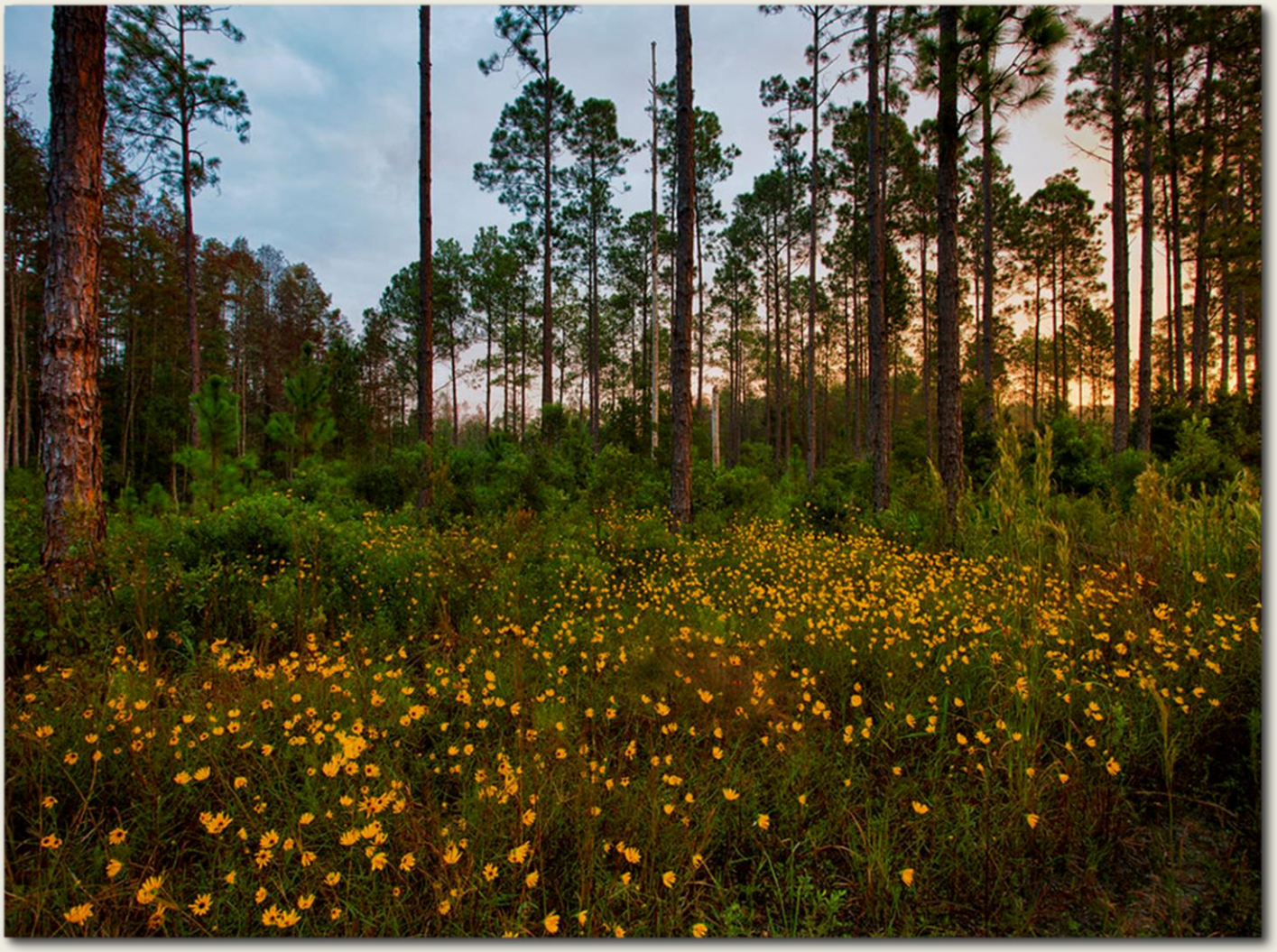
2025-2035

CHASSAHOWITZKA WILDLIFE MANAGEMENT AREA

10-YEAR MANAGEMENT PLAN
HERNANDO COUNTY



FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION
620 SOUTH MERIDIAN STREET
TALLAHASSEE, FL 32399-1600

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PENDING APPROVAL LETTER

A Management Plan for the Chassahowitzka Wildlife Management Area

Hernando County

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

November 2024

Approved Melissa Tucker

Melissa Tucker, Director
Division of Habitat and Species Conservation

LAND MANAGEMENT PLAN EXECUTIVE SUMMARY

Lead Agency: Florida Fish and Wildlife Conservation Commission (FWC)
Common Name of Property: Chassahowitzka Wildlife Management Area (CWMA)
Location: Hernando County, Florida
Acreage Total: 27,789 acres
Acreage Breakdown:

Land Cover Classification	Acres	Percent of Total Area
Artificial pond	13.80	0.05%
Basin marsh	560.68	2.01%
Basin swamp	1,406.94	5.03%
Baygall	95.50	0.34%
Borrow area	2.99	0.01%
Clearing	5.15	0.02%
Clearing/regeneration	3.70	0.01%
Depression marsh	293.63	1.05%
Developed	13.79	0.05%
Dome swamp	338.82	1.21%
Firebreak	167.70	0.60%
Hydric hammock	16,130.81	57.72%
Linear feature	1.33	0.00%
Mesic flatwoods	1,853.52	6.63%
Mesic hammock	406.57	1.45%
Pine plantation	80.88	0.29%
Restoration mesic flatwoods	206.20	0.74%
Restoration sandhill	1,252.31	4.48%
Restoration scrub	26.90	0.10%
Restoration scrubby flatwoods	13.10	0.05%
Restoration wet flatwoods	20.17	0.07%
Road	107.01	0.38%
Salt marsh	156.28	0.56%
Sandhill	3,981.36	14.25%
Scrub	199.50	0.71%
Scrubby flatwoods	35.84	0.13%
Sinkhole lake	1.71	0.01%
Spoil area	7.34	0.03%
Spring-run stream	11.91	0.04%
Successional hardwood forest	34.10	0.12%
Tidal creek	12.65	0.05%
Utility corridor	6.32	0.02%
Wet flatwoods	225.73	0.81%
Wet prairie	7.28	0.03%
Xeric hammock	264.12	0.95%

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

Lease/Management Agreement No.: 3586 (Appendix 11.1)
Use: Single __ Multiple X
Management Agency: FWC (Lead), FFS (Cooperative)
Management Responsibilities: FWC (Lead, CWMA), FFS (Cooperative, resource protection)
Designated Land Use: Wildlife Management Area
Sublease (s): None

Encumbrances: Inholding access and utility easements, access easement for the purpose of retention pond maintenance, and Well Monitoring License Agreement.
Type Acquisition: Conservation and Recreation Lands, Preservation-2000, and Florida Forever programs.
Unique Features: Significant expanse of hardwood swamp forest and other natural communities; springs, sink holes, and aquatic caves.
Archaeological/Historical: 24 historic sites listed in Division of Historical Resources Florida Master Site File.
Management Needs: Habitat restoration and improvement; public access and recreational opportunities; hydrological preservation and restoration; invasive and non-native species maintenance and control; imperiled species habitat maintenance, enhancement, and restoration.
Acquisition Needs/Acreage: 16,256 acres FWC Additions and Inholdings list; the remainders of the Annutteliga Hammock Florida Forever project and the Florida's First Magnitude Springs Florida Forever project (Figure 15).
Surplus Lands/Acreage: None
Public Involvement: Management Advisory Group consensus building meeting and Public Hearing (Appendix 11.4)

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

ARC Approval Date ____ BTIITF Approval Date: _____
Comments: _____

Land Management Plan Compliance Checklist

Required for State-owned conservation lands over 160 acres

Section A: Acquisition Information Items

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
1	The common name of the property.	18-2.018 & 18-2.021	ii
2	The land acquisition program, if any, under which the property was acquired.	18-2.018 & 18-2.021	iii
3	Degree of title interest held by the Board, including reservations and encumbrances such as leases.	18-2.021	9-11
4	The legal description and acreage of the property.	18-2.018 & 18-2.021	ii, 1
5	A map showing the approximate location and boundaries of the property, and the location of any structures or improvements to the property.	18-2.018 & 18-2.021	4, 5, 35, 36
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	39
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	59-62
8	Identification of adjacent land uses that conflict with the planned use of the property, if any.	18-2.021	37
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)	9
10	Proximity of property to other significant State, local or federal land or water resources.	18-2.021	2, 3, 7

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	32-34, 38, 39
12	A description of past and existing uses, including any unauthorized uses of the property.	18-2.018 & 18-2.021	31, 32
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	38, 39
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	9, 57, 63
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	30, 55
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	58, 72, 73
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)	31-34, 38, 39

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
18	A finding regarding whether each planned use complies with the 1981 State Lands Management Plan, particularly whether such uses represent "balanced public utilization," specific agency statutory authority and any other legislative or executive directives that constrain the use of such property.	18-2.021	38
19	Letter of compliance from the local government stating that the LMP is in compliance with the Local Government Comprehensive Plan.	BOT requirement	Appendix 11.23
20	An assessment of the impact of planned uses on the renewable and non-renewable resources of the property, including soil and water resources, and a detailed description of the specific actions that will be taken to protect, enhance and conserve these resources and to compensate/mitigate damage caused by such uses, including a description of how the manager plans to control and prevent soil erosion and soil or water contamination.	18-2.018 & 18-2.021	14-32
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	38, 39
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	30, 55, Appendix 11.18
23	A statement regarding incompatible use in reference to Ch. 253.034(10).	253.034(10)	39

*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	13
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)	13
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)	13, Appendix 11.4

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
27	Summary of comments and concerns expressed by the advisory group for parcels over 160 acres	18-2.021	Appendix 11.4
28	During plan development, at least one public hearing shall be held in each affected county. Notice of such public hearing shall be posted on the parcel or project designated for management, advertised in a paper of general circulation, and announced at a scheduled meeting of the local governing body before the actual public hearing. *Include a copy of each County's advertisements and announcements (meeting minutes will suffice to indicate an announcement) in the management plan.*	253.034(5) & 259.032(10)	Appendix 11.3, Appendix 11.4
29	The manager shall consider the findings and recommendations of the land management review team in finalizing the required 10-year update of its management plan. *Include manager's replies to the team's findings and recommendations.*	259.036	40, Appendix 11.10
30	Summary of comments and concerns expressed by the management review team, if required by Section 259.036, F.S.	18-2.021	40, Appendix 11.10
31	If manager is not in agreement with the management review team's findings and recommendations in finalizing the required 10-year update of its management plan, the managing agency should explain why they disagree with the findings or recommendations.	259.036	Appendix 11.10

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	14-30
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	14-30
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	14-30
36	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding beaches and dunes.	18-2.021	14, 30
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	30
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	24-27
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	22-25
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	26, 27, Appendix 11.12

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
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)	39-57
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.	↓	39-65
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.	↓	68-72
42-C.	The associated measurable objectives to achieve the goals.	↓	68-72
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.*	↓	68-72, Appendices 11.10, 11.15, 11.16
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.		76, 77
43	***Quantitative data description of the land regarding an inventory of forest and other natural resources and associated acreage. *See footnote.*	253.034(5)	18, 19
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).	↓	30, 55
44-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	↓	68-72
44-C.	Measurable objectives (see requirement for #42-C).	↓	68-72
44-D.	Related activities (see requirement for #42-D).	↓	68-72, Appendices 11.15, 11.18
44-E.	Budgets (see requirement for #42-E).		76, 77
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).	↓	39-65
45-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	↓	68-72
45-C.	Measurable objectives (see requirement for #42-C).	↓	68-72
45-D.	Related activities (see requirement for #42-D).	↓	39-65, 68-72
45-E.	Budgets (see requirement for #42-E).		76, 77
45-F	Assess the feasibility of managing the lands > 40 contiguous acres as a recipient site for gopher tortoises consistent with rules of the Fish and Wildlife Conservation Commission, as prepared by the agency or cooperatively with a Fish and Wildlife Conservation Commission wildlife biologist.	259.105	25
45-G	Economic feasibility of establishing a gopher tortoise recipient site, including the initial cost, recurring management costs and the revenue projections.	259.105	25

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
46	***Quantitative data description of the land regarding an inventory of non-native plants and associated acreage. *See footnote.*	253.034(5)	23, 24
47	Place the Arthropod Control Plan in an appendix. If one does not exist, provide a statement as to what arrangement exists between the local mosquito control district and the management unit.	BOT requirement via lease language	Appendix 11.22
48	**Non-native species maintenance and control**	259.032(10) & 253.034(5)	
48-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	49-52
48-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	↓	68-72
48-C.	Measurable objectives (see requirement for #42-C).	↓	68-72
48-D.	Related activities (see requirement for #42-D).	↓	68-72
48-E.	Budgets (see requirement for #42-E).		76, 77

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	27, 28
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	29
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	27-29
52	***Quantitative description of the land regarding an inventory of hydrological features and associated acreage. *See footnote.*	253.034(5)	27-29
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).	↓	54
53-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	↓	68-72
53-C.	Measurable objectives (see requirement for #42-C).	↓	68-72
53-D.	Related activities (see requirement for #42-D).	↓	68-72
53-E.	Budgets (see requirement for #42-E).		76, 77

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	30, 31
55	***Quantitative data description of the land regarding an inventory of significant land, cultural or historical features and associated acreage.	253.034(5)	30, 31
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	30, 55
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).	↓	30, 31, 55
57-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	↓	68-72
57-C.	Measurable objectives (see requirement for #42-C).	↓	68-72
57-D.	Related activities (see requirement for #42-D).	↓	68-72
57-E.	Budgets (see requirement for #42-E).		76, 77

**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)	35, 36, 56
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).	↓	56
59-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	↓	68-72
59-C.	Measurable objectives (see requirement for #42-C).	↓	68-72
59-D.	Related activities (see requirement for #42-D).	↓	68-72
59-E.	Budgets (see requirement for #42-E).		76, 77
60	*** Quantitative data description of the land regarding an inventory of recreational facilities and associated acreage.	253.034(5)	36, 37
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).	↓	52-54
61-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	↓	68-72
61-C.	Measurable objectives (see requirement for #42-C).	↓	68-72
61-D.	Related activities (see requirement for #42-D).	↓	68-72
61-E.	Budgets (see requirement for #42-E).		76, 77

Section H: Other/ Managing Agency Tools

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
62	Place this LMP Compliance Checklist at the front of the plan.	ARC and managing agency consensus	iv-x
63	Place the Executive Summary at the front of the LMP. Include a physical description of the land.	ARC and 253.034(5)	ii-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	46-60
65	Key management activities necessary to achieve the desired outcomes regarding other appropriate resource management.	259.032(10)	68-72
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)	76, 77
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)	76, 77
68	A statement of gross income generated net income and expenses.	18-2.018	Appendix 11.21

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

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Acronym Key

ADA	Americans with Disabilities Act
ARC	Acquisition and Restoration Council
BEBR	Bureau of Economic and Business Research
CARL	Conservation and Recreation Lands Program
CCT	Current Control Technologies
CNWR	Chassahowitzka National Wildlife Refuge
CWMA	Chassahowitzka Wildlife Management Area
DEP	Department of Environmental Protection
DFC	Desired Future Conditions
DRP	Division of Recreation and Parks
DSL	Division of State Lands
EEL	Environmentally Endangered Lands
F.A.C.	Florida Administrative Code
FAMU	Florida A&M University
FDACS	Florida Department of Agriculture and Consumer Services
FDOT	Florida Department of Transportation
FFS	Florida Forest Service
FISC	Florida Invasive Species Council
FMSF	Florida Master Site File
FNAI	Florida Natural Areas Inventory
F.S.	Florida Statute(s)
FWC	Florida Fish and Wildlife Conservation Commission
FWRI	Fish and Wildlife Research Institute
GIS	Geographic Information Systems
IMPP	Internal Management Policies and Procedures
IPCC	Intergovernmental Panel on Climate Change
LAP	Landowner Assistance Program
LMR	Land Management Review
MAG	Management Advisory Group
NRCS	Natural Resource Conservation Services
OBVM	Objective-Based Vegetation Management
OFW	Outstanding Florida Waters
PASO	Public Access Services Office
SWFWMD	Southwest Florida Water Management District
USDA	U.S. Department of Agriculture
USFWS	United States Fish and Wildlife Service
WCPR	Wildlife Conservation Prioritization and Recovery

1 Introduction and General Information

Forming the southern link of a nearly unbroken crescent of public conservation lands stretching 200 miles from Pasco County to the Apalachicola River, the Chassahowitzka Wildlife Management Area (CWMA) conserves one of the largest coastal hardwood swamp forests along the Gulf of Mexico, south of the Suwannee River. Together with its intact and functioning freshwater, tidal, and spring system communities, it provides significant watershed and water quality protection and important habitat for an array of imperiled and common wildlife and plant species.

Located in Hernando County, Florida, this 27,789-acre conservation area contains diverse natural communities that sustain a large variety of wildlife species. Extensive hardwood swamps in association with uplands create good habitat conditions for wildlife and allow for seasonal movement of animals in response to fluctuating water levels and food supplies. The CWMA contributes to the conservation of an array of imperiled and other native wildlife including the Florida black bear (*Ursus americanus floridanus*), gopher tortoise (*Gopherus polyphemus*), Florida mouse (*Podomys floridanus*), eastern indigo snake (*Drymarchon couperi*), and southern fox squirrel (*Sciurus niger niger*).

The CWMA is managed to conserve and restore natural wildlife habitat and to provide high-quality opportunities for hunting, fishing, wildlife watching, and other fish and wildlife-focused public recreation including horseback riding, cave diving, and hiking.

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

This Management Plan is submitted for review to the Acquisition and Restoration Council (ARC) acting on behalf of the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees) of the State of Florida through the Florida Department of Environmental Protection's (DEP) - Division of State Lands (DSL), in compliance with Chapters 253 and 259, Florida Statutes (F.S.), and Chapters 18-2 and 18-4, Florida Administrative Code (F.A.C.). Format and content were drafted in accordance with ARC requirements for management plans and the model plan outline provided by the staff of the DEP-DSL. The terms (Appendix 11.11) used in this Management Plan describing management activities conform to those developed for the Land Management Uniform Accounting Council Biennial Land Management Operational Report.

1.1 Location

The CWMA is located in west-central Florida in northwestern Hernando County and encompasses approximately 27,789 acres (Figures 1 and 2). The CWMA lies in multiple sections in Township

21 South, Ranges 17 and 18 East and in Township 22 South, Range 17 East (Figure 3). The CWMA is located approximately 64 miles north of Tampa and 80 miles west of Orlando. It is bordered on the west by the Gulf of Mexico, on the north by the Hernando/Citrus County line, and to the south by Weeki Wachee State Park and Preserve. Approximately two-thirds of the upper eastern boundary is bounded by U.S. Highway 19 (US 19) and intermittently interspersed by several inholdings. Additional disjunct portions of the CWMA are located east of US 19, extending approximately two miles south of the Hernando/Citrus County line. The area is surrounded by residential and urban development and publicly owned forested uplands and wetlands. The CWMA is not located within a designated Area of Critical State Concern.

1.1.1 Proximity to other Public Conservation Lands

The CWMA is in the vicinity of an extensive network of conservation lands, including lands managed by the Southwest Florida Water Management District (SWFWMD), the DEP, and Citrus, Pinellas, Pasco, and Hernando counties. Federally owned properties in the vicinity include Chassahowitzka National Wildlife Refuge (CNWR) that is adjacent to the west and north of the CWMA.

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 10-mile radius of the CWMA, including lands managed by public and private entities that conserve cultural and natural resources within this region of Florida (Figure 4).

Most of the conservation lands listed in Table 2 are owned by a public entity. However, some of these areas fall within a less-than-fee ownership classification where the land is owned and managed by a private landowner while a public agency or not-for-profit organization holds a conservation easement on the land (Figure 4).

Table 1. Florida Forever Projects within a 10-mile Vicinity

Project Name	GIS Acres
Annutteliga Hammock	8,747.00
Crossbar/Al Bar Ranch	12,440.00
Florida’s First Magnitude Springs – Springs Coast Research Station	27.60
Florida’s First Magnitude Springs – Weeki Wachee Springs	1,264.34
Florida Springs Coastal Greenway – Homosassa Reserve/Walker Property	9,756.21
Florida Springs Coastal Greenway – St. Martins River	25,871.07
Southeastern Bat Maternity Caves – Sweet Gum Cave	9.12

Table 2. Conservation Lands within a 10-mile Vicinity

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

Chassahowitzka National Wildlife Refuge	USFWS

State of Florida	**Managing Agency**
Brooksville Agriculture and Environmental Research Station	FAMU
Chinsegut Hill Conference Center	FFS
Chinsegut Wildlife and Environmental Area	FWC
Crystal River State Park	DEP-DRP
Ellie Schiller Homosassa Springs Wildlife State Park	DEP-DRP
Janet Butterfield Brooks Wildlife and Environmental Area	FWC
Weeki Wachee Springs State Park	DEP-DRP
Withlacoochee State Forest	FFS
Yulee Sugar Mill Ruins Historic State Park	DEP-DRP

Water Management District	**Managing Agency**
Annutteliga Hammock	SWFWMD
Chassahowitzka River and Coastal Swamps	SWFWMD
Weeki Wachee Preserve	SWFWMD

County/City	**Managing Agency**
Bluebird Springs Park	Citrus County
Cross Bar Ranch Wellfield	Pinellas County
Fickett Hammock Preserve	Hernando County
Jumping Gully Conservation Area	Pasco County
Linda Pendersen Preserve/Jenkins Creek Preserve	Hernando County
Peck Sink Preserve	Hernando County

Private/Public Conservation Organization	**Managing Agency**
Cumming Preserve	Tampa Bay Conservancy, Inc.
Upper Coastal Mitigation Bank	EarthBalance

Acronym Key	**Agency Name**
DEP-DRP	Florida Department of Environmental Protection – Division of Recreation and Parks
FAMU	Florida A&M University
FFS	Florida Forest Service
FWC	Florida Fish and Wildlife Conservation Commission
SWFWMD	Southwest Florida Water Management District
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service

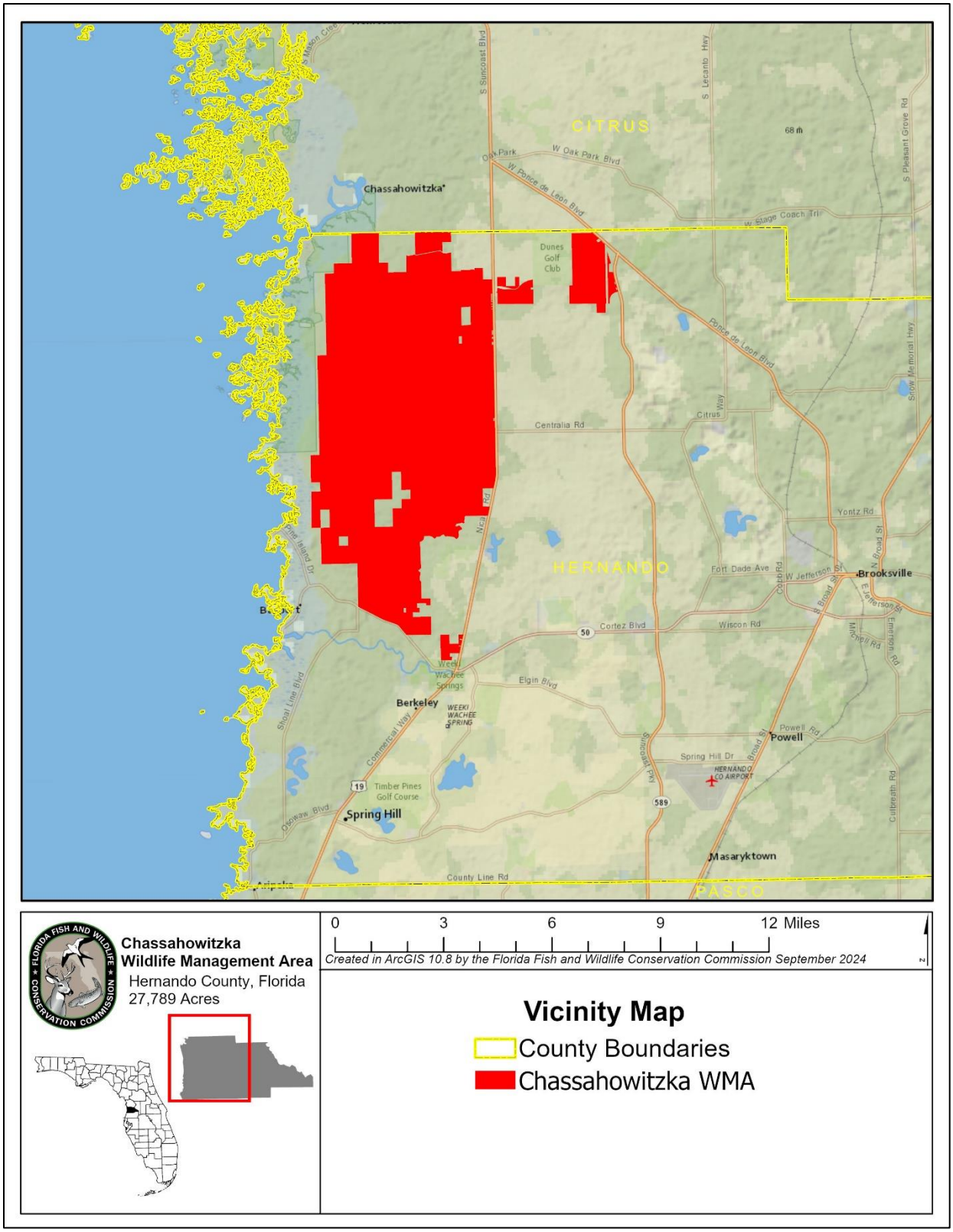


Figure 1. Vicinity Map

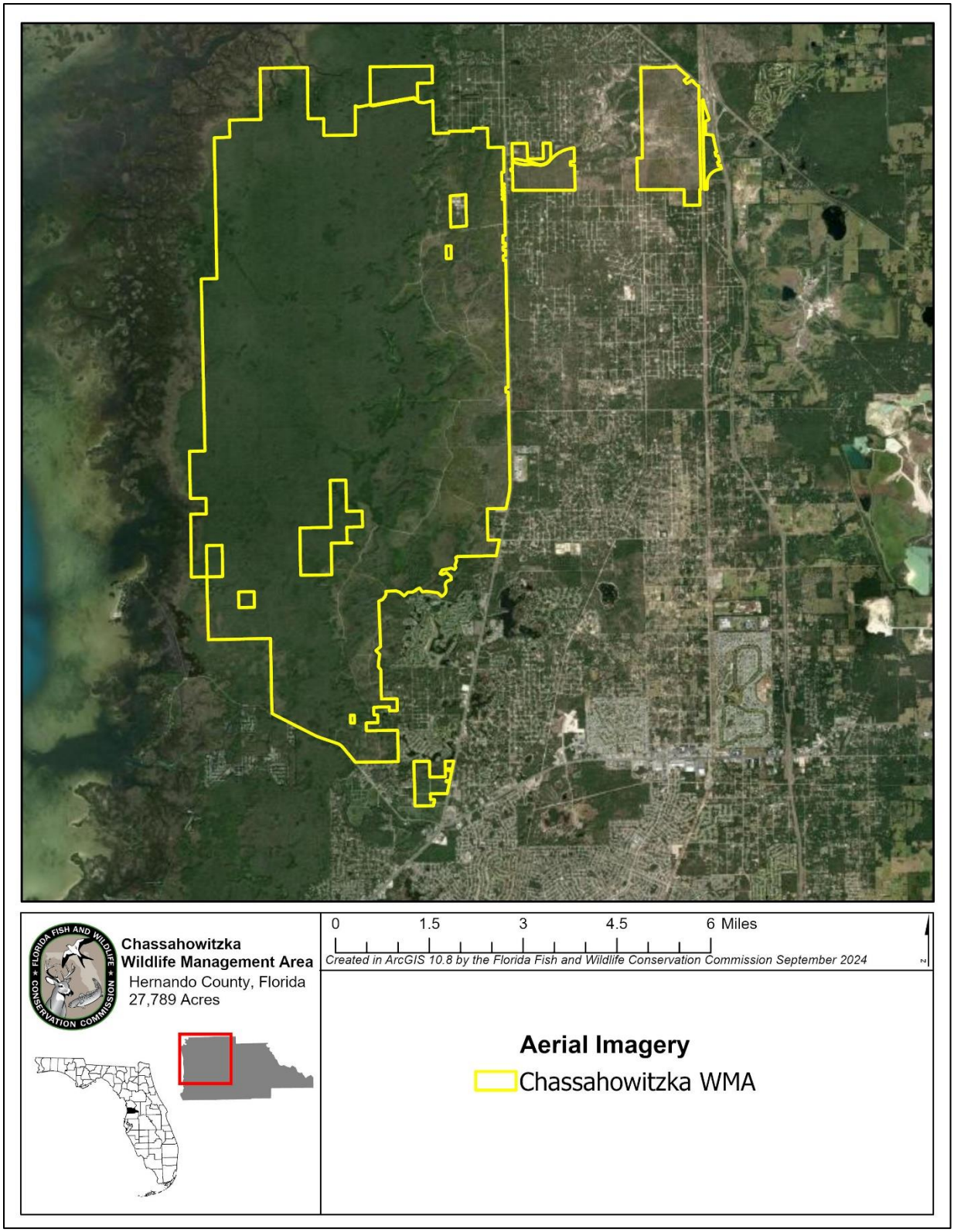


Figure 2. Aerial Imagery

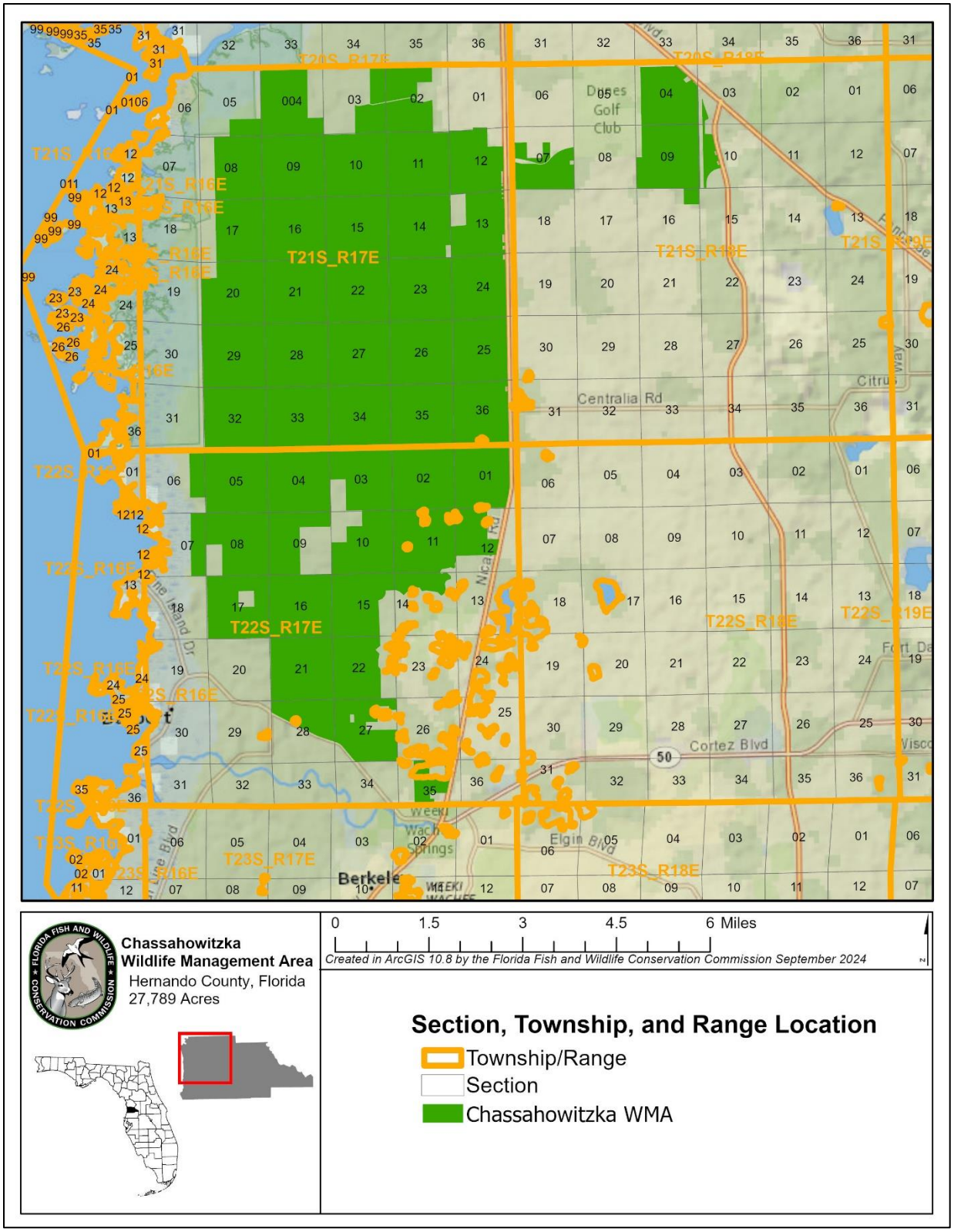
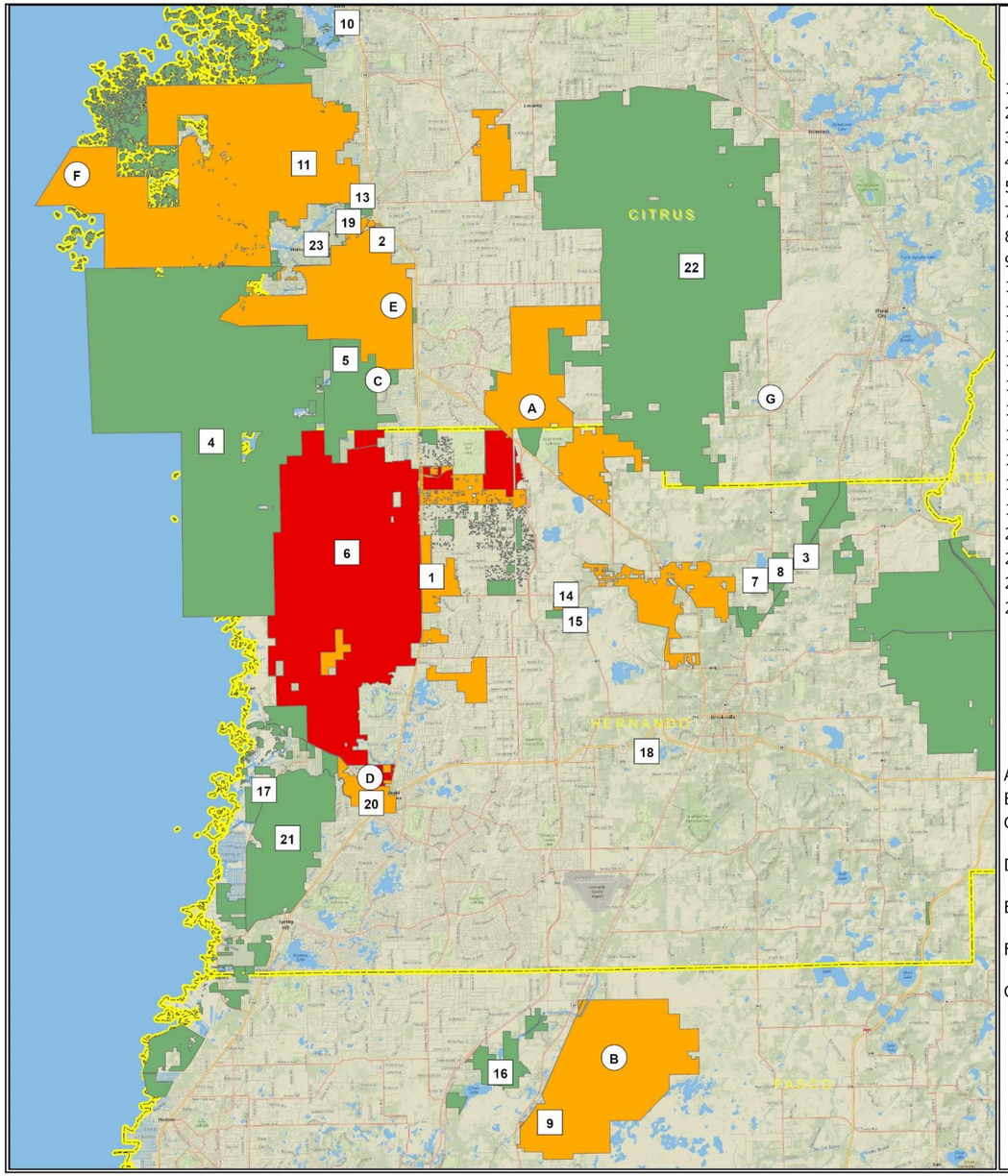


Figure 3. Section, Township, and Range Location



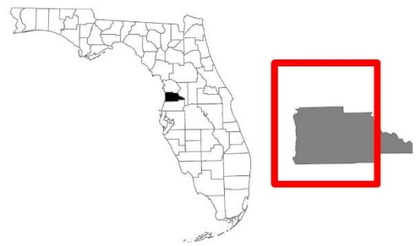
Conservation Lands within 10 miles of CWMA

1 Annutteliga Hammock
2 Bluebird Springs Park
3 Brooksville Plant Materials Center
4 Chassahowitzka National Wildlife Refuge
5 Chassahowitzka River and Coastal Swamps
7 Chinsegut Hill Conference Center
8 Chinsegut Wildlife and Environmental Area
9 Cross Bar Ranch Wellfield
10 Crystal River National Wildlife Refuge
11 Crystal River Preserve State Park
12 Cumming Preserve
13 Ellie Schiller Homosassa Springs Wildlife State Park
14 Fickett Hammock Preserve
15 Janet Butterfield Brooks Preserve Wildlife and Environmental Area
16 Jumping Gully Conservation Area
17 Linda Pedersen Preserve/Jenkins Creek Preserve
18 Peck Sink Preserve
19 Upper Coastal Mitigation Bank
20 Weeki Wachee Springs State Park
21 Weekiwachee Preserve
22 Withlacoochee State Forest
23 Yulee Sugar Mill Ruins Historic State Park

Florida Forever Projects within 10 miles of CWMA

A Annutteliga Hammock Florida Forever BOT Project
B Crossbar/Al Bar Ranch Florida Forever BOT Project
C Florida's First Magnitude Springs Florida Forever BOT Project - Springs Coast Research Station
D Florida's First Magnitude Springs Florida Forever BOT Project - Weekiwachee Springs
E Florida Springs Coastal Greenway Florida Forever BOT Project - Homosassa Reserve/Walker Property
F Florida Springs Coastal Greenway Florida Forever BOT Project - St. Martins River
G Southeastern Bat Maternity Caves Florida Forever BOT Project - Sweet Gum Cave

Chassahowitzka Wildlife Management Area
Hernando County, Florida
27,789 Acres



Legend

Chassahowitzka WMA
Conservation Lands
Florida Forever Projects
County

0 3 6 12 Miles

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Created in ArcGIS 10.8 by the Florida Fish and Wildlife Conservation Commission September 2024

Figure 4. Nearby Conservation Lands and Florida Forever Projects

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1.2 Title Interest and Management Authority

As State-owned lands, title to the majority of the lands within the CWMA is vested in the Board of Trustees, with the FWC holding fee title interest to approximately 150 acres (Figure 5). In 1985, the DSL, as staff to the Board of Trustees, entered into a 20-year lease agreement (Lease Agreement Number 3586) granting the FWC management authority for the CWMA. This lease was renewed for another 50 years in 2006. To date, Lease Agreement No. 3586 includes 27 amendments.

