal for this project, a unique balance may be obtained to ensure a desirable stand of forage and limit grazing on the wetland areas included in the same grazing unit.

The following table lists common forages found on Half Moon along with recommended heights to maintain healthy stands of forage:

FORAGE TYPE	Min. Ht. To Begin Grazing	Min. Grazing Ht.
Bahia grass	6"	2"
Maidencane	12"	6-8"
Chalky bluestem	12"	6-8"

Grazing heights for native forage plants are dependent upon the species and the time of year the plant is grazed. For native grasses, remove no more than 50% (by weight) of the plant in any grazing event. This will provide proper use of the forage while maintaining sufficient plant material to provide wildlife habitat, protect soil, and maintain the health of the plant community. Use the forage heights shown in the previous table to determine whether the pastures are overgrazed.

Adjustments to the Grazing System:
Adjustments to grazing may be necessary during and after restoration and other management activities, such as planting, prescribed burning or pest management. The adjustments will provide a suitable period for the vegetation to recover from the management activity or as dictated by pesticide label restrictions. A deferment from grazing means the complete removal of all domestic animals for the duration of the deferment. The minimum grazing heights listed for corresponding grasses shall not be exceeded.

If herbicides are used to control common weeds and invasive species, grazing will be adjusted to meet the requirements, if any, listed on the herbicide label. Cattle will not be allowed to re-enter the area for the duration shown on the herbicide label. Temporary fences may be used to protect areas during deferment periods.

Operation and Maintenance:
The location of mineral and supplement feeders will be moved to evenly distribute grazing animals throughout the pasture. The herd will be rotated to a fresh pasture when the average stubble height falls below the recommended minimum grazing height. Supplemental feeding of hay is not allowed.

Contingency Management Plan:

a. When the forage is not adequate, the grazing system will be adjusted. When prolonged periods of adverse climatic condition effect the supply of forage, the grazing system and/or stocking rates will be adjusted.
b. The Lessee is required to provide the contract manager with an Annual Forage Assessment and Maximum Stocking Rate estimate performed by either a local NRCS extension office or a professional rangeland consultant.
c. Lessees must submit and FWC must approve an annual plan for the movement and scheduled rotation of mineral vats and other supplemental feeds.
d. Stocking rates are subject to change based on the results of the annual forage and stocking rate assessment.
e. Lessee is required to comply with all Florida Cow Calf Best Management Practices.
f. On improved pasture, higher stocking rates may be considered provided adequate infrastructure is in place, and range management practices such as rotational grazing are used.

ATTACHMENT B

Half Moon WMA Natural Communities

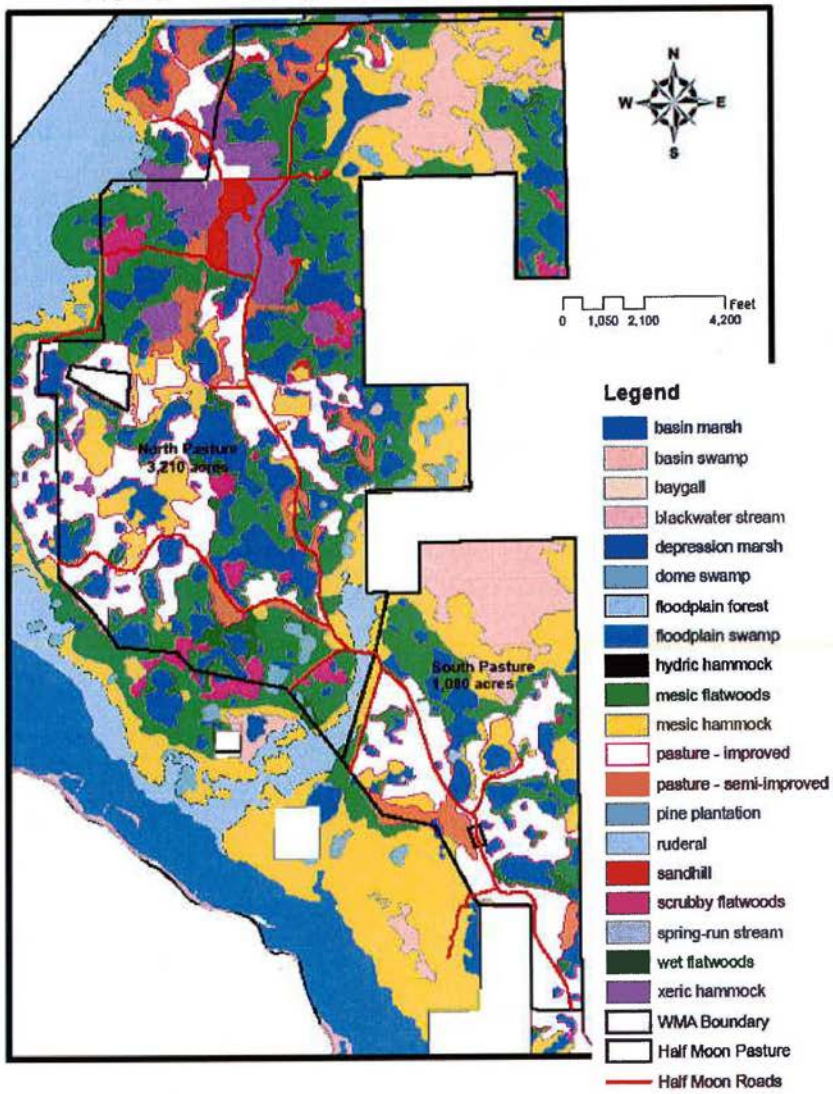


Exhibit 1: Half Moon WMA Cattle Lease Area

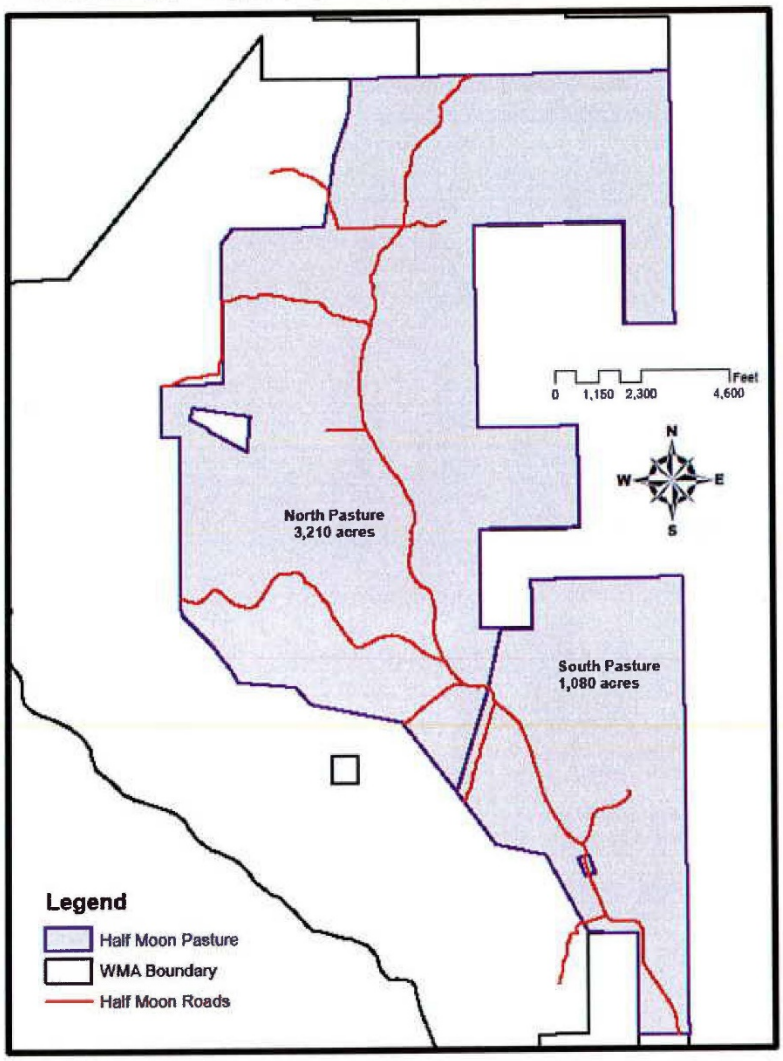


Exhibit 2 – Exotic Plant Elimination Information

SS-AGR-77

UF UNIVERSITY of FLORIDA
IFAS Extension

Tropical Soda Apple: A Noxious Weed in Florida[1]

J. Jeffrey Mullahey, Jason Ferrell, and Brent Sellers [2]

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.

Figure 1. Tropical soda apple in a typical south Florida bahiagrass pasture.

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 globular fruit, approximately 1 inch in diameter, is 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 solasodine. 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 1993 as WEC-7. Revised: August 2006. Reviewed: November 2006. Visit the EDIS Web Site at http://edis.ifas.ufl.edu.

2. J. Jeffrey Mullahey, professor and center director, West Florida Research and Education Center–Milton, FL; Jason Ferrell, assistant professor, Agronomy Department; Brent Sellers, assistant professor, Range Cattle Research and Education Center–Ona, 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 to 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, Dean

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 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.

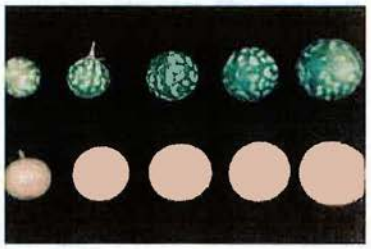


Figure 4. Tropical soda apple fruit. Top row: immature fruit. Bottom row: mature fruit.

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 capsicoides*, 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-Auxin 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

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.

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 *Gratiana boliviana*, the First Biocontrol Agent Released to Control Tropical Soda Apple in the USA (http://edis.ifas.ufl.edu/IN487)

ENY-824 Classical Biological Control of Tropical Soda Apple in the USA (http://edis.ifas.ufl.edu/IN457)

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)

South Florida
(
http://tsa.ifas.ufl.edu/00Slides/SouthFlorida/index.html)

Exhibit 3
Fence Specifications

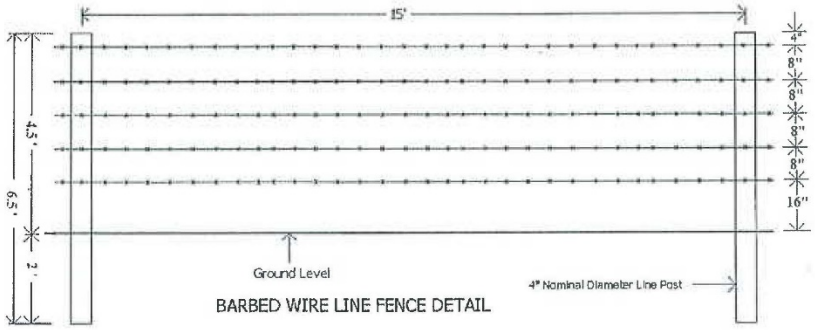
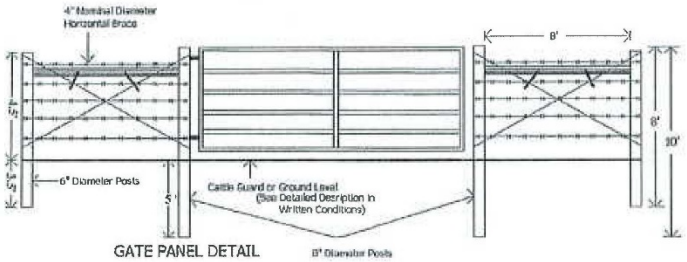
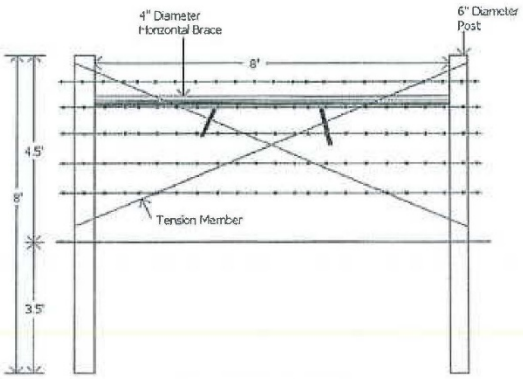


Exhibit 4
Fence Specifications

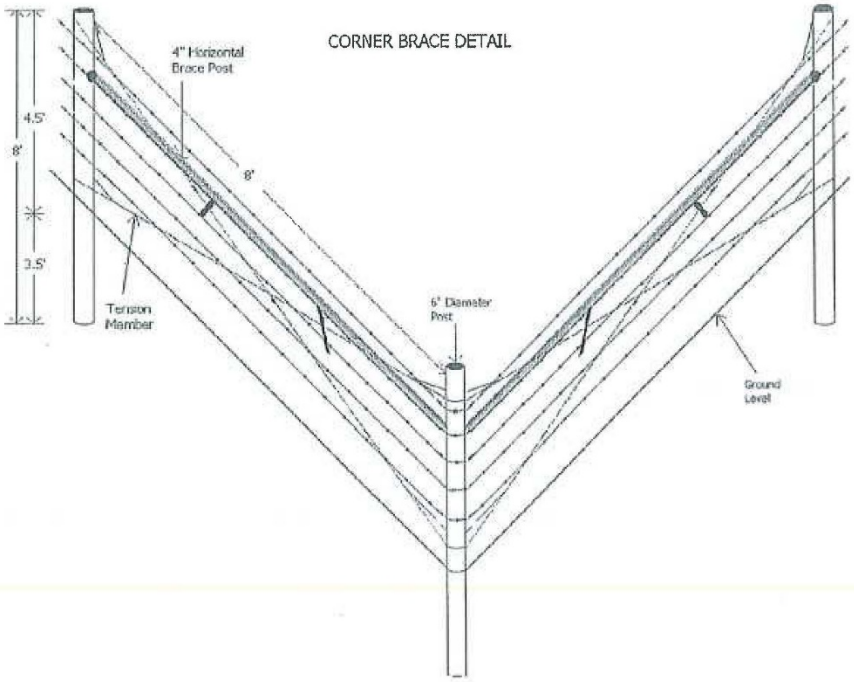


GATE PANEL DETAIL



IN-LINE BRACE DETAIL

Exhibit 5
Fence Specifications



12.14 Apiaries

12.14.1 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 is becomes available on a WMA/WEA and there are beekeepers on the waiting list interested in that particular area, those individuals meeting the criteria above will be given preference. If there is more than one beekeeper meeting the criteria with their name on the list then a random drawing will be held by the THCR Contract Manager to determine who will receive the site. Beekeepers on the waiting list will be notified in writing of the random drawing's date/location and will be invited to attend. The individual's name selected during this drawing will be awarded the contract.

Apiary agreements are non-transferable. Each agreement serves as a contract between a specific individual or company and FWC, and the rights and responsibilities covered by an individual agreement cannot be transferred.