The Board of Trustees' Lease Agreement No. 3586 with the FWC also directs the FWC to "manage the leased premises only for the conservation and protection of natural and historical resources and resource-based, public outdoor recreation which is compatible with the conservation and protection of these public lands, as set forth in subsection 253.023(11), F.S..." The lease agreement further directs the FWC to "implement applicable Best Management Practices for all activities under this lease in compliance with paragraph 18-2.018(2)(h), F.A.C., which have been selected, developed, or approved by lessor, lessee, or other land managing agencies for the protection and enhancement of the leased premises."

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

1.3 Acquisition

1.3.1 Acquisition History

The CWMA was purchased by the State of Florida with funds made available from the Conservation and Recreation Lands (CARL) program, funds appropriated to the FWC through Preservation 2000 (P-2000), and the Florida Forever Additions and Inholdings program. Primary CARL management responsibility (lead managing agency status) was assigned to the FWC due to the richness and diversity of the fauna associated with the hardwood swamp mosaic of the CWMA. The Florida Forest Service (FFS) was assigned as a cooperating agency, assisting with the management of the timber resources in a manner compatible with preservation of the area's unique characteristics.

The original Chassahowitzka Swamp CARL land acquisition project encompassed lands in both Hernando and Citrus counties. Private landowners (13) held parcels considered for State acquisition. Lands were acquired in 1985 from the Lykes Brothers, Inc. and the Turner Corporation, the two major landowners within the Chassahowitzka Swamp CARL project boundary. The Lykes Brothers' properties included approximately 7,062 acres and lands purchased from the Turner Corporation included approximately 8,393 acres (Appendix 11.1).

In 1988, 150 acres were added to the CWMA (FWC-owned) as part of a mitigation project designed to compensate for the loss of red-cockaded woodpecker (*Picoides borealis*) habitat in Marion County. Since then, several other tracts have been purchased and added to the management area. Large tracts of lands were acquired from Dr. James Gills, Royal Palm Beach

Colony, 19 West Associates, Glen Lakes Partnership, and Suncoast Family YMCA. Smaller acquired tracts include those of Boyce, Blackwell, Routman, Underwood, and Mizrahi. In 1994, the first tract of the Weeki Wachee First Magnitude Springs conservation project was purchased and added to the CWMA for management; however, in 2018, a large portion of this property was transferred to the DEP-Division of Recreation and Parks for management. Since 1994, several smaller parcels within that project have been acquired and added to the CWMA. The Seville tract, part of the Annutteliga Hammock CARL project, was purchased in 1998 adding approximately 1,585 acres to the CWMA. In 2012, as part of the Nativity Lutheran Church Exchange, 2.2 acres were released from the CWMA.

In 2018, an additional 704 acres were donated to the State and added to the CWMA as part of the Suncoast Parkway mitigation by the Florida Department of Transportation (FDOT). As of 2020, 0.52 acres were purchased by the Board of Trustees from Betty Jo Shiver using Florida Forever funding. In 2022,1,257 acres were added to the CWMA which included adjacent lands and inholdings purchased during the time between 1993 and 2005. Most recently, as of 2023, FDOT donated about 107 acres to the Board of Trustees, and this land was added to the CWMA as well.

Acquisition efforts continue for the purchase of additional wetlands along the coast and the uplands along US 19.

1.3.2 Purpose for Acquisition of the Property

The CWMA was purchased by the State of Florida under the CARL program under the Environmentally Endangered Lands (EEL) category. One of the qualifications for placing the Chassahowitzka Swamp CARL project in the EEL category was based upon a United States Fish and Wildlife Service (USFWS) determination that recognized the Chassahowitzka ecosystem as a unique wildlife system of national significance. Under the CARL program, the primary purpose for acquisition of the CWMA, as stated previously, was to conserve the largest remaining coastal hardwood swamp along the Gulf of Mexico south of the Suwannee River, along with its intact and functioning freshwater, tidal, and spring system communities, as well as to conserve the diversity of rare and endangered species and provide additional public outdoor recreational opportunities for Florida’s rapidly increasing population.

Therefore, conservation lands purchased in the EEL category under the CARL program are to be managed for the conservation of unique or significant ecosystems and the establishment of public uses consistent with resource protection. Resource management practices on the area are designed to address the perpetuation of the swamp, its natural communities, and associated wildlife. Strategies for managing the tract include preservation of endangered and threatened species, protection and perpetuation of native flora and fauna, and protection of water quality and natural hydrology. Multiple-use management strategies have been developed incorporating issues and concerns related to wildlife, fisheries, and forest management. Provisions for recreational opportunities are considered to be compatible with the original conservation acquisition intent.

Accordingly, the overall management of the CWMA is structured to ensure the protection and ecological integrity of the CWMA's natural and cultural resources, while providing additional fish and wildlife-focused public outdoor recreational opportunities for Florida's citizens and visitors. As mentioned previously, recreational opportunities offered on the CWMA are designed as low-intensity, multiple-use activities and include hunting, cave diving, fishing, wildlife watching, hiking, horseback riding, and bicycling.

1.1.1 Encumbrances

Encumbrances include access and utility easements to inholding parcels. These include access to the privately-owned Hernando Sportsman's Club shooting range (Appendix 11.2.1), as well as deeds covering access to other interior parcels consisting of individual ownerships (Appendix 11.2.2; Appendix 11.2.3).

In 2002, Easement No. 30687 was granted to Jerry Grigg, the owner of an adjoining land parcel (Appendix 11.2.4). This easement is for the installation, operation, and maintenance of overhead powerlines and poles.

Also, in August 1998, an access easement for the purpose of retention pond maintenance was granted by the Board of Trustees to S & D Seville, Ltd. (Appendix 11.2.5). This access easement facilitates maintenance of hydrology and storm water retention along the Seville Parkway, the roadway that provides vehicular access to The Dunes neighborhood.

In addition, the SWFWMD maintains a Well Monitoring License Agreement and an associated amendment with the Board of Trustees for "...the purpose of constructing, operating and maintaining scientific equipment to be used for collecting hydrological and other scientific data." In general, this agreement further grants permissions to SWFWMD to access the 0.0046-acre (< 700 square feet) site to utilize the water monitoring well (Appendix 11.2.6).

There are two additional easements that allow for the construction and maintenance of a sign and two billboards across and upon two parcels (Appendix 11.2.7 and 11.2.8).

Currently, these encumbrances do not pose any significant impediments to the overall management of the area. However, acquisition of the inholdings with their associated access easements would enhance general management operations. There are no other known encumbrances, outstanding mineral rights, or other interests within the established boundary.

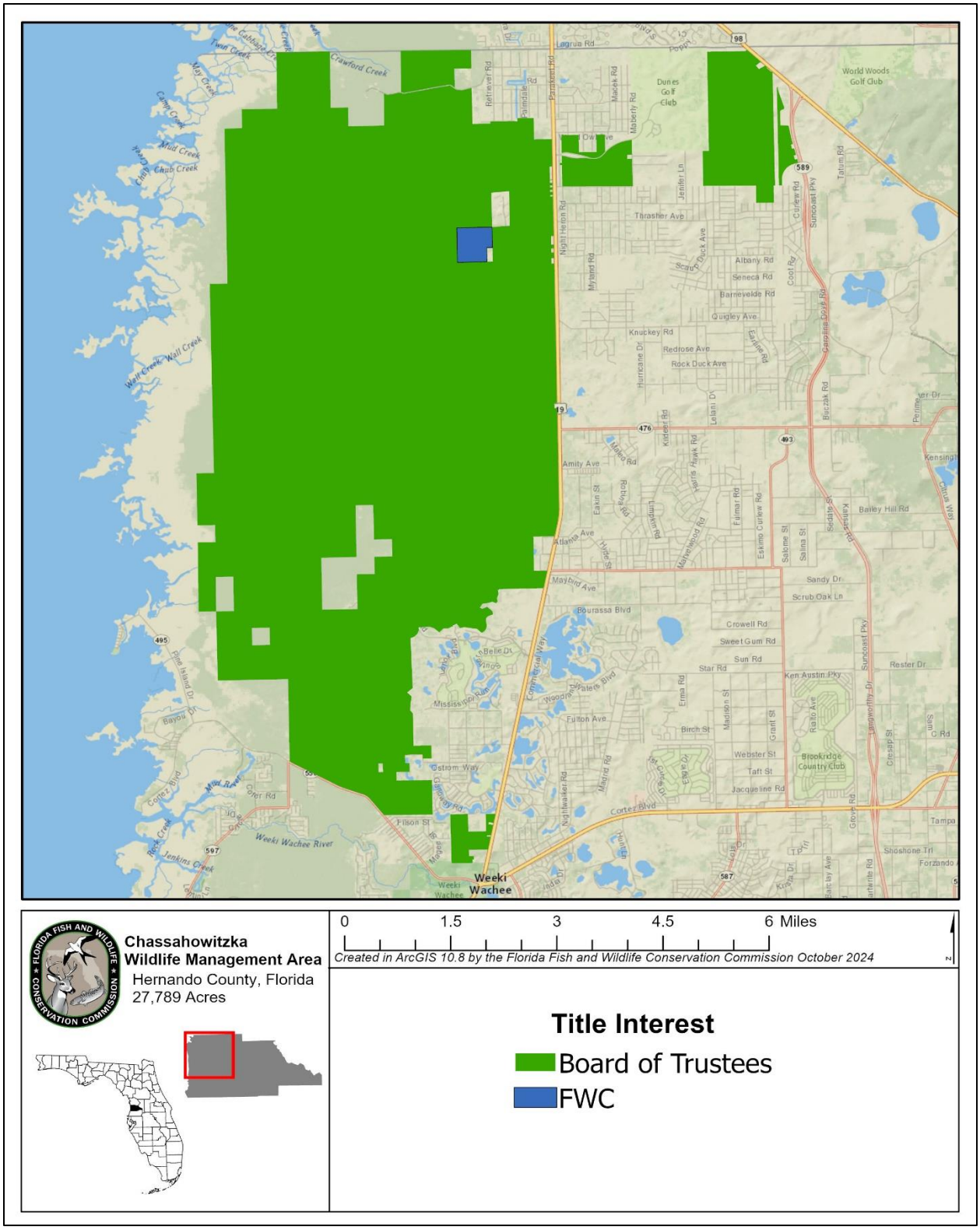


Figure 5. Title Interest

1.4 Planning Philosophy

The FWC's planning philosophy focuses on producing conservation outcomes that align with the needs of an ever-changing world. The FWC emphasizes consensus-building from the beginning of the planning process in order to engage, understand, and incorporate the ideas of the various interests, user groups, and communities that it serves. To achieve this holistic management approach, the FWC convenes a Management Advisory Group (MAG) meeting which engages stakeholders from various user groups at the beginning of FWC's planning process and a public hearing in which the public can provide formal testimony. The FWC also engages field staff, as well as other FWC staff and agency experts, in developing Management Plans, thereby facilitating development of meaningful management intent language. Further management planning input is also received through Land Management Reviews (LMR) conducted every five years. LMRs include both a review of the current management plan and a field review of the area conducted by a diverse team of land management auditors, providing the FWC with important information and guidance (Section 4.1).

Furthermore, the FWC maintains transparency and accountability throughout the development and implementation of the Management Plan by following a "living document" concept which links each plan with the previous plan by reporting on the objectives, management activities, and projects accomplished over the last planning timeframe (see Section 4).[1] The Management Plan serves as the guiding framework to implement an adaptive management process and content will be evaluated throughout the planning period to achieve comprehensive conservation goals (Section 4.2). As needed, amendments to Management Plans are presented to the DSL and ARC for review and consideration.

1.5 Public Involvement

The FWC conducted a MAG meeting via Microsoft Teams, due to COVID-19 gathering restrictions, on September 23, 2020 to obtain input from both public and private stakeholders regarding management of the CWMA. Results of this meeting were used by the 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 list of participants, is included in Appendix 11.4.1. Further, a public hearing, as required by Chapter 259.032(10), F.S., was held via Adobe Connect on October 28, 2020, to solicit input and comment from the public regarding this Management Plan. The Management Prospectus was made available to the public 30 days prior to the public hearing. The report of that hearing is included in Appendix 11.4.2.

A website is also maintained for receipt of public input. Further testimony and input will be received at a public hearing held by ARC. Input received from all public involvement efforts are considered in the development of the update to the Management Plan.

2 Natural and Cultural Resources

2.1 Physiography

2.1.1 Topography and Geologic Formations

Florida has a storied geological history. The State of Florida is a part of the Florida platform that extends into the Atlantic Ocean and extends over 100 miles into the Gulf of Mexico. During the Paleozoic and Mesozoic ages, volcanic and sedimentary rock formed to create the base layer of what is now Florida. Due to rifting and tectonic shift, North America broke away from Pangea and during this time the panhandle of Florida was underwater. Due to the waterway separating Florida from the rest of the United States, sediments eroding from the Appalachian Mountains kept Florida waters clear. This also created a limestone layer that, due to karstification, created the intricate aquifer and cave system in Florida. The final stage that brought Florida into the geologic condition represented today was the northern movement of the continent and receding water levels. This event also created the panhandle of Florida which is characterized by siliciclastic sediments created by the erosion of previously deposited rocks. Through these changes, Florida has a mosaic of geologic formations and soil types.

Florida is part of the Coastal Plain physiographic province which stretches from Cape Cod to the Mexican border. The Coastal Plain is divided into six physiographic sections and Florida lies between two of these sections: the Floridian section, which encompasses most of peninsular Florida and the East Gulf Plain section, which encompasses the panhandle of Florida. The Florida Geological Survey[21] recognizes a total of 10 physiographic divisions (Districts) within Florida. The CWMA is located across 3 provinces within the Ocala Karst District, a region that contains Ocala Limestone and Suwannee Limestone, as well as beach ridge and dune formations. The bulk of the CWMA, including the areas closest to the coast, is located in the Crystal River Karst Plain Province, a low karst plain of Suwannee Limestone overlain by a thin mantle of undifferentiated sediments which become thicker inland. The easternmost tract of the WMA is in the Brooksville Ridge Province, a high north-south-trending ridge of undifferentiated sandy sediments overlying the siliciclastic sediments of the Hawthorn Group, which itself overlies the Suwannee Limestone. The southernmost tip of the CWMA is in the Land O' Lakes Karst Plain Province, a low plain underlain by Ocala and Suwannee Limestones and is characterized by numerous springs and sinkholes, overlain by traces of ancient dunes that extend southwestward from the Brooksville Ridge.

Ocala Limestone formations are characterized by permeable, highly fossiliferous limestone and shallow elevations that range from sea level to 100 feet above mean sea level (MSL). This limestone underlies most of Florida and is an essential part of the Floridan aquifer system. Suwannee Limestone is typically yellow to cream colored, poorly- to well-indurated, and a variably fossiliferous, moldic limestone. It is found in the upper part of the Floridan aquifer system. Outcrops of both Ocala and Suwannee Limestones can be found in Hernando County. Beach ridge and dune formations are comprised of sand. Sand is unfossiliferous and classified as an undifferentiated sediment.

Much of the CWMA has a low, flat topography with a thin surface layer of poorly drained carbonate sands and silts overlying limestone. The uplands range in elevation from 10 to 20 feet above MSL, with higher elevations of better-drained soils derived from low ridge relict coastal dunes. The bottomlands are typically less than 10 feet above MSL.

2.1.2 Soils

The U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) data were used to identify the CWMA soil series and depth to water table. The map units described in the soil survey of the CWMA are distributed as shown in Figure 6. Analyses of depth to water table for map units occurring within the CWMA 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.” Soil map units may contain multiple soil components which are given names that are unique identifiers. Appendix 11.7 lists the names and official map unit descriptions of areas delineated on the detailed soil maps in a soil survey or by miscellaneous areas in the survey area as determined by the NRCS. Analysis of depth to water table for map units occurring within the CWMA are also provided in Appendix 11.7. Specific soils found on the CWMA are mostly Aripeka-Okeelanta-Lauderhill association and Okeelanta-Terra Ceia association which make up over 60%. Another 34% is made up of Basinger, Candler, and Tavares fine sands, as well as Myakka-Myakka wet, fine sand. The remainder of the CWMA contains interspersed, small amounts of Adamsville, Anclote, Arredondo, Eaugallie, Paola, Pomello, and Sparr find sands, as well as Lacoochee fine sandy loam, Pits, Pits-Dumps complex, Weeki Wachee muck, and water.

2.1.3 Climate

In general, a moderate climate occurs in Hernando County. The CWMA is characterized by long, warm summers and mild winters. The average daily winter temperature over the last 10 years has been 62° Fahrenheit (F), with an average minimum temperature of approximately 51° F. The average daily summer temperature is 82° F with an average maximum temperature of approximately 91° F. Over the last 10 years, the CWMA has seen an average annual rainfall of 54 inches with the majority occurring in the summer season.

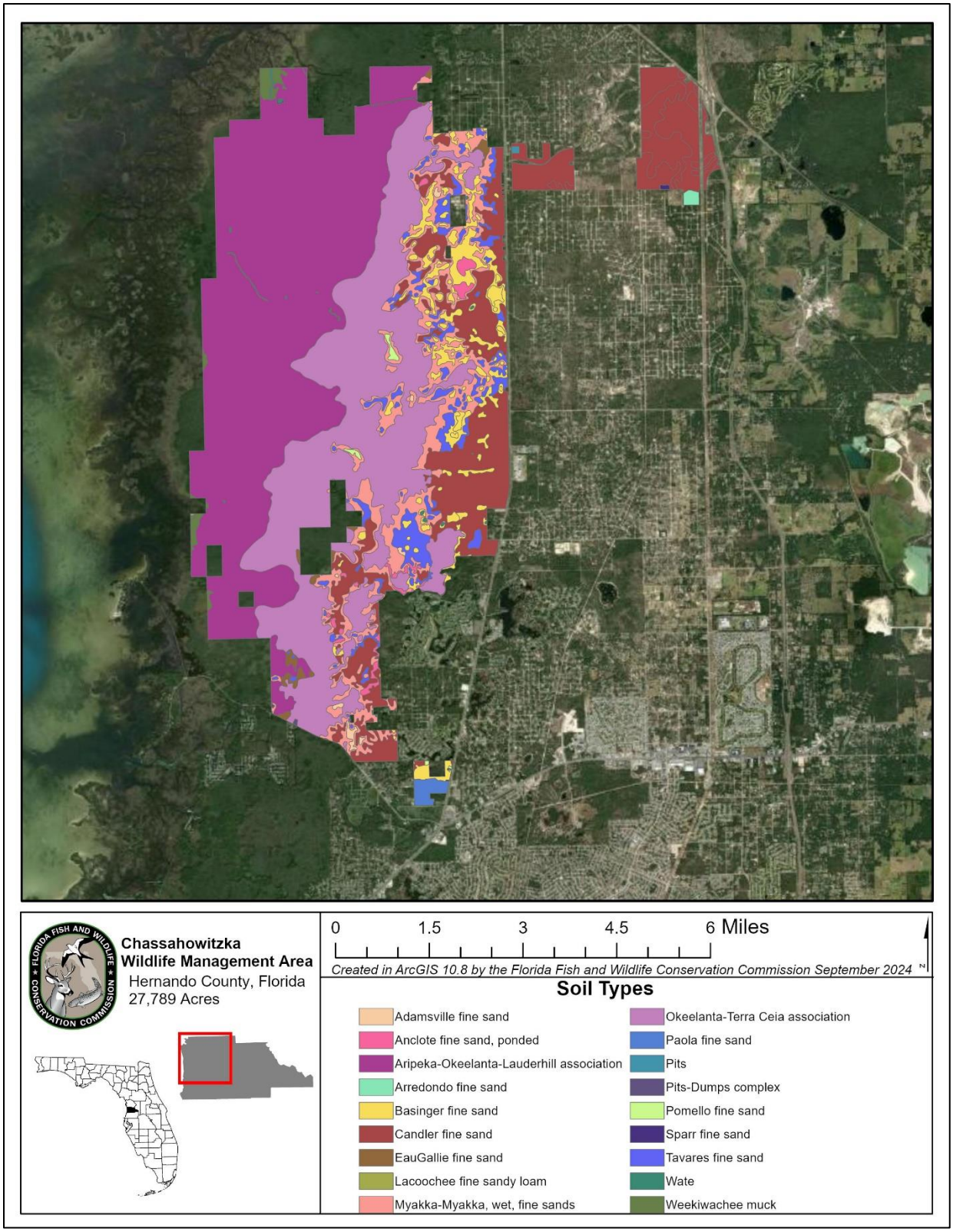


Figure 6. Soil Types

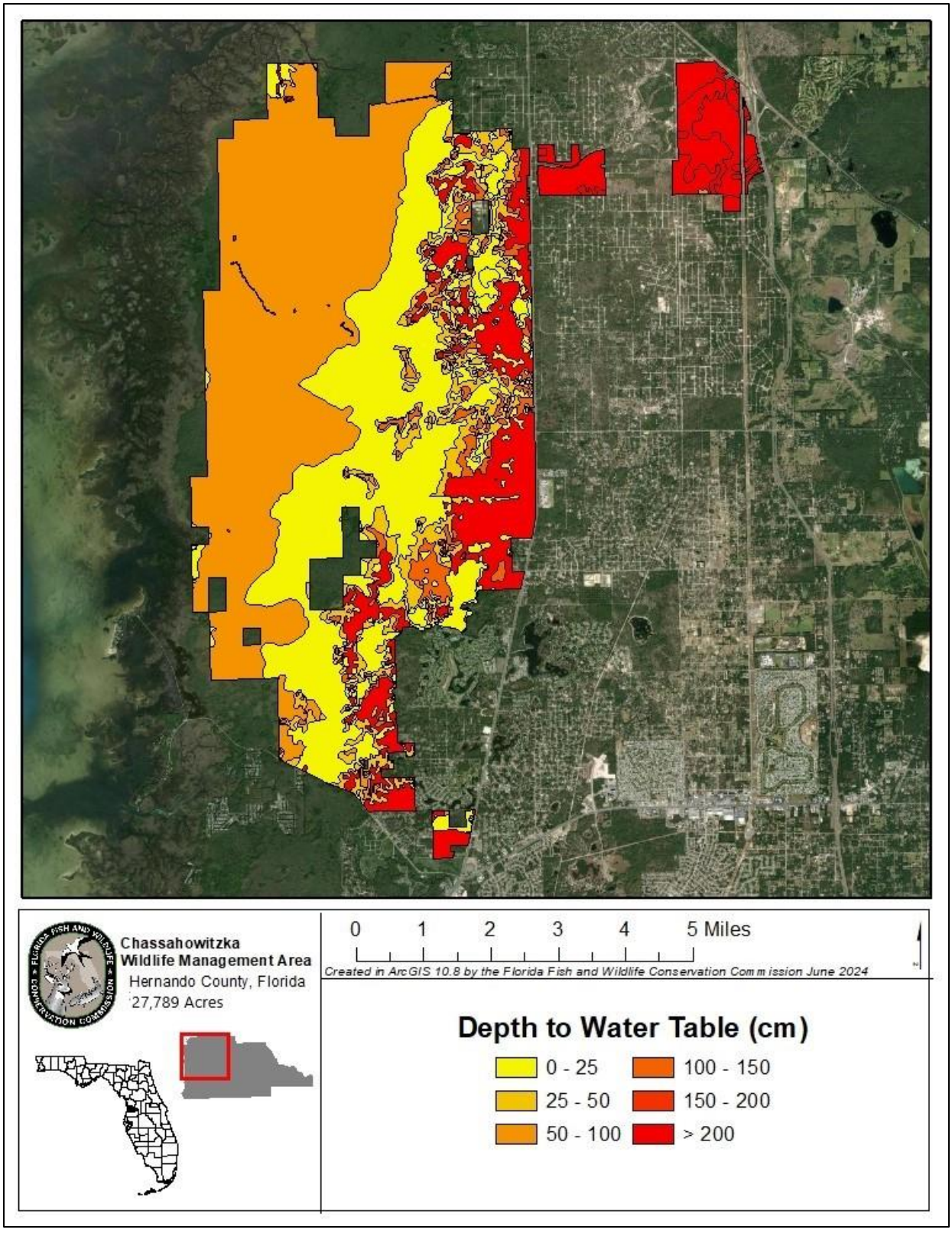


Figure 7. Depth to Water Table

2.2 Vegetation

The FWC manages the lands in the Wildlife Management Area (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 species occurring in these habitats.

Through the services of the Florida Natural Areas Inventory (FNAI), the FWC has mapped the current and historic natural communities and altered landcover types of the CWMA and documented 34 occurring on the CWMA (Table 3, Figures 8 - 9). To date, historic natural communities have only been mapped on certain parts of the CWMA. The most prominent natural communities on the CWMA are hydric hammock and sandhill. Detailed descriptions are included in Appendix 11.8.

Additionally, native plant species found on the CWMA have been documented and recorded by either FWC staff or contractors (Appendix 11.5.1). Currently, 24 imperiled plant species and 32 non-native plant species have been documented on the area (Tables 4- 5, Sections 2.2.1-2.2.2).

Table 3. Natural Communities and Altered Landcover Types

Community/Landcover	GIS Acres	Percentage
Hydric hammock	16,130.81	57.72%
Sandhill	3,981.36	14.25%
Mesic flatwoods	1,853.52	6.63%
Basin swamp	1,406.94	5.03%
Restoration sandhill	1,252.31	4.48%
Basin marsh	560.68	2.01%
Mesic hammock	406.57	1.45%
Dome swamp	338.82	1.21%
Depression marsh	293.63	1.05%
Xeric hammock	264.12	0.95%
Wet flatwoods	225.73	0.81%
Restoration mesic flatwoods	206.20	0.74%
Scrub	199.50	0.71%
Firebreak	167.70	0.60%
Salt marsh	156.28	0.56%
Road	107.01	0.38%
Baygall	95.50	0.34%
Pine plantation	80.88	0.29%
Scrubby flatwoods	35.84	0.13%
Successional hardwood forest	34.10	0.12%
Restoration scrub	26.90	0.10%

Restoration wet flatwoods	20.17	0.07%
Artificial pond	13.80	0.05%
Developed	13.79	0.05%
Restoration scrubby flatwoods	13.10	0.05%
Tidal creek	12.65	0.05%
Spring-run stream	11.91	0.04%
Spoil area	7.34	0.03%
Wet prairie	7.28	0.03%
Utility corridor	6.32	0.02%
Clearing	5.15	0.02%
Clearing/regeneration	3.70	0.01%
Borrow area	2.99	0.01%
Sinkhole lake	1.71	0.01%
Linear feature	1.33	0.00%

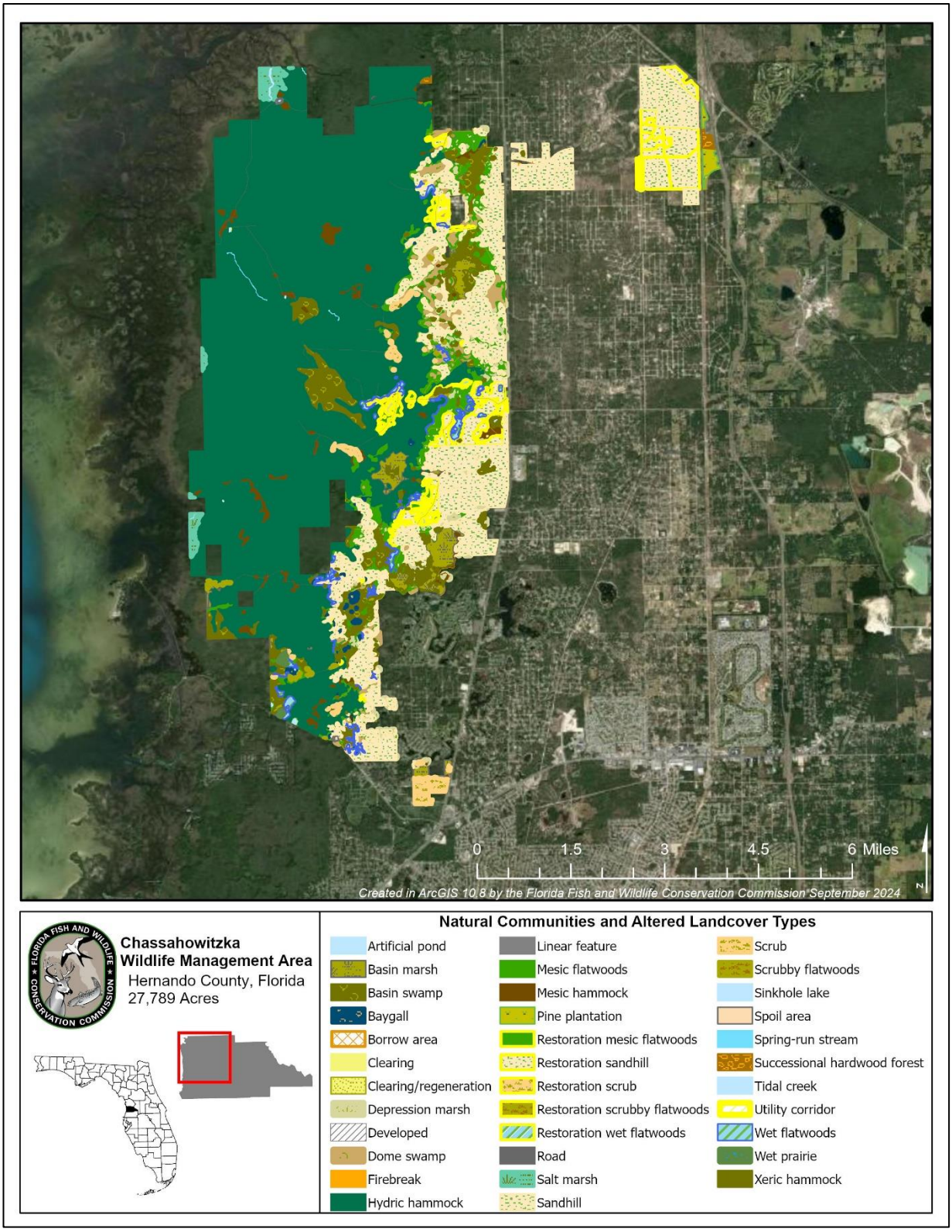


Figure 8. FNAI Natural Communities and Altered Landcover Types

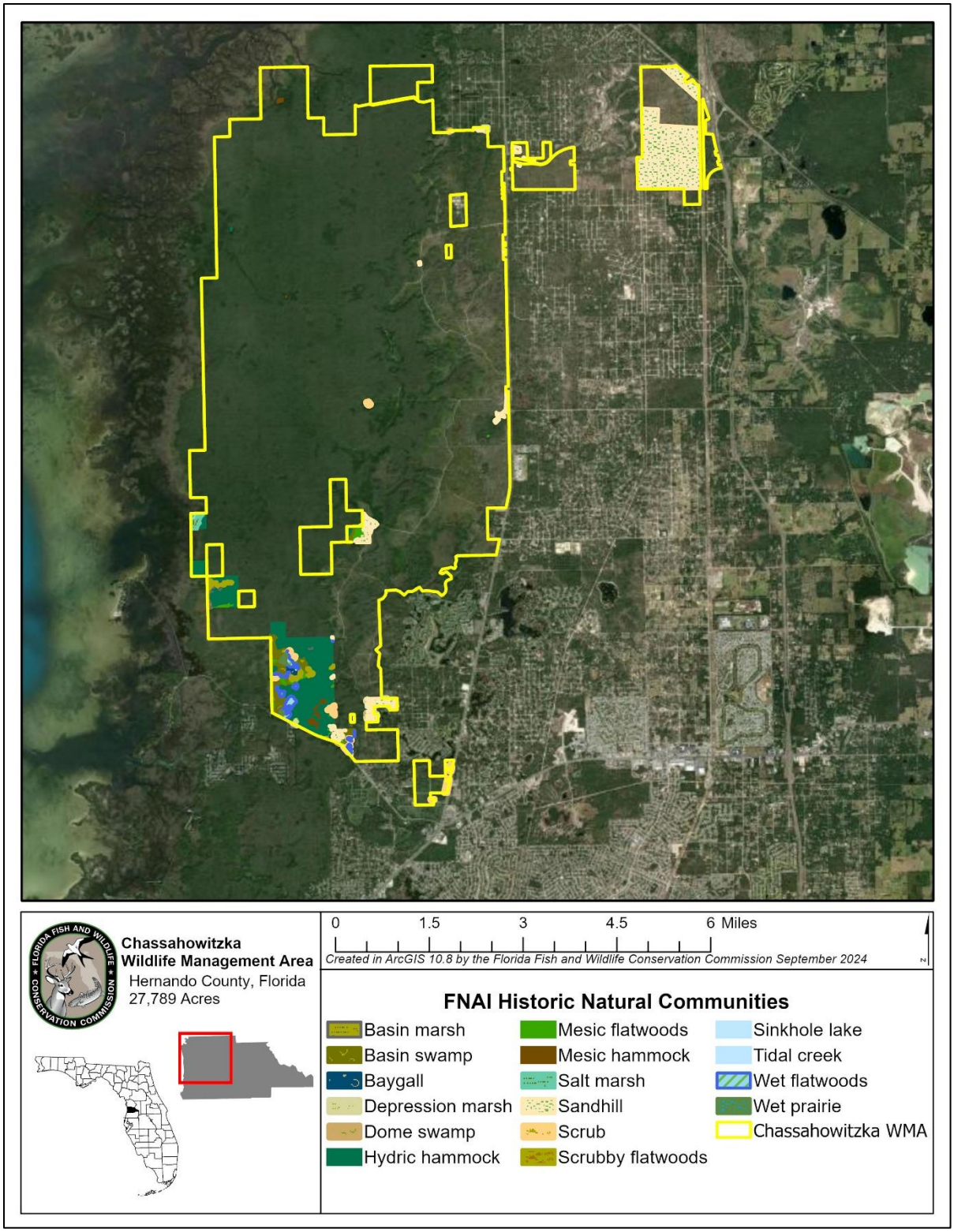


Figure 9. FNAI Historic Natural Communities*

*Only altered landcover types and new additions were historically mapped.

2.2.1 Imperiled Plants

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

FNAI conducted a rare plant survey in 2011 on the CWMA and identified 14 imperiled plant species, of which, six are state-designated as Endangered and eight are state-designated as Threatened (Table 4). The legal protections afforded plants that occur on conservation lands, in conjunction with management actions including invasive plant removal and prescribed fire, will continue to maintain and enhance habitat for these and other imperiled plants. As such, these species should persist under planned management on the CWMA.

In addition to the imperiled plants, seven plants state listed as Commercially Exploited are known to occur on the CWMA (Table 4). Detailed descriptions of these imperiled plants are included in Appendix 11.9. The FWC will continue to monitor the known occurrences of these species and report any illegal collection to the appropriate authorities.

Table 4. Imperiled Plant Species

Scientific Name	Common Name	Status	FNAI Ranks*
Asclepias curtissii	Curtiss’s milkweed	SE	G3 / S3
Encyclia tampensis	Butterfly orchid	CE	G4 / SNR
Epidendrum conopseum	Green-fly orchid	CE	G4 / SNR
Eulophia ecristata	Non-crested eulophia	ST	G2G3 / S2
Garberia heterophylla	Garberia	ST	G3G4 / S3S4
Hexalectris spicata	Crested coral-root	SE	G5 / S3
Lechea cernua	Scrub pinweed	ST	G3 / S3
Lechea divaricata	Spreading pinweed	SE	G2 / S2
Lilium catesbaei	Catesby lily	ST	G4 / S4
Lobelia cardinalis	Cardinal flower	ST	G5 / SNR
Matelea gonocarpos	Angle pod	ST	G5 / SNR
Osmunda cinnamomea	Cinnamon fern	CE	G5T5 / SNR
Osmunda regalis	Royal fern	CE	G5T5 / SNR
Pinguicula caerulea	Blue-flowered butterwort	ST	G4 / S3S4
Pinguicula lutea	Yellow-flowered butterwort	ST	G4G5 / S3
Platanthera flava	Gypsy-spikes	ST	G5 / S3S4
Pogonia ophioglossoides	Rose pogonia	ST	G5 / S3S4
Polypodium plumula	Plume polypody	SE	G5 / S2
Polypodium ptilodon	Swamp plume polypody	SE	G5?TNR / S2
Rhapidophyllum hystrix	Needle palm	CE	G4 / S4
Serenoa repens	Saw palmetto	CE	G4G5 / S4S5

Stylisma abdita	Austin's dawnflower	SE	G3 / S3
Tillandsia utriculata	Giant wild-pine	SE	G5 / S3
Zamia integrifolia	Coontie	CE	G5 / SNR

*FNAI Ranking System definitions can be found in Appendix 11.6

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

It is possible other imperiled species occur on the CWMA 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.

2.2.2 Non-native Plants

FWC biologists and contractors have documented 32 non-native plant species on the CWMA, of which, 20 are considered invasive (Table 5). Species that are considered invasive are species that (a) are non-native to a specified geographic area; (b) were introduced by humans (intentionally or unintentionally); and (c) do or can cause environmental, economic, or human harm. The FWC relies on the Florida Invasive Species Council (FISC) for the categorization of invasive plant species.

Table 5. Non-native Plant Species

Scientific Name	Common Name	FISC Category
Albizia julibrissin	Silktree, Mimosa	I
Aristida purpurea	Purple threeawn	-
Broussonetia papyrifera	Paper mulberry	II
Cinnamomum camphora	Camphor tree	I
Crotalaria spectabilis	Showy rattlebox	-
Dioscorea bulbifera	Air-potato	I
Eremochloa ophiuroides	Centipede grass	-
Eriobotrya japonica	Loquat	-
Imperata cylindrica	Cogongrass	I
Indigofera hirsuta	Hairy indigo	-
Lantana camara	Spanish lantana	I
Leucaena leucocephala	White lead tree	II
Ludwigia peruviana	Peruvian primrose-willow	I
Lygodium japonicum	Japanese climbing fern	I

Lygodium microphyllum	Old world climbing fern	I
Medicago lupulina	Black medick	-
Melia azedarach	Chinaberry	II
Melilotus albus	White sweetclover	-
Melinis repens	Natal grass	I
Paederia foetida	Skunk vine	I
Panicum repens	Torpedo grass	I
Parthenium hysterophorus	Santa Maria feverfew	-
Paspalum notatum	Bahiagrass	-
Ricinus communis	Castor bean	II
Schinus terebinthifolia	Brazilian pepper	I
Solanum viarum	Tropical soda apple	I
Sorghum halepense	Johnson grass	-
Triadica sebifera	Chinese tallow, Popcorn tree	I
Tripidium ravennae	Ravenna grass	-
Urena lobata	Caesarweed	I
Urochloa maxima	Guinea grass	II
Verbascum virgatum	Wand mullein	-

2.3 Fish and Wildlife Resources

As described above, the CWMA has a variety of natural communities and habitat types that support a wide array of imperiled and common wildlife species. Active wildlife management practices make the CWMA an excellent place to view wildlife. The CWMA's hydric hammock, sandhill, and other natural communities provide critical habitat for resident and migratory wildlife. The FWC maintains an inventory of native fauna occurring on the CWMA listed in Appendix 11.5.2, including mammals, birds, reptiles, amphibians, and invertebrates.

2.3.1 Imperiled Fish and Wildlife

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

Table 6. Imperiled Wildlife Species

Scientific Name	Common Name	Status	FNAI Ranks*
Cistothorus palustris marianae	Marian's marsh wren	ST	G5T3/S3
Drymarchon couperi	Eastern indigo snake	FT	G3 / S2?
Pituophis melanoleucus mugitus	Florida pine snake	ST	G4 /S3
Gopherus polyphemus	Gopher tortoise	ST	G3 / S3
Egretta caerulea	Little blue heron	ST	G5 / S4

Platalea ajaja	Roseate spoonbill	ST	G5 / S2
Falco sparverius paulus	Southeastern American kestrel	ST	G5T4 / S3
Egretta tricolor	Tricolored heron	ST	G5 / S4
Mycteria americana	Wood stork	FT	G4 / S2

*FNAI Ranking System definitions can be found in Appendix 11.6

Acronym	Status
FT	Federally Threatened
ST	State Threatened

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

Gopher Tortoise Recipient Site Eligibility

Per Chapter 259.01 F.S., the FWC has evaluated the CWMA and determined that it is not eligible as a recipient site for gopher tortoise relocation due to the area being at carrying capacity. The CWMA has a robust natural population of an estimated 2,651 individuals. This population meets all the criteria of a viable population with a high likelihood of persisting through stochastic events; therefore, the area would not be an ideal site for gopher tortoise restocking or relocation efforts. Additionally, the CWMA is one of a handful of FWC-lead sites selected for long-term statewide monitoring of gopher tortoises. To understand how gopher tortoise populations are doing on FWC-lead areas throughout the state, a few 'representative' sites were selected to receive line-transect distance sampling (LTDS) surveys every five years. The LTDS survey of the CWMA covers 6,420 acres which includes all potentially permittable gopher tortoise habitat on site.

2.3.2 Non-native Wildlife Species

In addition to the species listed in Appendix 11.5.2, eight non-native wildlife species have been documented on the CWMA (Table 7), some of which are considered invasive, such as the wild hog. The FWC will continue to document any occurrences of non-native species found on the CWMA. More information on monitoring and management of invasive and non-native wildlife can be found in Section 4.5 and Section 5.4.

Table 7. Non-native Wildlife Species

Scientific Name	Common Name
Anolis sagrei	Cuban brown anole
Bubulcus ibis	Cattle egret
Columba livia	Rock dove
Dasypus novemcinctus	Nine-banded armadillo
Eleutherodactylus planirostris	Greenhouse frog
Passer domesticus	House sparrow
Sturnus vulgaris	European starling
Sus scrofa	Wild hog

2.3.3 FNAI Element Occurrences

A diversity of wildlife species is found on the CWMA. The FWC uses the FNAI Natural Heritage Database to assist in identifying and recording resources on FWC-managed areas. This database also supplemented the development of the species tables found in Appendix 11.5. FNAI's Natural Heritage Database is a comprehensive compilation of records documenting the location and ecological status of rare plant and animal species in the state. The database consists of "element occurrences", where an "element" is any exemplary or rare component of the natural environment, such as a species, natural community, or other ecological feature and an "element occurrence" is an area of land and/or water where an element is, or was, present. FNAI scientists "track" (collect information on) approximately 233 vertebrates, 562 invertebrates, and 492 plants representing approximately 13% of the state's vertebrate species, less than 5% of the invertebrates, and about 12% of the plants. The status of each tracked element is assessed and each tracked element is assigned ranks that reflect its rarity and degree of imperilment at the global and state level. These ranks are applied using a standardized methodology that incorporates many factors, including geographic range; number, size, and condition of known occurrences; population size and trends; life history characteristics; and threats. Natural Heritage Rank and definitions are in Appendix 11.6.

The FNAI element occurrence records include 24 occurrences of wildlife species in the vicinity (one mile) of the CWMA. Several of the imperiled species discussed in Section 2.2.1 and Section 2.3.1 in this report are tracked by FNAI. These species and their ranks are listed in Tables 4 and 6. In addition to the imperiled wildlife species listed in Table 6, FNAI also tracks the following rare and/or vulnerable species that occur on the CWMA: Appalachian brown (*Satyrodes appalachia*; G4, S2S3), bald eagle (*Haliaeetus leucocephalus*; G5, S3), short-tailed hawk (*Buteo brachyurus*; G4G5, S1), eastern diamondback rattlesnake (*Crotalus adamanteus*; G3, S3), hairy woodpecker (*Dryobates villosus*; G5, S3), swallow-tailed kite (*Elanoides forficatus*; G5, S2), merlin (*Falco columbarius*; G5, S2), Florida long-tailed weasel (*Mustela frenata peninsulae*; G5T3, S3), Florida mouse (*Podomys floridanus*; G3, S3*),* gopher frog (*Lithobates capito*; G2G3, S3), gopher tortoise shell moth (*Ceratophaga vicinella;* G1G3, S1S2), one-toed amphiuma (*Amphiuma pholeter*; G3, S3), rosemary grasshopper *(Schistocerca ceratiola*; G3, S3), yellow-crowned night-heron (*Nyctanassa violacea*; G5, S3), black-crowned night-heron (*Nycticorax nycticorax*; G5, S3),

osprey (*Pandion haliaetus*; G5, S3S4), Bachman's sparrow (*Peucaea aestivalis;* G3, S3), glossy ibis (*Plegadis falcinellus;* G5, S3), southern fox squirrel (*Sciurus niger niger*; G5T5, S3), southern hognose snake (*Heterodon simus*; G2, S2S3), white ibis (*Eudocimus albus*; G5, S4), and Florida black bear (*Ursus americanus floridanus*; G5T4, S4). Appendix 11.12 contains a letter from FNAI authorizing the FWC to utilize their database for the purpose of identifying known plant and animal resources.

2.4 Water Resources

All surface waters of the State are classified by the DEP according to designated uses as described in Chapter 62-302.44 F.A.C. The surface waters of the CWMA are designated as Class III and classified for fish consumption and recreation as well as propagation and maintenance of a healthy, well-balanced population of fish and wildlife. Additionally, it is the policy of the DEP to afford the highest protection to Outstanding Florida Waters (OFW) and Outstanding National Resource Waters (Chapter 62-302.700 F.A.C.). The waters of the state-owned portion of the CWMA, along with the waters of the adjoining CNWR, are classified as OFW. Waters and the attendant aquatic and upland resources are managed consistent with the provisions of the DEP OFW program. No degradation of water quality, other than that allowed in subsections Chapter 62-4.242(2) and (3) F.A.C., is permitted in these OFW, notwithstanding any other DEP rules that may allow water quality lowering.

The CWMA is located within three drainage basins (Figure 10). The primary drainage basin is a Direct Runoff to the Gulf (Class 3M waters, estuary). Other basins include the Chassahowitzka River (Class 2 waters, estuary), Mud River – Salt Creek (Class 3M waters, estuary), and Weeki Wachee Spring Run (Class 3F waters, stream). Perhaps the most interesting hydrological features of the CWMA are the large number of springs found within the swamp. The CWMA is not within or adjacent to an aquatic preserve.

Additionally, the CWMA overlies both the Floridan aquifer and a small surficial aquifer. The aquifer is comprised of the middle and upper Avon Park and the Ocala and Suwannee Limestones. The lower part of the Avon Park contains anhydrite and gypsum, which renders the water non-potable and the rock less permeable and marks the base of the aquifer. The aquifer is less than 700 feet thick near the coast, where the top of the aquifer is at land surface and more than 800 feet thick in the Brooksville Ridge area, where the top of the aquifer may be as deep as 100 feet below sea level. The Floridan aquifer is unconfined in most parts of the county, but in some areas of rather limited extent, the aquifer is confined by overlying clay beds.

The Floridan aquifer ranges from an elevation of approximately 80 feet above MSL near the eastern edge of Hernando County to less than 10 feet above MSL along the coast. Groundwater in the Floridan aquifer generally flows to the west-northwest across most of the county. At a few locations in the county, there is a surficial or perched aquifer in the sands above the Floridan aquifer (especially the Brooksville Ridge area) where the sands are separated from the underlying limestone by beds of low-permeability clay. In most places, the surficial aquifer only contains water during the rainy seasons and water levels fluctuate rapidly.

There is a series of shallow wells in the southwest part of the county that are used to monitor the surficial aquifer; they generally contain water year-round and yield significant quantities of water. However, in this area there is no clay separating the sands from the limestones and the surficial aquifer is thought to be hydraulically connected with the underlying Floridan aquifer. Water flow in the surficial aquifer, where it is not directly connected hydraulically to the Floridan aquifer, generally follows the slope of the land; movement runs from topographically high to topographically low areas. Site-specific features such as ponds and ditches may exert an influence on flow during periods of recharge and discharge. During extreme rainfall events, the aquifer may be recharged by the surface water bodies and, during dry seasons, the water table may discharge to the surface water bodies.

The CWMA also contains numerous small springs throughout the area (Figure 10). The first magnitude spring at Weeki Wachee is located just south of the CWMA. Blind Creek, located in the middle of the WMA, is spring-fed and traverses the swamp for several miles before receding through a sinkhole. Ryle Creek, located at the north end of the CWMA, also receives spring waters. The spring that heads the Chassahowitzka River, just north of the property, is also a first magnitude spring. Most or all the springs on the CWMA, according to the Springs Initiative, are part of the Chassahowitzka Springs Group.

The CWMA is important to the adjacent CNWR coastal estuary. It supplies a source of fresh water and serves as a reservoir for the release of freshwater into the estuary. Additionally, it filters and cleans outgoing water resulting in high water quality within the estuary. In essence, the swamp collects, stores, filters, and slowly releases the water resource into the estuary and aquifer.

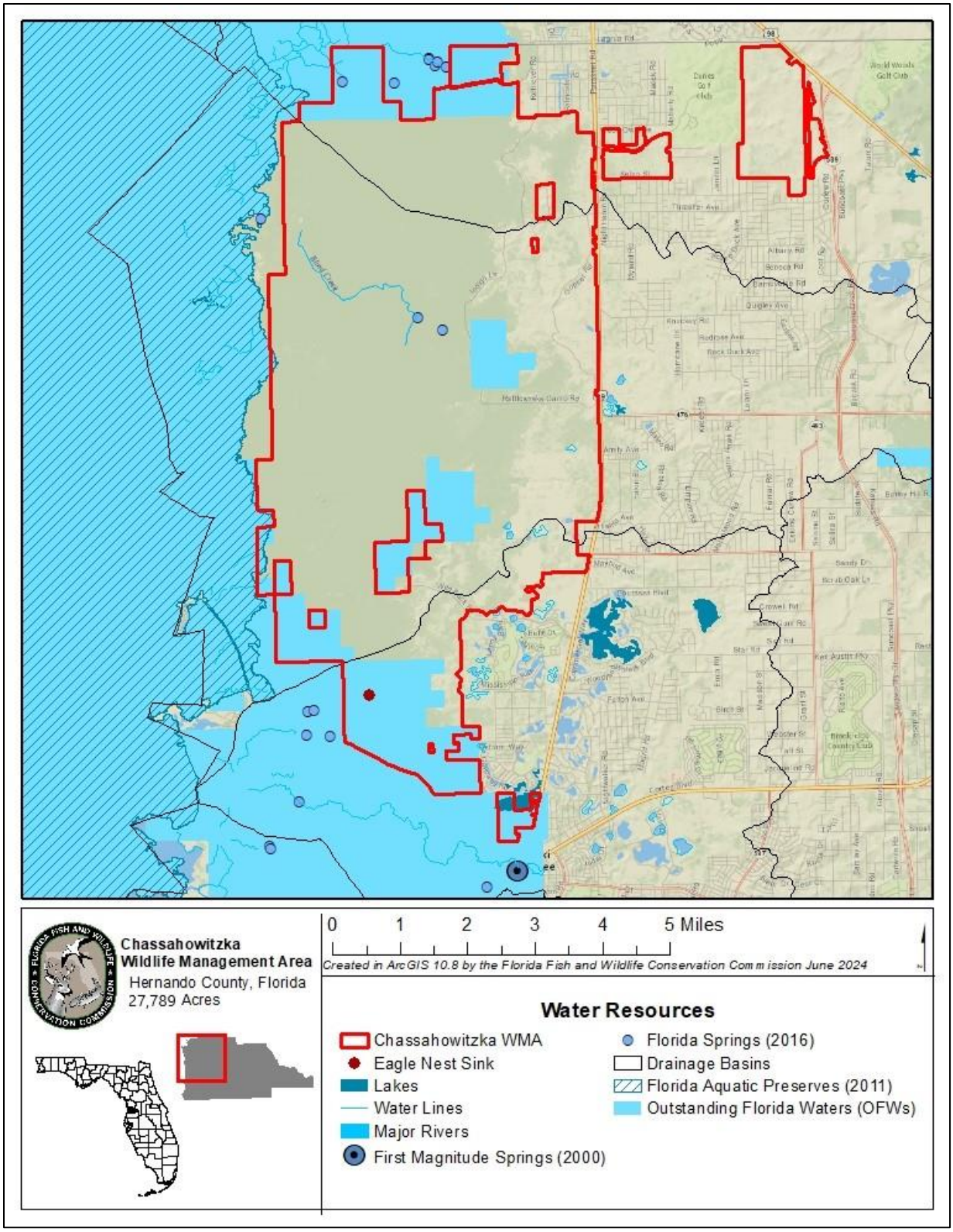


Figure 10. Water Resources

2.5 Forest Resources

Timber resources include mostly natural longleaf pine (*Pinus palustris*) with some slash pine (*Pinus elliottii*) and sand pine (*Pinus clausa*). Most stands have low stocking of trees due to natural conditions. Limited natural regeneration exists where there were openings in the understory and favorable conditions to support seed catch, germination, and continued growth of the trees. Thinning of the 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. Uplands planted with off-site pines will be reforested with longleaf pine as appropriate.

2.6 Beaches and Dunes

There are no beaches or dunes located on the CWMA.

2.7 Mineral Resources

A formal mineral resource survey has not been done, but the CWMA is located in an area that contains limestone formations.

2.8 Cultural Resources

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

To date, the FMSF indicates that 24 historical sites have been recorded on the CWMA. Most recently, a historical resource survey was done on the Zebrafinch Tract in 2023. One of the identified cultural resources has been determined eligible for inclusion in the National Register of Historic Places (NRHP) (Table 8). The FWC consults with the DHR to determine the necessary actions for resource inventory and preservation. All identification, assessment, and preservation strategies are developed in consultation with the DHR.

Table 8. Cultural Resources

FMSF No.	Resource Category	Resource Title	Acres	NRHP Eligibility
HE00075	Archaeological site	Hunters Trail	1.25	-
HE00076	Archaeological site	Coon Wallow	1.99	No
HE00307	Archaeological site	Centralia	272.20	Yes
HE00310	Archaeological site	Oak Grove	128.28	-
HE00319	Archaeological site	Varns Hunt Camp	1.87	-
HE00320	Archaeological site	Chapman Hunt Camp	2.01	-
HE00321	Archaeological site	Sister Sinks	0.74	-
HE00322	Archaeological site	South of Planted Pine	2.30	-
HE00338	Archaeological site	Sol Bend North Junction	1.24	-

HE00339	Archaeological site	Old Camp	1.99	-
HE00394	Archaeological site	Pristine Place	0.32	-
HE00395	Archaeological site	Turpentine Hunt Camp	0.24	-
HE00396	Archaeological site	Speed Bump Road Borrow Pit	0.15	-
HE00397	Archaeological site	Fenceline Sandhill	0.14	-
HE00398	Archaeological site	Wagon	0.05	-
HE00437	Archaeological site	Seville Burrow	1.65	-
HE00457	Archaeological site	Pond Hole	4.08	-
HE00497	Archaeological site	Eagle's Nest	0.78	No
HE01085	Archaeological site	John Tillman	0.31	-
HE01086	Archaeological site	Archie Cook	0.31	-
HE01087	Archaeological site	Nero Levant	0.34	-
HE01088	Archaeological site	Judge Berry	1.75	-
HE01089	Archaeological site	Emmanuel Lewis	1.77	-
HE01090	Archaeological site	Mac Landon	0.17	-

2.9 Scenic Resources

The CWMA offers a variety of scenic vistas including springs, creeks, cypress swamps, hydric hammock, sandhill, and scrubby flatwoods. The sinkhole lakes and floodplain swamps along the spring-runs are particularly scenic. They feature a sparse to moderate understory, a high canopy, and a variety of aquatic and epiphytic plants. Karst formations such as the Eagles Nest Sink and Buford Spring are of particular interest to experienced cave divers.

3 Uses of the Property

3.1 Previous Use and Development

The first Paleoindian inhabitants of Florida arrived at least 13,000 years ago. While these and subsequent native inhabitants of Florida were largely fisher-gatherer-hunters, subsequent cultures began to produce domesticated crops, such as maize, beans, squash, and other crops for a growing and increasingly sedentary population. For thousands of years before Europeans arrived, Native peoples thrived in South Florida by hunting, fishing, and gathering of wild plants and shellfish.

By the time Europeans arrived, the landscape of Florida had been shaped and modified by Native Americans for thousands of years. Along with novel agricultural practices, the Spanish, and later, the British and other settlers, brought cattle, hogs, horses, and other livestock to Florida. Social programs such as British agricultural land grants led to the proliferation of intensive agriculture throughout the state.

Agricultural practices such as rangeland cattle grazing quickly became crucial to the economy of the state from the 16th through the 20th century. The influx of settlers and resulting intensification

of agricultural practices led to additional landscape alteration, continuing a trend that had been occurring for centuries. This alteration was quickly outpaced by Florida's boom-and-bust economies of the 19th and 20th centuries. The ensuing widespread environmental modification and commercial and residential development would permanently transform the cultural and ecological landscape of the state.

In 1528, the Panfilo de Narvarez expedition travelled north from Tampa Bay several miles inland from the coast, perhaps along the sand ridge bordering the eastern edge of the Chassahowitzka swamp. Although no encampments or other sites have been found, the Seminole Indians were known to have been in the area during the Second Seminole War (1835-1842). They gave the region the name Chassahowitzka, meaning "pumpkin hanging place." The pumpkin that was referred to was a small climbing variety that is now rare and perhaps even extinct.

In the early 1900's, virgin bald cypress was harvested in the swamp. Southern red cedar was logged after the marketable cypress was removed to make pencils and cigar boxes. From 1910 to 1922, the Tidewater Cypress lumber company operated a mill at Centralia, a town of 1,500 laborers and their families. The laborers were a conglomerate of ethnic groups and included Greeks, Irish, and Germans. The town had a well-stocked commissary, school, restaurant, and even a theater, doctor, and dentist. The mill, at the time one of the largest in the state, could produce 100,000 board feet of lumber each day during peak periods. By 1938 the railroad had ceased operation, and the town of Centralia was deserted. A vast tram system was also constructed for mules to haul timber from the swamp to a railroad in Homosassa. Many of the trams remain today and are used by hunters, bikers, hikers, birders, and nature photographers.

3.2 Current Use of the Property

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

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

3.1.1 Hunting

Currently, the CWMA offers several hunting opportunities, including archery, muzzleloading gun, general gun, wild hog-dog, raccoon, spring turkey, youth spring turkey, and migratory bird seasons. For more information on hunting opportunities at the CWMA visit the following link: www.MyFWC.com/Hunting.

3.1.2 Fishing

Fishing is authorized year-round at the CWMA.

3.1.3 Paddling

Paddling is allowed on Ryle Creek, coming from the Florida Circumnavigational Saltwater Paddling Trail.

3.1.4 Trails and Roads

Currently, the CWMA offers around 1.5 miles of marked hiking trails and 45.8 miles of roads, of which 20 miles also function as multi-use trails. Additionally, approximately 29 miles of those roads are for public vehicular access and the remainder are used by staff to access the CWMA for management. Horseback riding and bicycling are allowed on designated (named) roads only. During hunting periods bicycles are allowed throughout the area.

3.1.5 Camping

Currently, camping is prohibited on the CWMA. Due to the proximity to several State Parks and privately operated RV/campgrounds that provide camping opportunities, the FWC has not identified a need to provide camping facilities on the CWMA.

3.1.6 Geocaching

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

It is the policy of the FWC to allow placement of geocaches only in those locations that do not present the potential for resource damage, user conflicts, or threats to the safety of the activity participants. The placement of geocaches on the FWC-managed lands is governed by specific guidelines. These guidelines may be found on the following FWC website: https://myfwc.com/license/public-land-use/geocaching/guidelines/.

3.1.7 Aquatic Cave Diving

Aquatic caves are cavities below the surface of the ground that contain permanent standing water and range from shallow pools to completely inundated caverns. Aquatic caves develop in areas of karst topography as water moves through underlying limestone, dissolving and creating fissures and caverns. Due to the rise and fall of water levels, many aquatic caves have alternately been terrestrial caves. Some aquatic caves occur in conjunction with springs. Caves have stable internal environments with temperature, humidity, and water conditions remaining constant. Cave

waters are usually clear and deep water often appears blue. The water may take on a brown stain if decaying plant matter is carried in with rainwater; in some areas the water may have a milky appearance because fine limestone silt is present. The chemical makeup of the water in caves is dependent on the source; most waters in aquatic caves have a high mineral content. Many aquatic cave systems have species that are specifically adapted to and endemic in that system and are therefore at greater risk from even minute changes in the habitat.

Caves support unique and irreplaceable species and those with unique adaptations that may be sensitive to small increases in levels of contaminants or shifts in dissolved oxygen, temperature, or food webs. Threats specific to aquatic caves include incompatible recreational activities and mining activities, causing destruction of critical, irreplaceable habitat. Due to this sensitivity, management actions for aquatic caves may include gating cave entrances or filling in cave openings to prevent trespass from unauthorized recreation.

Several of the actions developed to mitigate statewide threats to unique habitats are only applicable to aquatic caves and a few other habitats (i.e., calcareous stream, cypress swamp, freshwater marsh and wet prairie, natural lake, reservoir/managed lake, seepage/steep head stream, soft-water stream, spring and spring run, terrestrial cave, and coastal tidal river or stream). Specific actions are intended to prevent harm to the caves and other ecosystems influenced by groundwater by developing numeric nutrient criteria specific to cave systems and to prevent physical destruction or degradation of cave habitat from recreational activities. The FWC will work to develop specific action strategies to reduce the impacts from incompatible recreational activities. As necessary, the FWC will monitor conditions and consult with the DEP and the SWFWMD concerning potential impacts from nearby mining operations.

Eagles Nest Sink and Buford Spring are two popular aquatic cave dive sites at the CWMA. Eagles Nest is a deep sink with both upstream and downstream tunnels. There is a large debris cone in the center that slopes downward. This site is deep (310 feet) and is considered an advanced dive. The National Association for Cave Diving and National Speleological Society Cave Diving Section recommends that divers have Full Cave Certification, Trimix breathing gas certification, and appropriate experience with deep cave dives. Additionally, a CWMA SCUBA Diving Registration is required and must be on-file with the FWC prior to SCUBA diving at Eagles Next Sink or Buford Spring.

Buford Spring on CWMA is the second largest cavern in Florida. The maximum depth is 165 feet at the siphoning downstream end of the main cavern. The inflow at this depth comes from some outflowing areas at 140 feet. The right side of the cavern seems to be a collapse zone that has eroded its way open over a long time. Although access is available for the public, it is highly recommended that first time divers go with someone who is familiar and experienced with the site.

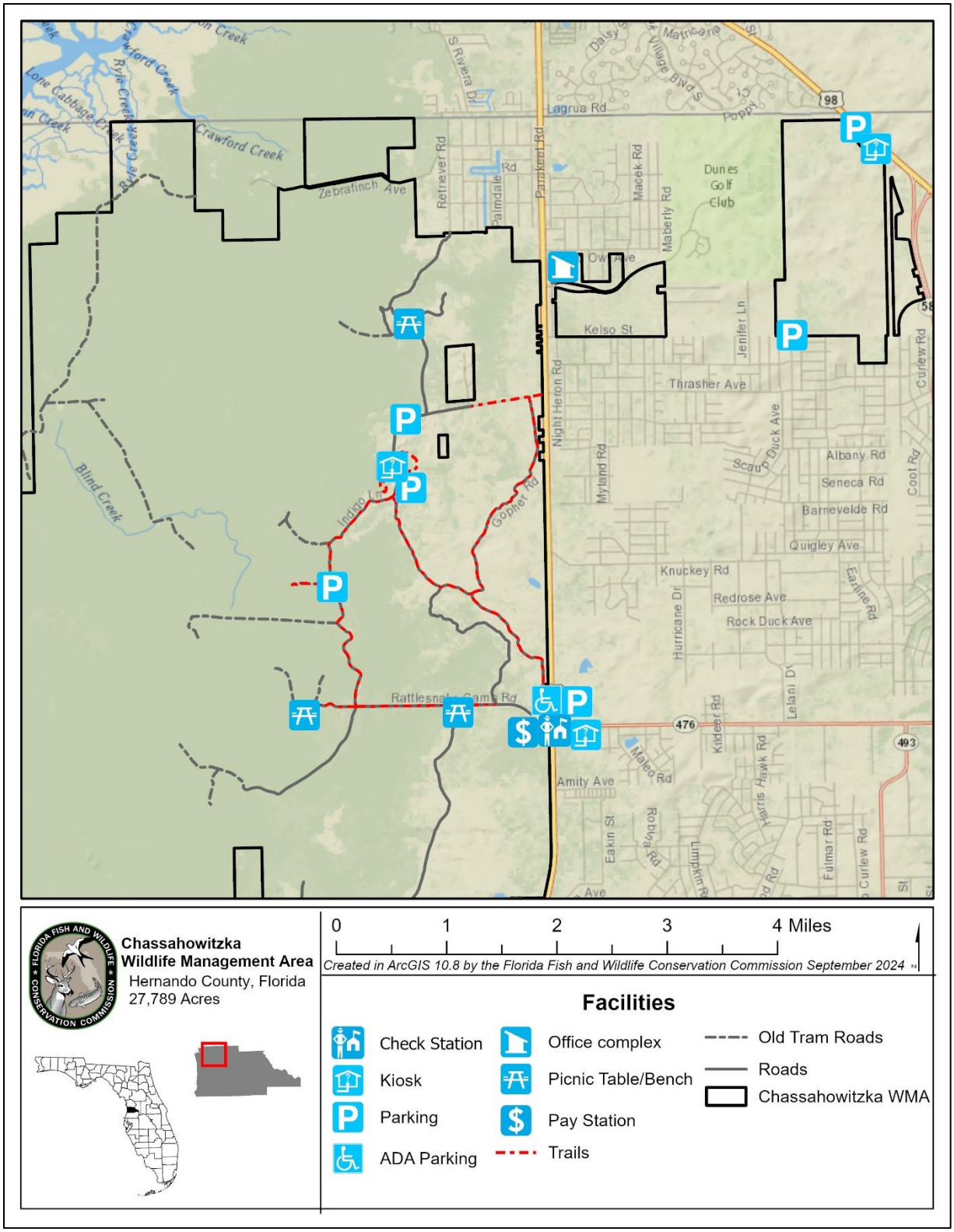


Figure 11. Facilities on the Northern Half of the CWMA

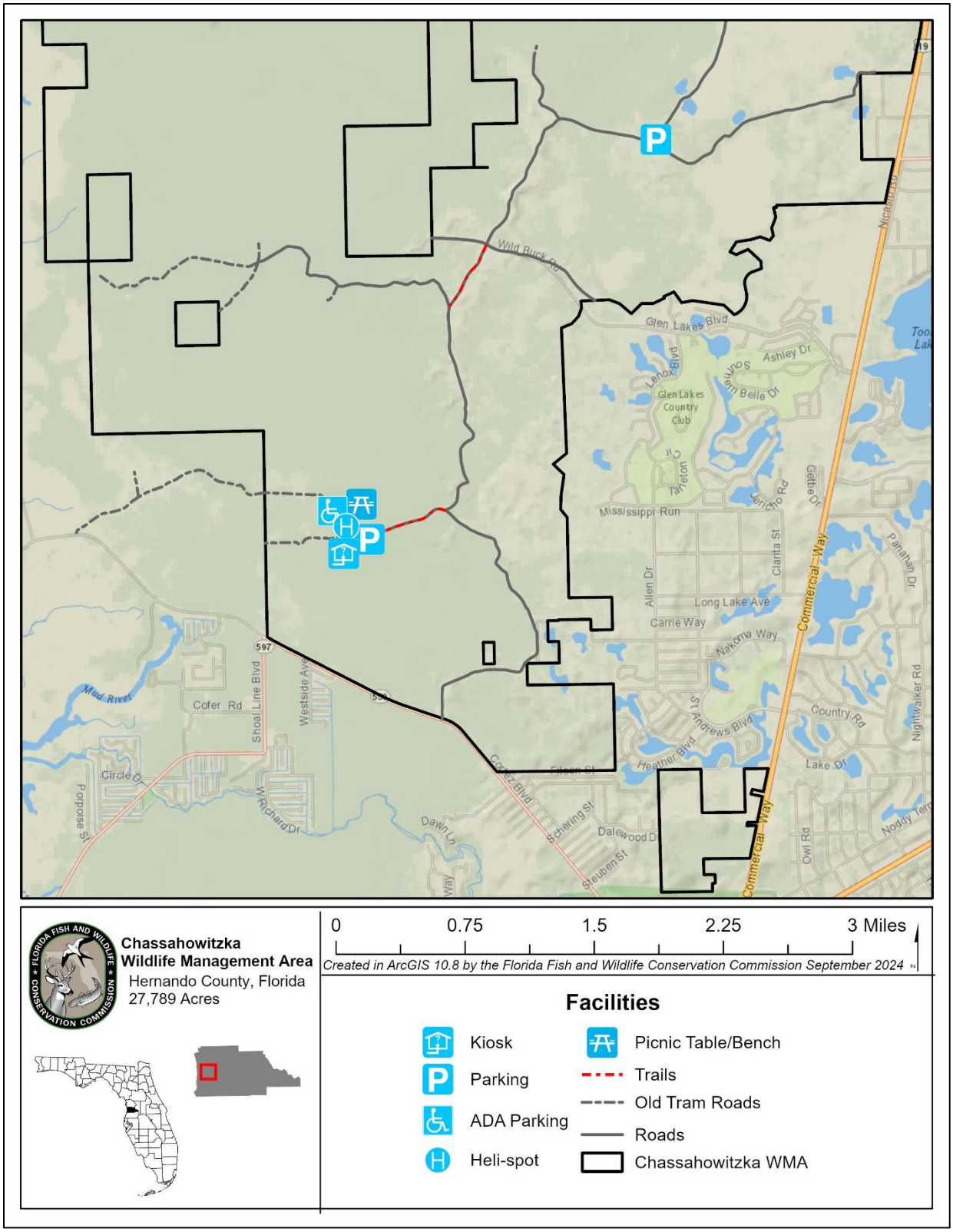


Figure 12. Facilities on the Southern Half of the CWMA

3.3 Adjacent Land Uses

The CWMA is in Hernando County west of the City of Brooksville. Over the last 50 years, the urban areas of Brooksville, Springhill, and Homosassa have been growing exponentially, which will likely influence future development in the area.

The 2023 U.S. Census estimates that there are 204,265 people living in Hernando 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 223,000 people living in Hernando County. The BEBR population projections for the counties surrounding Hernando County for the year 2030 are as follows: Citrus County – 175,400; Pasco – 693,400; and Sumter – 190,700.

The current zoning ordinance for the CWMA is Conservation and Agriculture. According to Hernando County's Comprehensive Plan, this designation allows for natural resource conservation and recreational uses. Hernando County's future land use maps indicate that the CWMA will continue to be designated and zoned as Conservation.