Contracts

Apiary contracts are for five (5) years and renewals are contingent upon a satisfactory performance evaluation by Area Biologist and concurrence of the THCR Section Leader. Approval is based on apiarist performance, adherence to rules and regulations and general cooperation. If an Area Biologist decides an apiarist whose contract is expiring is unacceptable he may recommend not approving the new contract. If this transpires then the wait list process using random selection will be used. If there is no apiarist on a current wait list then the apiarists who are in good standing with existing contracts will be notified to see if any want to be put on the wait list for the drawing. If none are interested then the site will be put on hold pending a valid request.

Pricing of Apiary Site(s)

Cost of each apiary site will be $40 annually which will include up to 50 beehives. Additional beehives will be charged at the rate of $40 per 50 beehives.

Pricing examples:

- A beekeeper is leasing 2 apiary sites with up to 100 beehives - the fee per year is $80.
- A beekeeper is leasing 3 apiary sites with up to 200 beehives - the fee per year is $160.

Note: The maximum number of hives/colonies allowed on an apiary site will be at the discretion of the apiarist. However, the apiarist is strongly recommended to follow the BMP as recommended by the FDACS/DPI. In addition to providing the BMP, FDACS/DPI's management has recommended 50 hives per site in pineland communities and no more than 100 hives per site in areas with bountiful resources. However, FWC will not dictate the number of hives on a site unless they create land management issues.

Bear Depredation Control at Apiary Site(s)

Beekeepers are required to consult with the WMA/WEA Area Biologist to see if electric fencing is required for their apiary sites. If the Area Biologist requires electric fencing then the Beekeeper shall construct and maintain electric fences for each apiary site. Numerous electric fence designs have been used to varying success and FWC as a courtesy provides an electric fence technical information bulletin with each Agreement. This bulletin is attached in order to assist the Beekeeper and/or provide a design that has been proven to be reasonable effective.

SUBJECT MATTER REFERENCES

Apiary Inspection Law - Chapter 586, Florida Statutes (see http://www.leg.state.fl.us/Statutes/), Rule Chapter 5B-54, Florida Administrative Code (see www.flrules.org).

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.

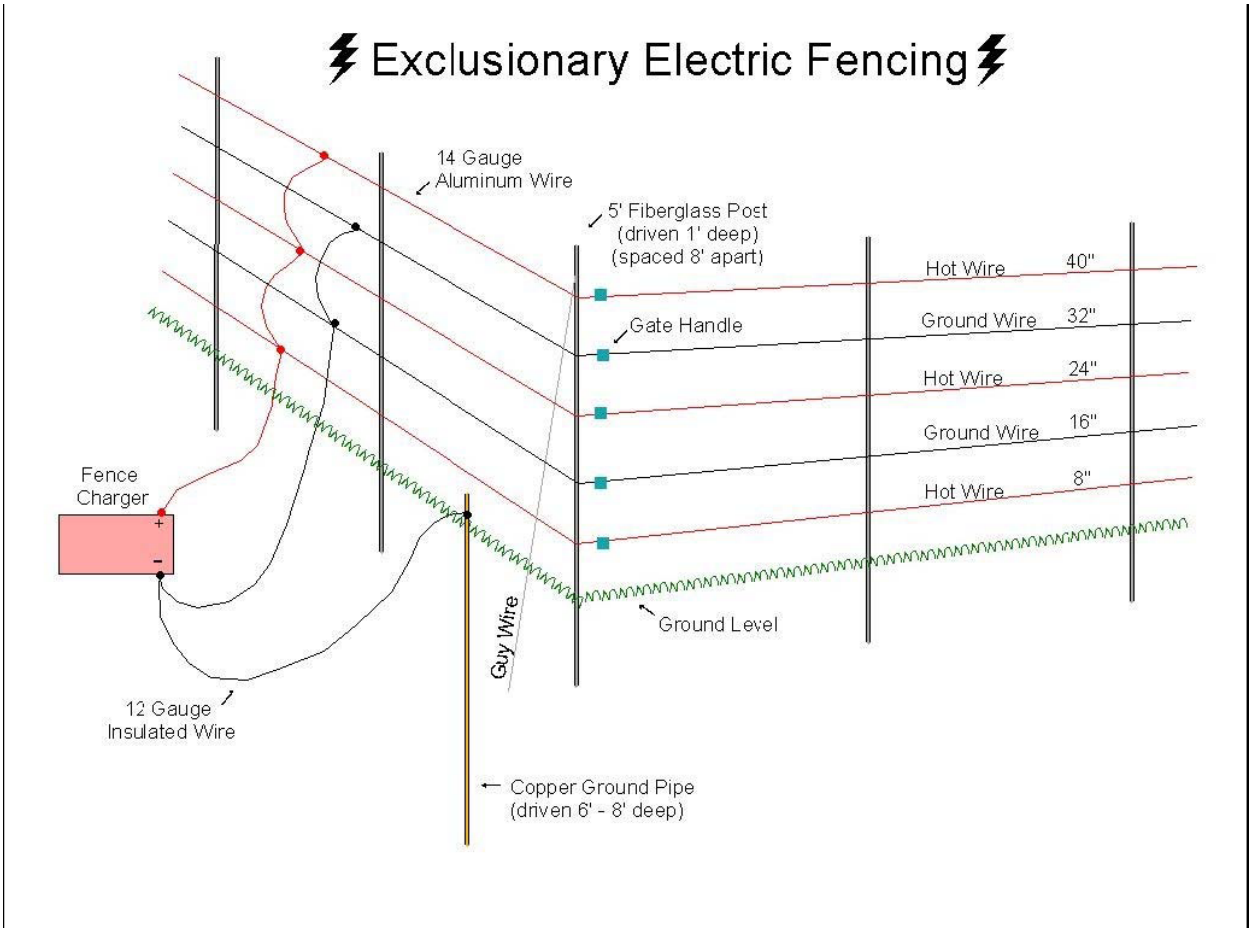
Tips to improve the effectiveness of your electric fence to deter black bears:

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.

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.

12.14.2 HMWMA Apiary Assessment

Apiary Feasibility on Half Moon Wildlife Management Area

The guidelines set forth in the FWC Apiary Policy were used along with ArcGIS to assess the feasibility of permitting apiary sites within the Half Moon WMA. Based on the criteria outlined in the policy, area staff has identified four (4) sites that have potential to be suitable apiary locations on Half Moon WMA.

1.) Apiary sites should be situated at least ½ mile from WMA property boundary lines, and at least one mile from any other known apiary site.

    a. FWC is the lead agency on 100% of Half Moon WMA due to an agreement with SWFWMD, but staff felt it was best to avoid placement of apiary sites directly on the portion of the WMA that is owned by the WMD. However, for the purpose of this assessment, the ½ mile buffer began at the outside boundary instead of the interior boundary shared with SWFWMD (Figure 1). The result of this buffer restricted apiary sites to that portion of the WMA owned by FWC. The potential sites identified in Figure 1 show a ½ mile radius buffer ensuring that each are at least 1 mile apart.

    The remaining criteria examined below only pertain to the portions of the WMA that were more than ½ mile from the WMA boundary.

2.) Sites should be relatively level, fairly dry, and not prone to flooding when bees would be normally present.

    a. The potential sites identified in Figure 1 are located on upland sites that should not be prone to flooding under normal conditions.

3.) Sites should be accessible by roads which allow for reasonable transfer of hives to the site by vehicle.

    a. The potential sites identified in Figure 1 are located on closed roads or fire lines. As such, they are accessible by four-wheel drive vehicle.

4.) If a site is to be located near human activity, then the apiary site should be located at a minimum of 150-200 yards from the edge of that activity.

    a. One site is located in proximity to a trail but will be placed at least 150-200 yards away. The remaining proposed sites are not located near human activity.