Lands immediately adjacent to the CWMA are classified as residential, agriculture, recreation, and commercial. Development of the remaining undeveloped lands within the Annutteliga Hammock Florida Forever project and of undeveloped lots along US 19 poses the most significant adjacent land use challenges to the CWMA.

3.4 Visitation, Economic Benefits, and Revenue-generating Potential

Visitation and public use of the area for fish and wildlife-focused public outdoor recreational opportunities is the primary source of economic benefits from the CWMA and contribute to the overall economy for this region of Florida. In Fiscal Year 2023-2024, an estimated 92,549 people visited the CWMA. Primarily because of this visitation and use of the area, the FWC economic analysis estimates indicate that the CWMA generated an estimated annual economic impact of $18,083,149* for the State and the Southwest Florida region. This estimated annual economic impact has aided in the support or creation of an estimated 184 jobs*.

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

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

throughout the state. Users applying these results to local situations should be aware that differences might exist between these statewide averages and the site in question and make adjustments if needed.

3.5 Single- or Multiple-use Management

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

3.5.1 Analysis of Multiple-use Potential

The following actions or activities have been considered under the multiple-use concept as possible uses to be allowed on the CWMA. Uses classified as “Approved” are considered to be in accordance with the purposes for acquisition; the Conceptual State Lands Management Plan; and the FWC agency mission, goals, and objectives as expressed in the FWC Agency Strategic Plan (Appendix 11.13). 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		✓	
Archery		✓	
Astronomy		✓	
Bicycling	✓		
Cattle grazing			✓
Citrus or other agriculture			✓
Ecosystem services and maintenance	✓		
Ecotourism		✓	
Environmental Education	✓		
First-responder training		✓	
Fishing		✓	
Geocaching		✓	
Hiking	✓		
Horseback riding	✓		
Hunting		✓	
Linear facilities			✓
Military training		✓	
Preservation of cultural resources	✓		

Primitive camping		✓	
Protection of imperiled species	✓		
Off-road vehicle use			✓
Shooting sports park			✓
Soil and water conservation	✓		
Timber harvest	✓		
Wildlife observation	✓		

3.5.2 Incompatible Uses and Linear Facilities

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

3.6 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, the FWC considers recommendations for surplus lands as they relate to Florida's "No Net Loss of Hunting Lands" legislation (Ch. 379.3001 F.S.) as well as surplus restrictions for lands acquired through the Federal Aid in Wildlife Restoration Act (Pittman-Robertson) or through other federal grant programs.

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

4 Management Activities and Intent

The following section provides a description of agency plans to locate, identify, protect, preserve, or otherwise use fragile natural resources and non-renewable cultural resources. In general, the FWC management intent for the CWMA is to restore and maintain natural communities in a condition that sustains ecological processes and conserves biological diversity, especially fish and wildlife resources. In conjunction with this primary emphasis, it is the FWC's intent to provide quality fish and wildlife-focused public outdoor recreational opportunities on the CWMA. The FWC

will utilize the best available data, guidelines, natural resource management practices, and recreational management practices to achieve these outcomes in accordance with the original purposes for acquisition. Furthermore, as noted previously, the management activities described in this section comply with those of the Conceptual State Lands Management Plan.

4.1 Land Management Review

On-site reviews of conservation and recreation lands that exceed 1,000 acres and are titled in the name of the Board of Trustees are required every five years by Section 259.036, F.S. These reviews determine whether the lands are being managed for the purposes for which they were acquired and whether they are being managed in accordance with their land management plan adopted pursuant to Section 259.032, F.S. According to statute, the review team “shall evaluate the extent to which the existing management plan provides sufficient protection to threatened or endangered species, unique or important natural or physical features, geological or hydrological functions or archaeological features. The review shall also evaluate the extent to which the land is being managed for the purposes for which it was acquired and the degree to which actual management practices, including public access, are in compliance with the adopted management plan.” A land management review of the CWMA was conducted in October of 2019 and the results of that review and the FWC responses to recommendations are included as Appendix 11.10. It was determined that the CWMA is being managed in accordance with the purposes for acquisition and that management practices, including public access, are in compliance with the management plan. A new land management review was conducted in August of 2024; however, those results have not yet been finalized.

4.2 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 the Management Plan, for which effective monitoring is an integral component. The FWC will

monitor conservation actions, species, habitats, and major threats to the conservation of the natural and cultural resources of the CWMA.

4.2.1 Monitoring

A well-developed monitoring protocol is also one of the principal required components for the management of the CWMA. Monitoring and performance measures are important but often overlooked elements of conservation planning. Monitoring provides the critical link between implementing conservation actions and revising management goals.

Monitoring is the systematic, repeated measurement of environmental characteristics to detect changes, and particularly trends, in those characteristics. Monitoring provides the essential data for evaluating the costs, benefits, and effectiveness of planned conservation actions, whereby those evaluations can then be used to modify management actions as necessary to meet longer-term management goals.[2]

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

4.2.2 Florida Landscape Assessment Model

The FWC has developed the Florida Landscape Assessment Model (FLAM) as a Geographic Information Systems (GIS)-based assessment tool that incorporates a wide variety of landscape and wildlife species data. The FLAM evaluates the Florida landscape based upon important natural resources and habitat needs of wildlife 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 (2021) indicates that the CWMA has a very high mean wildlife value of 9.3 (Figure 13).

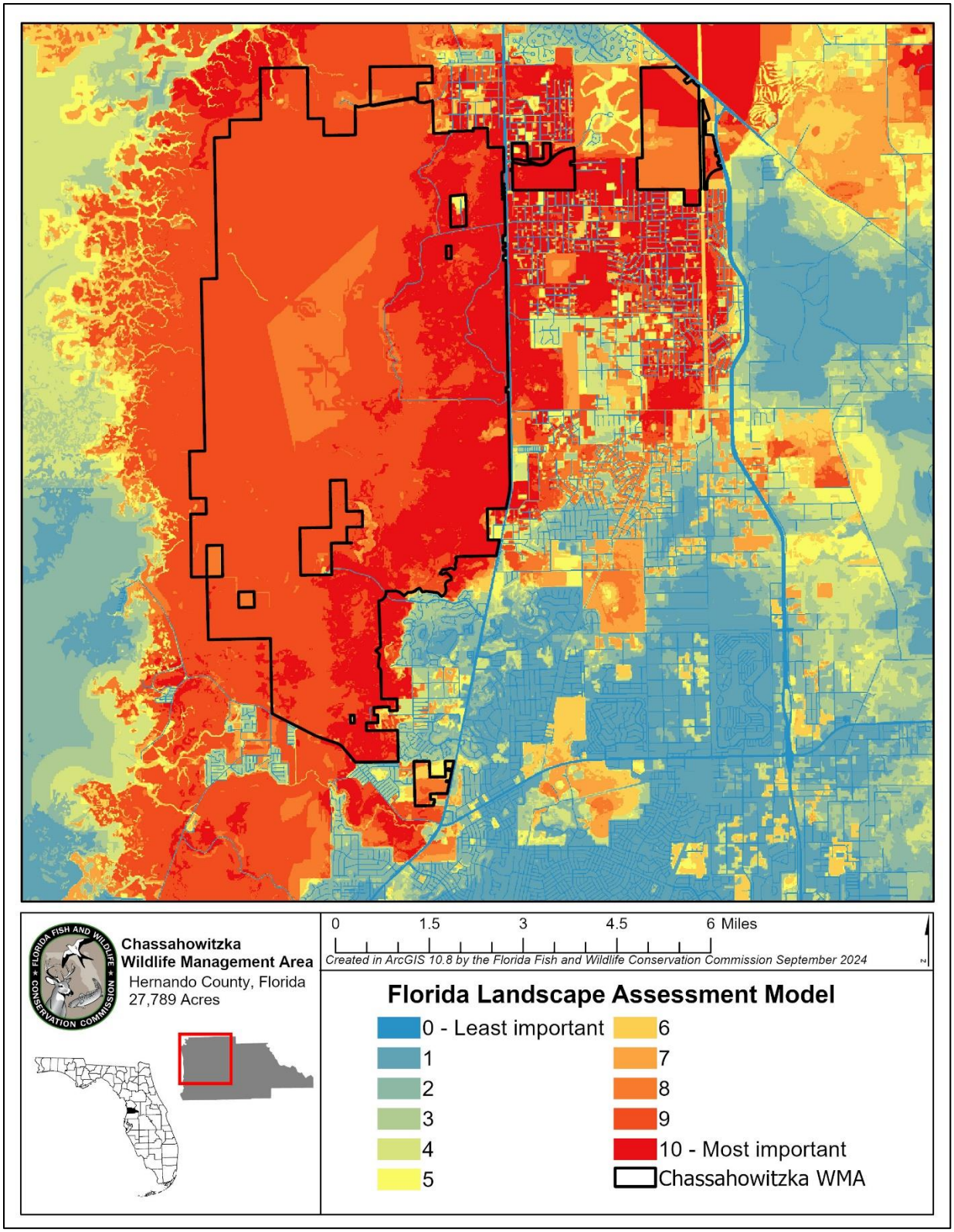


Figure 13. FLAM Map

4.2.3 Performance Measures

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

4.2.4 Implementation

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

4.3 Habitat Restoration and Improvement

On the CWMA, the FWC will focus on managing for native habitat diversity, emphasizing maintenance of natural communities and restoration of disturbed areas. The CWMA has functioning natural communities including basin swamp, sandhill, and hydric hammock, that the FWC will continue to manage and protect. Retention of the native old growth component of forests, while also providing for natural regeneration, remains an important consideration. On any disturbed upland sites, the FWC intends to continue groundcover and natural community restoration. Restoration may be achieved on disturbed areas by the reintroduction of fire, restoring historic hydrological conditions, and/or the use of mechanical or chemical forest management techniques as appropriate.

4.3.1 Objective-Based Vegetation Management

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

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

FNAI has conducted surveys and mapped the current natural communities on the CWMA and the historic natural communities on a portion of CWMA. The most recent mapping update was completed in 2022. New acquisitions that have occurred on the area will be mapped for current natural communities and altered landcover types during this planning period.

After natural communities have been mapped, FWC land managers will identify those natural communities that will influence and guide management decisions, known as the actively managed natural communities. Through OBVM monitoring, the FWC collects data on specific vegetation attributes in the actively managed natural communities that provide insight about natural community conditions. This information will be used to guide and prioritize management and restoration efforts on the area. Because the FWC is interested in the overall effect of management on the natural communities, OBVM data is analyzed area wide. Actively managed natural communities at CWMA that are monitored using OBVM are mesic flatwoods, sandhill, and scrub.

Vegetation monitoring samples the 12 OBVM core attributes with the results being compared to the desired future conditions (DFCs). Measurable habitat management objectives, referred to as DFCs, have been established by FNAI for each actively managed natural community. The DFCs are the acceptable range of values for quantifiable vegetation attributes, such as basal area, shrub height and cover, and groundcover. The FWC collaborated with 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 generally use reference site attribute values when setting DFCs for actively managed natural communities.

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 the DFCs. Measured changes in vegetation conditions are intended to be used to inform future land management actions.

Overall, natural community mapping, OBVM structural sampling, and plant species lists provide FWC staff with baseline data indicating natural community structure, distribution, and condition on the area. Comparing the monitoring results to DFCs provides important information on the structural condition and composition of a natural community at a given point in time. OBVM sampling is repeated every 5 years and comparisons with past OBVM monitoring data allows changes over time to be detected. Using this information, managers can evaluate, adjust, and modify their management practices to better natural community conditions. By comparing natural community mapping products through the years, managers can track progress in moving altered communities to functioning natural communities.

4.3.2 Prescribed Fire and Fire Management

Periodic spring and summer fires occur in fire-adapted communities under natural conditions. Plant species composition reflects the frequency, seasonality, and intensity of these fires. In the absence of fire, fire-dependent natural communities typically follow a successional pattern in

which woody species (typically hardwoods) become increasingly dominant. These changes in community composition and structure reduce the community's suitability for plants and animals that depend on it and affect fire behavior by altering humidity and fuel loads. The details of this process differ across communities, but for Florida's fire-dependent communities - whether marsh, flatwoods, prairie, sandhill, or scrub - the dominant role of fire in controlling woody growth is equally important.

Fire exclusion and timber management practices have altered the plant species composition of the area resulting in a loss of fine fuels 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 to restore the area to historic natural communities.

The FWC employs a fire management regime to maintain or increase both species and habitat diversity and will continue a prescribed burning program on the CWMA in accordance with natural community management objectives. Historically, when natural fires moved across the landscape, variation in weather and fuel conditions affected the evenness of the burn and the intensity of fires. Implementing prescribed fires that vary in frequency, intensity, and seasonality within a historically-appropriate range of variation mimics this variation and preserves habitat diversity and a mosaic of vegetation patterns. This mosaic landscape will maintain suitable conditions for fire-dependent species while allowing refugia for species that are more sensitive to fire, benefiting the greatest suite of flora and fauna.

On some areas, prescribed burning is limited by the buildup of mid-story brush and a lack of pyrogenic groundcover fuels. When extensive, this condition creates unsuitable habitat for many wildlife species. Used in conjunction with prescribed fire, mechanical control of brush by roller chopping, mowing, shredding, or incidentally by equipment during timber thinning operations, can reduce shading and encourage the grasses and forbs that best sustain prescribed fire. Mowing and roller chopping can be a valuable management tool, enabling the use of prescribed fires in areas heavily impacted by dense woody vegetation. However, used inappropriately, roller chopping may damage the herbaceous groundcover, especially wiregrass. Therefore, FWC will work to limit its use to situations where burning can only be accomplished after mechanical reduction of woody vegetation.

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

The transitional areas between two adjacent but different natural community types are known as ecotones. With the exception of wildfire suppression, mechanical soil disturbance in wetland ecotones will be avoided in order to protect habitats for important rare species that often occur between upland and wetland margins. Creation of firebreaks will be avoided in wetland margins unless necessary to defend the boundary of a managed area. When safe, fires are allowed to burn into the edges of marshes, swamps, and other wetlands in order to maintain these habitats. With some exceptions, such as scrub and scrubby flatwoods, most fire managed natural

communities are best maintained, or improved, with fire return intervals of two to three years, preferably during the spring and early summer months when possible.

In addition to the general prescribed fire management guidelines described above, an area-specific Prescribed Burn Plan has been developed and implemented for the CWMA. This plan includes, but is not limited to, delineation of burn management units, descriptions of prescribed fire methodology, safety, and smoke management guidelines. 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 CWMA, are discussed in more detail below.

4.3.3 Habitat Restoration and Improvement Activities and Accomplishments

Significant habitat management activities have taken place within many of the natural and altered communities on the CWMA over the course of the previous management period beginning in 2014. As stated previously, all management units with fire-adapted natural communities will continue to be treated with prescribed fires, most on a repeated basis as established within the Prescribed Burn Plan. This has aided in the improvement and restoration of native groundcover and wildlife habitat throughout the CWMA for imperiled and locally important species, such as the northern bobwhite (*Colinus virginianus*). Following is a list of the primary habitat restoration and improvement activities that have occurred on the CWMA since 2014.

- Prescribed Burn Plan updated in 2020.
- 8,250 acres of the area's fire adapted communities are fire-maintained.
- Approximately 44% of the fire-adapted communities are maintained within the recommended fire return intervals.
- Mechanical shredding has been used on hundreds of acres to alter fuel structure in units needing restoration.
- Timber harvesting has been conducted on 674 acres of sandhill to improve herbaceous groundcover, natural community structure, and habitat value for wildlife.
- Longleaf pine seedlings have been planted on hundreds of acres of sandhill and flatwoods as part of habitat restoration efforts.
- A seed mixture of native herbaceous sandhill groundcover species was planted on about 70 acres of former pine plantation to improve habitat quality for wildlife and further sandhill restoration efforts.
- 14 ephemeral wetlands (depression marshes) have been cleared of woody encroachment to restore natural vegetative conditions to benefit wildlife such as the gopher frog.

Continuing habitat management activities on the CWMA will focus on enhancing natural communities, maintaining recommended fire return intervals for fire adapted communities, treating and removing invasive plant species, and controlling vegetation through mowing and roller chopping as needed. Invasive species control is more extensively discussed in Section 4.5. Further specific habitat management and improvement objectives planned for the CWMA are described in Section 5.

4.4 Fish and Wildlife Management, Enhancement, and Population Restoration

Across the CWMA, the size and diversity of natural communities create a mosaic landscape of natural communities that supports a wide variety of fish and wildlife species, including imperiled, game, and non-game species. The FWC uses the term “listed and locally important species” to encompass imperiled species, as well as a select group of common species, that occur on the area and can help guide management activities. By managing the area’s natural communities for locally important species, the area will benefit a host of other species that use these natural communities. To support this goal, the FWC emphasizes conservation, protection, and management of natural communities in order to protect and enhance populations of fish and wildlife found on the CWMA. Natural communities vital to listed and locally important species on the CWMA include sandhill and hydric hammock. Restoration and improvement of any altered landcover types, in order to expand habitat on the CWMA, is also emphasized.

To guide species management on FWC-managed lands, the FWC takes a proactive, science-based approach in conjunction with input from species experts and individuals with knowledge of the area. Management practices are designed to restore, enhance, or maintain natural communities with an emphasis on the needs of listed and locally important species. Listed and locally important species (resident and migratory) will be managed for optimum richness, diversity, and abundance. This will be further augmented by following approved Federal and FWC Species Action Plans, guidelines, and other scientific recommendations for these species. Guided by these recommendations, land management activities including prescribed burning and timber stand improvements will further address listed and locally important species requirements and habitat needs.

For listed and locally important species population monitoring, the FWC takes a tiered approach. Using taxa inventory monitoring and opportunistic observations, staff identify which species occur on the CWMA and track diversity through time. In addition, when appropriate, staff monitor specific species to track population status. Wildlife experts help to identify the best monitoring approach for the area to inform how management is influencing the populations. Using this tiered monitoring approach, the FWC will gather information about the species using the area and how select species are responding to management. Section 4.4.1 and Appendix 11.16 provide further information on FWC’s comprehensive wildlife management strategy for all listed and locally important wildlife and their respective habitats.

4.4.1 Listed 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 the OBVM to monitor how specific

vegetative parameters are responding to management and uses the WCPR program to ensure management is having the desired effect on wildlife.

The WCPR program helps assess listed and locally important wildlife species' needs and opportunities, prioritize what the FWC does for these species, prescribe management actions to aid in species recovery, prescribe monitoring to allow evaluation of the species' response to management, and ensure the information is shared with others. To determine specific management and monitoring actions needed for each species, the FWC considers the species' status on the area; the current condition of the area's natural communities; the amount and spatial arrangement of the species' potential habitat on the area and adjacent lands; the species' response to management; and any local overriding factors (e.g., status of species in the region, local declines, or extirpations). Staff then combine these assessments with area-specific management considerations to develop a Wildlife Management Strategy for the area. The Wildlife Management Strategy (Appendix 11.16) was developed in 2019. Each area-specific Strategy prescribes management actions to achieve and identifies monitoring to verify progress towards meeting desired outcomes. 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 native wildlife.

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

4.4.2 Game Populations

The FWC intends to manage game populations on a sustained-yield basis to assure healthy game populations and a high-quality recreational experience. In general, game wildlife populations will be managed to provide continued recreational sport hunting and wildlife viewing opportunities. Specific management for white-tailed deer (*Odocoileus virginianus*) and upland game birds is described in the area's WCPR Strategy. However, some of the hunting opportunities may be regulated through a limited entry hunt program to ensure the persistence of viable game species populations, as well as hunter safety and satisfaction. The potential for conflicts among recreational activities and user groups will also be considered and continually monitored.

4.4.3 Nuisance Animal Species

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

4.4.4 Fish and Wildlife Management Activities and Accomplishments

During the previous planning period, the FWC conducted monitoring activities for several locally important species on the CWMA. Locally important species projects will continue to be implemented in accordance with the WCPR Strategy. In addition to locally important species

activities, the FWC will continue to monitor and manage for game and nuisance animal species. Following is a list of activities and monitoring outcomes that have occurred since 2014 in order to further FWC's mission for managing fish and wildlife on the CWMA:

- Three gopher frog call surveys; gopher frogs were detected.
- Gopher tortoise LTDS survey.
- Grassland birds callback monitoring.
- Small mammal inventory; detected four species.
- Annual breeding bird surveys.
- Annual deer spotlight surveys.
- Monitored nine southeastern American kestrel nest boxes.
- Monitored 13 bluebird nesting boxes.
- Monitored four bat houses; found all houses occupied at various points.
- Meso-mammal inventory; detected 10 species.
- Acoustic bat survey; detected six to seven species.
- Herpetofauna inventory; detected 27 species.
- Avian inventory; detected 117 species.

4.5 Non-native Species Maintenance and Control

With non-native and invasive species populations continuing to grow in Florida, the FWC takes a proactive and comprehensive approach to the monitoring and management of invasive and non-native plants and animals, as well as pests and pathogens, on FWC-managed areas. Non-native species are those species that do not originate from Florida. These species are often introduced as a result of deliberate or accidental human activities and are closely monitored by the FWC for potential future impacts. If a non-native species is found to cause or is likely to cause environmental or economic harm to humans, it is then classified as an invasive. On the CWMA, the FWC has established a variety of control measures for the management of any found non-native or invasive plant and animal species as further outlined in Section 5.4 of this Management Plan.

4.5.1 Non-native Plant Species

The FWC will continue efforts to control the establishment and spread of FISC Category I and II plants on the CWNA while using the most current control technologies (CCT) which may include mechanical, herbicide, and biological control. Treatments utilizing herbicides will comply with instructions found on the herbicide label and employ the Best Management Practices and CCT for their application. More information regarding herbicides used on FWC's lead managed areas can be found here: https://edis.ifas.ufl.edu/pdf%5CWG%5CWG20900.pdf.

During the previous planning period, a number of control activities have occurred (Section 4.5.3). FWC staff strive to either eradicate infestations or achieve maintenance rotation. Maintenance rotation is defined as having a given area/acreage with invasive species infestations reduced to a level where no ecological harm will occur by skipping any treatment for a period of one- to

several-years, depending on the species. Maintenance rotation is not necessarily synonymous with eradication, which is usually impractical to achieve.

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

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

Herbaceous and weakly woody species that only dominate the groundcover can be particularly challenging. This group is diverse and includes species such as tropical soda apple (*Solanum viarum)*, coral ardisia (*Ardisia crenata*), Caesarweed (*Urena lobata)*, cogongrass (*Imperata cylindrica)*, and Guinea grass (*Urochloa maxima)*. The rotation intervals can vary from treatments once every two- to three-years (for coral ardisia), to annual treatments, to as many as four treatments in a growing season depending on the species. For this reason, rotation intervals for these species should be developed in coordination with the FWC's Invasive Plant Management Section. Infestations requiring multiple treatments in a growing season should also be mapped individually because their treatment plans may differ from the rest of the invasive plants in any given unit.

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

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

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

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

4.5.2 Non-native Fish and Wildlife Species

The FWC continues to work towards minimizing the adverse impacts of non-native and invasive fish and wildlife species in Florida. A non-native species may be considered invasive if it causes or is likely to cause adverse impacts to Florida's ecology, economy, or human health and safety. Minimizing adverse impacts is accomplished through prevention, early detection, rapid response, control and management, and education and outreach. Early detection and rapid response are a critical defense against the establishment of invasive fish and wildlife. The FWC monitors and removes non-native species, responds to new invasions, and continues to assess the risk of species not yet present in our state. Rule 68-5, F.A.C., Federal Lacey Act, and certain F.S. govern the importation, possession, and use of non-native fish and wildlife. Rule 68-5, F.A.C., identifies Conditional and Prohibited non-native species in Florida. More information on these regulations can be found here: https://www.fws.gov/injuriouswildlife/ and https://www.flrules.org/gateway/chapterhome.asp?chapter=68-5. Conditional species (formerly referred to as restricted species) and Prohibited species are considered to be dangerous to Florida's native species and habitats and could pose threats to health and welfare of the people of Florida. The FWC relies on monitoring efforts and current science including risk determination, supplemental documentation, and research to identify possible invasive species. In order to further assist the FWC's effort on non-native fish and wildlife identification and removal, the FWC encourages the public to utilize the FWC's Invasive Species Hotline at 888-Ive-Got1 (483-4681) or to visit www.IveGot1.org to report observations of non-native species. More information on these public reporting options and other components of FWC's Wildlife Impact Management Section's Nonnative Fish and Wildlife Program can be found here: https://myfwc.com/wildlifehabitats/nonnatives/.

To address the presence of non-native fish and wildlife on the CWMA, FWC area staff will continue to work closely with FWC's Wildlife Impact Management Section for guidance and assistance. The FWC also relies on public assistance and participation in the control of non-native fish and wildlife species. Executive order 17-11 authorizes the lethal take of non-native reptiles on 32 FWC-managed lands. Trappers and nuisance wildlife control operators can also apply for an eradication and control permit to assist in the capture of Prohibited non-native species on private and public lands including WMAs. More information on this permit process can be found here: https://myfwc.com/wildlifehabitats/nonnatives/rule-development/trappers/. Due to the

growing concern related to the impacts of several non-native species, the FWC and partners take a proactive and coordinated approach towards the removal of these harmful non-native species.

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

4.5.3 Non-native Species Activities and Accomplishments

Invasive plant species known to occur on the CWMA include air-potato (*Dioscorea bulbifera)*, castor bean (*Ricinus communis)*, chinaberry (*Melia azedarach)*, and tropical soda apple, among others (Table 5). During the previous planning period, FWC staff have worked to survey and control invasive and non-native plant and wildlife species found on the CWMA. The following is a list of activities the FWC accomplished during the last planning period as well as activities that are still ongoing. Non-native and invasive species objectives and challenges for the CWNA for the next 10 years are further detailed in Sections 5 and 6.

- 25,389 acres have been placed into maintenance rotation.
- Approximately 90% is considered as having achieved maintenance rotation. An estimated 10% of the CWMA remains to be surveyed, monitored, and treated as appropriate, as guided by the FWC's Invasive Plant Management Section.
- Staff continued to implement extensive non-native species control and maintenance activities, including non-native and invasive plant species treatments within areas classified as infested.
- The FWC continues to offer hunts for control of the wild hog population.

4.6 Public Access, Participation, and Recreational Opportunities

To facilitate wildlife watching recreational opportunities on the area, the FWC has continued to establish and maintain multi-use trails, kiosks, picnic areas, and several other recreational and interpretive opportunities for the public. The FWC also offers additional opportunities to enhance public access and recreation through statewide programs. The FWC hosts annual events on WMAs throughout the State. Events are designed to help Florida residents and visitors discover some of Florida's best spots to see wildlife and enjoy the outdoors. For more information on the numerous recreation opportunities the FWC offers on all areas visit: https://myfwc.com/recreation/.

In addition to recreation opportunities on the CWMA, the FWC offers a variety of environmental education programs throughout the state. The FWC has several summer camp locations across the state. Camps vary in the activities they offer, but the theme of conservation-centered recreation is consistent throughout. Currently, FWC staff on the CWMA coordinate with the

Chinsegut Conservation Center. FWC Conservation Center staff are available to assist the CWMA staff on education programs or tours for the CWMA, such as wildlife education and ethical angling and hunting. However, the FWC has identified a need for increasing the number of conservation centers in order to reach other areas of the state.

In addition to FWC Conservation Centers, the FWC offers the educational program Project WILD. Project WILD is an interdisciplinary conservation and environmental education program emphasizing wildlife. The program is designed for educators of kindergarten through 12th grade students. However, Project WILD can also be utilized by area biologists throughout the state. Project WILD workshops are conducted at some of the FWC-managed areas and educators or biologists can request materials and more information by visiting the following webpage: https://myfwc.com/education/educators/project-wild/.

Further planned public access and recreational and educational opportunities on the area are detailed in Section 5. Ongoing public access and recreational opportunity management challenges are addressed in Section 6. In addition, the FWC will continue to implement activities in accordance with the Public Access Assessment.

4.6.1 Americans with Disabilities Act

When public facilities are developed on areas managed by the FWC, every effort is made to comply with the Americans with Disabilities Act (ADA) (Public Law 101-336). As new facilities are developed, the universal access requirements of this law are followed in all cases except where the law allows reasonable exceptions. Recreation facilities in semi-primitive or primitive zones will be planned to be universally accessible to the degree possible except as allowed by the ADA[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; and (4) compliance would require construction methods or materials prohibited by federal or state statutes or local regulations.

4.6.2 Public Access Assessments

The FWC has adopted a comprehensive approach to the planning and administration of fish and wildlife-focused public outdoor recreational opportunities for the CWMA. To accomplish this, the FWC worked with recreational stakeholders and the public to develop a Recreation Master Plan for the CWMA. The Recreation Master Plan for the CWMA was completed in July 2014 (Appendix 11.17). This plan will be used to assist in the design and development of appropriate infrastructure that will support the recreational use of the area by the public. This Recreation Master Plan includes planning for parking, trail design, and area resource interpretation. For future updates, the Recreation Master Plan will become a Public Access Assessment.

4.6.3 Public Access Carrying Capacity

Baseline carrying capacities for users on the FWC-managed lands are established by conducting a site-specific sensitivity analysis using available data for the site. The intent of the carrying capacity analysis is to minimize wildlife and habitat disturbance and provide the experience of being “immersed in nature” that visitors to the FWC-managed areas desire. Carrying capacities

are just a first step; management of recreational use requires a means of monitoring visitor impacts. Responding to these impacts may require adjusting the carrying capacities as necessary. The carrying capacities generated through this process are used as a tool to help plan and develop public access, wildlife watching, and fish and wildlife-focused public outdoor recreation opportunities. Based on an analysis of the overall approved uses and supported public access user opportunities and the anticipated proportional visitation levels of the various user groups, the FWC has determined that the CWMA can currently support 550 visitors per day. It is important to note that public access carrying capacities are not developed to serve as a goal for expanding the public use of a particular area to match the established carrying capacity. Rather, they are developed to establish maximum thresholds for public use of the respective area to protect the natural and cultural resources on the CWMA 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.

4.6.4 Public Access and Recreational Activities and Accomplishments

During the previous 10-year planning period, the FWC completed several public access and recreational improvements and enhancements on the CWMA, including:

- Installation of a new information sign and trailhead at the Annutteliga Hammock north entrance.
- Installation of an elevated walkway to Buford Springs.
- Several new main entrance facilities on Rattlesnake Road.

4.7 Hydrological Preservation and Restoration

A Hydrological Assessment was completed on the CWMA in 2011. FWC staff will work towards implementing hydrological restoration and improvement activities as recommended by the area's assessment. Some recommendations may not be feasible during this planning period due to funding and potential adjacent land impacts. However, during this planning period staff will work to improve and repair existing culverts and low water crossings and install new culverts or low water crossings, as appropriate.

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

4.7.1 Hydrological Preservation and Restoration Activities and Accomplishments

During the previous 10-year planning period, the FWC completed several hydrological restoration and improvement activities on the CWMA, including:

- Seven low water crossings have been installed on roadways to improve and restore the hydrology.
- Eight culverts were replaced, including a headwall installation at Ryle Creek.

4.8 Forest Resource Management

A Forest Management Plan for the CWMA was conducted by The Forestry Company in 2016 (Appendix 11.18). The management of timber resources will be considered in the context of the Forest Management Plan and the overall land management goals and activities. Also, the FWC will continue to consult with the FFS or a professional forestry consultant regarding forest management activities as appropriate.

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 as appropriate.

4.8.1 Forest Resource Management Activities and Accomplishments

During the previous 10-year planning period, the FWC completed several forest resource management activities on the CWMA, including:

- 380 acres of pines in the Seville tract were thinned to 30-40 square feet per acre in 2014.
- Timber Assessment and Forest Management Plan was completed in 2016.
- In 2021, hardwoods were removed and fire breaks were improved in the Centralia area, covering about 50 acres.
- 155 acres of sand pine were harvested in 2022.
- Over 30,000 longleaf pine seedlings were handplanted between 2014-2016, with over 100,000 more being planted using different methods up until 2021, covering over 1,400 acres.

4.9 Cultural Resources

A review of the FMSF indicates that 24 cultural resources have been recorded on the CWMA (Section 2.8). Additionally, 15 cultural resource surveys have been conducted on the area. In cooperation with the DHR, the FWC will continue to monitor and report on all recorded sites annually.

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

located on the CWMA, the FWC will prepare and submit all necessary documentation to the FMSF.

4.9.1 Cultural Resource Management Activities and Accomplishments

Several cultural resource accomplishments were made during the previous 10-year planning period, including:

- A cultural resource assessment survey was conducted in the Centralia historic site in 2020.
- In 2023, a cultural resource assessment was conducted for the Zebrafinch tract, in which six cultural resources were found.
- 19 locations have been and continue to be monitored and evaluated annually by area staff.

4.10 Capital Facilities and Infrastructure

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

Current capital facilities and infrastructure on the CWMA include an office complex, check station/main entrance complex (check station, informational two-sided panel kiosk, vault toilet, picnic shelter, etc.), Rattlesnake compound (well house and picnic table), several parking areas, Wild Buck well, Buford Spring boardwalk with two interpretive signs, Indigo picnic area/trailhead, Zebrafinch compound (enclosed barn and shed, basketball court, tennis court etc.), and Annutteliga Hammock North and South entrances. As described in Section 4.6.1 of this Management Plan, for any public facilities that are developed on areas managed by the FWC, every effort is made to comply with the ADA Act (Public Law 101-336). Maintenance and improvement activities of current and future capital facilities are further outlined in Section 5.9 and Figure 16.

4.10.1 Capital Facilities and Infrastructure Activities and Accomplishments

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

- The Buford Spring boardwalk was built.
- The Eagles Nest Sink day use area was improved, which included ADA parking, sidewalk improvements, a pavilion, and a vault toilet.
- The entrance was relocation/constructed.
- Annutteliga Hammock improvements were done, which included a water well and a well house.

4.11 Land Conservation and Stewardship Partnerships

Landscape conservation is an approach that brings people together across geographies, sectors, and cultures to collaborate on connecting and conserving our diverse landscapes at a large scale – across public and private lands and regardless of political and jurisdictional boundaries. The goals of conservation at the landscape scale are to **conserve** ecosystems, habitats, and species on a large scale and across all borders. Landscape conservation can only be fully achieved by pooling together resources and **connecting** staff, partners, and stakeholders to **collaborate** on conservation at the larger landscape scale.

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

4.11.1 Landscape Conservation Goals

Ensuring Florida's natural resources are conserved for future generations and following a legacy of successful conservation efforts, the FWC Landscape Conservation Strategic Initiative (LCSI), which ran from 2020 to 2024, served as the catalyst guiding and informing the FWC's strategic conservation measures. Now in effect, the September 2021 Landscape Conservation policy defines a holistic conservation approach with guidelines supporting statewide implementation of landscape conservation goals and procedures. The primary goal of the initiative was achieving large-scale, long-lasting, and cost-effective conservation outcomes, as well as cultivating strong partnerships with government agencies, conservation organizations, private landowners, academic institutions, and other stakeholders. The landscape conservation efforts include proactive and future-focused planning that is multi-jurisdictional and multi-purpose. FWC staff are implementing the concepts of landscape conservation through the Regional C3 (Connect, Collaborate, and Conserve) Process. Using a variety of tools, FWC staff work to prioritize land acquisition, management actions, and partnership opportunities within identified target conservation areas. As informed by the initiative, the FWC area managers and locally operating biologists implement landscape conservation strategies and track the results.

4.11.2 Decision Support Tools

Florida Conservation Blueprint

The Florida Conservation Blueprint (Blueprint) is a spatial plan that identifies shared conservation priorities across Florida. The Blueprint was developed by the Peninsular Florida Landscape Conservation Cooperative (PFLCC) for the cooperative incorporation of strategies from a suite of

partners. The Blueprint supports spatial conservation planning to inform conservation actions and investment. The Blueprint provides planners and managers across organizations the opportunity to align their efforts to protect fish and wildlife habitat, improve quality of life for people, and develop strong economies. The Florida Conservation Blueprint can be accessed from the Florida Conservation Planning Atlas. The FWC uses the Blueprint to help guide and prioritize landscape conservation actions and acquisition opportunities (Figure 14).

Other Decision Support Tools

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

4.11.3 Conservation Stewardship and Partnership Opportunities

Private Lands Partnerships

The FWC recognizes the interconnected needs of protecting and enhancing private property values and rights and creating new markets and economies that support the conservation value of private working lands. Private landowners seeking assistance with habitat management will likely find it offered within the FWC Landowner Assistance Program (LAP). The FWC LAP program provides many opportunities for conservation minded landowners to obtain 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. The FWC employs biologists who are available to provide wildlife-related assistance with land use planning and habitat management. In addition, the LAP works with landowners to enroll in NRCS conservation cost-share programs in order to assist with implementation of wildlife friendly practices. There are many forms of assistance that include technical, financial, educational, and various forms of recognition that seek to reward landowners who manage their wildlife habitat responsibly. At the time of the plan development, no specific land stewardship workshops had been conducted for landowners adjacent to the CWMA. 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 the FWC's LAP program and online habitat management tools are available online at: http://myfwc.com/conservation/special-initiatives/lap/.

Landscape Conservation Partnerships

The FWC will continue to work with partners including government entities, private organizations, and academic institutions on collaborative landscape conservation efforts and acquisition opportunities. Potential partners for the CWMA and surrounding areas include SWFWMD, FDACS-FFS, USFWS, Hernando County, Citrus County, Pasco County, DEP, Conservation Florida, Florida Nature Coast Conservancy and other organizations and potential grant program

opportunities. The FWC will continue to commit staff time and other resources to regularly providing information to partners regarding landscape conservation science, opportunities, and progress.

4.11.4 Land Acquisition

Using identified tools outlined previously, the FWC works to identify lands within or adjacent to FWC-managed areas that are important for the conservation of fish and wildlife, serve as a link or corridor to other publicly owned property, enhance the protection or management of the property, would create a more manageable boundary configuration, or have a high resource value that would otherwise be unprotected. Preservation of these lands can be accomplished through fee-simple or less-than-fee acquisition. The FWC works to pursue these opportunities through the FWC Additions and Inholdings Acquisition program, supporting DEP/Board of Trustees acquisition and addition of lands within the Florida Forever program and continued partnership with other agencies and private organizations on acquisition of identified lands.

Less-Than-Fee Acquisition

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

Fee-Simple Acquisition

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

FWC's Additions and Inholdings Acquisition Program

Per F.A.C. 18-2.021, the FWC identifies parcels located directly in or adjacent to the subject area which can be recommended for acquisition through the FWC Additions and Inholdings Acquisition program. Several properties, equaling approximately 16,256 acres, have been identified for recommended acquisition under the auspices of the FWC's Additions and Inholdings Acquisition program for the CWMA (Figure 15). Consistent with Florida Forever program criteria, parcels on the list have been ranked High, Medium, or Low priority based on a score generated by a GIS-based resource evaluation model, along with technical input from FWC staff. The order of acquisition priority may be changed as necessary based on factors including available funding

necessary to complete a particular acquisition project, changing development pressures, landowner willingness, funding partnerships, unique acquisition opportunities like bargain sales (less than 80% of appraised value), and donations.

The FWC Additions and Inholdings Acquisition List is updated through time, thus staying up to date for land ownerships, County parcel records, land conservation opportunities, and evolving management challenges. The FWC frequently analyzes, evaluates, and prioritizes its recommended conservation actions in a systematic, comprehensive, and consistent manner over time. At this time, the FWC often recommends fee-simple acquisition of the lands on the FWC Additions and Inholdings Acquisition List for the CWMA to optimize the conservation of fish and wildlife, public access and use, and overall resource and operational management of the area. However, as mentioned previously, the FWC may also pursue less-than-fee acquisition with adjacent landowners. It should be noted that landowner preference is often the key element in determining whether to pursue a fee-simple or less-than-fee acquisition.

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

Alternative Options

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

4.11.5 Landscape Conservation Activities and Accomplishments

During the previous 10-year planning period, the FWC has worked to advance landscape conservation partnerships and pursue potential acquisition opportunities. The State has acquired approximately 815 acres since 2012 that have been added onto the CWMA.

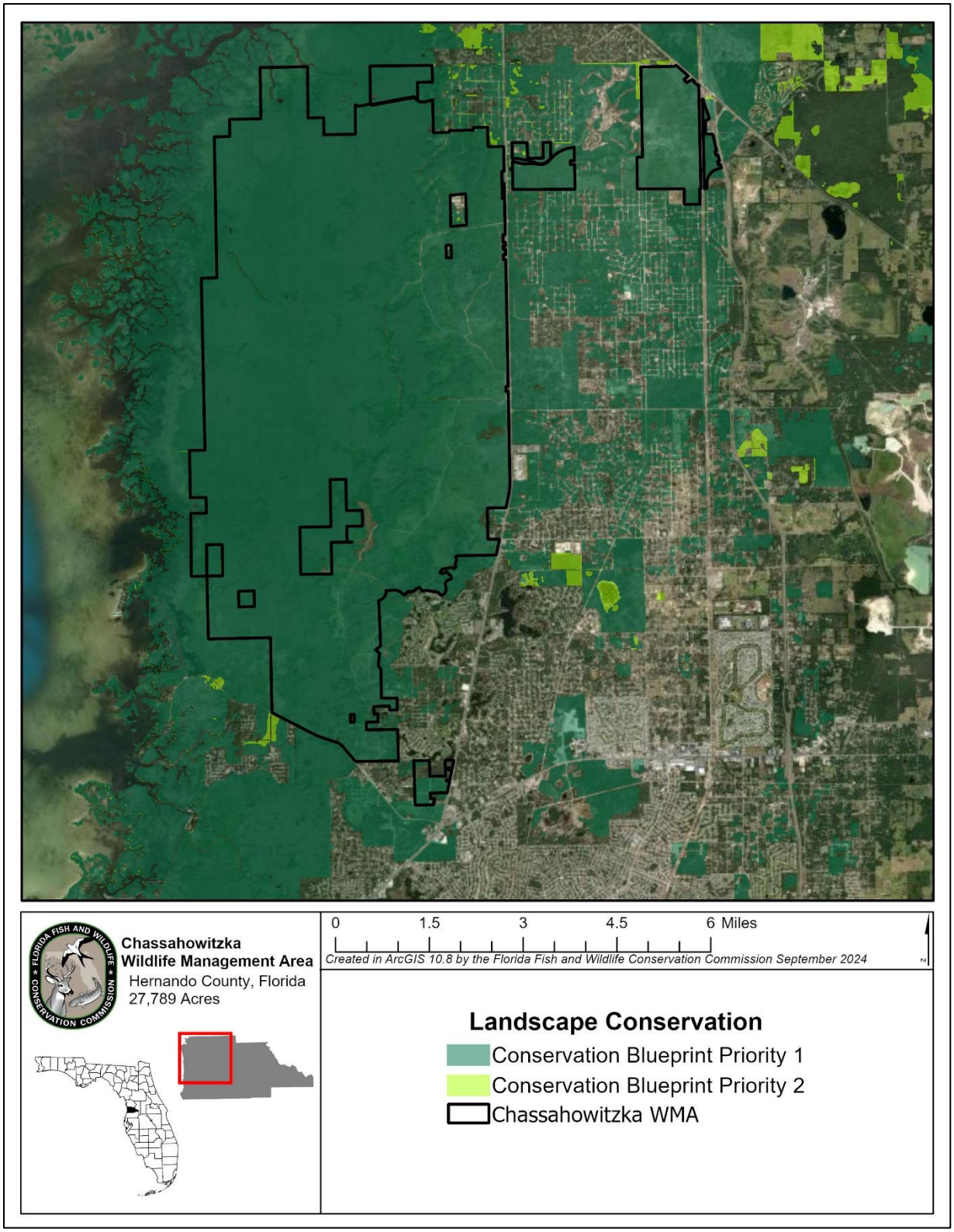


Figure 14. Landscape Conservation Blueprint

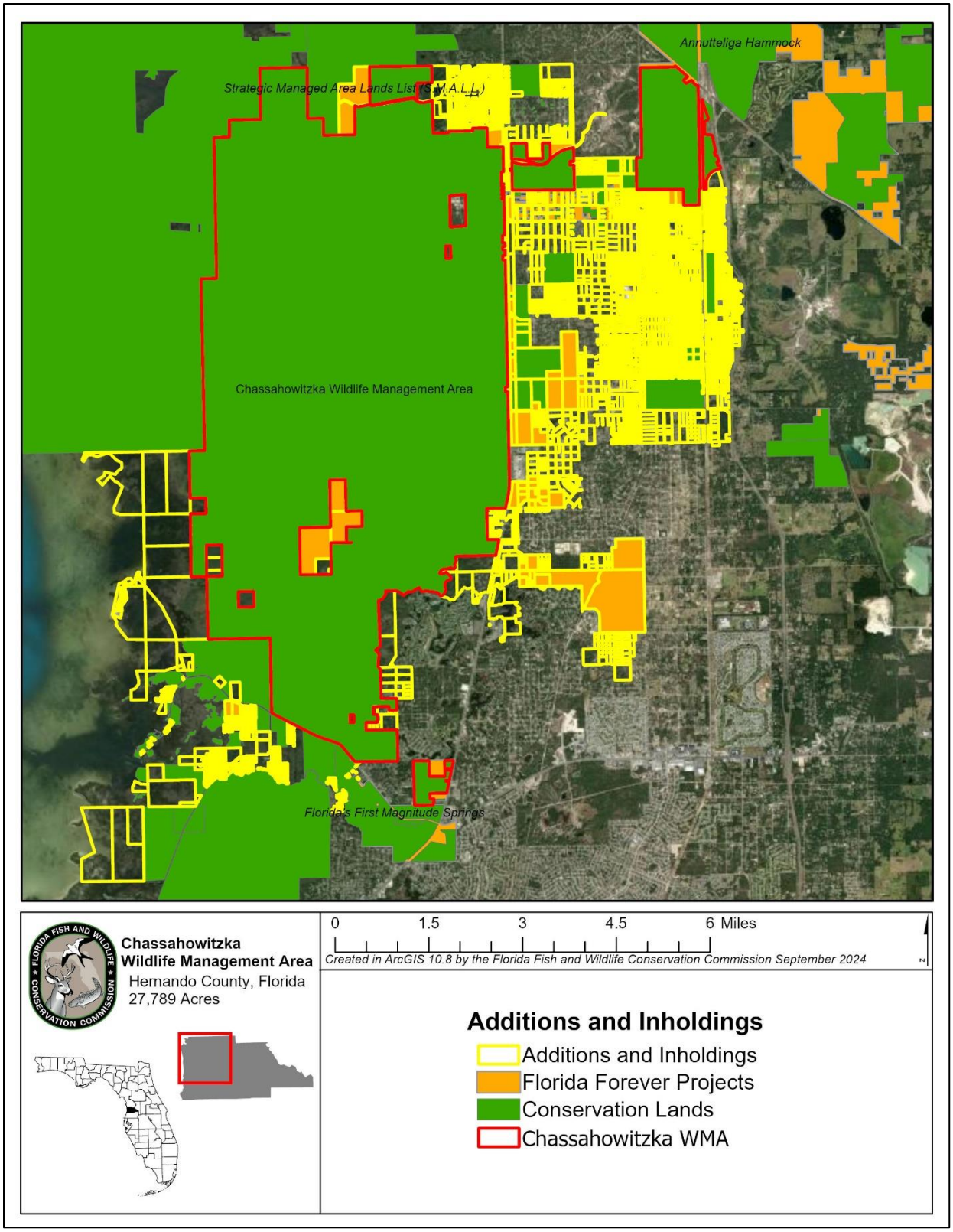


Figure 15. Additions and Inholdings

4.12 Research Opportunities

The FWC intends to cooperate with researchers, universities, and others as feasible and appropriate. For the CWMA, the FWC will continue to assess and identify 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 CWMA must have prior approval by the FWC.

4.13 Cooperative Management and Special Uses

4.13.1 Cooperative Management

The FWC is responsible for the overall management and operation of the CWMA as set forth in the lease agreements with the Board of Trustees. 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 the DHR to ensure the requirements of the *Management Procedures Guidelines - Management of Archaeological and Historical Resources* document (Appendix 11.19) 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, the 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 CWMA.

4.13.2 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 CWMA. 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 CWMA 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 CWMA. Any first-responder or military training that is not low-impact, intermittent and occasional would require an amendment to the Management Plan and therefore will be submitted by the FWC to the DSL and ARC for approval consideration prior to authorization.

4.13.3 Apiaries

Currently, there are no apiaries operating on the CWMA. However, use of apiaries is conditionally approved for the CWMA; 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 FWC Agency Strategic Plan (Appendix 11.13). Location, management, and administration of apiaries on the CWMA will be guided by the FWC Apiary Policy (Appendix 11.14).

4.14 Climate Change

At this time, the effects of climate change on Florida's conservation lands are just beginning to be studied and are not yet well understood. The FWC has a program in place to increase our understanding of the impacts of climate change on Florida's natural resources and to develop strategies to help wildlife and habitats adapt to changing conditions. While it may not be possible for natural resource managers to prevent or reverse the impacts of climate change, management actions can increase the resilience of natural systems. For example, the FWC follows a process that includes monitoring, evaluating, and determining what specific actions, if any, are recommended to ameliorate the projected impacts of climate change on fish and wildlife resources, native vegetation, and the possible spread of invasive species. Currently, the FWC is continuing its work on the development of future 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 update.

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. The FWC has conducted multiple species and habitat vulnerability assessments in recent years and these models are important tools to help managers assess the severity of climate change impacts. As impacts from climate change continue to accelerate, the FWC will consider the need for updating or conducting additional vulnerability assessments to model the potential effects of climate change, especially sea level rise and storm events, on imperiled species and their habitats on FWC-managed land.

Elements of climate change that may potentially affect CWMA include inundation and saltwater intrusion from sea level rise (Figure 16), more frequent and more potent storm events, alteration of vegetation reproductive cycles, and changes in the fire regime. The results of a Sea Level Affecting Marsh Model for CWMA show habitats that may potentially be impacted. The low-lying coastal habitats, such as salt marsh and hardwood swamp natural communities, are projected to face the most direct and dramatic impacts of climate change, particularly from a projected rising sea level and from the projected increased frequency and intensity of coastal storms.[16, 17, 18, 19] The effects of sea level rise in the recent past have been observed on the adjacent CNWR. The potential loss of habitat may result in the loss of species using that habitat, including migrating and nesting birds. Storm events also cause considerable physical damage to native vegetation along vulnerable shorelines, impacting nesting habitat for sea life and shorebirds. The projected rise in sea levels may decrease the availability and abundance of prey for wading birds that forage in shallow waters on the expansive tidal flats of the Gulf Coast. Climate change may amplify and hasten these effects, potentially at rates that exceed the normal resiliency of plant communities to recover, shift, or adapt accordingly.[20, 21] Projected saltwater intrusion into the subsurface

freshwater lens from potential sea level rise and saltwater inundation of surface freshwaters from storm surges may alter coastal ecosystems and freshwater marshes, possibly resulting in more salt-tolerant aquatic plant communities.

To address the potential impacts of climate change on the CWMA, goals and objectives have been developed as a component of this Management Plan (Section 5.12). Depending on the recommendations of the adaptive management strategies described above, additional specific goals and objectives to mitigate potential climate change impacts may be developed for the CWMA in the future.

4.15 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. Water conservation is accomplished through hydrological restoration, management, and monitoring as described in Section 4.6.

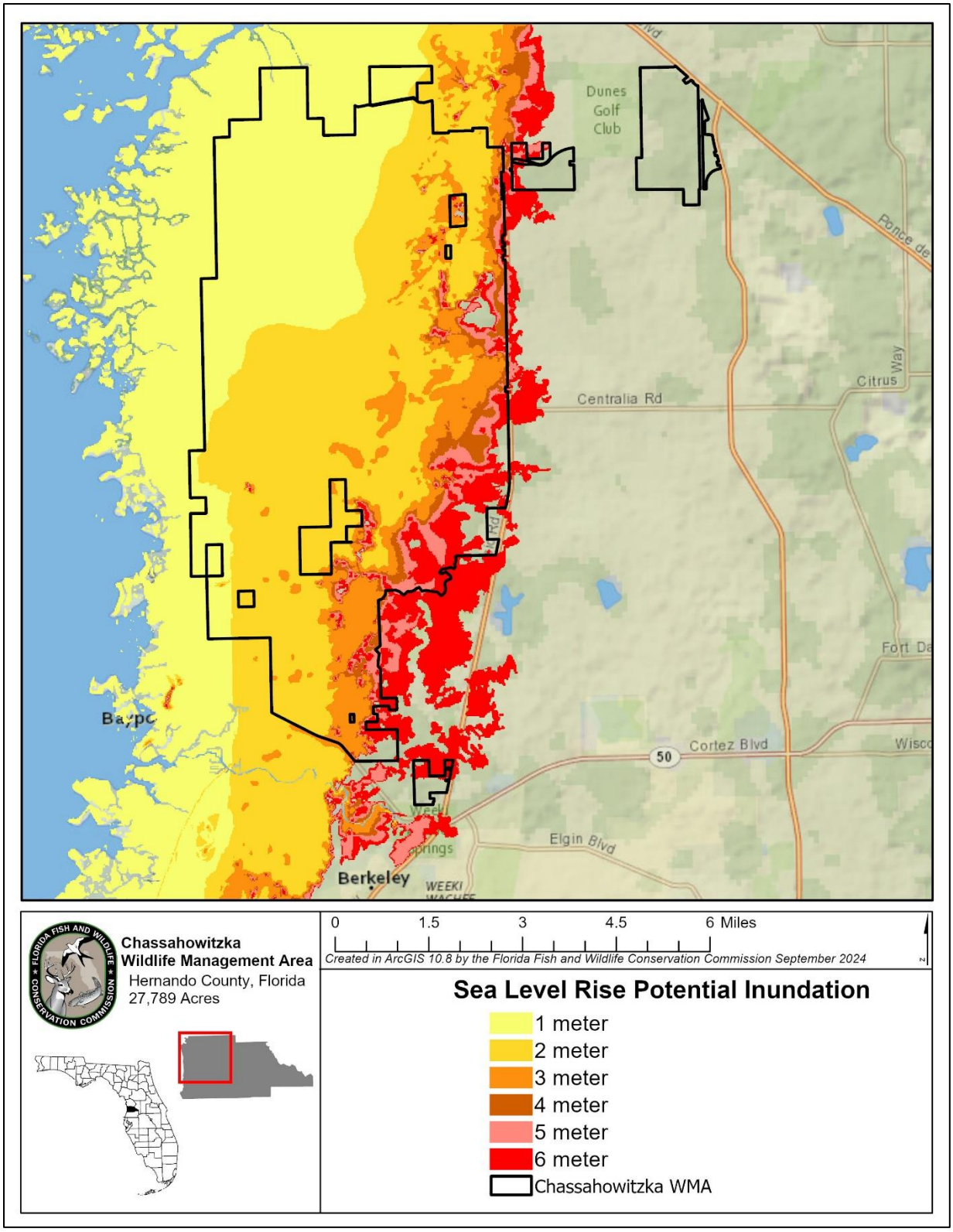


Figure 16. Sea Level Rise Potential Inundation Map

5 Resource Management Goals and Objectives

The management goals and objectives described in this section are broad, enduring statements designed to guide the general direction of management actions aimed at achieving an overall desired future outcome for the CWMA. 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 10 years) timelines for completion.

5.1 Habitat Restoration and Improvement

Goal: Improve extant habitat and restore disturbed areas.

Short-term

1. Utilize OBVM monitoring to evaluate the actively managed natural communities and adjust management activities.

Long-term

1. Contract for historic mapping of new additions and remapping of current natural communities.
2. Utilize OBVM monitoring to evaluate actively managed natural communities and adjust management efforts to meet DFCs.
3. Continue to implement Prescribed Burn Plan.
4. Continue to conduct habitat/natural community improvement and maintenance using management techniques such as shredding, timber harvest, roller chopping, mowing, disking, native vegetation planting, herbicide treatment, and prescribed fire.
5. Continue to conduct habitat/natural community restoration activities including longleaf pine plantings as needed and appropriate.

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

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

Long-term

1. Continue to implement monitoring and management priorities identified in the WCPR Strategy.
2. Continue to collect and record opportunistic wildlife species occurrence data.
3. Update the WCPR Strategy.

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

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

Long-term

1. Continue to monitor locally important wildlife species as identified in the WCPR Strategy.
2. Continue to collect opportunistic wildlife occurrence data.
3. Explore the potential of the relocation of Florida black bears to the CWMA, as appropriate.

5.4 Invasive and Non-native Species Maintenance and Control

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

Long-term

1. Monitor the CWMA for the level of infestation of FISC Category I and Category II invasive and non-native plant species and treat as needed and appropriate.
2. Continue to implement control measures on one invasive animal species (wild hog).

5.5 Public Access, Participation, and Recreational Opportunities

Goal: Provide public access, participation, and recreational opportunities.

Short-term

1. Reestablish driving tour on the CWMA including installing markers and developing a webpage and digital format guide.

Long-term

1. Continue to implement the Recreation Master Plan and update if new acquisitions or other factors warrant.
2. Maintain public access and recreational opportunities to allow for a recreational carrying capacity of 550 visitors per day.
3. Continue to update and provide publications on webpage, recreation guide, four kiosks, trail brochure, and driving tour guide for interpretation and education.
4. Explore the feasibility of developing interpretation on the Centralia site and Annutteliga Hammock.
5. Continue to maintain 1.5 miles of designated trails.
6. Develop up to one mile of trails on Annutteliga Hammock tract.
7. Explore the feasibility of developing up to a half mile of interpretative trails on Centralia site.
8. If possible, develop up to a half mile of interpretative trails on the Centralia site.
9. Monitor trails annually for visitor impacts.
10. Continue to provide hunting opportunities for deer, small game, migratory birds, turkey, and wild hogs.
11. Continue to provide fishing opportunities on appropriate water bodies.

12. 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.
13. Develop a Public Access Assessment.

5.6 Hydrological Preservation and Restoration

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

Long-term

1. To enhance natural hydrological functions, continue to install and maintain low-water crossings and culverts as appropriate.
2. Continue to implement the hydrological restoration plan.
3. Continue to cooperate with the SWFWMD and DEP for the monitoring of surface and ground water quality and quantity.

5.7 Forest Resource Management

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

Long-term

1. Continue to utilize the CWMA Forest Management Plan for guidance on activities including reforestation, harvesting, and prescribed burning based on restoration and maintenance needs of the natural communities and other goals established for management of the CWMA.
2. Coordinate with the FFS or a professional forestry consultant on obtaining an updated Forest Management Plan or Timber Assessment.
3. Continue to consult with the FFS or a professional forestry consultant regarding forest management activities as appropriate.

5.8 Cultural Resources

Goal: Protect, preserve, and maintain cultural resources.

Long-term

1. Ensure all known sites are recorded in the Florida DHR Master Site file.
2. Coordinate with the DHR to schedule and conduct a historical reconnaissance survey, as needed.
3. Cooperate with the DHR in designing site plans for development of infrastructure.
4. Cooperate with the DHR to manage and maintain known existing cultural resources.
5. Continue to monitor, protect, and preserve, as necessary, 24 identified sites.
6. Coordinate with the DHR to send staff to Archeological Resource Management training.

7. 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.

5.9 Capital Facilities and Infrastructure

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

Long-term

1. Monitor trails and infrastructure annually for visitor impacts. Continue to maintain all facilities.
2. Continue to maintain 45.8 miles of roads.
3. Continue to maintain 1.5 miles of trails.
4. Explore the necessity and feasibility of improving and/or replacing existing barn on the Zebrafinch tract and construct if determined necessary and feasible.
5. Improve Indigo Lane trailhead with ADA accessible picnic table(s), sidewalk, and parking space(s).
6. As funding allows, construct concrete camper pads with appropriate hookups adjacent to or near the CWMA office compound.
7. If deemed necessary and appropriate, construct concrete camper pads with appropriate hookups within the CWMA Zebrafinch tract compound.
8. Evaluate the potential of installing trailhead facilities on Annutteliga Hammock.
9. Evaluate the potential of installing a trailhead facility on Centralia site.
10. If determined feasible, construct trailheads at Annutteliga Hammock and Centralia site.
11. Explore the feasibility to install and construct boating access improvements at Ryle Creek and construct if determined feasible.
12. Explore the feasibility of installing an observation deck on South Road and construct if determined feasible.
13. Explore the potential to reroute the check station driveway. If determined feasible, reroute check station driveway.
14. Explore the feasibility of improving roads at the Annutteliga Hammock.
15. If determined feasible, construct road improvements on Annutteliga Hammock.
16. Install well(s) if necessary.

5.10 Land Conservation and Stewardship Partnerships

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

Long-term

1. Continue to identify and evaluate potential important wildlife habitat, landscape-scale linkages, wildlife corridors, and operational management needs.

2. Continue to contact and inform adjoining private landowners about the FWC LAP and coordinate with public entities to pursue conservation stewardship partnerships.
3. Continue to evaluate and identify the FWC inholdings and additions priority parcels for potential conservation acquisition and pursue acquisitions as funding allows.
4. Continue to maintain a GIS-shapefile and other necessary data to facilitate nominations within the FWC Additions and Inholdings program for the FWC landowner assistance and conservation acquisition programs.
5. Continue to identify potential non-governmental land stewardship organization partnerships and grant program opportunities.
6. Determine the efficacy of conducting a landowner assistance/conservation stewardship partnership workshop(s) and pursue as necessary and appropriate.
7. Continue to evaluate and determine if any portions of the CWMA are no longer needed for conservation purposes and therefore may be designated as surplus lands.

5.11 Climate Resiliency Adaptation

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

Long-term

1. Coordinate with FWC-FWRI Climate Resiliency Team to identify potential impacts of projected climate change on fish and wildlife resources and operational management of the CWMA.
2. As appropriate, update the CWMA Prescribed Burn Plan, WCPR Strategy, and Public Access Assessment to incorporate new scientific information regarding projected climate change.
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.

5.12 Cooperative Management, Special Uses, and Research Opportunities

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

Long-term

1. Continue to cooperate with researchers, universities, and others as appropriate.
2. Continue to assess the need for research and environmental education partnership opportunities as appropriate.
3. Coordinate and cooperate with Department of Defense military branches to allow for training opportunities for military personnel and other initiatives as appropriate and compatible with the conservation of the CWMA.

6 Resource Management Challenges and Strategies

The following section identifies and describes further management needs and challenges associated with the CWMA and provides solution strategies that will address these challenges. These specific challenges may not be fully addressed in the broader goals and objectives section above and are thereby provided here.

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

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

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

Strategy: Explore potential volunteer resources for assisting with management.

Challenge 2: The natural resource and recreational connection between regional conservation lands should be further examined for improvement.

Strategy: Work with partners and adjacent landowners to develop and improve natural resource and recreational connectivity among neighboring conservation lands.

Challenge 3: Unauthorized access, illegal dumping, vandalism, poaching, and unauthorized off-road vehicle use are an increasing challenge on the area.

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

Strategy: Communicate with law enforcement regarding hotspots for vandalism or illegal access, and attempt to target those areas with increased security, e.g. patrols and cameras.

Challenge 4: Non-native and invasive plant infestations continue to be an ongoing challenge on the area.

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

Strategy: Coordinate with the FWC Invasive Plant Management section to develop appropriate treatment plans and schedules.

Strategy: Pursue additional funding sources to help monitor and control infestations.

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

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

Strategy: Cooperate and work with Hernando County and neighboring counties to ensure land use and zoning designations adjacent to the CWMA will continue to be compatible with the management of the area.

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

Strategy: Work with FDOT and explore options to develop underpasses to facilitate wildlife movement to and from the CWMA.

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

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

Strategy: Coordinate with FDOT to assist with increased outreach and communications regarding prescribed burning.

Challenge 7: There are inholdings within the CWMA that can cause management and access challenges.

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

Strategy: Maintain inholdings within the Additions and Inholdings Acquisition Program list and work to acquire if possible.

Strategy: Coordinate with existing landowners regarding management of non-native and invasive plant species.

Strategy: Work to resolve potential conflicts regarding access to privately owned inholdings along official and historic access easements and public access to portions of the CWMA.

Challenge 8: Awareness is low regarding prescribed burns occurring on the CWMA and the potential smoke impacts for neighboring residents.

Strategy: Work with partners such as Hernando County, the DEP, the USFWS, FDOT, and other nearby managing agencies to communicate to the public regarding smoke impacts and prescribed fire.

Strategy: Explore a variety of media and other available communication outlets to inform neighboring residents of prescribed burning on the area.

Challenge 9: The future of the FDOT Multi-use Corridors of Regional Economic Significant project near the CWMA is unknown.

Strategy: Continue to work with the FDOT to ensure minimal to no impacts occur on the CWMA.

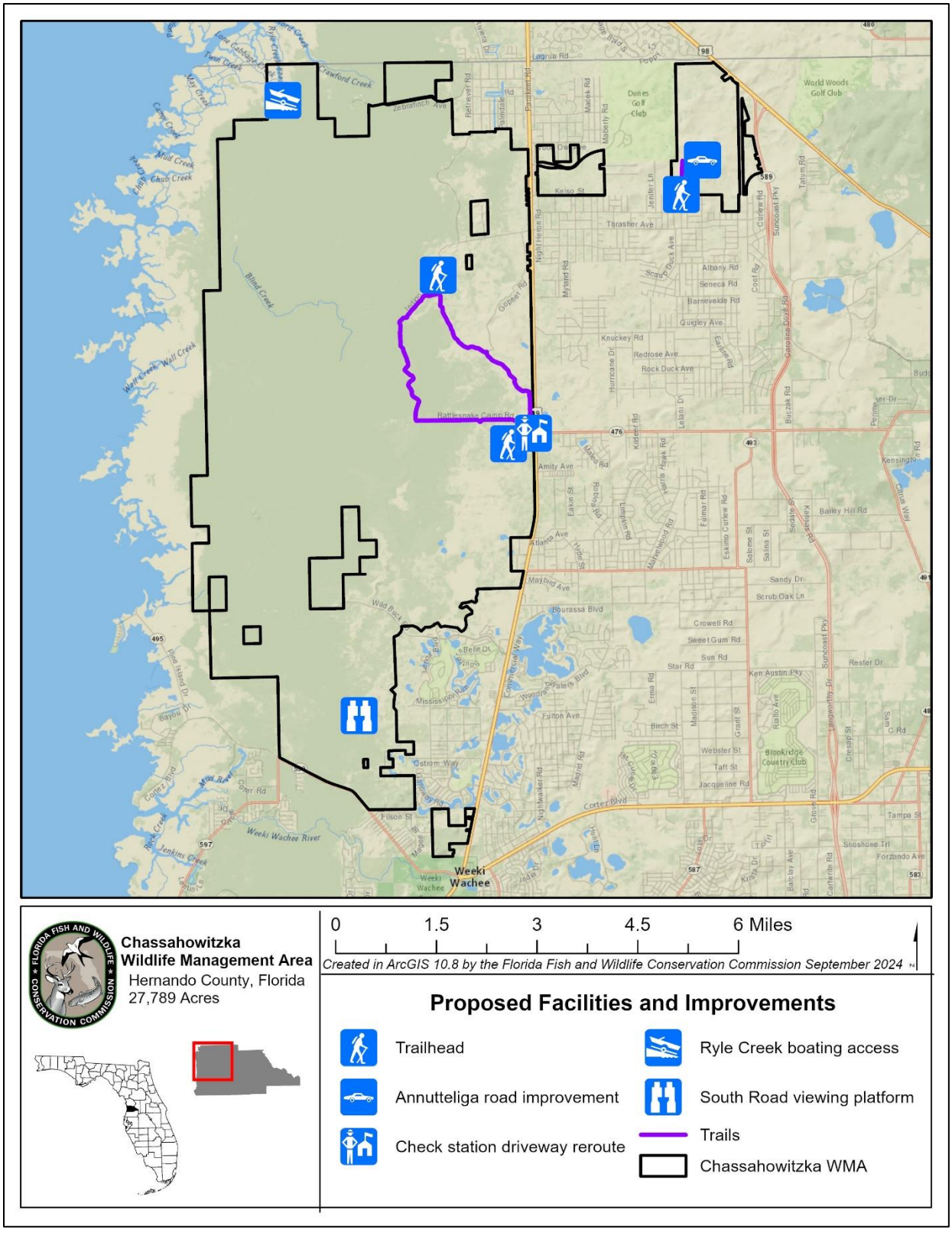


Figure 17. Proposed Facilities and Improvements

7 Cost Estimates and Funding Sources

The following represents the actual and unmet budgetary needs for managing the lands and resources of the CWMA. This cost estimate was developed using data developed by the FWC and other cooperating entities and is based on actual costs for land management activities, equipment purchase and maintenance, and 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 specific projects. Alternative funding sources, such as monies available through grants and potential project-specific mitigation, may be sought to supplement existing funding as needed.

The following cost estimate, although exceeding what the FWC typically receives through the appropriations process, is estimated to be what is necessary for optimal management and is consistent with the current and planned resource management and operation of the CWMA. Cost estimate categories are those currently recognized by the FWC and the Land Management Uniform Accounting Council. More information on these categories, as well as the Fiscal Year 2022-2023 operational plan showing detailed cost estimates by activity and categories of expenditures, may be found in Appendix 11.20 and 11.21.

CWMA Management Plan Cost Estimate	*Maximum expected one-year expenditure*
Resource Management	Expenditure
Invasive Species Control	$145,253
Prescribed Burning	$108,223
Cultural Resource Management	$2,955
Timber Management	$27,573
Hydrological Management	$727,968
Vegetation Monitoring/Management	$97,533
Wildlife Monitoring/Management	$50,622
Subtotal	**$1,160,127**
Administration	
General administration	**$125,953**
Support	
Land Management Planning	$32,517
Management Reviews	$0
Training/Staff Development	$7,215
Vehicle Purchase	$11,132
Vehicle Operation and Maintenance	$48,258
Other (Technical Reports, Data Management, etc.)	$5,024
Internal Program Review	$3,086
Technology and Data Management	$21,986
Subtotal	**$407,652**
Capital Improvements	
New Facility Construction	$12,265
Facility Maintenance	$226,897
Subtotal	**$239,162**
Visitor Services/Recreation	
Info./Education/Operations	**$94,354**
Law Enforcement	
Resource protection	**$147,753**
Total	**$2,175,001**

* Based on the characteristics and requirements of this area, 10 FTE positions would be optimal to fully manage this area. All land management funding is dependent upon annual legislative appropriations.

CWMA Management Plan Cost Estimate	*Ten-year projection*		
Resource Management	Expenditure	Priority	Priority schedule:
Invasive Species Control	$1,276,205	(1)	**(1) Immediate (annual)**
Prescribed Burning	$950,860	(1)	*(2) Intermediate (3-4 years)*
Cultural Resource Management	$25,963	(1)	(3) Other (5+ years)
Timber Management	$242,259	(1)	
Hydrological Management	$6,396,005	(1)	
Vegetation Monitoring/Management	$856,934	(1)	
Wildlife Monitoring/Management	$444,774	(1)	
invasive Species Control	$10,193,001	(1)	
Subtotal	**$1,276,205**		
Administration			
General administration	**$1,106,640**	(1)	
Support			
Land Management Planning	$285,697	(1)	
Management Reviews	$17,970	(3)	
Training/Staff Development	$63,391	(1)	
Vehicle Purchase	$979,824	(2)	
Vehicle Operation and Maintenance	$424,003	(1)	
Other (Technical Reports, Data Management, etc.)	$44,138	(1)	
Internal Program Review	$27,110	(1)	
Technology and Data Management	$193,168	(1)	
Subtotal	**$2,035,306**		
Capital Improvements			
New Facility Construction	$1,511,772	(2)	
Facility Maintenance	$1,993,544	(1)	
Subtotal	**$3,505,316**		
Visitor Services/Recreation			
Info./Education/Operations	**$829,002**	(1)	
Law Enforcement			
Resource protection	**$1,298,170**	(1)	
Total	**$18,967,435**	*	

* Based on the characteristics and requirements of this area, 10 FTE positions would be optimal to fully manage this area. All land management funding is dependent upon annual legislative appropriations.

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

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

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

9 Compliance with Federal, State, and Local Governmental Requirements

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

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

Uses planned for the CWMA 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 11.13). Such uses also comply with the authorities of the FWC as derived from Article IV, Section 9 of the Florida Constitution

as well as the guidance and directives of Chapters 253, 259, 327, 370, 373, 375, 378, 379, 403, 487, 597, and 870 F.S.

The FWC has developed and utilizes an Arthropod Control Plan for the CWMA in compliance with Chapter 388.4111 F.S. (Appendix 11.22). This plan was developed in cooperation with the local Hernando County arthropod control agency. This Management Plan is also in conformance with the Local Government Comprehensive Plan as approved and adopted for Hernando County, Florida, (Appendix 11.23).

10 Endnotes

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11 Appendices

11.1 Lease Agreement No. 3586

State of Florida
Department of Natural Resources
Division of State Lands

Document Conversion

FILE HEADER SHEET

FILE #: 3586 (1)

JJH:05/16/91:Alpha Systems

(1) 3586

MULTIPLE AGENCY MANAGEMENT LEASE

FOR

CHASSAHOWITZKA WILDLIFE MANAGEMENT AREA

770-9007

LEASE NO. ~~770-9007~~ 3586

THE BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, referred to herein as the "Board" and the STATE OF FLORIDA DEPARTMENT OF NATURAL RESOURCES, DIVISION OF STATE LANDS, referred to herein as "State Lands", as agent for the Board, do hereby grant to the STATE OF FLORIDA GAME AND FRESH WATER FISH COMMISSION, referred to herein as the "Commission", and the STATE OF FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES, DIVISION OF FORESTRY, referred to herein as "Forestry", management responsibilities for the Chassahowitzka Wildlife Management Area, located in Hernando County, Florida described as follows and subject to all existing encumbrances:

No STR use County

(See exhibit "A" attached hereto and made a part hereof)

TO HAVE AND TO HOLD the above described property for a period of twenty (20) years.