5.) It is preferable to have apiary sites located adjacent to or off roads whenever possible.

a. The potential sites identified in Figure 1 are located off and adjacent to roads or in an area of improved pasture where they can be easily accessed by vehicle.

6.) FWC Area Biologist shall select apiary sites and the site shall not require excessive vegetation clearing or ground disturbance (including fill).

a. The potential sites identified in Figure 1 are located in relatively clear upland sites and should not need additional clearing or fill upon placement. However, fire lines will be needed around all sites due to frequent prescribed fires.

Additional notes:

1). While bears have been documented on the WMA, they are not frequently seen and may not be a problem. The contractor may choose to wait to see if depredation occurs prior to going through the effort and expense of electric fencing.

2). Because the WMA is leased for cattle grazing, the potential exists for damage to hives by cattle, but this may be unlikely.

Sites:

Apiary Site	Location		Name
	Longitude	Latitude	
1	-82° 14.933761”	28° 55.64613”	Potter Bend
2	-82° 15.545498”	28° 54.928116”	Old Oxford
3	-82° 14.827184”	28° 54.011385”	Alto Landing
4	-82° 14.062688”	28° 53.287831”	Gut Pile

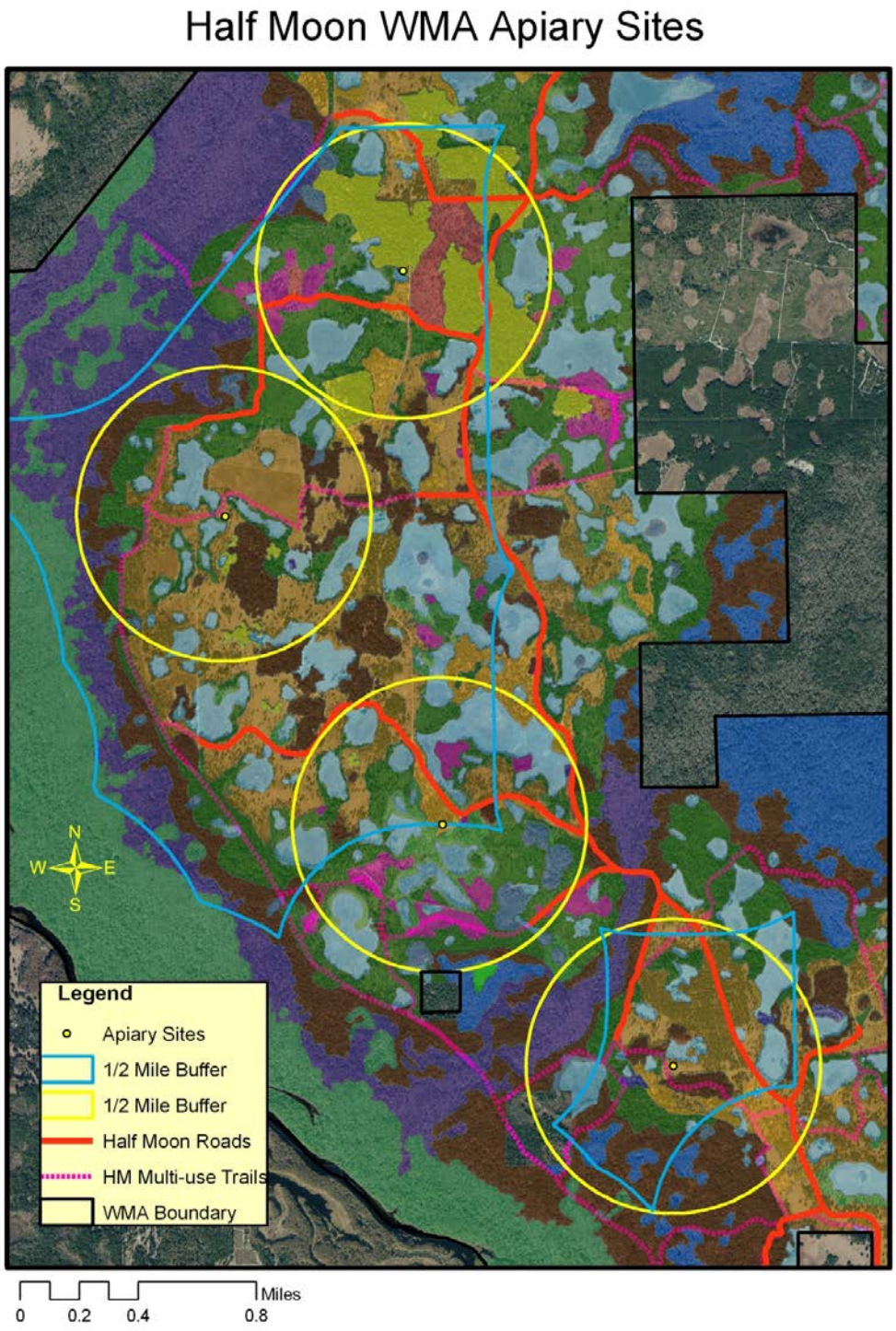

Half Moon WMA Apiary Sites
N
W
E
S
Legend
Apiary Sites
1/2 Mile Buffer
1/2 Mile Buffer
Half Moon Roads
HM Multi-use Trails
WMA Boundary
Miles
0
0.2
0.4
0.8

Figure 1

12.14.3 Apiary Agreement

Florida Fish & Wildlife Conservation Commission
Contract/Grant Routing Review Form

1. TYPE: ✓ New ☐ Amendment # ☐ Task Assignment # ☐ Renewal/Extension ☐ Modification ☐ Expenditure Contract ☐ Expenditure Grant ☐ MOA/MOU ✓ Revenue Generating

2. Contract Number: 18181 | 3. Contract Manager's Name/Telephone Number: Byron A Williams 850-617-9510
4. Project Manager: Jason Slater | Date: 12/11/18 | Telephone #: 386-329-2517 | Division/Office HSC
5. ✓ Financial ☐ Non-Financial | Method of Procurement: L-Exempt, Services or Commodities provided by Govern | Solicitation #: N/A
6. Project Title/Contract Description: Apiary Agreement, Malcolm Brinson, Caravelle Ranch WMA, Hilochee (Osprey Unit) and Half Moon WMA

7. Original Contract Amount	Increase Amount	Decrease Amount	Revised Contract Amount
$ 880.00/year	$	$	$

8. Contract Begin Date: upon execution | Original End Date: 3 years from executi | New End Date:
9. Vendor Name: Malcolm Brinson | Telephone#: 352-267-9640
10. Vendor's Contact Name: Malcolm Brinson | 11. Vendor/Tax ID# | Seq.#
12. Cost/Price Analysis Required? ☐ Yes ✓ No | 13. Risk Assessment Required? ☐ Yes ✓ No
14. Administrative Review/Signature

Reviewed	If Reviewed Electronically, check box to indicate "Reviewed" and include the continuous email of approvals. If Reviewed in Hard Copy, please initial under "Reviewed", Print Name, Date and indicate if edits are required.		
BAW	Contract Manager Name: Byron A. Williams	Date: 12/11/18	FCCM #: 18072
RG	If not applicable, indicate with "N/A" Budget Reviewer Name: Rosa Guthrie	Date: 12/12/18	Edits: ☐ Yes ✓ No
	Delegate based on current Fiscal Year Delegation of Authority Div/Off Director or Delegate: Gwen E Angle	Date: 12/12/18	Edits: ☐ Yes ✓ No
	If not applicable, indicate with "N/A" Chief Information Officer: N/A	Date:	Edits: ☐ Yes ☐ No
	FBO Contract Admin.: Kat Ethridge	Date: 12/17/2018	Edits: ☐ Yes ✓ No
	If not applicable (Under $325k), indicate with "N/A" General Services Section Leader: N/A	Date:	Edits: ☐ Yes ☐ No

15. Contract Execution *(MUST be Hard Copy Review/Signatures)*
If not executed for any reason, please notify FBO Contract Administration and the Contract Manager

Legal Signature: Anthony Pizzino | Date: 12/19/18
Print Name: Anthony Pizzino
Return to the Contract Manager for Vendor Signature
Date Sent to Vendor: 12/19/18 | Date Received Back from Vendor: 1/7/2019
By signature, the Contract Manager Confirms no changes were made after Legal review during initial routing and review.
Contract Manager Signature: B. A. Williams | Date: 1/7/2019
Print Name: BYRON A. WILLIAMS
If changes were made after Legal review, attach a documented list of changes and route back to Legal prior to proceeding with any further approvals or execution.
Legal Signature: N/A | Date:
Print Name:
If not applicable (under $500k), indicate with "N/A":
**Chief Operating Officer Signature: N/A | Date:
Print Name:
Executive Director or Designee Signature: D. B. Johnson | EXECUTION DATE: *(Date Signed by Ex. Dir. or Designee)* 1/7/2019
Print Name: David B. Johnson
FBO Contract Admin. Signature: | Date Entered into FACTS:
Date Received: | Print Name:

**Contract Attestation, if anticipated expenditures of $500,000 or more: I confirm that this contract or purchase order contains or complies with the requirements of FBO Memorandum 2016-01.
Rec. in CA on 12/13/2018 for Review.

FWC-167 (Revised – 4/2016)

Florida Fish & Wildlife Conservation Commission
Contract/Grant Routing Review Form

1. TYPE: [✓] New [ ] Amendment # [ ] Task Assignment # [ ] Renewal/Extension [ ] Modification [ ] Expenditure Contract [ ] Expenditure Grant [ ] MOA/MOU [✓] Revenue Generating

2. Contract Number: 18181 | 3. Contract Manager's Name/Telephone Number: Byron A Williams 850-617-9510

4. Project Manager: Jason Slater | Date: 12/11/18 | Telephone #: 386-329-2517 | Division/Office HSC

5. [✓] Financial [ ] Non-Financial | Method of Procurement: L-Exempt, Services or Commodities provided by Govern | Solicitation #: N/A

6. Project Title/Contract Description: Apiary Agreement, Malcolm Brinson, Caravelle Ranch WMA, Hilochee (Osprey Unit) and Half Moon WMA

7. Original Contract Amount	Increase Amount	Decrease Amount	Revised Contract Amount
$ 880.00/year	$	$	$

8. Contract Begin Date: upon execution | Original End Date: 3 years from executi | New End Date:

9. Vendor Name: Malcolm Brinson | Telephone#: 352-267-9640

10. Vendor's Contact Name: Malcolm Brinson | 11. Vendor/Tax ID# | Seq.#

12. Cost/Price Analysis Required? [ ] Yes [✓] No | 13. Risk Assessment Required? [ ] Yes [✓] No

14. Administrative Review/Signature

Reviewed	*If Reviewed Electronically, check box to indicate "Reviewed" and include the continuous email of approvals. If Reviewed in Hard Copy, please initial under "Reviewed", Print Name, Date and indicate if edits are required.*		
BAW	Contract Manager Name: Byron A. Williams	Date: 12/11/18	FCCM #: 18072
	If not applicable, indicate with "N/A" Budget Reviewer Name: Rosa Guthrie	Date: 12/12/18	Edits: [ ] Yes [✓] No
	Delegate based on current Fiscal Year Delegation of Authority Div/Off Director or Delegate: Carson E Angle	Date: 12/12/18	Edits: [ ] Yes [✓] No
	If not applicable, indicate with "N/A" Chief Information Officer: N/A	Date:	Edits: [ ] Yes [ ] No
	FBO Contract Admin.: Kat Ethridge	Date: 12/17/2018	Edits: [ ] Yes [✓] No
	If not applicable (Under $325k), indicate with "N/A" General Services Section Leader: N/A	Date:	Edits: [ ] Yes [ ] No

15. Contract Execution *(MUST be Hard Copy Review/Signatures)*
If not executed for any reason, please notify FBO Contract Administration and the Contract Manager

Legal Signature: Anthony Pinzino Date: 12/19/18
Print Name: Anthony Pinzino

Return to the Contract Manager for Vendor Signature

Date Sent to Vendor: 12/19/18 Date Received Back from Vendor: 1/7/2019

By signature, the Contract Manager Confirms no changes were made after Legal review during initial routing and review.

Contract Manager Signature: B. A. Williams Date: 1/7/2019
Print Name: BYRON A. WILLIAMS

If changes were made after Legal review, attach a documented list of changes and route back to Legal prior to proceeding with any further approvals or execution.

Legal Signature: N/A Date:
Print Name:

If not applicable (under $500k), indicate with "N/A":
**Chief Operating Officer Signature: N/A Date:
Print Name:

Executive Director or Designee Signature: D. B. Johnson
Print Name: David B. Johnson
EXECUTION DATE: *(Date Signed by Ex. Dir. or Designee)* 1/7/2019

FBO Contract Admin. Signature: Kat Ethridge Date Uploaded to Contract Archives 4/10/2019 Date Entered into FACTS: N/A
Date Received: 1/7/2019 Print Name: Kat Ethridge

**Contract Attestation, if anticipated expenditures of $500,000 or more: I confirm that this contract or purchase order contains or complies with the requirements of FBO Memorandum 2016-01.

Rec. in CA on 12/13/2018 for Review.

FWC-167 (Revised – 4/2016)

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION
DIVISION OF HABITAT AND SPECIES CONSERVATION

MEMORANDUM

Date: December 11, 2018

To: Contract Reviewers

From: Byron A. Williams
HSC/WHM

RE: Contract 18181 between Florida Fish and Wildlife Conservation Commission (FWC) and Malcolm Brinson, on the Caravelle Ranch Wildlife Management Area (WMA), Hilochee (Osprey Unit) WMA and Half Moon WMA

Included for your review are two originals of the above referenced Contract 18181, on the Caravelle Ranch Wildlife Management Area (WMA), Hilochee (Osprey Unit) WMA and Half Moon WMA. This is a new contract to replace contract 15179 with Malcolm Brinson.

This will be a new three (3) year contract starting upon execution.

Your prompt review and delivering to the next reviewer would be appreciated. If more expeditious, please contact me so I may pick up the package and hand deliver it to the next party. Should there be any questions, please call me at 617-9510.

Thank you for your assistance.

Attachments (2 Originals)

FWC Contract No. 18181

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 Malcolm Brinson, whose address is P. O. Box 2157, Umatilla, Florida 32784, 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 three (3) 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 1100 hive boxes on the COMMISSION-managed property on the Caravelle Ranch WMA, Hilochee WMA including the Osprey Unit and Half Moon WMA and as represented by the Attachment B, C, D and E maps.

3. The USER Agrees:

    a. To pay $880 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 100 hive boxes on any of the eleven sites in the Caravelle Ranch WMA, the Hilochee WMA including the Osprey Unit and the Half Moon 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 three (3) 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 USER 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 USER, his subcontractor, or any of the employees, agents or representatives of the USER 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.

Caravelle Ranch WMA:

Site 1	Latitude 29° 30' 51.2385"N	Longitude 81° 43' 72.615"W
Site 2	Latitude 29° 30' 51.5411"N	Longitude 81° 43' 77.235"W

As represented by the Attachment B map.