WITNESSETH:

The Board, the Commission and Forestry, for and in consideration of the covenants hereinafter contained, do hereby covenant as follows:

1. The lands shall be managed in accordance with a management plan to be prepared pursuant to Section 253.034, Florida Statutes, and presented to the Board for approval within twelve (12) months of the date of this Lease. The management plan shall emphasize the original management concept as approved by the Board at the time of acquisition and which established the primary purpose for which this tract was acquired. Activities of the parties shall be governed by and in compliance with the Management Plan.

2. The Commission shall be the primary managing agency. As such, it shall coordinate and oversee all activities on the

See Mgmt Agreement 770-9007

property; initiate appropriate management programs to meet the intent of the goals and objectives stated herein; coordinate preparation and periodic revision of the Management Plan; coordinate and monitor all management activities undertaken by others; and, compile and submit such reports as may be required of the managing agencies.

3. The Commission shall: provide a permanent staff position, as funding is acquired, to plan and supervise management of the property; administer and regulate campsites, if camping is permitted; restore natural hydroperiods; manage wildlife habitat; provide specific management recommendations and protection for all wildlife; regulate hunting, fishing and nongame activities; and assist in patrolling and providing required law enforcement to prevent poaching, to protect threatened and endangered species, and to protect archaeological and historic sites from looting and other unauthorized activities.

4. Forestry shall: provide advice and on-site assistance to the Commission in implementing a prescribed burning program; initiate prescribed burning on specified forested areas in cooperation with the Commission; respond to and take charge of any wildfire; and, oversee any timber planting and harvesting activities.

5. Any management conflict between any of the managing agencies shall be resolved, if possible, by consensus of the primary managing agency and the affected managing agencies which are parties to this Lease. If a consensus cannot be reached, conflicts shall be submitted through State Lands to the Board for resolution.

6. It is understood by all parties that all management activities specified by this Lease shall be designed to conserve, protect and enhance the lands covered by this Lease as provided for by Chapter 259, Florida Statutes.

7. It is further understood and agreed that in addition to the management responsibilities specified herein, the following will be applicable:

A. A Management Plan for this tract shall be prepared by the primary managing agency, in accordance with

Section 253.034, Florida Statutes and in cooperation with the other managing agencies, and shall be submitted to the Board for approval through State Lands, acting as agent for the Board.

The approved Management Plan shall provide the basic guidance for all management activities and shall be reviewed jointly by the managing agencies and the Board at no greater than five-year intervals. Annual work plans and management activities shall be reviewed by the primary managing agency prior to implementation and submitted to State Lands on an annual basis.

B. The managing agencies shall not use or alter the property except as provided for in the approved Management Plan without the advance written approval of State Lands, acting as agent for the Board. Any managing agency proposing an activity that requires physical alteration of the property shall notify the primary managing agency prior to initiating that activity. The primary managing agency, in turn, shall notify other managing agencies.

C. The Board may, on occasion, after discussion with and concurrance by the managing agencies, authorize compatible uses of the property by other parties during the life of this Lease.

D. The Board, or its duly authorized agent, may at any time inspect the works and operations of the managing agencies in any matter pertaining to this Lease. Should any agency fail to keep or perform any of its responsibilities as designated by the Management Plan or program provided for herein, the Board shall notify the specific agency(ies) of such non-performance. If correction or justification is not made after sixty days of receipt of written notice, the Board may terminate any agency's participation in the Lease by providing thirty days written notice of such pending

action. Any notice will be in writing from the Director of the Division of State Lands, as agent for the Board.

E. This Lease shall remain in effect until such time as the Board may terminate it in recognition of a greater public purpose consistent with Chapter 259, Florida Statutes. If a greater public purpose should be determined, the Board, in consultation with the managing agencies, shall have the right to amend or terminate this Lease by providing a reasonable time period to effectuate such an amendment or termination of activities. Any notice of such action shall be in writing from the Director of the Division of State Lands, as agent for the Board. Each agency herein shall have the right to terminate its participation in this management lease upon 60 days written notice to the Board and shall have up to 6 months to conclude its activities hereunder.

8. This Lease and any rights and privileges contained herein are for the sole use of the managing agencies and shall not be assigned or transferred to another party without the advance approval of the Board. The managing agencies shall have the right to enter and occupy the property for the purposes necessary to meet their designated responsibilities, including protection of the property. The agencies' agents and employees shall take all reasonable measures to provide security against property damage, property degradation and unauthorized uses.

9. The managing agencies agree to assist in the investigation of injury or damage claims either for or against the State or the Board pertaining to their respective areas of responsibilities, or arising out of their respective management programs and activities, and to contact the lead agency regarding whatever legal action they deem appropriate to remedy same.

IN TESTIMONY WHEREOF, the lawfully designated agent of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida, the State of Florida Game and Fresh Water Fish Commission, and the State of Florida Department of Agriculture and Consumer Services, Division of Forestry have hereunto set their hands in the City of Tallahassee, Florida, on the 12 day of April, A.D. 1985.

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

By: _____
DIRECTOR, DIVISION OF STATE LANDS
AGENT FOR THE BOARD OF TRUSTEES
OF THE INTERNAL IMPROVEMENT TRUST
FUND OF THE STATE OF FLORIDA

(SEAL)
Board of Trustees
of the Internal
Improvement Trust
Fund of the State
of Florida

FOR THE MANAGING AGENCIES

By: _____
STATE OF FLORIDA GAME AND FRESH
WATER FISH COMMISSION

By: _____
STATE OF FLORIDA DEPARTMENT OF
AGRICULTURE AND CONSUMER SERVICES

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY
Commission Attorney

Approved as to form and legality
By: _____
Resident Attorney

APPROVED AS FISCALLY
AND BUDGETARILY SOUND
DIRECTOR
DIVISION OF ADMINISTRATIVE SERVICES
GFWFC

This instrument prepared
and reviewed by:

Lee Fohe

10

State of Florida
DEPARTMENT OF NATURAL RESOURCES

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399

TOM GARDNER
Executive Director

BOB MARTINEZ
Governor
JIM SMITH
Secretary of State
BOB BUTTERWORTH
Attorney General
GERALD LEWIS
State Comptroller
BILL GUNTER
State Treasurer
DOYLE CONNER
Commissioner of Agriculture
BETTY CASTOR
Commissioner of Education

June 28, 1988

PLEASE ADDRESS REPLY TO:

Frank Smith, Bureau Chief
Florida Game and Fresh Water
Fish Commission
620 South Meridian Street
Tallahassee, Florida 32399-1600

Dear Mr. Smith:

The following numbers identifying certain projects under your jurisdiction have been changed. The old and new numbers are as follows:

Prior Number	Project	New Number
770-0002	Rotenberger	3581
770-0003	Volusia Recharge	3582
770-0004	Browns Farm	3583
770-9003	Lower Apalachicola	3584
770-9006	Guana	3585
770-9007	Chassahowitzka	3586
770-0009	Andrews Tract	3587
770-0011	Big Bend	3588
770-0010	East Everglades	3589
770-0012	Wacissa-Aucilla	3590

Please utilize these new numbers when corresponding with this office relative to these projects.

Thank you.

Sincerely,

Deborah A. Hart

Deborah A. Hart
Assistant Chief
Bureau of State Lands Management

DAH/tc
cc: Gary Bishop
Division of Forestry
Department of State

"Working together to protect Florida's future"

MAS 10 770-9007 Q MULTIPLE

MULTIPLE AGENCY MANAGEMENT LEASE

FOR

CHASSAHOWITZKA WILDLIFE MANAGEMENT AREA

(1)770-9007

LEASE NO. 770-9007

THE BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, referred to herein as the "Board" and the STATE OF FLORIDA DEPARTMENT OF NATURAL RESOURCES, DIVISION OF STATE LANDS, referred to herein as "State Lands", as agent for the Board, do hereby grant to the STATE OF FLORIDA GAME AND FRESH WATER FISH COMMISSION, referred to herein as the "Commission", and the STATE OF FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES, DIVISION OF FORESTRY, referred to herein as "Forestry", management responsibilities for the Chassahowitzka Wildlife Management Area, located in Hernando County, Florida described as follows and subject to all existing encumbrances:

(See exhibit "A" attached hereto and made a part hereof)

TO HAVE AND TO HOLD the above described property for a period of twenty (20) years.

WITNESSETH:

The Board, the Commission and Forestry, for and in consideration of the covenants hereinafter contained, do hereby covenant as follows:

1. The lands shall be managed in accordance with a management plan to be prepared pursuant to Section 253.034, Florida Statutes, and presented to the Board for approval within twelve (12) months of the date of this Lease. The management plan shall emphasize the original management concept as approved by the Board at the time of acquisition and which established the primary purpose for which this tract was acquired. Activities of the parties shall be governed by and in compliance with the Management Plan.

2. The Commission shall be the primary managing agency. As such, it shall coordinate and oversee all activities on the

IN TESTIMONY WHEREOF, the lawfully designated agent of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida, the State of Florida Game and Fresh Water Fish Commission, and the State of Florida Department of Agriculture and Consumer Services, Division of Forestry have hereunto set their hands in the City of Tallahassee, Florida, on the 12 day of April, A.D. 1984.

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

By: _____
DIRECTOR, DIVISION OF STATE LANDS
AGENT FOR THE BOARD OF TRUSTEES
OF THE INTERNAL IMPROVEMENT TRUST
FUND OF THE STATE OF FLORIDA

(SEAL)
Board of Trustees
of the Internal
Improvement Trust
Fund of the State
of Florida

FOR THE MANAGING AGENCIES

By: _____
STATE OF FLORIDA GAME AND FRESH
WATER FISH COMMISSION

By: _____
STATE OF FLORIDA DEPARTMENT OF
AGRICULTURE AND CONSUMER SERVICES

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY
_____
Commission Attorney

Approved as to form and legality
By: _____
Resident Attorney

APPROVED AS FISCALLY
AND BUDGETARILY SOUND
_____
DIRECTOR
DIVISION OF ADMINISTRATIVE SERVICES
GFWFC

This instrument prepared
and reviewed by:
_____

Approved as to form and
legality _____

Page 5 of 5
Lease No. 770-9007

Exhibit A

Township 21 South - Range 17 East:

Section	4	West 1/2 of Northeast 1/4, Northwest 1/4 of Southeast 1/4, Northwest 1/4, North 1/2 of Southwest 1/4, Southwest 1/4 of Southwest 1/4, Southeast 1/4 of Southwest 1/4, South 1/2 of Southeast 1/4
	5	South 1/2 of Southeast 1/4
	8	East 3/4
	9	All
	10	All
	11	North 1/2, Southwest 1/4
	14	Southwest 1/4, North 1/2
	15	All
	16	All
	17	East 3/4
	20	East 1/2, Northeast 1/4 of Northwest 1/4, South 1/2 of Northwest 1/4, Southwest 1/4
	22	All
	23	West 1/2 of Northwest 1/4; South 1/2, Southwest 1/4
	26	West 1/2; North 1/2 of Southeast 1/4; Southwest 1/4 of Southeast 1/4
	27	All
	28	All
	29	All
	32	All
	33	All
	34	All
	35	West 1/2

Township 22 South - Range 17 East:

Section	2	Northwest 1/4; North 1/2 of Southwest 1/4; Southeast 1/4 of Southwest 1/4; West 1/2 of Southeast 1/4
	3	North 1/2 of Northeast 1/4; West 1/2 of Northwest 1/4
	4	All
	5	All
	6	East 1/2 of Northeast 1/4, Northeast 1/4 of Southeast 1/4
	7	Southeast 1/4 of Northeast 1/4, Northeast 1/4 of Southeast 1/4
	8	North 1/2, Southeast 1/4, East 1/2 of Southwest 1/4
	9	West 1/2, North 1/2 of Northeast 1/4
	11	North 1/2 of Northwest 1/4; Northwest 1/4 of Northeast 1/4
	16	West 1/2 of Northwest 1/4, East 1/2 of Southwest 1/4, Northwest 1/4 of Southwest 1/4
	17	North 1/2 of Northeast 1/4
	16	The East 1/2 and the East 1/2 of the Northwest 1/4 of Section 16, Township 22 South, Range 17 East, TOGETHER WITH a Non-Exclusive easement over the West 60 feet of Northwest 1/4 of Southwest 1/4 of Section 27, Township 22 South, Range 17 East lying North of State Road #50, and the West 60 feet of the Northwest 1/4 of Section 27; and West 60 feet of Section 22; and the East 60 feet of North 60 feet of Northeast 1/4 of Section 21, ALL in Township 22 South, Range 17 East.

ALL LYING AND BEING IN HERNANDO COUNTY, FLORIDA.

NO. 770-9007
EXHIBIT A
PAGE 1 OF 3

Together with the following easements:

Tract 1:

An easement for ingress and egress and utilities over the East 60 feet of Section 2, Township 21 South, Range 17 East, Hernando County, Florida,

as shown in Warranty Deed from Olaf K. Lovaas and Ann B. Lovaas to Turner Corporation as recorded May 8, 1983 in O.R. Book 523 at Page 557, of the Public Records of Hernando County, Florida.

Tract 2:

A sixty foot non-exclusive right of way easement described as follows:

30 feet on either side of the East/West one-half section line of Section 13, Township 21 South, Range 21 East, and 30 feet on either side of the East/West one-half Section line in the East 1/2 of Section 14, Township 21 South, Range 17 East, and the South 30 feet of the East 60 feet of the NW 1/4 of Section 14, Township 21 South, Range 17 East, and the East 60 feet of the SW 1/4 of Section 14, Township 21 South, Range 17 East, and the South 60 feet of the SE 1/4 of the SW 1/4 of Section 14, Township 21 South, Range 17 East, and the South 60 feet of the East 60 feet of the SW 1/4 of the SW 1/4 of Section 14, Township 21 South, Range 17 East. (See Official Record Book 513, Page 1920 and Easement found in O.R. Book 474, Page 1917, Hernando County Public Records.)

more fully set out as follows:
1) that certain Mutual Grant of Right-of-Way easement from Royal Palm Beach Colony to Turner Corporation as recorded in O.R. Book 474 at Page 1917, of the Public Records of Hernando County, Florida, and;

2) further reserved by Turner Corporation more particularly described in that certain deed from Turner Corporation to Amerifirst Development Company of Central Florida and Hubert R. Earley as recorded in O.R. Book 508 at Page 1910, of the Public Records of Hernando County, Florida, and;

3) further reserved by Turner Corporation more particularly described in that certain deed from Turner Corporation to Lykes Bros Inc. as recorded in O.R. Book 513 at Page 1920, of the Public Records of Hernando County, Florida.

Tract 3:

A sixty foot right-of-way easement for ingress and egress and utilities over and across the South sixty feet of Section 36, lying West of U.S. Highway 19 and a sixty foot right-of-way easement for ingress and egress and utilities over and across the South sixty feet of the East 1/2 of Section 35, all lying and being in Township 21 Soutn, Range 17 East, Hernando County, Florida, as recorded in Warranty Deed from Turner Corporation to Amerifirst Development Company of Central Florida and Hubert R. Earley, as recorded in O.R. Book 508 at Page 1915, of the Public Records of Hernando County, Florida.

NO. 720-9007
EXHIBIT A
PAGE 2 OF 3

Subject to Reservation contained in deed from Trustees of the Internal Improvement Fund of the State of Florida to C.S. Wilson, dated October 27, 1906, recorded in deed book 18, page 715, Public Records of Hernando County, Florida, which reads, "SAVING AND RESERVING unto the said Trustees of the Internal Improvement Fund of the State of Florida, and their successors, the right at any time to enter upon the said lands and make or cause to be made and constructed thereon such canals, cuts and sluiceways, dikes and other works as may, in the judgment of the Trustees, or their successors, be necessary and needful for the drainage or reclamation of any of the lands granted to the State and to take from the said lands hereby conveyed and to use such gravel, stone or earth as may, in the judgment of the Trustees, or their successors, be necessary to use in the making and construction of said canals, cuts, sluiceways, dikes and other works upon said lands for purposes aforesaid," as to lands in Section 26, Township 21 South, Range 17 East only.

Subject to taxes for 1984.

NO. 770-9007
EXHIBIT A
PAGE 3 OF 3

10

State of Florida
DEPARTMENT OF NATURAL RESOURCES

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399

TOM GARDNER
Executive Director

BOB MARTINEZ
Governor
JIM SMITH
Secretary of State
BOB BUTTERWORTH
Attorney General
GERALD LEWIS
State Comptroller
BILL GUNTER
State Treasurer
DOYLE CONNER
Commissioner of Agriculture
BETTY CASTOR
Commissioner of Education

June 28, 1988

PLEASE ADDRESS REPLY TO:

Frank Smith, Bureau Chief
Florida Game and Fresh Water
Fish Commission
620 South Meridian Street
Tallahassee, Florida 32399-1600

Dear Mr. Smith:

The following numbers identifying certain projects under your jurisdiction have been changed. The old and new numbers are as follows:

Prior Number	Project	New Number
770-0002	Rotenberger	3581
770-0003	Volusia Recharge	3582
770-0004	Browns Farm	3583
770-9003	Lower Apalachicola	3584
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770-0009	Andrews Tract	3587
770-0011	Big Bend	3588
770-0010	East Everglades	3589
770-0012	Wacissa-Aucilla	3590

Please utilize these new numbers when corresponding with this office relative to these projects.

Thank you.

Sincerely,

Deborah A. Hart
Assistant Chief
Bureau of State Lands Management

DAH/tc
cc: Gary Bishop
Division of Forestry
Department of State

"Working together to protect Florida's future"

The following amendments to lease #3586 can be made available upon request:

Lease Number	Acreage	Date	Notes
Lease 3586-01	482	9/5/1991	
Lease 3586-02	650	5/21/1992	
Lease 3586-03	1,511	7/23/1993	
Lease 3586-04	1,605	6/13/1994	
Lease 3586-05	352	8/15/1994	
Lease 3586-06	443	1/12/1996	
Lease 3586-07	405.74	1/8/1996	
Lease 3586-08	2,011	2/17/1997	
Lease 3586-09	179.45	8/11/1997	
Lease 3586-10	9.61	9/10/1997	
Lease 3586-11	44.37	1/6/1999	
Lease 3586-12	1.33	4/3/1998	
Lease 3586-13	598.2	10/22/1998	
Lease 3586-14	15.15	2/17/1999	
Lease 3586-15	0.83	2/26/1999	
Lease 3586-16	199.68	2/17/1999	
Lease 3586-17	1,584.9	6/4/1999	
Lease 3586-18	361.32	11/22/1999	
Lease 3586-19	79.2	4/15/2004	
Lease 3586-20	-	4/19/2006	Lease extension for another 50 years
Lease 3586-21	0.92	4/12/2007	
Lease 3586-22	0.46	4/12/2007	
Lease 3586-23	2.53	10/16/2012	
Lease 3586-24	709.34	10/5/2021	DOT Suncoast Parkway mitigation
Lease 3586-25	0.52	3/3/2022	
Lease 3586-26	1,256.53	6/24/2022	
Lease 3586-27	106.54	8/28/2023	
Partial Release 1	2.2	10/16/2012	Part of the Nativity Lutheran Church Exchange
Partial Release 2	389	3/16/2018	Weeki Wachee Springs (Release to DEP)
Partial Release 3	0.75	8/28/2023	Remainder of Weeki Wachee Springs (Release to DEP)

11.2 Easements and/or Other Agreements

11.2.1 Easement No. 28781

DIVISION LOG # 1981 AGREEMENT NUMBER (EASEMENT NO: 28781)

AGREEMENT ROUTING REVIEW FORM

CONTRACTOR HERNANDO SPORTSMAN / FWC

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

PROJECT TITLE CHASAHOWITZKA WMA - HERNANDO SPORTSMAN EASEMENT 28781

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 _X_ EASEMENT/DEED __LEASE (INCLUDES WMA OR FMA LEASES)

AGREEMENT BEGINNING DATE/EXECUTION 7/1/92 END DATE 6/30/2022 OPTION FOR _____YEARS TOTAL

CONTRACT AMOUNT $_____ PAYMENT 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		11/16/09	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

Randy Chapman 11/17/09

Hernando Sportsman's Club
Chassahowitzka

1/28/08 - Called Randy Richart - left vm for him - Poles along road are 1 phase (single wire) (NOT 2 phase) - utility Co wants to not be curved - He doesn't want to / doesn't think he should have to pay app. fee & for a survey - process was easy when 1st got easement - explained (now) set up to discourage taking / wanting state conservation land. Told if can stay on road, its better. His to contact utility Co + see if can be worked out. - he's to let me know.

2/7 - 11:03 Met. / Don Lawson (W.T. Wacoochee Elec Coop (WREC)) 2/6 - 3:54 call - explained LFP, ag ARC & application procedure - setting date to make Agril ARC so looky @ fence mtg - WREC has a DOT permit # to cross RT 19 which had deadline so needs to get moving. Also in leg - commercial is moving but not residential plus HSC bldg will be ready in ±30 days - Told for better if can stay w/in existing easement.

11:29 Sent email of above to VE, CA + KL

2/12 - CA emailed That WREC was out Trimming trees along ~~the~~ Lodge Rd.

2/29 - sent email response to keep me informed.
4/11 CA responded That per RL, They are to stay w/- The easement.

9/29 - 2:16 Chad Allison responded to my 2:15 email saying all's well - stayed w/in easement.
2:39 Sent w/o to KL so he knew he could close file. ASSUMES THAT HSC + IIIT extended easement from 6/30/07 expiration to 6/30/2022.

10/8/07 - 10:45 - Talked to Randy Richert

Says has utility easement.
Wants 3 phase That runs straight.

Have 3 access easements - 60' wide -

No hunting on their property

Lsci@gate.net -

Hernando Sportsmans Club –
Chassahowitzka

5or 9/07 Was advised HSC wanted to change Their easement. Don't remember if Communicated by Randy Pickard, president by ~~email~~ email, phone or letter.

10/10/07 - Contacted Victor Echaves by email, asking if he had any info on The request - VE advised he didn't.

10/22 - sent email to RR That he needed to contact DSL (Gloria Barber)

12/24 - RR submitted an application to DSL (± 11/1, RR contacted GB & she sent him an application).

1/18/08 - met w KL (+ GB shortly) - DSL to send letter That application isn't complete. Will need to go to ARC, need survey, can go out a total of 50 yrs - Original IITF ~~road~~ Easement to HSC dated 7/1/92 was for 15yrs (ended 6/30/07) w/ one 15yr ~~ex~~ extension - Therefore, could give add. 20 yrs. Appears has 3 other easements. Had given IITF a 30 Ac conservation easement on ~~facing~~ setting The road easement.

1/22 - 12:05 Sent KL an email after reviewing The HSC application. Questioned if utility co has utility easement along The road - says now 2 phase - to change to 3 phase. If such easement exists, is it pre-existing? Feel best of deal if all HSC easements & issues @ once so only go to ARC once.

Mospens, Richard

From: Mospens, Richard
Sent: Tuesday, July 29, 2008 2:39 PM
To: 'Landes, Kime'
Subject: FW: Randie Rickert - Hernando Sportsman's Club (HSC) - Utility easement - Chassahowitzka WMA

Kime,
Just wanted to send the concerned email to you so that you were aware of HSC pulling the 3-phase electrical line within their existing easement (Easement No. 28781). They had made application to DSL some time ago (BPLA Work File #14879), but had never provided the $300.00 fee nor a survey. After going around on the matter, I had a good talk with Mr. Rickert and the electrical company and the electrical company was able to stay within the existing easement by adding more poles to get around a curve. Being 3-phase, it appears they prefer to do a 90 degree turn, but after understanding what was required to get approval for an amended or new easement and HSC not wanting to go through the hassle, the electrical company capitulated and agreed to add more poles on the existing easement curve. Therefore, you can for sure close the file. – Rich

---

From: Allison, Chad
Sent: Tuesday, July 29, 2008 2:16 PM
To: Mospens, Richard
Subject: RE: Randie Rickert - Hernando Sportsman's Club (HSC)

All's well. They were able to stay within their easement

Chad Allison
Florida Fish & Wildlife Conservation Commission
Chassahowitzka Wildlife Management Area
17260 Necklace Warbler Avenue
Brooksville, FL 34614
phone 863.648.3200 fax 352.592.5633

visit us at www.myfwc.com

From: Mospens, Richard
Sent: Tuesday, July 29, 2008 2:15 PM
To: Allison, Chad
Subject: RE: Randie Rickert - Hernando Sportsman's Club (HSC)

Chad,
Any update on the concerned matter? Thanks. – Rich

From: Allison, Chad
Sent: Friday, February 29, 2008 4:11 PM
To: Mospens, Richard
Subject: RE: Randie Rickert - Hernando Sportsman's Club (HSC)

I've spoken with Randie and it looks like they are going to stay within their easement.

Chad Allison, Wildlife Biologist
Florida Fish & Wildlife Conservation Commission
Chassahowitzka Wildlife Management Area
17260 Necklace Warbler Avenue
Brooksville, FL 34614
phone 352.592.5634 suncom 630.5634
fax 352.592.5633 suncom 630.5633

7/29/2008

visit us at www.myfwc.com

From: Mospens, Richard
Sent: Friday, February 29, 2008 4:02 PM
To: Allison, Chad
Cc: Echaves, Victor; 'Landes, Kime'
Subject: RE: Randie Rickert - Hernando Sportsman's Club (HSC)

Chad,
Thanks for the update. I am guessing they will stay within (?) the easement and just add poles to make the curve. Let me know of future developments. Thanks. -- Rich

---

From: Allison, Chad
Sent: Tuesday, February 12, 2008 7:03 PM
To: Mospens, Richard
Cc: Echaves, Victor
Subject: RE: Randie Rickert - Hernando Sportsman's Club (HSC)

Chass' tech Stan Kirkland has advised Victor and I that WRE had trucks out there today. They were topping trees along Indigo Ln most likely within their current easement. It will be interesting to see if they continue tomorrow (we got some heavy rains this evening). It will also be interesting to see if they are able to curve the line or if they plan to move forward with their surveyed path outside of their easement.

Wanted to give you a heads up in case a call was needed to WRE.

From: Mospens, Richard
Sent: Thu 2/7/2008 11:28 AM
To: Echaves, Victor; Allison, Chad; 'Landes, Kime'
Subject: FW: Randie Rickert - Hernando Sportsman's Club (HSC)

Gentlemen,
I just talked to Mr. Ron Lawson, Withlacoochee River Electric Cooperative. He has a deadline for pulling the concerned 3-phase line across Rt. 19. I explained of the State's linear facilities policy, which is in place to protect and maybe even discourage people looking toward state conservation land for its purpose. The process, if nothing else, is lengthy and HSC has not even completed its application. I explained it would be much better if they could stay within the existing easement. It appears WREC will try to do so. We will need to monitor the situation and ensure they do stay within the easement. I will let you know if & when I hear anything further. -- Rich

---

From: Mospens, Richard
Sent: Thursday, January 31, 2008 4:23 PM
To: Echaves, Victor; Allison, Chad; 'Landes, Kime'
Subject: RE: Randie Rickert - Hernando Sportsman's Club

Gentlemen,
I just finished talking to Mr. Rickert. We had a cordial conversation. He is against spending Club money for the DSL apllication fee and for a survey. He was frustrated about the length of time. The Club's new education building is up with their working on the interior. I explained to him that since he is going off the existing easement, he is bound to follow the State's linear facilities policy, which would require both of the previously mentioned items, plus having to go before ARC. I told him that though his Club is beneficial to FWC due to its involvement in gun safety and education, any incompatible use of the State's conservation land is frowned upon with the process made difficult to discourage such uses. He is going to talk to Withlacoochee River Electric Cooperative, Inc. to see if there is a way to stay within the road easement. I suppose if he can't get it worked out with them, he may finally decide to use one of the other 3 easements the Club holds and cut down trees, which he is trying to avoid, for the utility line. He is to call me next week. I will let you know. -- Rich

7/29/2008

From: Mospens, Richard
Sent: Thursday, January 31, 2008 3:24 PM
To: Echaves, Victor; Allison, Chad
Cc: 'Landes, Kime'
Subject: FW: Randie Rickert - Hernando Sportsman's Club

Victor & Chad,
I have been in communication with DSL on the Club's application. It appears the application was not complete and there are questions to be answered, including the need for FWC review/comments/approval. Attached is a copy of the letter DSL sent to the Club on 1/22/08. The Club's road easement includes the Club's right to install a utility line. I have a call into Mr. Rickert to determine if the utility co relied on that language to install the electric or if there is a separate easement. DSL and I did talk about the line and we think the utility co. intends to remove its line along the road as it is 2-phase and replace it with 3-phase. It is for that reason, that the new line cannot just go back on the old poles. 3-phase apparently is going to require stronger poles and most importantly, the line cannot curve. This means the line cannot follow the curved Club entrance road, but rather has to go straight (west) for about 150' beyond the entrance and then turn north for about 200'.

You will need to analyze the new route and the route along the road, should it need to be modified, relative to the natural resources. The analysis should be in a written format that can be presented to ARC so they know we did our homework to ensure there was nothing of value along the proposed route. I can provide you with a sample of one done at another WMA should it be needed.

We are also trying to talk to Mr. Rickert about the other 3 easements he indicates the Club holds. In his cover letter to DSL, he mentioned his wanting to talk to DSL at a later time. At this time, we are thinking that we may want to have him relinquish those easements as part of our working with him on the utility matter. Any thoughts?

Thanks. -- Rich

From: Mospens, Richard
Sent: Wednesday, January 16, 2008 11:43 AM
To: Echaves, Victor
Cc: McGrady, Jeff
Subject: RE: Randie Rickert - Hernando Sportsman's Club

Victor,
I am fairly certain it is in DSL's hands, though I believe it has not been there very long. On Oct. 22, I had advised Mr. Rickert that there was a change in the process and advised him to contact DSL to make an application. I will contact DSL and determine exactly where they are on the matter. -- Rich

---

From: Echaves, Victor
Sent: Wednesday, January 16, 2008 10:10 AM
To: Mospens, Richard
Cc: McGrady, Jeff
Subject: Randie Rickert - Hernando Sportsman's Club

Rich, I received a phone call from Randie this morning pertaining to his request for the gun club power lines easement, he is a bit frustrated due to the fact that the new constructed building is almost 90% completed, and the electric company can not proceed with proving electric services to the building. He has not received any news / status regarding his request. Can you shed some light on this issue? Thanks.

Victor D. Echaves
District Wildlife Biologist
Division of Habitat and Species Conservation
Southwest Regional Office
3900 Drane Field Road, Lakeland, FL 33811
(863)-648-3200 / SC - 515-2930 / FAX - (863)-701-1440

7/29/2008

Mospens, Richard

From: Mospens, Richard
Sent: Thursday, February 07, 2008 11:29 AM
To: Echaves, Victor; Allison, Chad; 'Landes, Kime'
Subject: FW: Randie Rickert - Hernando Sportsman's Club (HSC)

Gentlemen,
I just talked to Mr. Ron Lawson, Withlacoochee River Electric Cooperative. He has a deadline for pulling the concerned 3-phase line across Rt. 19. I explained of the State's linear facilities policy, which is in place to protect and maybe even discourage people looking toward state conservation land for its purpose. The process, if nothing else, is lengthy and HSC has not even completed its application. I explained it would be much better if they could stay within the existing easement. It appears WREC will try to do so. We will need to monitor the situation and ensure they do stay within the easement. I will let you know if & when I hear anything further. -- Rich

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From: Mospens, Richard
Sent: Thursday, January 31, 2008 4:23 PM
To: Echaves, Victor; Allison, Chad; 'Landes, Kime'
Subject: RE: Randie Rickert - Hernando Sportsman's Club

Gentlemen,
I just finished talking to Mr. Rickert. We had a cordial conversation. He is against spending Club money for the DSL apllication fee and for a survey. He was frustrated about the length of time. The Club's new education building is up with their working on the interior. I explained to him that since he is going off the existing easement, he is bound to follow the State's linear facilities policy, which would require both of the previously mentioned items, plus having to go before ARC. I told him that though his Club is beneficial to FWC due to its involvement in gun safety and education, any incompatible use of the State's conservation land is frowned upon with the process made difficult to discourage such uses. He is going to talk to Withlacoochee River Electric Cooperative, Inc. to see if there is a way to stay within the road easement. I suppose if he can't get it worked out with them, he may finally decide to use one of the other 3 easements the Club holds and cut down trees, which he is trying to avoid, for the utility line. He is to call me next week. I will let you know. -- Rich

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Cc: 'Landes, Kime'
Subject: FW: Randie Rickert - Hernando Sportsman's Club

Victor & Chad,
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Thanks. -- Rich

2/7/2008

Mospens, Richard

From: Mospens, Richard
Sent: Thursday, January 31, 2008 10:11 AM
To: 'Landes, Kime'
Subject: FW: Chass. WMA/Gin Club Easement (He means the Hernando Sportsman's Club)

Klme,
I also noticed in reviewing what I have, including the Club's road easement, that there is nothing in the submission that advises on how the utility line has the right to be there. I assume the utility co has the right to be along the road, but shouldn't the utility co be the one to seek the right to traverse the new path and to possibly modify their route along the road should it be necessary for the 3-phase line? It confuses me why the Club is making the application. Let me know your thoughts. Thanks. -- Rich

---

From: Mospens, Richard
Sent: Thursday, January 31, 2008 9:49 AM
To: 'Landes, Kime'
Subject: FW: Chass. WMA/Gin Club Easement (He means the Hernando Sportsman's Club)

Kime,
Here is an email Gary Cochran sent to Greg Holder, who is our SW Region Director. It seems Randy Rickert, the Club's president, has contacted Greg, with Greg calling Gary. I explained to Gary the timeline as best as I remember and that the Club finally made application, but that it was not complete, plus there were questions. In addition to that, you would have to do the background research. From that conversation, Gary sent the below email to Greg so Greg knew we were not sitting on our hands. There is a tendency for people to believe the process is simple. Of course, keep me informed. Thanks. -- Rich

---

From: Cochran, Gary
Sent: Wednesday, January 30, 2008 12:03 PM
To: Holder, Greg
Cc: Mospens, Richard
Subject: Chass. WMA/Gin Club Easement

Greg,

We have discussed the status of this application with DEP and they have informed us that they are still working on completing all of the background research (title history, related documents, Incompatible Use Policy review etc.), for this easement application and when that is completed they will contact the applicant and FWC with the results. At that point, we'll be in a position to make recommendations on the application to the applicant and to DEP/ARC/BOT. They understand that the applicant is frustrated that the process is taking so long and are working diligently to complete the review analysis.

Gary

1/31/2008

Mospens, Richard

From: Mospens, Richard
Sent: Tuesday, January 22, 2008 12:05 PM
To: 'Landes, Kime'
Subject: Hernando Sportsman's Club (HSC) Utility Easement - Chassahowitzka WMA

Kime,
I have taken a closer look at the referenced matter. It appears the utility company intends on changing its current line along Indigo Lane to a 3-phase line with taller poles, plus take in the new service to HSC along the proposed veer-off from the road. HSC only has a road (access) easement along Indigo Lane. Is there another easement (utility) along Indigo Lane for the utility company? Is it or is it not a pre-existing easement to when IITF acquired that land?

It also appears, per the P.S. that HSC wants, in the future, to talk to DSL about its "other 3 legal right of ways for the existing road". I am sure that HSC is in a hurry to get the utility issue over so it can start its construction project, but it may make sense to only go to ARC once. Could you find out more about what HSC has in mind?

Thanks,
Rich

1

Florida Department of Environmental Protection

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

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

January 22, 2008

Mr. Randie W. Rickert, President
Hernando Sportsman's Club, Inc.
P.O. Box 10754
Brooksville, FL 34603-0754

RE: Road Easement Application
BPLA Work File 14879

Dear Mr. Rickert:

The Bureau of Public Land Administration (BPLA) has received the Hernando Sportsman's Club's request to extend the current road easement to accommodate for electricity. However, before BPLA can proceed with the request, the following information is needed:

1. An application fee in the amount of $300 made payable to the Department of Environmental Protection.
2. Two prints of a certified survey of the easement area meeting the minimum technical standards of Chapter 61G17-6 Florida Administrative Code, which contain the boundaries, legal descriptions, and acreage of the property.
3. A statement of written approval from the managing agency (Florida Fish and Wildlife Conservation Commission) describing how the proposed easement conforms to the management plan when the easement application involves state land which is under lease, sublease, easement, or management agreement. (I have sent over your request to FWC for their approval).

As soon as the three (3) above mentioned steps take place, BPLA, may proceed with your request. If you have any questions, please call Gloria Barber or Kime Landes at (850) 245-2720.