Hilochee WMA:

Site 1	Latitude 28° 21' 11.61"N	Longitude 81° 43' 59.27"W
Site 2	Latitude 28° 22' 41.86"N	Longitude 81° 43' 25.70"W

Site 3	Latitude 28° 24' 21.62"N	Longitude 81° 43' 39.51"W

As represented by the Attachment C map.

Hilochee Osprey Unit WMA:

Site 1	Latitude 28° 10' 51.05"N	Longitude 81° 43' 02.06"W
Site 2	Latitude 28° 10' 16.59"N	Longitude 81° 41' 57.42"W

As represented by the Attachment D map.

Half Moon WMA:

Site 1	Latitude 28° 55' 38.837"N	Longitude 82° 14' 55.803"W
Site 2	Latitude 28° 54' 55.537"N	Longitude 82° 15' 33.182"W
Site 3	Latitude 28° 54' 0.772"N	Longitude 82° 14' 49.438"W
Site 4	Latitude 28° 53' 16.829"N	Longitude 82° 14' 4.205"W

As represented by the Attachment E 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.

REMAINDER OF PAGE INTENTIONALLY LEFT BLANK

FWC Contract No. 18181

IN WITNESS WHEREOF, the parties have executed this Agreement on the day and year last below written.

USER SIGNATURE

Date: JAN 4, 2019

Witness

Witness

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

David B. Johnson, Section Leader
Wildlife and Habitat Management

Date: 1/7/19

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

Attachments B, C, D and E: Maps of Apiary Locations on Caravelle Ranch WMA, Hilochee WMA including the Osprey Unit and Half Moon WMA

Page 7 of 7

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

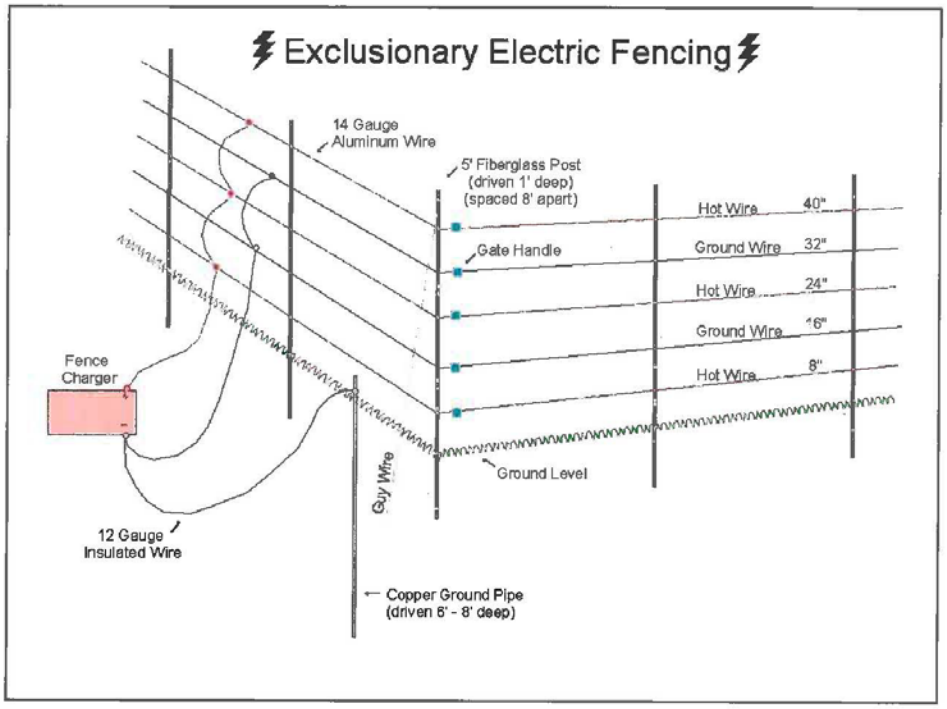
shorting out the fence.

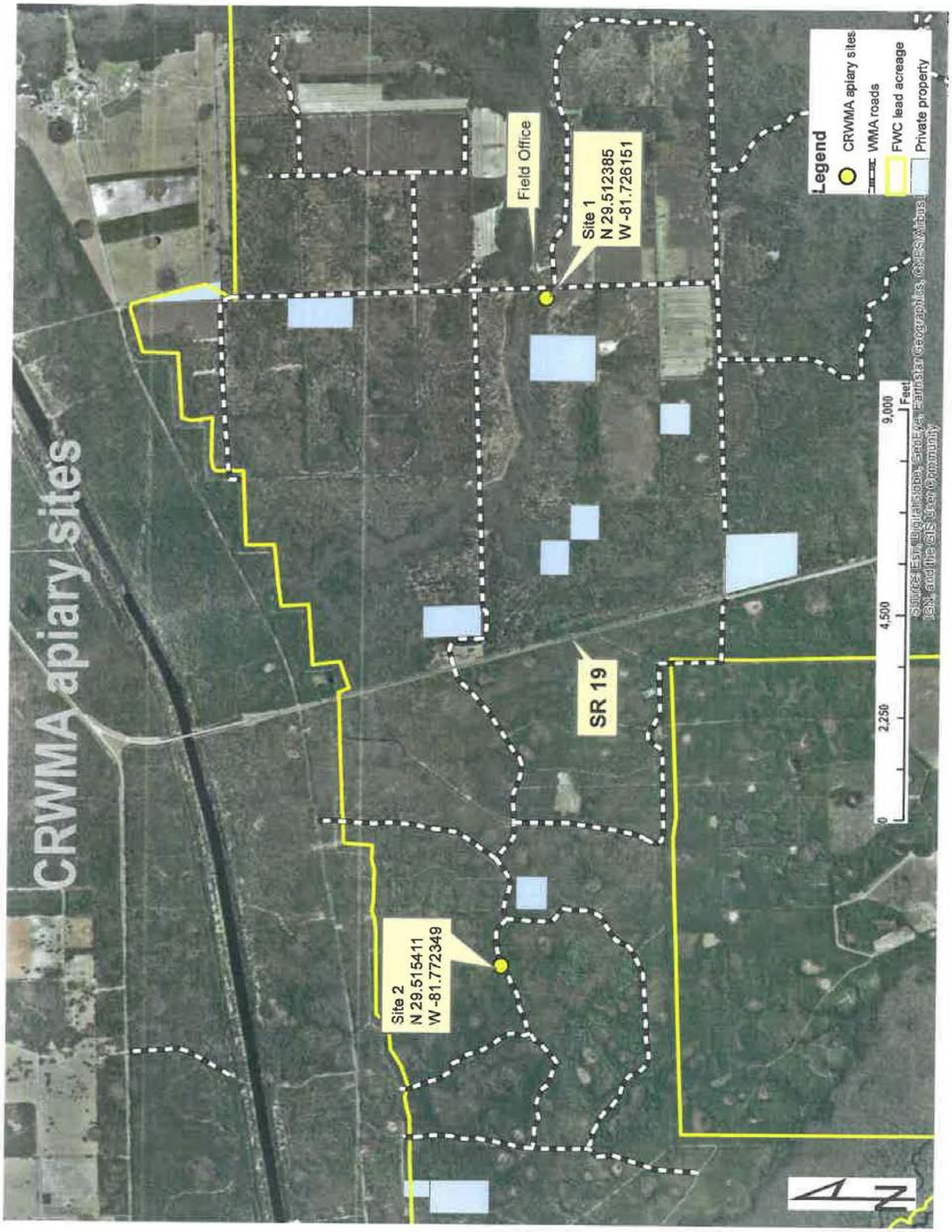
9. When protecting a specific structure (like a shed or rabbit hutch), the fence should be placed 3 to 5 feet away from the structure (rather than on it) so that the bear encounters the fence before reaching the attractant.
10. Protect the fence charger from the elements by covering it with a plastic 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.