Sincerely,

Kime Landes
Bureau of Public Land Administration
Mail Station 130

"More Protection, Less Process"
www.dep.state.fl.us

Mospens, Richard

From: Mospens, Richard
Sent: Wednesday, January 16, 2008 11:43 AM
To: Echaves, Victor
Cc: McGrady, Jeff
Subject: RE: Randie Rickert - Hernando Sportsman's Club

Victor,
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Sent: Wednesday, January 16, 2008 10:10 AM
To: Mospens, Richard
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Subject: Randie Rickert - Hernando Sportsman's Club

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Victor D. Echaves
District Wildlife Biologist
Division of Habitat and Species Conservation
Southwest Regional Office
3900 Drane Field Road, Lakeland, FL 33811
(863)-648-3200 / SC - 515-2930 / FAX - (863)-701-1440

1/18/2008

HERNANDO SPORTSMAN'S CLUB, INC.

P. O. Box 10754, Brooksville, FL 34603-0754 Ph. (352) 597-9931 (O) (352) 597-8997 Fax
Email: hsci@gate.net Website: www hernandosportsmansclub.com NRA Affiliate Club

December 20, 2007

Gloria C. Barber
Operations & Management Consultant
Department of Environmental Protection
Division of State Lands
Bureau of Public Land Administration
3800 Commonwealth Blvd.
Tallahassee, Florida 32399-3000, MS 130

Dear Ms. Barber:

As per our conversation we have filled out the application as it pertains to us and I have enclosed documents on lease property ownership, warranty deed and the Hernando County Property Appraiser's map of the club property.

Please note on the state contract Exhibit A, the current electric follows road exactly. The new electric three phase power requires taller poles and will follow the road slightly past curve and will then make a 90 degree turn and cross over to club property approximately 150 feet. The power company requires that these larger, taller poles go in a straighter line. I do not, at this time, wish to use any of the club's other three existing right of ways as this would cause a much destruction to the trees in the area. Also please note on the contract, electrical easement is given as notated on Page 8, Item H.

Please forward approval as soon as possible. We have now delayed the building process for our new clubhouse. Thank you in advance for your consideration and if you have questions, I can be contacted at 352-799-3605.

Sincerely,

Randie W. Rickert

Randie W. Rickert
President

P.S. At a later date, I would like to talk to you further in regard to trading the club's three existing legal right of ways for the existing road.

Gulf Coast

550.00
10.50

WARRANTY DEED

THIS INDENTURE, Made this 21 day of ~~October~~, 1988 BETWEEN Royal Palm Beach Colony, Limited Partnership, a Delaware limited partnership authorized to do business in the State of Florida, of Dade County, State of Florida, "Grantor", and Hernando County Rifle & Pistol Club, Inc. of Hernando County, State of Florida, "Grantee", whose post office address is: ~~c/o Southern Land Investments, 7177 Okeechobee Blvd., International Country Gardens, Homosassa, FL 32646~~ P. O. Box 403, Brooksville, FLorida 34605-0403

WITNESSETH, That said Grantor, for and in consideration of the sum of Ten and No/100 ($10.00) Dollars, and other good and valuable consideration 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 Hernando County, Florida, to-wit:

The West 1/2 of the Northwest 1/4, Section 13, Township 21 South, Renge 17 East, Hernando County, Florida.

SUBJECT TO: Easements, covenants, restrictions, and reservations of record; Matters otherwise common to the subdivision; The lien of County taxes and assessments for the year of closing and subsequent years; Zoning ordinances, regulations and the like, together with any rights-of-ways.

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.

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

Signed, Sealed and Delivered
in the presence of:

Jill Rosenfield

Linda Simms

Documentary Tax Pd. $ 550.00
Intangible Tax Pd. $
Karen Hunstal, Clerk of Circuit Court
Hernando County, Florida
By D. Lopez D.C.

Royal Palm Beach Colony, Limited Partnership BY: Stein Management Co., Inc., Managing General Partner

BY: _____
Martin J. Katz, Exec. Vice President

FILED AND RECORDED
KAREN HUNSTAL, CLERK
HERNANDO COUNTY, FLA
'88 OCT 28 PM 4 12

035603

O.R. 711 PG 0058

STATE OF FLORIDA
COUNTY OF DADE

I HEREBY CERTIFY that on this day personally appeared before me, an officer duly authorized to administer oaths and take acknowledgments, Martin J. Katz, Exec. Vice President of the Grantor named herein, to me well known to be the person described in and who executed the foregoing instrument and duly acknowledged before me that he executed the same for the purposes therein expressed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal in the County and State last aforesaid this 25 day of October, 1988.

Notary Public-State of Florida

My Commission Expires: 3-15-90

This Instrument Prepared By:
David H. Greenberg
1371 SW 12th Avenue
Pompano Beach, Florida 33069

O.R. 711 PG 0059

UPLAND EASEMENT APPLICATION
BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA

This application is to be used in order to apply for easement interest in land, title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida (Board of Trustees). If you have any questions, after reading this application form, you may call (850) 245-2720 for assistance. **Mail application to: Department of Environmental Protection, Division of State Lands, Bureau of Public Land Administration, 3800 Commonwealth Boulevard, Tallahassee, Florida 32399-3000, MS 130.**

SPECIAL NOTE TO ALL APPLICANTS: SUBMITTAL OF A COMPLETE APPLICATION SHALL NOT OPERATE TO CREATE ANY RIGHTS OR CONSTITUTE ANY GROUNDS FOR THE DEPARTMENT TO RECOMMEND APPROVAL OF ANY EASEMENT. THE BOARD OF TRUSTEES HAS THE AUTHORITY AND RESERVES THE RIGHT TO DENY ANY EASEMENT APPLICATION. ALL COSTS INCURRED BY APPLICANTS COMPLYING WITH THE REQUIREMENTS OF THIS APPLICATION SHALL BE AT THEIR OWN RISK. COSTS ASSOCIATED WITH OBTAINING AN EASEMENT ARE NON-REFUNDABLE AND SHALL BE ASSUMED BY THE APPLICANT INCLUDING, BUT NOT LIMITED TO, ALL APPRAISALS, ALL SURVEYS, ALL TITLE SEARCHES, AND ALL RECORDING FEES.

PRIOR TO COMPLETING THE APPLICATION, PLEASE BE ADVISED THAT:
Any application to use state land which would result in significant adverse impact to state land or associated resources shall not be approved unless the applicant demonstrates there is no other alternative and proposes compensation or mitigation acceptable to the Board of Trustees pursuant to paragraph 18-2.018(2)(i), Florida Administrative Code. Any requested use of state land which has been acquired for a specific purpose, such as conservation and recreation lands, shall be consistent with the original specified purpose for acquiring such land pursuant to paragraph 18-2.018(2)(c), Florida Administrative Code. Applicants applying for an easement across state land which is managed for the conservation and protection of natural resources shall be required to provide net positive benefit pursuant to subsection 18-2.017(39), Florida Administrative Code, if the proposed easement is approved.

Type of Easement: ⌈Private ⌈Federal, Regional or Local Agency ⌈State Agency

Applicant Information:

Name: HERNANDO SPORTSMANS CLUB Home Phone: 352-799-3605

Mailing Address: P.O. BOX 10754 Work Phone: 352-597-9931

City: BROOKSVILLE State: FL Zip: 34603 Fax Number: 352-796-2203

Email Address: HSCI@GATE.NET

Representative Information: Only complete if someone will be handling this transaction on your behalf.

Name: RANDIE W. RICKERT Home Phone: 352-799-3605

Mailing Address: 7461 CEDARHURST ST. Work Phone: _____

City: BROOKSVILLE State: FL Zip: 34613 Fax Number: 352-796-2203

Email Address: _____

Property Information:

County: HERNANDO Property Appraiser's Parcel Number: R1342117000002C

Section: ____ Township: ____ Range: ____ Zoning Designation: _____

Intended Use of Property: UP GRADE ELECTRIC ON EXISTING EASEMENT

Include the Following with the Application: Please check all that are included

_____ **(Private Easements Only)** A check in the amount of $300 made payable to the Department of Environmental Protection. This fee in non-refundable.

_____ **(Private Easements Only)** A written commitment to pay an easement fee based on the appraised market value of the proposed easement.

_____ **(Local Governments Only)** A formal resolution adopted by the Board of County/City Commissioners requesting the proposed easement.

_____ Recent aerial photograph with the boundaries of proposed easement area identified.

_____ A statement describing the public benefits that will occur as a result of the proposed easement.

_____ A letter from the applicable local planning agency stating that the proposed easement is consistent with the local government

_____A letter from the applicable local planning agency stating that the proposed easement is consistent with the local government Comprehensive plan adopted pursuant to section 163-3167, Florida Statutes.

_____A county tax map identifying the parcel proposed for easement.

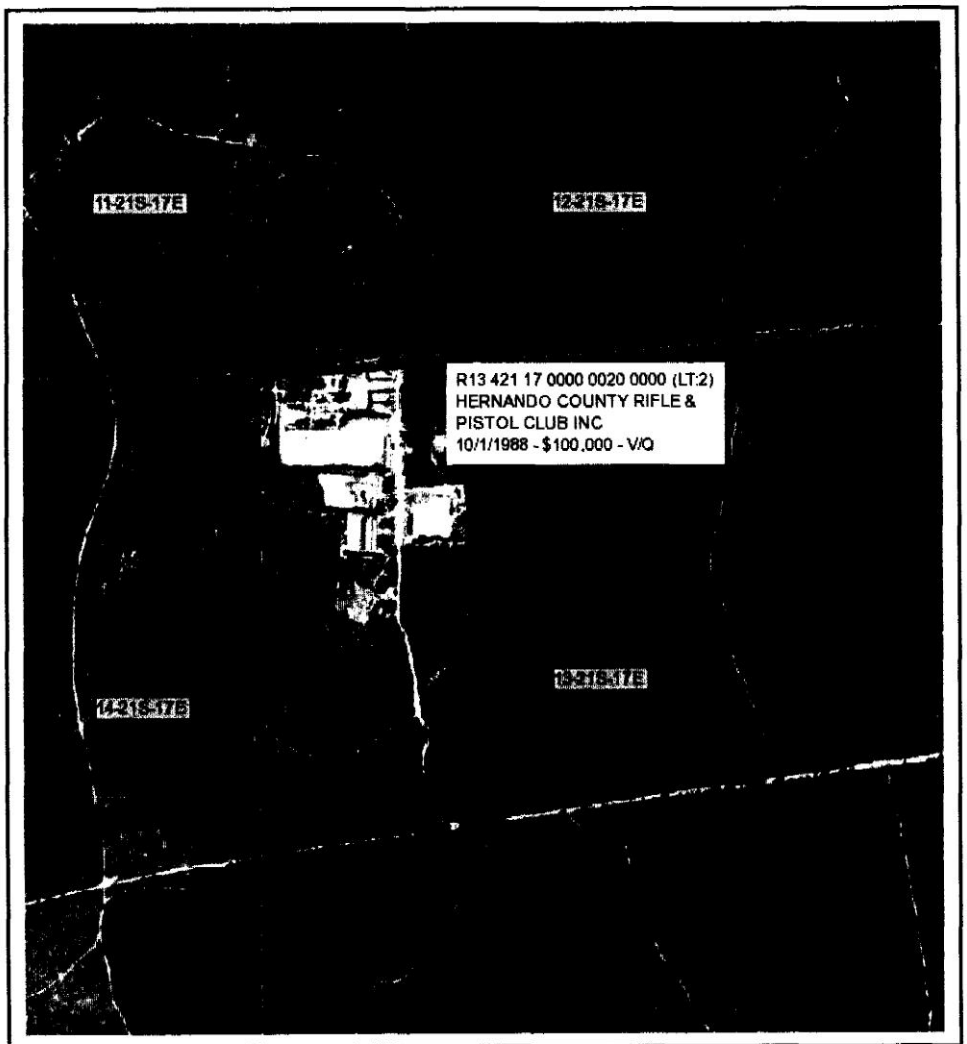
_____Two prints of a certified survey of the easement area meeting the minimum technical standards of Chapter 61G17-6 Florida Administrative Code, which contain the boundaries, legal descriptions, and acreage of the property.

_____A statement of written approval from the managing agency along with a statement from the managing agency describing how the proposed easement conforms to the management plan when the easement application involves state land which is under lease, sublease, easement, or management agreement.

_____Applications for easements across state land shall include a statement of intended use which shall include, at a minimum, the following:

1. The requested term for the proposed easement which shall not be greater than is necessary to provide for the reasonable use of the state land.
2. The need for the proposed easement and written evidence that all other alternatives to the use of state land have been denied.
3. Projected revenue to be generated from the use of the state land.
4. Whether the intended use is public or private and the extent of public access for such use.
5. A description of the type of facility proposed for the easement area (e.g. road, overhead utility, pipes, etc.)

***General Information**: *The granting or approval of an easement that will negatively affect the Board of Trustees' ability to manage uplands in a manner that achieves maximum public benefit will be discouraged pursuant to paragraph 18-2.018(2) (b), Florida Administrative Code. The successful grantee shall assume all*



Hernando County Property Appraiser
Alvin R. Mazourek CFA - Brooksville, Florida - 352-754-4190

PARCEL: R13 421 17 0000 0020 0000 | KEY: 00326481

W1/2 OF NW1/4 FRACTL

Name:	HERNANDO COUNTY RIFLE & PISTOL CLUB INC	LandVal	$454,974.00
Site:	17065 COMMERCIAL WAY	BldgVal	$20,955.00
Mail:	PO BOX 10754	JustVal	$525,756.00
	BROOKSVILLE FL 34603-0754	Assd	$389,212.00
Sales	10/1/1988 $100,000.00V (Q)	Exmpt	$379,452.00
Info	1/1/1980 $0.00 (D)	Taxable	$9,760.00

0 0.07 0.14 0.21 mi

This information was derived from data which was compiled by the Hernando County Property Appraiser Office solely for the governmental purpose of property assessment. This information should not be relied upon by anyone as a determination of the market value, ownership, or zoning of the property. Zoning information should be obtained from the Hernando County Development Department. No warranties, expressed or implied, are provided for the accuracy of the data herein, it's use, or it's interpretation. Although it is periodically updated, this information may not reflect the data currently on file in the Property Appraiser's office. The assessed values are NOT certified values and therefore are subject to change before being finalized for ad valorem assessment purposes.
Data Updated: 12/7/2007 | GIS Map Updated: 12/7/2007 | © Copyright 2003 All Rights Reserved - Hernando County Property Appraiser

Virginia B. Wetherell
Executive Director

FLORIDA DEPARTMENT OF NATURAL RESOURCES

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399

Lawton Chiles
Governor
Jim Smith
Secretary of State
Bob Butterworth
Attorney General
Gerald Lewis
State Comptroller
Tom Gallagher
State Treasurer
Bob Crawford
Commissioner of Agriculture
Betty Castor
Commissioner of Education

STATE OF FLORIDA
COUNTY OF LEON

CERTIFICATION

I, Judy A. Brooks, do hereby certify that the Governor and Cabinet, sitting as the Board of Trustees of the Internal Improvement Trust Fund, met on September 15, 1992, and approved the following Item 14 on the agenda for that date.

Item 14

REQUEST: Issuance of a 15-year easement for road access over approximately 2 1/2 acres of Board of Trustees land within the Chassahowitzka Wildlife Management area to the Hernando Sportsman's Club, Inc.

COUNTY: Hernando

LOCATION: Section 13, Township 21 South, Range 17 East

CONSIDERATION: Conservation easement over 30 acres of private land and maintenance of the road.

STAFF REMARKS: The subject property was purchased with an existing easement to adjacent land owned by the Hernando Sportsman's Club, Inc. (Club). However, the legal access is undeveloped and actual access is a dirt road, lying outside the easement area, which is used by both the Club and the managing agency, the Florida Game and Fresh Water Fish Commission (FGFWFC). The FGFWFC prefers that the legal access remain undeveloped to avoid further destruction of sensitive habitat. In exchange for receiving an easement over the existing road, the Club has agreed to maintain the road in good condition and to grant a conservation easement over 30 acres of its own land for the same term as the road easement. The FGFWFC has expressed satisfaction with this arrangement.

A local government comprehensive plan has been adopted for this area pursuant to section 163.3167, F.S.; however, the Department of Community Affairs (DCA) determined that the plan was not in compliance. In accordance with the compliance agreement between DCA and the local government, an amendment has been adopted which brought the plan into compliance. The proposed action is consistent with the plan as amended.

RECOMMEND **APPROVAL**

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of the Board of Trustees of the Internal Improvement Trust Fund this 15th day of September, A.D. 1992.

Judy A. Brooks
Division of State Lands
Department of Natural Resources

SEAL

Mospens, Richard

From: Mospens, Richard
Sent: Monday, November 26, 2007 11:45 AM
To: Brooks, Mike; Holder, Greg
Subject: FW: Randy Rickert Request for Utility Easement at Chassahowitzka WMA

Mike and Greg,
Here is my email to Mr. Rickert, advising him to contact Ms. Barber on starting the process for an easement. I have not heard from Mr. Rickert since and have confirmed with DSL that they have not yet heard from Mr. Rickert. I did not send the email, asking for confrimation that the email had been received or read, but as you will see, I did tell him to contact me if there were any questions or problems. Let me know if you have any questions. -- Rich

---

From: Mospens, Richard
Sent: Monday, October 22, 2007 10:38 AM
To: 'hsci@gate.net'
Subject: Randy Rickert Request for Utility Easement at Chassahowitzka WMA

Thank you for your phone call, reminding me of your request. For utility easements across state-owned conservation land, an application needs to be made with the Department of Environmental Protection. The contact person is:

Ms. Gloria Barber
Department of Environmental Protection
Division of State Lands
3800 Commonwealth Boulevard
Tallahassee, FL 32399-3000
850-245-2720

Once her office has received and processed the application and supporting information, the managing agency is asked for its input. We will, by that time, have made a thorough evaluation of the situation and will timely respond to that Division. In the meantime, should you have any questions or concerns, please call me.

Sincerely,

Richard C. Mospens
Operations & Management Consultant Manager
Florida Fish & Wildlife Conservation Commission
620 S. Meridian St.
Tallahassee, FL 32399-1600
(850) 488-3831, ext. 17289
fax (850) 921-7793

Visit us at MyFWC.com

Mospens, Richard

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Tallahassee, FL 32399-3000
850-245-2720

Once her office has received and processed the application and supporting information, the managing agency is asked for its input. We will, by that time, have made a thorough evaluation of the situation and will timely respond to that Division. In the meantime, should you have any questions or concerns, please call me.

Sincerely,

Richard C. Mospens
Operations & Management Consultant Manager
Florida Fish & Wildlife Conservation Commission
620 S. Meridian St.
Tallahassee, FL 32399-1600
(850) 488-3831, ext. 17289
fax (850) 921-7793

Visit us at MyFWC.com

1

Mospens, Richard

From: Echaves, Victor
Sent: Wednesday, October 10, 2007 10:21 AM
To: Mospens, Richard
Subject: RE: Hernando Sportsmans Club

Rich, I mailed you the letter he submitted with the easement request, I don't have a copy, I sent you the original. In addition, Jennifer Roberts (area Biologist) sent you a map you requested depicting the area to consider. The president of the Hernando Sportsman Club is Randy Rickert, 352-597-9931. Thanks.

Victor D. Echaves
District Wildlife Biologist
Division of Habitat and Species Conservation
Southwest Regional Office
3900 Drane Field Road, Lakeland, FL 33811
(863)-648-3200 / SC - 515-2930 / FAX - (863)-701-1440

From: Mospens, Richard
Sent: Monday, October 08, 2007 5:18 PM
To: Echaves, Victor
Subject: Hernando Sportsmans Club

Victor,
I received a call from the president of the club, asking where I stand on his utility easement. I must admit I had to state that I had not made any progress. I did tell him I would email him the DSL contact so he could make application, which is the process by which we are to now follow. After getting off the call, I looked for information on the request and have yet to find it. Do you have that information and the president's name and contact information? Thanks. -- Rich

Mospens, Richard

From: Echaves, Victor
Sent: Wednesday, October 10, 2007 10:24 AM
To: Mospens, Richard
Subject: FW: Powerline easement
Attachments: Powerline Easement for Hernando Sp.jpg

Victor D. Echaves
District Wildlife Biologist
Division of Habitat and Species Conservation
Southwest Regional Office
3900 Drane Field Road, Lakeland, FL 33811
(863)-648-3200 / SC - 515-2930 / FAX - (863)-701-1440

From: Echaves, Victor
Sent: Monday, August 06, 2007 2:32 PM
To: Mospens, Richard
Cc: Roberts, Jennifer
Subject: FW: Powerline easement

Rich, attached is a map depicting additional information and Jennifer's clarification to Randy Rickertt's easement request per the power company.

Victor D. Echaves
District Wildlife Biologist
Division of Habitat and Species Conservation
Southwest Regional Office
3900 Drane Field Road, Lakeland, FL 33811
(863)-648-3200 / SC - 515-2930 / FAX - (863)-701-1440

From: Roberts, Jennifer
Sent: Monday, August 06, 2007 12:34 PM
To: Echaves, Victor
Cc: Given, Aaron
Subject: Powerline easement

Hi Victor,
Aaron and I spoke with Randy Rickertt about this easement on Friday and got clarification on where the powerline needs to go. They are adding new power poles on the North side of Indigo and on the east side of their driveway up to their property. These power poles are going to be taller than the current poles and will be in addition to the current poles. The current poles are on both sides of the road to their property (the line crosses the road in several spots). They said that the easement will need to be about 20 ft wide and they are trading some other easements they have for this one (is this what you have on the request?)
Thanks
Jenny

Jennifer Roberts
FWC Biologist II
Chassahowitzka WMA
17260 Necklace Warbler Rd
Brooksville, FL 34614
office 352-592-5634
fax 352-592-5633

10/22/2007

Mospens, Richard

From: Echaves, Victor
Sent: Wednesday, October 10, 2007 10:21 AM
To: Mospens, Richard
Subject: RE: Hernando Sportsmans Club

Rich, I mailed you the letter he submitted with the easement request, I don't have a copy, I sent you the original. In addition, Jennifer Roberts (area Biologist) sent you a map you requested depicting the area to consider. The president of the Hernando Sportsman Club is Randy Rickert, 352-597-9931. Thanks.

Victor D. Echaves
District Wildlife Biologist
Division of Habitat and Species Conservation
Southwest Regional Office
3900 Drane Field Road, Lakeland, FL 33811
(863)-648-3200 / SC - 515-2930 / FAX - (863)-701-1440

From: Mospens, Richard
Sent: Monday, October 08, 2007 5:18 PM
To: Echaves, Victor
Subject: Hernando Sportsmans Club

Victor,
I received a call from the president of the club, asking where I stand on his utility easement. I must admit I had to state that I had not made any progress. I did tell him I would email him the DSL contact so he could make application, which is the process by which we are to now follow. After getting off the call, I looked for information on the request and have yet to find it. Do you have that information and the president's name and contact information? Thanks. -- Rich



powerline easement requested

Hernando Sportsman Easment

Hernando Sportsman Club Property line

B. Native plant communities will be maintained or restored. This may require some reforestation, timber stand improvement, and controlled burning of pine uplands and sawgrass marsh.

C. Surveillance and monitoring of native wildlife shall be conducted annually.

D. Consumptive uses of fish and wildlife such as hunting and fishing shall be allowed consistent with protection of the resources.

E. Nonconsumptive uses relating to fish and wildlife resources such as camping, nature appreciation, hiking, picnicking, and boating shall be encouraged.

F. Archaeological and historic sites will be conserved and protected from destruction through other management activities or vandalism and shall be regulated by the Division of Historical Resources of the Department of State. Research is discouraged, where such research would involve excavation or destruction of the resource.

G. Field surveys may be conducted to identify the potential endangerment of historic sites due to activities requiring land surface alteration.

H. The Citrus County Department of Parks and Recreation has expressed a desire to operate an existing campground with a convenience store, parking lot, boat ramp and overnight hook-up facilities for mobile camper trailers.

In summary, the tract is being managed for low intensity, multiple uses featuring fishing, hunting, frogging wildlife viewing, hiking, horseback riding, bicycling, swimming, and canoing/boating. The purchase of this tract was effected primarily for ensuring the protection and ecological integrity of the Chassahowitzka region and providing additional recreational opportunities for Florida's rapidly increasing population.

E. Acreage that should be acquired or declared surplus: Development is encroaching on the CWMA from the north, south and east. Lands surrounding the management area are either being subdivided and sold to individuals, or retained as large tracts by landowners who are developing subdivisions or industrial complexes. This encroachment is the greatest threat to the natural resources of the area, and to its diverse fauna and flora. A number of properties have been identified for acquisition under the auspices of the agency's Inholdings and Additions Program (see figure 6). These properties have been nominated 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 and regular property boundary, and to provide critical habitat connectivity for CWMA and other public wildlife habitat lands.

Wetlands along the coast and uplands along US 19 contain elements that are critical to the management of the natural resources on the area. Supplementary upland acquisitions would provide a buffer from development. The problem of management access to the southern

third of the area could be corrected by such purchases. The alternative to acquiring additional lands for management access, upgrading existing trams, would be extremely expensive, assuming permits could be acquired.

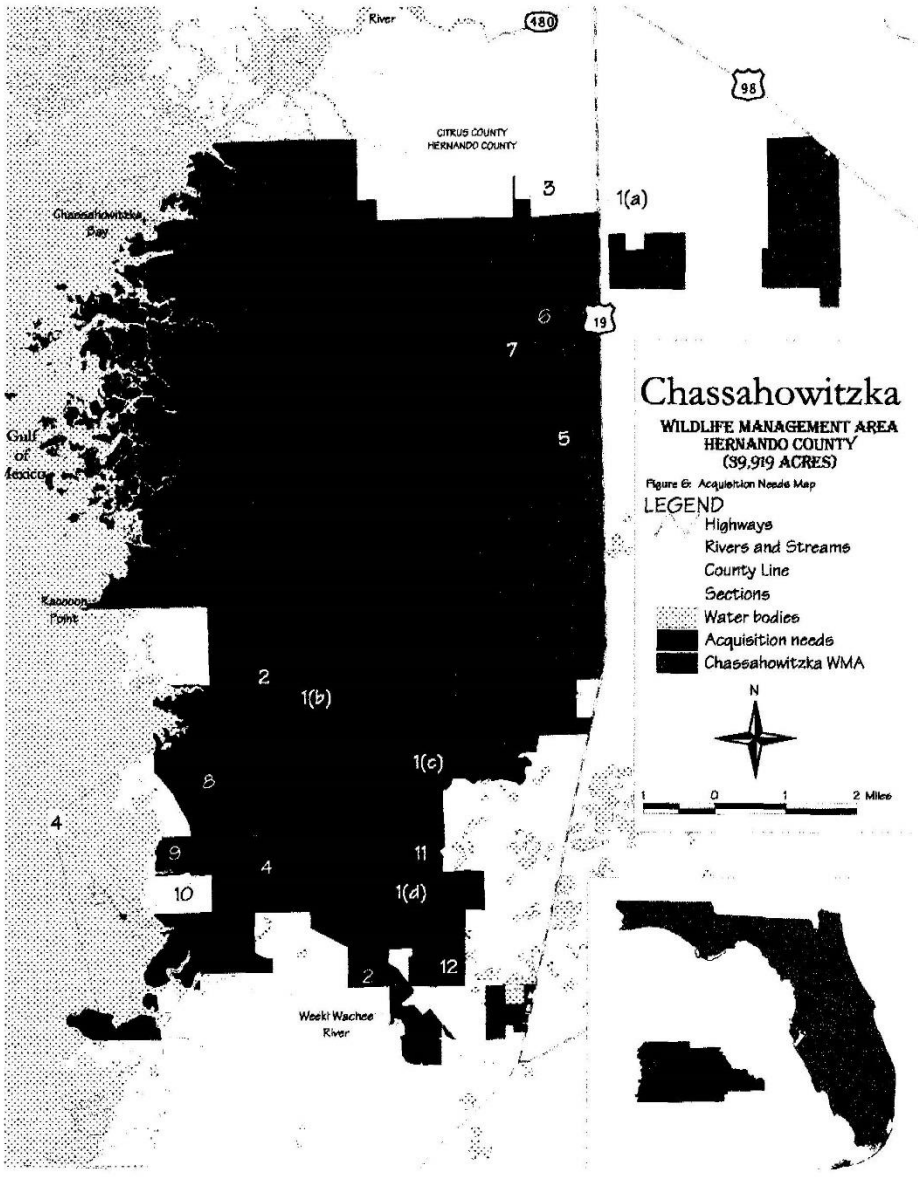
The CWMA presently encompasses the Chassahowitzka swamp and an upland buffer area along the eastern boundary. Acquisition of additional uplands between the wildlife management area and US 19 would benefit the natural resources by providing more buffering for the swamp, preserving upland habitat for species using both the swamp and uplands, facilitating land management activities, and providing public access points. None of the land within the CWMA should be declared surplus. The following list is the justification for acquisition of the properties identified in Figure 6.

1. Chassahowitzka (Various)

   A. Nunag (45 acres) - The eastern boundary of this property borders US 19. Also, people illegally access the WMA through this property. Therefore, acquisition of this parcel would protect the northeast corner of the WMA from development and solve an illegal access problem. The habitat on this parcel is diverse, consisting of a mixture of sandhill, flatwoods, and cypress wetlands.
   B. Geiger et al. (400 acres); Coogler & Rogers (80 acres); Whiteside & McKenzie (40 acres) - Chassahowitzka WMA contains the largest hardwood swamp on the west coast of Florida, south of the Suwannee River. These properties are primarily composed of hardwood swamp, and would be an important addition the WMA. The Chassahowitzka population of the Florida black bear has been documented as using these properties. Also, there is an old logging tram road on the Geiger property that could be opened up for public foot travel if this inholding were purchased.
   C. Hope (40 acres) - This inholding is composed of sandhill habitat, which grades into hardwood swamp. Purchase of this property would facilitate management activities such as prescribed burning in this portion of the WMA.
   D. Various, NE corner of S27, R17, T22 (160 acres) - There is a road that runs through this property that is needed for access to the south end of the WMA. Currently, the road is located on both the state and private property, which causes WMA management personnel to traverse private property in the course of regular management activities. Also, acquisition of this property would create a buffer between state lands and nearby development.

2. Sun Bank Trust/Underwood (95 acres) - Acquisition of this property will provide high quality habitat for the imperiled Chassahowitzka black bear population, protect several bald eagle nests, and provide numerous recreational activities for the public. In addition to the access problems, these properties are essential in providing a corridor between the Chassahowitzka WMA and the Weeki Wachee Preserve. This corridor is currently used by black bear radio-collared in a research project. Purchase of this land would facilitate movement between the two state properties.

3. Lashley (44 acres) - This site is adjacent to the north boundary of the WMA. It is composed of sandhill, mixed with cypress wetlands. It also borders the hardwood swamp. This area is used regularly by the Chassahowitzka black bear population.


River
480
98
CITRUS COUNTY
HERNANDO COUNTY
3
1(a)
Chassahowitzka Bay
6
19
7
5
Gulf of Mexico
Kaboom Point
2
1(b)
1(c)
8
4
9
11
4
10
1(d)
12
2
Weeki Wachee River
Chassahowitzka
WILDLIFE MANAGEMENT AREA
HERNANDO COUNTY
(39,919 ACRES)
Figure 6: Acquisition Needs Map
LEGEND
Highways
Rivers and Streams
County Line
Sections
Water bodies
Acquisition needs
Chassahowitzka WMA
N
1 0 1 2 Miles

Also, acquisition of this property would protect it from further development, and allow for better security along the northern boundary of Chassahowitzka, where illegal access has been a problem.

4. Whitehurst (2,673 acres) - Acquisition of this property would preserve significant natural resources including listed species, and would prevent the potential for development in an area between the WMA and the coast.

5. Various (5 acres) - All small adjacent properties on the west side of US 19 between the northern and southern boundary of Chassahowitzka should be purchased to provide an optimum boundary for the WMA. This would facilitate land management activities such as prescribed burning, and would help protect the property from incompatible adjacent land uses.

6. Hernando County Sportsman's Club (74 acres) - This property has been developed for the benefit of the shooting sports. Acquisition would provide FWC with another revenue source, should the agency continue to make the club available for use by the general public.

7. The Development and Construction Corporation of America (9 acres) - Acquisition of this inholding would protect the wetland habitat that composes the majority of this property. Management activities such as prescribed burning would be greatly facilitated if this property were acquired.

8. William Buckner (470 acres) - This is very diverse habitat, composed of a mixture of hardwood swamp, tidal marsh, sawgrass marsh, and oak hammocks. Acquisition of this property, would protect important habitat for the Florida black bear, and other game and nongame wildlife species. Public recreation opportunities would be numerous, and would include hunting and wildlife viewing.

9. A. McKethan (126 acres) - Acquisition of this property, composed of tidal wetlands with scattered islands, would provide excellent birdwatching opportunities for the public.

10. Paul D. Hawkins (35 acres); Frank Scofield (5 acres) - These properties, composed primarily of tidal wetlands, would protect valuable wildlife habitat, and provide excellent wildlife viewing opportunities for the public.

11. Pales (80 acres), Huntley (40 acres), Kolendowicz (40 acres) - These properties are composed of sandhill, and sand pine plantation. The sandhill, with mixed cypress wetlands provides habitat for many game and nongame species of wildlife including white-tailed deer and Sherman's fox squirrel. The sand pine plantation could be harvested for revenue, and then restored to sandhill.

12. Cody Grigg (5 acres) - Acquisition of this property would facilitate management activities, particularly prescribed burning, on the south end of the WMA.

F. Accomplished objectives from the 1997 Chassahowitzka CMP

		Percent and date accomplished
Goal 1: Establish uses consistent with perpetuation of natural communities.		
Objective 1.	Provide recreational opportunities (both consumptive and non-consumptive) that are consistent with the conservation of the natural resources of the swamp.	100% - Ongoing
Objective 2.	Conserve the watershed and its high quality.	100% - Ongoing
Objective 3.	Manage game populations on a sustained-yield basis.	100% - Ongoing
Goal 2: Manage communities to optimize the abundance, diversity and distribution of native species.		
Objective 1.	Conduct an inventory of natural resources. Comment: Rare and endangered plant species surveys are in the process of being completed in FY 01-02.	0%
Objective 2.	Restore and maintain communities to a natural state, if possible.	75% - Ongoing
Objective 3.	Develop a comprehensive prescribed burn plan addressing habitat recovery and maintenance, and establish management guidelines addressing wildfire suppression.	100% - 4/98

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Events

HERNANDO SPORTSMAN'S CLUB, INC.

Document Number	753243
Date Filed	07/02/1980
Effective Date	None
Status	Active

Event Type	Filed Date	Effective Date	Description
NAME CHANGE AMENDMENT	12/12/1988		OLD NAME WAS : HERNANDO COUNTY RIFLE AND PISTOL CLUB, INC.

Note: This is not official record. See documents if question or conflict.

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Detail by Entity Name

Florida Non Profit Corporation

HERNANDO SPORTSMAN'S CLUB, INC.

Filing Information

Document Number	753243
FEI Number	592102875
Date Filed	07/02/1980
State	FL
Status	ACTIVE
Last Event	NAME CHANGE AMENDMENT
Event Date Filed	12/12/1988
Event Effective Date	NONE

Principal Address

17045 COMMERCIAL HWY
BROOKSVILLE FL 34614 US

Changed 04/20/1994

Mailing Address

P. O. BOX 10754
P. O. BOX 10754
BROOKSVILLE FL 34603-0754 US

Changed 03/03/2005

Registered Agent Name & Address

RICKERT, RANDIE W
7461 CEDARHURST STREET
BROOKSVILLE FL 34613

Name Changed: 07/09/1991

Address Changed: 07/09/1991

Officer/Director Detail

Name & Address

Title PD

RICKERT, RANDIE W
7461 CEDARHURST ST
BROOKSVILLE FL 34613

Title VPD

PAYNE, JOE
11712 FOXFIRE DR
HUDSON FL 34669

Title TD

RICKERT, DIANE M
7461 CEDERHURST ST

BROOKSVILLE FL 34613

Title ED

GELBOGIS, DAVE
55 S CAMELLIA AVE
CRYSTAL RIVER FL 34429

Annual Reports

Report Year	Filed Date
2005	03/03/2005
2006	04/15/2006
2007	04/25/2007

Document Images

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Fax

Randie Rickert
7461 Cedarhurst St.
Brooksville, FL 34613
352-799-3605

Date:_07-13-07_____

Message Sent To:_Victor Echaves

Message From_Randie Rickert_HERNANDO SPORTSMANS CLUB

Comments: The Club is building a new clubhouse and with large 3 phase air conditioning. This will require the electric co to install new electric poles along the road. They will need a form with original signatures which is attached.