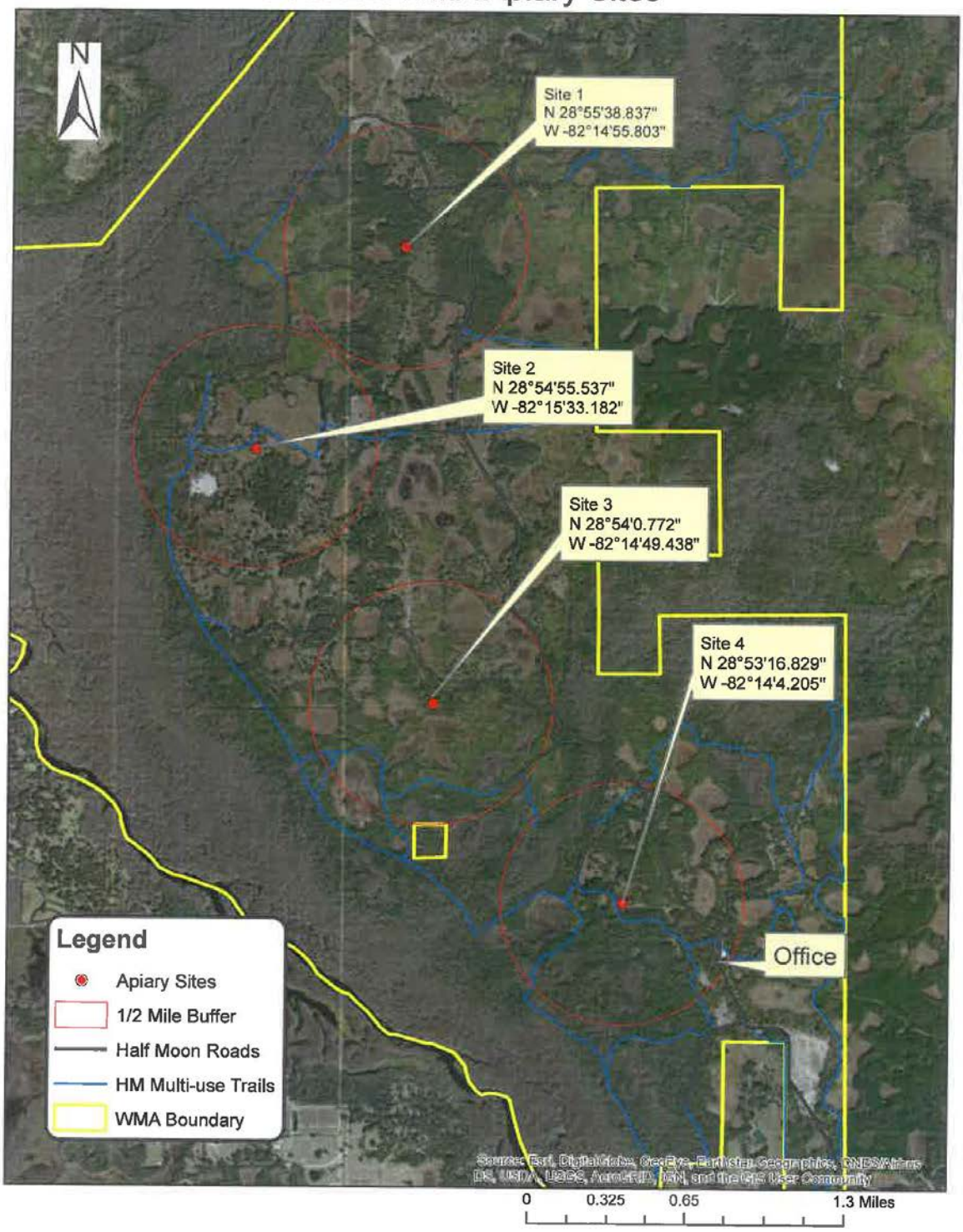



CRWMA apiary sites
Field Office
Site 1
N 29.512385
W -81.726151
Site 2
N 29.515411
W -81.772349
SR 19
Legend
CRWMA apiary sites
WMA roads
FWC lead acreage
Private property
0
2,250
4,500
9,000
Feet

Attachment C

Attachment D

Half Moon WMA Apiary Sites



12.15 Cost Estimates

12.15.1 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 Cost 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

194 Lake restoration
215 Hydrology management
216 Dams, dikes, levees
217 Canals
218 Water level management

Other

185 GIS
200 RESOURCE MANAGEMENT
203 Tree and shrub planting
213 Wildlife management
214 Listed Species management
219 Upland restoration
221 Animal surveys
228 Inland aerial surveys
235 Vegetation and plant surveys
250 MONITORING AND ASSESSMENTS
252 Biomedical monitoring
253 Ecological monitoring
256 Habitat monitoring analysis
263 Nest box monitoring
264 Population demographics
275 Permits and authorizations
276 Commission rule development and review
281 Technical assistance
282 Hebaceous seeding
283 Clearings
284 Feeding/watering
285 Nest structures
286 Population control
287 Stocking enhancements/population augmentation
288 Nuisance animal complaints 282 Herbaceous seeding
289 Native vegetation management (mechanical)
290 Native vegetation management (chemical)
293 Mortality investigations
294 Program coordination and implementation C inter- and intra-agency coordination and program

	implementation at the section, bureau, or division level
295	Biological data collection, analysis, and reporting
296	Habitat protection technical assistance
750	URTD assessment
789	Site Preparation – GCR
790	Irrigation – GCR
791	Seed Collection – Hand
792	Seed Collection – Mechanical
793	Herbicide Maintenance Treatment

Administration

Central Office/Headquarters

100 ADMINISTRATION C administrative tasks, including preparation of forms, word processing, photocopying, filing, and other clerical/secretarial duties.

104 Budget/purchasing/accounting

Districts/Regions

See Location code

Units/Projects

See Location code

Support

Land Management Planning

103 Meetings C includes workshops, conferences, staff, and other meetings.

204 Resource Planning

Land Management Reviews

101 Project inspection C field inspections of projects.

209 Land Management Reviews

Training/Staff Development

150 PERSONNEL MANAGEMENT C recruitment, hiring, training, counseling, and supervising.

Vehicle Purchase

128 New Vehicle and Equipment Purchase

Vehicle Operation and Maintenance

923 FEM C vehicles/equipment

Other

140 REPORT WRITING/EDITING/MANUSCRIPT PREPARATION

141 Grant applications

180 SYSTEMS ADMINISTRATION AND MANAGEMENT

182 Data management

184 Metadata development and management

187 IT

188 Web development

226 Human dimensions surveys

721 Geospatial analysis techniques

Capitol Improvements

New Facility Construction

910 New facility construction C buildings/structures

912 New construction C roads/bridges

913 New construction C trails

914 New construction C fences

Facility Maintenance

920 Facility and equipment maintenance (FEM) C buildings/structures

921 FEM C utilities

922 FEM C custodial functions

925 FEM C boating access

926 FEM C roads/bridges

927 FEM C trails

928 FEM C fences

Visitor Services/Recreation

Information/Education Programs

145 Technical bulletin

Operations

311 Boundary signs
312 Informational signs
320 Outreach and education C attending or developing educational or informational materials or events for the public
341 Public use administration (hunting)
342 Public use administration (non-hunting)
350 Customer service support C disseminating written or verbal information or assistance to the public
700 STUDIES
740 EVALUATIONS AND ASSESSMENTS

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

12.15.2 Operation Plan Fiscal Year 2019 – 2020

Activity	Description	Staff Days	Salary	Fuel Cost	Other	Total
101	Project inspection	4.00	$871.92	$34.00	$0.00	$905.92
103	Meetings	15.00	$3269.70	$127.50	$2000.00	$5397.20
104	Budget/purchasing/accounting	12.00	$2615.76	$102.00	$0.00	$2717.76
140	Report writing/editing/manuscript preparation	8.00	$1743.84	$68.00	$0.00	$1811.84
150	Personnel management	10.00	$2179.80	$85.00	$0.00	$2264.80
182	Data management	70.00	$15258.60	$595.00	$2000.00	$17853.60
185	GIS	14.00	$3051.72	$119.00	$0.00	$3170.72
201	Cultural resource management	2.00	$435.96	$17.00	$0.00	$452.96
202	Timber management	3.00	$653.94	$25.50	$0.00	$679.44
204	Resource planning	10.00	$2179.80	$85.00	$0.00	$2264.80
206	Prescribed burning - growing season	25.00	$5449.50	$212.50	$4000.00	$9662.00
207	Prescribed burning - dormant season	28.00	$6103.44	$238.00	$850.00	$7191.44
208	Firebreaks	20.00	$4359.60	$170.00	$0.00	$4529.60
211	Exotic plant control (mechanical)	15.00	$3269.70	$127.50	$4000.00	$7397.20
212	Exotic plant control (chemical)	20.00	$4359.60	$170.00	$2000.00	$6529.60
219	Upland restoration	57.00	$12424.86	$484.50	$2000.00	$14909.36
221	Animal surveys	67.00	$14604.66	$569.50	$1000.00	$16174.16
235	Vegetation and plant surveys	5.00	$1089.90	$42.50	$0.00	$1132.40
263	Nest box monitoring	5.00	$1089.90	$42.50	$0.00	$1132.40
281	Other resource management	5.00	$1089.90	$42.50	$0.00	$1132.40
282	Herbaceous seeding	12.00	$2615.76	$102.00	$5475.00	$8192.76
285	Nest structures	2.00	$435.96	$17.00	$500.00	$952.96
289	Native vegetation management (mechanical)	30.00	$6539.40	$255.00	$20000.00	$26794.40
290	Native vegetation management (chemical)	17.00	$3705.66	$144.50	$2000.00	$5850.16
294	Program coordination and implementation	12.00	$2615.76	$102.00	$1000.00	$3717.76
295	Biological data collection, analysis, and reporting	18.00	$3923.64	$153.00	$8500.00	$12576.64
311	Boundary signs	4.00	$871.92	$34.00	$0.00	$905.92
312	Informational signs	3.00	$653.94	$25.50	$0.00	$679.44
320	Outreach and education	4.00	$871.92	$34.00	$0.00	$905.92
341	Public use administration (hunting)	40.00	$8719.20	$340.00	$1200.00	$10259.20
342	Public use administration (non-hunting)	27.00	$5885.46	$229.50	$5200.00	$11314.96
350	Customer service support	4.00	$871.92	$34.00	$0.00	$905.92
920	FEM -- buildings/structures	15.00	$3269.70	$127.50	$2000.00	$5397.20
921	FEM -- utilities	1.00	$217.98	$8.50	$1575.00	$1801.48

922	FEM -- custodial functions	2.00	$435.96	$17.00	$0.00	$452.96
923	FEM -- vehicles/equipment	30.00	$6539.40	$255.00	$8200.00	$14994.40
926	FEM -- roads/bridges	24.00	$5231.52	$204.00	$9000.00	$14435.52
927	FEM -- trails	10.00	$2179.80	$85.00	$2000.00	$4264.80
928	FEM -- fences	5.00	$1089.90	$42.50	$2000.00	$3132.40
Total:		655.00	$142,776.90	$5,567.50	$86,500.00	$234,844.40

12.16 Arthropod Control Plan

Florida Department of Agriculture and Consumer Services
Division of Agricultural Environmental Services

ARTHROPOD MANAGEMENT PLAN - PUBLIC LANDS

ADAM H. PUTNAM
COMMISSIONER

Section 388.4111, F.S.
Telephone: (850) 617-7997

For use in documenting an Arthropod Control Pan 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:
Half Moon Wildlife Management Area

Is Control Work Necessary: ☐ Yes ☒ No

Location:
8864 CR 247, Lake Panasoffkee, FL 33538

Land Management Agency:
Florida Fish & 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:

DACS-13668 11/09
Page 1 of 4

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:

Chemical or Common name:

☐ Ground ☐ Aerial

Rate of application:

Method of application:

DACS-13668 11/09
Page 2 of 4

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: Arthropod control agency may request special exception to this plan during a threat to public or animal health declared by State Health Officer or Commissioner of Agriculture.

Proposed Notification Procedure for Control Activities:

Records:

Are records being kept in accordance with Chapter 388, F.S.:

☐ Yes ☐ No

Records Location:

How long are records maintained:

DACS-13668 11/09
Page 3 of 4

Vegetation Modification:

What trimming or altering of vegetation to conduct surveillance or treatment is proposed?

Proposed Land Modifications:

Is any land modification, i.e., rotary ditching, proposed:

Include proposed operational schedules for water fluctuations:

List any periodic restrictions, as applicable, for example peak fish spawning times.

Proposed Modification of Aquatic Vegetation:

Land Manager Comments:

Arthropod Control Agency Comments:

2/10/14

Signature of Lands Manager or Representative Date

2-7-14

Signature of Mosquito Control Director / Manager Date

DACS-13668 11/09
Page 4 of 4

12.17 Sumter County Letter of Compliance with Local Government Comprehensive Plan

Board of County Commissioners
Sumter County, Florida

7375 Powell Road, Suite 200 • Wildwood, FL 34785 • Phone (352) 689-4400 • FAX: (352) 689-4401
Website: http://sumtercountyfl.gov

May 14, 2020

Lance Jacobson, Conservation Planner
Florida Fish and Wildlife Conservation Commission
Farris Bryant Building
620 S. Meridian Street
Tallahassee, FL

RE: Land Management Plan for the Half Moon Wildlife Management Area 2020-2030

Dear Mr. Jacobson:

I have reviewed the LMP for the Half Moon Wildlife Management Area in Sumter County, Florida that you submitted. I have found that the LMP is consistent with Sumter County's Comprehensive Plan.

If you have any further questions or need additional information, please do not hesitate to contact this office.

Sincerely,

Patricia Burgos
Planner

Al Butler, Dist 1
Second Vice Chairman
(352) 689-4400
7375 Powell Road
Wildwood, FL 34785

Don Burgess, Dist 3
(352) 689-4400
7375 Powell Road
Wildwood, FL 34785

Steve Printz, Dist 5
Chairman
(352) 689-4400
7375 Powell Road
Wildwood, FL 34785

Doug Gilpin, Dist 2
(352) 689-4400
7375 Powell Road
Wildwood, FL 34785

Garry Breeden, Dist 4
Vice Chairman
(352) 689-4400
7375 Powell Road
Wildwood, FL 34785

Bradley S. Arnold,
County Administrator
(352) 689-4400
7375 Powell Road
Wildwood, FL 34785

Gloria R. Hayward, Clerk & Auditor
(352) 569-6600
215 East McCollum Avenue
Bushnell, FL 33513

County Attorney
The Hogan Law Firm
Post Office Box 485
Brooksville, Florida 34605