Fax 352-796-2203 1 of 4

MAP NO._____
ACCT. NO._____

EASEMENT FOR RIGHT-OF-WAY

(INDIVIDUAL)

KNOW ALL MEN BY THESE PRESENTS, that we the undersigned (Whether one or more)
_____(unmarried)(husband and wife) for One Dollar ($1.00) and other valuable consideration, the receipt of which is hereby acknowledged, do hereby grant unto Withlacoochee River Electric Cooperative, Inc., a Cooperative corporation (hereinafter called the ("Cooperative"), whose Post office address is Post Office Box 278, Dade City, Florida, 33526, and to its successors or assigns, the perpetual right to enter upon the lands of the undersigned, situated in the County of _____, State of Florida, and more particularly described as follows: The easement area will consist of 10' either side for overhead installed facilities of Withlacoochee River Electric Cooperative located within the property described in Exhibit "A" attached hereto and made a part hereof.

and to construct, reconstruct, install, alter, repair, operate and maintain on, over, or under the above described lands and/or in, over, upon or under all streets, roads and highways abutting said lands, an electric transmission and/or distribution line or lines, or other electrical or communication facilities or system or systems; to cut, trim and control the growth by chemical means, machinery or otherwise of trees and shrubbery located within 10 feet of the center line of any line or system, or that may interfere with or threaten to endanger the operation and maintenance of any line or system including any control of the growth of vegetation in the right-of-way which may incidentally and necessarily result from the means of control employed; and further agrees that the Cooperative may license, permit or otherwise agree to the joint use or occupancy of the lines or systems by any other person, association or corporation whom or which Cooperative shall permit, license or agree to occupy the same upon such terms as Cooperative in its sole discretion shall establish.

The undersigned agree that all poles, wires and other facilities, installed on, over, or under the above described lands at the Cooperative's expense, shall remain the property of the Cooperative, removable at the option of the Cooperative, and any removal shall not constitute an abandonment of the easement.

The undersigned covenant that they are the owners of the above described lands and that the said lands are free and clear of encumbrances and liens of whatsoever character except those held by the following persons:

IN WITNESS WHEREOF, the undersigned have set their hands and seals this _____ day of_____, _____.

Signed, sealed and delivered
in the presence of:

WITNESS:	PROPERTY OWNER:
X _____	X _____ (SEAL)
Signature	Signature
_____	_____
Type/Print Name:	Type/Print Name:
X _____	X _____ (SEAL)
Signature	Signature
_____	_____
Type/Print Name:	Type/Print Name:

STATE OF FLORIDA
COUNTY OF_____

The foregoing instrument was acknowledged before me this Date._____
By_____. He/she is personally known to me or has produced_____ as identification and did (did not) take an oath.

_____, Notary Public, Commission No._____
(Signature)

_____(Name of Notary typed, printed or stamped)

3 of 4

WITHLACOOCHEE RIVER ELECTRIC COOPERATIVE, INC.

(NOT A MAILING ADDRESS)

SERVICE ADDRESS: HERNANDO SPORTSMAN'S CLUB
17045 COMMERCIAL WAY
BROOKSVILLE, FL 34614

IN ORDER TO INSTALL AND MAINTAIN ELECTRIC SERVICE IT WILL BE NECESSARY TO DRIVE W.R.E.C. VEHICLES AND EQUIPMENT ONTO YOUR PROPERTY, AND TO CUT ALL TREES AND OVERHANGING LIMBS 10' ON EACH SIDE OF W.R.E.C.'S INSTALLED FACILITIES. IN DOING SO W.R.E.C. WILL TAKE REASONABLE PRECAUTIONS BUT WILL NOT BE RESPONSIBLE FOR DAMAGE TO SURFACES THAT DO NOT SUPPORT OUR EQUIPMENT.

IN THE EVENT THAT YOU REQUIRE AN UNDERGROUND SERVICE W.R.E.C. WILL TAKE REASONABLE CARE IN TRENCHING AND BACKFILLING THE AREA BUT WILL NOT BE RESPONSIBLE FOR CONSUMER OWNED FACILITIES NOT LOCATED BY SUNSHINE STATE ONE CALL OF FLORIDA,INC, SOIL AND WEATHER CONDITIONS THAT MAY EFFECT THE ORIGINAL OR FINAL GRADE.

DATE: _____

SIGNED: _____

ENGINEER: _____

2 of 4

West Hernando District Office
10005 Cortez Blvd., Brooksville, FL 34613
FAX (352) 596-5312
(352) 596-4000

Your Touchstone Energy® Partner

Your Touchstone Energy® Partner

WITHLACOOCHEE RIVER ELECTRIC COOPERATIVE, INC.

Donald Taulbee
ENGINEERING SERVICES TECHNICIAN

West Hernando District Office
10005 Cortez Blvd., Brooksville, FL 34613
(352) 596-4000, Ext. 3139
Fax (352) 596-5312

HERNANDO SPORTSMAN'S CLUB, INC.

P. O. BOX 10754
BROOKSVILLE, FL 34603

(352) 597-9931
Fax: (352) 597-8997
Email: hsci@gate.net
Randie W. Rickert *President*
(352) 799-3605
web page: www.hernandosportsmansclub.com

4 of 4

PPE8101

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

ROAD EASEMENT

Easement No. 28781

THIS INDENTURE, made and entered into this 1st day of July, 1992, between the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, acting pursuant to its authority set forth in Section 253.03, Florida Statutes, hereinafter referred to as "GRANTOR", and HERNANDO SPORTSMAN'S CLUB, INC. its successors and assigns, hereinafter referred to as "GRANTEE".

WHEREAS, GRANTOR is the owner of the hereinafter described real property, which is managed by the State of Florida Game and Fresh Water Fish Commission under Lease No. 3586 Amended; and

WHEREAS, GRANTEE desires a road easement across the hereinafter described real property for temporary access to their property described on Exhibit "B" Attached hereto and made part thereof; and

WHEREAS, the managing agency has agreed to the proposed use of this land under this instrument.

NOW THEREFORE, GRANTOR, for good and valuable consideration and mutual covenants and agreements hereinafter contained, has granted, and by these presents does grant, a non-exclusive road easement unto GRANTEE over and across the following described real property in Hernando County, Florida, to wit:

(See Exhibit A Attached)

subject to the following terms and conditions:

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

2. TITLE DISCLAIMER: GRANTOR does not warrant or guarantee any title, right or interest in or to the property described in Exhibit "A" attached hereto.

3. TERM: The term of this easement shall be for a period of fifteen (15) years commencing on June 30, 1992 and ending on June 30, 2007 with a 15 year extension with no additional compensation, unless sooner terminated pursuant to the provisions

of this road easement. GRANTEE reserves the right to cancel this agreement upon giving GRANTOR 30 days written notice.

4. USE OF PROPERTY AND UNDUE WASTE: This road easement shall be limited to maintenance of a 30 foot non-paved road easement, lying 15 feet either side of the center line of an existing road upon and across the property described in Exhibit A during the term of this road easement. This road easement shall be non-exclusive. GRANTOR retains the right to engage in any activities on, over, below or across the road easement area which do not unreasonably interfere with GRANTEE'S exercise of this road easement and further retains the right to grant compatible uses to third parties during the term of this road easement.

GRANTEE shall dispose of, to the satisfaction of GRANTOR, all brush and refuse resulting from the use of this road easement for the uses authorized hereunder. GRANTEE shall take all reasonable precautions to control soil erosion and to prevent any other degradation of the real property described in Exhibit A during the term of this road easement. GRANTEE shall pick up and remove all debris resulting from use of this road easement including, but not limited to, containers, papers, and trash foreign to the road easement and adjacent area and dispose of the same in a satisfactory manner as to leave the road easement and adjacent area clean and free of any such debris. GRANTEE shall not dispose of any contaminants including, but not limited to, hazardous or toxic substances, chemicals or other agents produced or used in GRANTEE'S operations, on this road easement or on any adjacent state land or in any manner not permitted by law.

Upon termination or expiration of this road easement GRANTEE shall restore the lands over which this road easement is granted to substantially the same condition it was upon the effective date of this road easement. GRANTEE agrees that upon termination of this road easement all authorization granted hereunder shall cease and terminate.

5. PAYMENT: No monies are required as payment for road easement granted under this contract, however, special conditions (see paragraph 28) are imposed and serve as compensation.

6. ASSIGNMENT: This road easement shall not be assigned in whole or in part without the prior written consent of GRANTOR. Any assignment made either in whole or in part without the prior written consent of GRANTOR shall be void and without legal effect.

7. RIGHT OF INSPECTION: GRANTOR or its duly authorized agents, representatives or employees shall have the right at any and all times to inspect the road easement and the works and operations of GRANTEE in any matter pertaining to this road easement.

8. BINDING EFFECT AND INUREMENT: This road easement shall be binding on and shall inure to the benefit of the heirs, executors, administrators and assigns of the parties hereto, but nothing contained in this paragraph shall be construed as a consent by GRANTOR to any assignment of this easement or any interest therein by GRANTEE.

9. NON-DISCRIMINATION: GRANTEE shall not discriminate against any individual because of that individual's race, color, religion, sex, national origin, age, disabilities, handicaps, or marital status with respect to any activity occurring within this road easement or upon state lands adjacent to and used as an adjunct of this road easement.

10. INDEMNITY: GRANTEE hereby covenants and agrees to investigate all claims of every nature at its own expense, and to indemnify, protect, defend, save and hold harmless GRANTOR and the State of Florida from any and all claims, actions lawsuits and demands of any kind or nature arising out of this road easement.

11. COMPLIANCE WITH LAWS: GRANTEE agrees that this road easement is contingent upon and subject to GRANTEE 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.

12. VENUE PRIVILEGES: GRANTOR and GRANTEE agree that GRANTOR has venue privilege as to any litigation arising from matters relating to this road easement. Any such litigation

between GRANTOR and GRANTEE shall be initiated and maintained only in Leon County, Florida.

13. ARCHAEOLOGICAL AND HISTORIC SITES: Execution of this road easement 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.

14. PROHIBITIONS AGAINST LIENS OR OTHER ENCUMBRANCES: Fee title to the lands underlying this road easement is held by GRANTOR. GRANTEE shall not do or permit anything to be done which purports to create a lien or encumbrance of any nature against the real property of GRANTOR including, but not limited to, mortgages or construction liens against the real property described in Exhibit A or against any interest of GRANTOR therein.

15. PARTIAL INVALIDITY: If any term, covenant, condition or provision of this road easement shall be ruled by a court of competent jurisdiction to be invalid, void, or unenforceable, the remainder shall remain in full force and effect and shall in no way be affected, impaired or invalidated.

16. SOVEREIGNTY SUBMERGED LANDS: This road easement does not authorize the use of any lands located waterward of the mean or ordinary high water line of any lake, river, stream, creek, bay, estuary, or other water body or the waters or the air space thereabove.

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

18. ENTIRE UNDERSTANDING: This road easement sets forth the entire understanding between the parties and shall only be amended with the prior written approval of GRANTOR.

19. TIME: Time is expressly declared to be of the essence of this road easement.

20. CONVICTION OF FELONY: If GRANTEE or any principal thereof is convicted of a felony during the term of this road

easement, such conviction shall constitute, at the option of GRANTOR, grounds for termination of this road easement agreement.

21. ATTORNEYS' FEES: GRANTEE shall pay all costs, charges and expenses, including attorneys' fees and appellate attorneys' fees, in connection with any dispute arising out of this road easement, including without limitation, any costs and fees incurred or paid by GRANTOR because of the failure on the part of GRANTEE to comply with and abide by each and every one of the stipulations, agreements, covenants and conditions of this road easement, or incurred by GRANTOR in seeking any remedy available to GRANTOR as a result of such failure by GRANTEE.

22. DEFAULT: Should GRANTEE, at any time during the term of this road easement, suffer or permit to be filed against it an involuntary, or voluntary, petition in bankruptcy or institute a composition or an arrangement proceeding under Chapter X or XI of the Chandler Act; or make any assignments for the benefit of its creditor; or should a receiver or trustee be appointed for GRANTEE'S property because of GRANTEE'S insolvency, and the said appointment not vacated within 30 days thereafter; or should GRANTEE'S road easement interest be levied on and the lien thereof not discharged within 30 days after said levy has been made; or should GRANTEE fail promptly to make the necessary returns and reports required of it by state and federal law; or should GRANTEE fail promptly to comply with all governmental regulations, both state and federal; or should GRANTEE fail to comply with any of the terms and conditions of this road easement and such failure shall in any manner jeopardize the rights of GRANTOR; then, in such event, and upon the happening of either or any of said events, GRANTOR shall have the right, at its discretion, to consider the same a default on the part of GRANTEE of the terms and provisions hereof, and, in the event of such default, GRANTOR shall have the option of either declaring this road easement terminated, and the interest of GRANTEE forfeited, or maintaining this road easement in full force and effect and exercising all rights and remedies herein conferred upon LESSOR. The pendency of bankruptcy proceedings or arrangement proceedings to which GRANTEE shall be a party shall not preclude GRANTOR from

exercising either option herein conferred upon it. In the event GRANTEE, or the trustee or receiver of GRANTEE'S property, shall seek an injunction against GRANTOR'S exercise of either option herein conferred, such action on the part of GRANTEE, his trustee or receiver, shall automatically terminate this road easement as of the date of the making such application, and in the event the Court shall enjoin GRANTOR from exercising either option herein conferred, such injunction shall automatically terminate this road easement.

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

24. PAYMENT OF TAXES AND ASSESSMENTS: GRANTEE shall assume full responsibility for and shall pay all liabilities implemented by Grantee that accrue to the road easement area or to the improvements thereon including any and all drainage and special assessments or taxes of every kind and all mechanic's or materialman's liens which may be hereafter lawfully assessed and levied against this road easement.

25. AUTOMATIC REVERSION: This road easement is subject to automatic termination and reversion to GRANTOR when, in the opinion of GRANTOR, this road easement is not used for the purposes outlined herein, and any costs or expenses arising out of the implementation of this clause shall be borne completely, wholly and entirely by GRANTEE.

26. GOVERNING LAW: This road easement shall be governed by and interpreted according to the laws of the State of Florida.

27. SECTION CAPTIONS: Articles, subsections and other captions contained in this road easement are for reference purposes only and are in no way intended to describe, interpret,

define or limit the scope, extent or intent of this road easement or any provisions thereof.

28. SPECIAL CONDITIONS: The following special conditions shall apply to this road easement. Any violation of the following conditions will be just cause to terminated this road easement.

A) GRANTEE agrees to maintain this non-paved road easement in a reasonable manner to the managing agency's satisfaction. If this does not occur the managing agency can notify the GRANTEE by certified mail, and GRANTEE will be given 10 days to correct.

B) GRANTEE agrees to fence and post the boundaries of their property on an as needed basis in the time frame of the construction phases.

C) GRANTEE agrees to construct all facilities on their property to insure safety of the general public on the land surrounding their facility.

D) All firearms transported by the GRANTEE on over or upon this road easement shall be unloaded and cased, and all persons using the road easement must stay within the road easement area. Parking of vehicles will not be allowed on or along the road easement area.

E) GRANTOR reserves the right to relocate the road easement, if relocation is necessary for management purposes, and further understands that any relocation will provide access comparable to that provided by this road easement.

F) GRANTEE shall obtain the written approval of the managing agency to post any signs on State property. The managing agency shall determine the specifications and placement of the sign.

G) GRANTEE shall set aside a conservation area consisting of 30 acres, as described in Exhibit "C," to remain in a natural and undeveloped condition for the life of the easement. No permanent improvements or structures will be placed on this area. This conservation area must be left undeveloped for the life of this road easement, or until such time as GRANTOR accepts other consideration in lieu of this conservation road easement.

H) GRANTEE reserves the right to install utilities on the road easement to its property as described in Exhibit B. The managing agency shall determine the specifications and placement of all utilities on state-owned lands.

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

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

Witness

Witness

By: _____ (SEAL)
DIRECTOR, DIVISION OF STATE LANDS, DEPARTMENT OF NATURAL RESOURCES

"GRANTOR"

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 21st day of September, 1992, by Percy W. Mallison, Jr., as Director, Division of State Lands, Department of Natural Resources.

_____ (SEAL)
NOTARY PUBLIC

CATHY LYNN WATKINS
MY COMMISSION # CC 187822 EXPIRES
March 22, 1996
BONDED THRU TROY FAIN INSURANCE, INC.

My Commission Expires:

Approved as to Form and Legality

By: _____
DNR Attorney

HERNANDO SPORTSMAN'S CLUB, INC.

Witness

Witness

BY: _____ (SEAL)

Its: President

"GRANTEE"

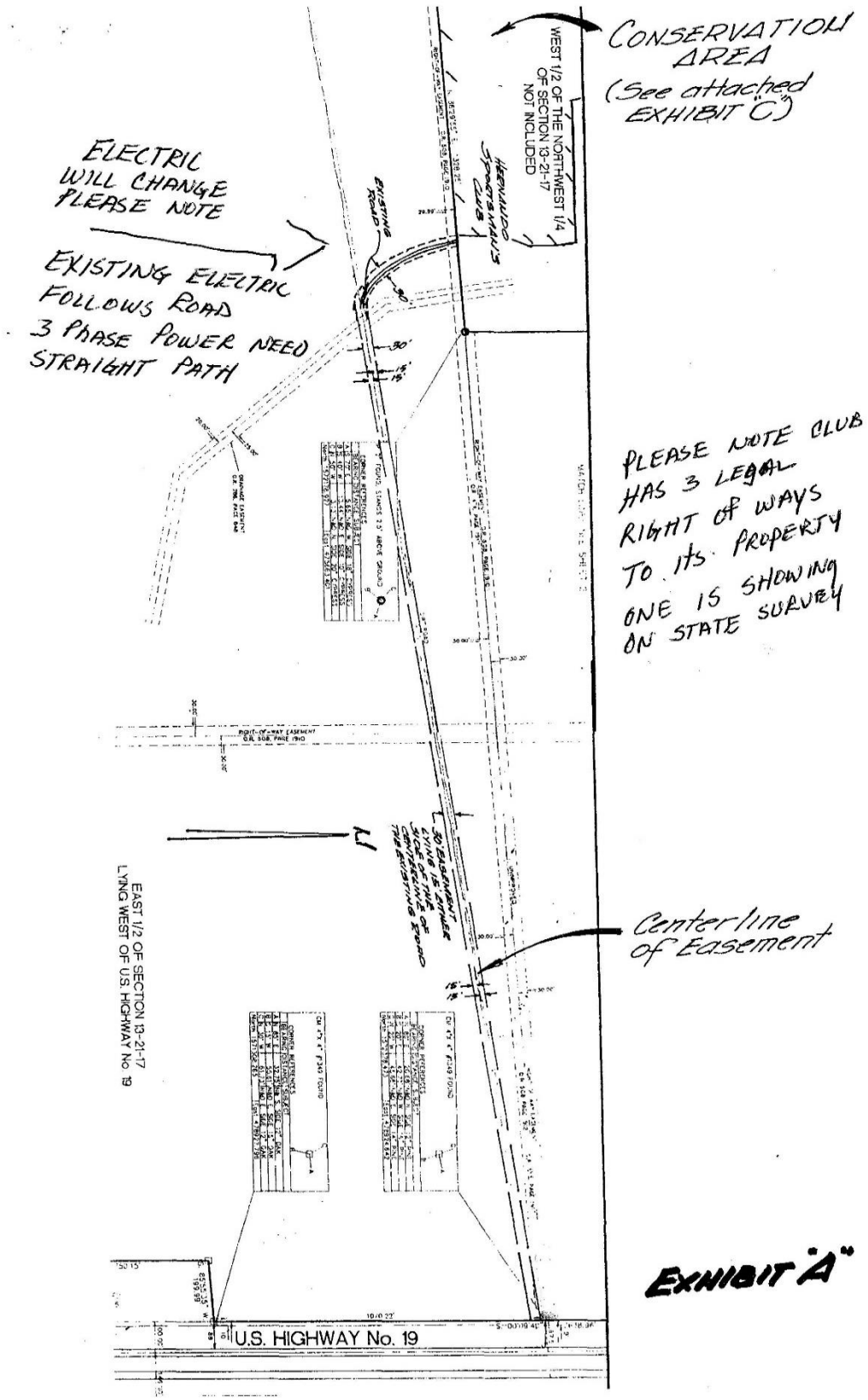
STATE OF Florida
COUNTY OF Hernando

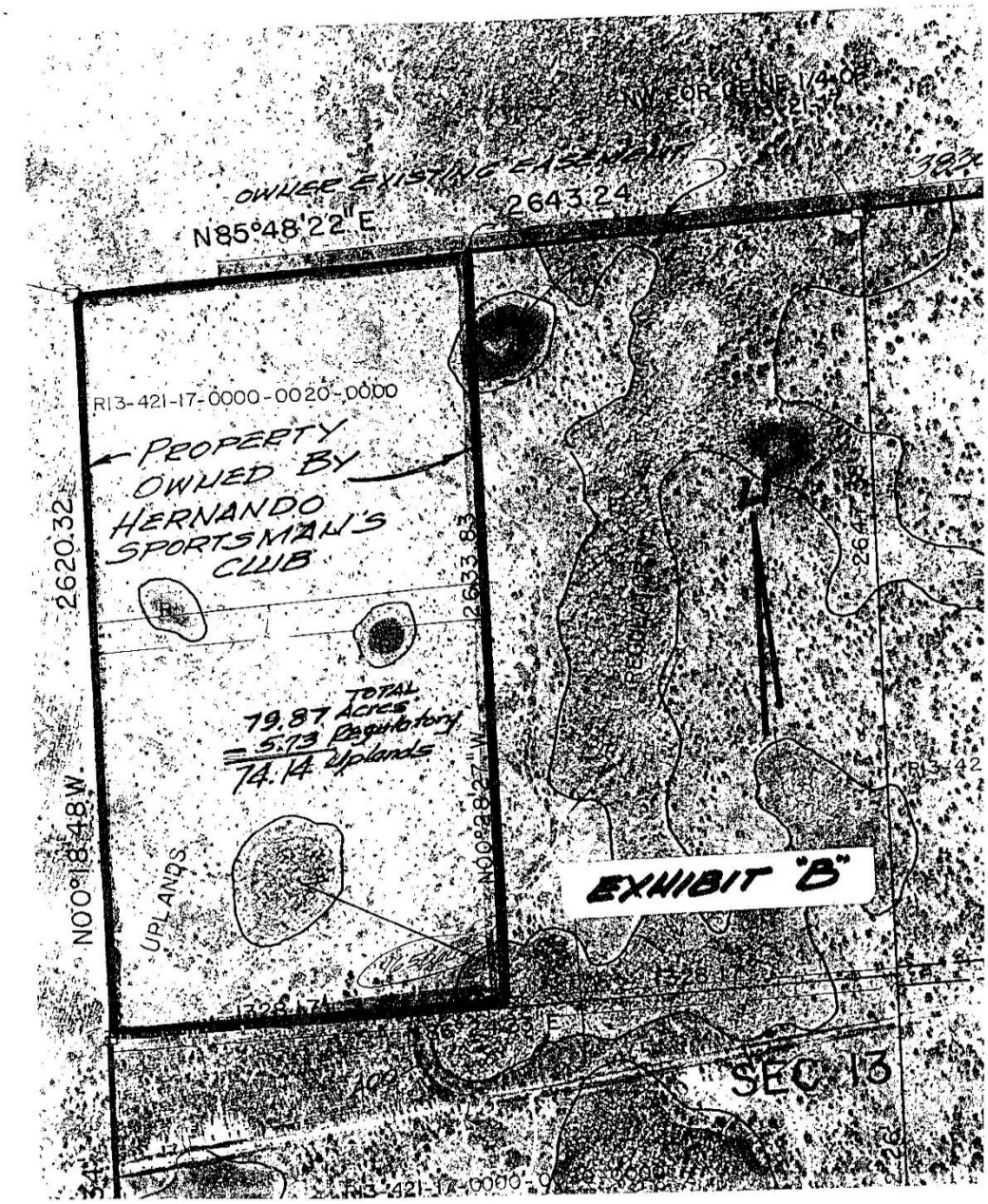
The foregoing instrument was acknowledged before me this 28 day of July, 1992, by Randie W. Rickert, of Hernando Sportsmans Club, a Florida corporation on behalf of the corporation.

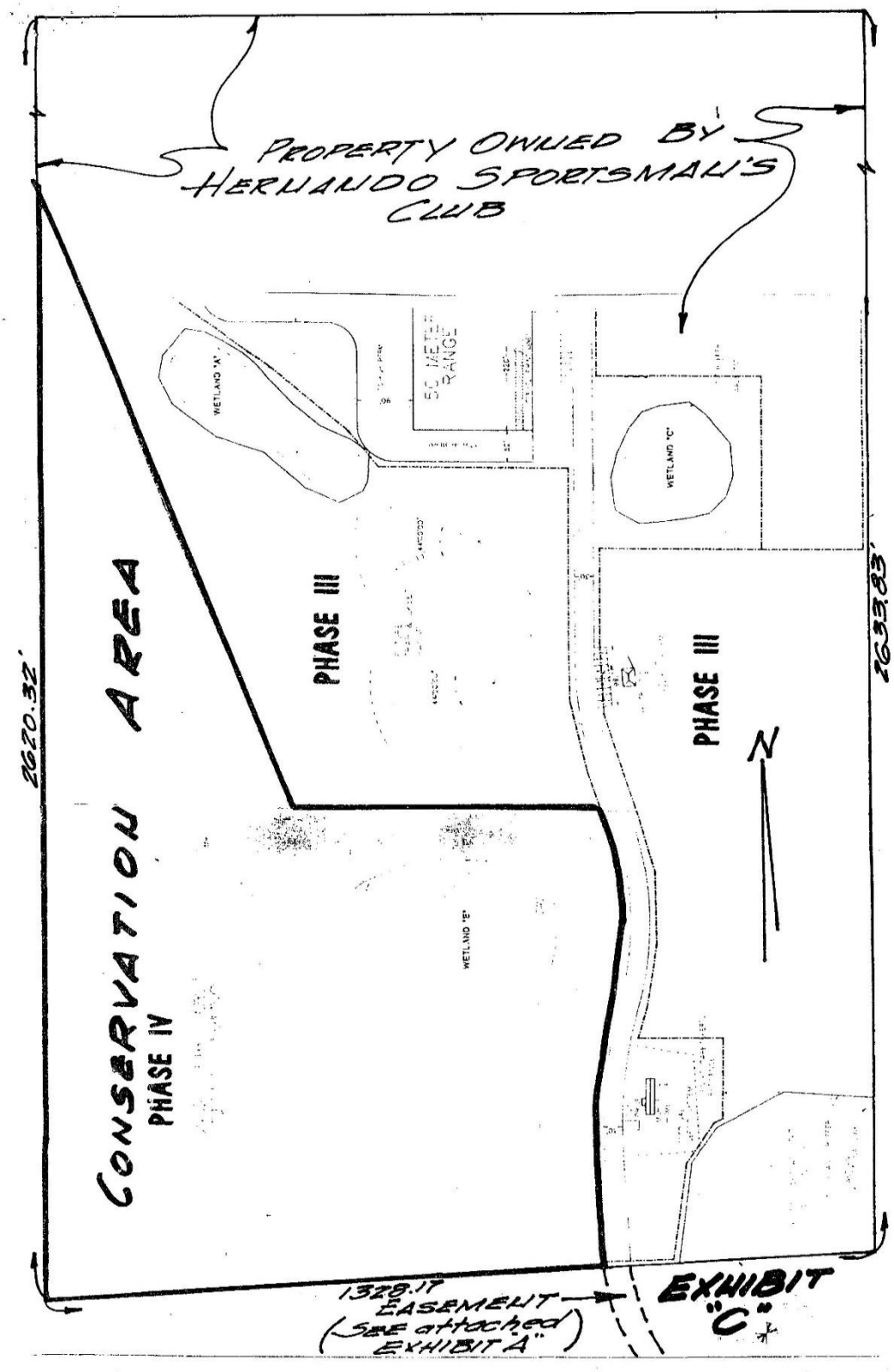
_____ (SEAL)
NOTARY PUBLIC

My Commission Expires:

NOTARY PUBLIC STATE OF FLORIDA
MY COMMISSION EXP. MAY 27,1995
BONDED THRU GENERAL INS. UND.


CONSERVATION AREA
(See attached EXHIBIT C)
WEST 1/2 OF THE NORTHWEST 1/4 OF SECTION 13-21-17 NOT INCLUDED
HERNANDO SPORTSMAN'S CLUB
ELECTRIC WILL CHANGE PLEASE NOTE
EXISTING ELECTRIC FOLLOWS ROAD
3 PHASE POWER NEED STRAIGHT PATH
EXISTING ROAD
PLEASE NOTE CLUB HAS 3 LEGAL RIGHT OF WAYS TO ITS PROPERTY ONE IS SHOWING ON STATE SURVEY
Center line of Easement
EAST 1/2 OF SECTION 13-21-17 LYING WEST OF U.S. HIGHWAY No. 19
U.S. HIGHWAY No. 19
EXHIBIT "A"


OWNERS EXISTING EASEMENT
N85°48'22"E
2643.24
R13-421-17-0000-0020-0000
PROPERTY OWNED BY HERNANDO SPORTSMAN'S CLUB
79.87 TOTAL Acres
- 5.13 Regulatory
74.14 Uplands
2620.32
N00°18'48"W
2633.83
N00°48'27"W
UPLANDS
EXHIBIT "B"
SEC. 13
R13-421-17-0000-0


PROPERTY OWNED BY
HERNANDO SPORTSMAN'S
CLUB
50 METER
RANGE
WETLAND "A"
WETLAND "C"
WETLAND "B"
PHASE III
PHASE III
CONSERVATION AREA
PHASE IV
2620.32'
2633.83'
N
1328.17
EASEMENT
(SEE attached
EXHIBIT A")
EXHIBIT
"C"

11.2.2 Crandall deed

** OFFICIAL RECORDS **
BK: 1141 PG: 348

FILE# 97-030800
HERNANDO COUNTY, FLORIDA

** OFFICIAL RECORDS **
BK: 1137 PG: 291

FILE# 97-027594
HERNANDO COUNTY, FLORIDA

RCD Jul 23 1997 12:15pm
KAREN NICOLAI, CLERK

Prepared by and Return to:
DAVID R. CARTER, Attorney at Law
7419 U.S. Hwy. 19
New Port Richey, FL 34652-1240

Tax Parcel # R27 N22 17 0000 0090 0020

RR 10.50 10.50

WARRANTY DEED DEED DOC STAMPS 0.70
07/23/97 BRC Deputy Clk

THIS INDENTURE, made this 17 day of July, 1997, **BETWEEN**

JOHN CRANDALL, joined by his wife LINDA G. CRANDALL , as GRANTOR*,

and whose Post Office address is: 8135 Ostrom Way Brooksville Fla 34613
of the County of Hernando, State of Florida,
and

JOHN CRANDALL AND LINDA G. CRANDALL, his wife

and whose Post Office address is: 8135 Ostrom Way Brooksville, Fla 34613
of the County of Hernando, State of Florida,

Re-record to correct legal description

WITNESSETH that said grantor, for and in consideration of the sum of TEN AND 00/100 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 Hernando County, Florida, to-wit:

NE. 1/4 SE 1/4

The East 1/4 of the South 1/2 of the SW 1/4 of the NW 1/4 of Section 27, Township 22 South, Range 17 East, Hernando County, Florida.
Less the North 25 feet for road right-of-way together with easements as recorded in O.R. Book 443, Page 95 and O.R. Book 445, Page 1327

Subject to easements, restrictions and reservations of record.

Subject to taxes and assessments for the year 1996 and thereafter.

RCD Aug 13 1997 12:44pm
KAREN NICOLAI, CLERK

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

*"Grantor" and "Grantee" are used for singular or plural, as the context requires.

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

Certificate

I hereby certify that I prepared this instrument from information given to me by the parties hereto. I do not guarantee either marketability of title or accuracy of description as I did not examine the title of the property involved.

** OFFICIAL RECORDS **
BK: 1141 PG: 349

** OFFICIAL RECORDS **
BK: 1137 PG: 292

Signed, sealed and delivered
in the presence of:

Witness #1 Signature

Witness #1 Printed Name

Witness #2 Signature

Witness #2 Printed name

John Crandall

Linda G. Crandall

STATE OF FLORIDA

COUNTY OF HERNANDO

I HEREBY CERTIFY that on this day, before me, an officer duly qualified to take acknowledgements, personally appeared John Crandall and Linda G. Crandall, to me known to be the person described in and who executed the foregoing instrument and acknowledged before me that she executed the same. I relied upon the following form of identification of the above named person Personally known and that an oath was taken.

WITNESS my hand and official seal in the County and State last aforesaid this 17 day of July, 1997.

NOTARY PUBLIC

My Commission Expires

(Notary Rubber Stamp Seal)

Rosalie Meyer
Notary Public, State of Florida
Commission No. CC 607937
My Commission Exp. 2/22/2001
Bonded Through Fla. Notary Services & Bonding Co.

11.2.3 Harding deed

Instr #2020009551 BK: 3806 PG: 821, Filed & Recorded: 2/13/2020 11:04 AM TLM Deputy Clk, #Pgs:1
Doug Chorvat, Jr.,Clerk of the Circuit Court Hernando CO FL Rec Fees: $10.00 Deed Doc Stamp: $0.70

1

Quitclaim Deed

This Quitclaim Deed, made this 31 day of **January, 2020** A.D., between **Blake Harding as Successor Trustee of the Lois E. Harding Trust Dated May 22, 1996,** whose mailing address is 1316 N. Easy Street, Payson, Arizona 85541, **grantor,** and **Blake Harding as Trustee for the Harding Family Trust Dated December 5, 2018** whose mailing address is 1316 N. Easy Street, Payson, Arizona, 85541, **grantee.**

Witnesseth, that the GRANTOR, for and in consideration of the sum of **TEN DOLLARS ($10.00),** and other good and valuable consideration to GRANTOR in hand paid by GRANTEE, the receipt whereof is hereby acknowledged, has granted, bargained and quitclaimed to the said GRANTEE and GRANTEE'S heirs, successors and assigns forever, the following described land, situate, lying and being in the **County of Hernando, State of Florida** to wit:

Parcel ID: R32-223-17-3960-00005-0030
5414 Darlene St.
Lot 3, Weeki Wachee Gardens, Number 4, as per plat thereof as recorded in plat book 7, Page 1A, Public Records of Hernando County, Florida.
Parcel ID: R32-222-17-3960-0000-0150
5458 Darlene St.
Lot 15, Weeki Wachee Gardens, Unit No. Four, as per plat thereof recorded in Plat Book 7, Page 1, of the Public Records of Hernando County, Florida.
Parcel ID: R27-422-17-0000-0010-0010
8132 Ostrom Way
The East ¼ of the North ½ of the Southwest ¼ of the Northeast ¼ of Section 27, Township 22 South, Range 17 East, Public Records of Hernando County, Florida. Reserving the South 25 feet thereof for road right of way, TOGETHER with the right if ingress and egress over and across easements as recorded in O.R. Book 443, Page 95, and O.R. Book 445, Page 1372, Public Records of Hernando County, Florida.
Parcel ID: R32-222-17-3960-0000-0170
5464 Darlene St.
Lot 17, Weeki Wachee Gardens, Number Four, as per plat thereof as recorded in Plat Book 7, Page 1, Public Records of Hernando County, Florida, LESS a Parcel more particularly described as follows: Beginning at the NW corner of Lot 17 of Weeki Wachee Gardens Number Four as recorded in Plat Book 7, Page 1, Public Records of Hernando County, Florida, run thence South 19° 22'12" West 110.00 feet; thence South 84° 19'00" East 8.31 feet; thence North 15° 15 of' 36" East, 108.34 feet to the Point of Beginning, together with Mobile Home ID#8073119.

This instrument was prepared from information given by the parties hereto and there is no guarantee of the marketability of title or accuracy of description as there was no examination of the title of the property involved.
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 grantor, either in law or equity, for the use, benefit and profit of the said grantee forever.
In Witness Whereof, the grantor has hereunto set his hand and seal the day and year first above written.
Signed, sealed and delivered in our presence:

Witness printed Name: Robert Pearson

Witness printed Name: Harrison DeHaan

Blake Harding, Grantor (Seal)

STATE OF ARIZONA
COUNTY OF GILA
The foregoing instrument was acknowledged before me this 31st day of **January, 2020,** by **Blake Harding** ( ) who is personally known to me or who has produced Arizona Driver's License as identification.

LISA JONES
Notary Public - State of Arizona
GILA COUNTY
My Commission Expires
November 3, 2021

Notary Public
Printed Name: Lisa Jones
My Commission Expires: 11-3-21

11.2.4 Easement No. 30687

TFI Cover Sheet

DM ID _____

Document Type: Trustees of the Internal Improvement Trust Fund Instruments

Instrument: [ ]Deed [ ]Lease [✓]Easement [ ]Permit [ ]Management Agreement

[ ]Use Agreement [ ]Disclaimer [ ]Quitclaim [ ]Dedication [ ]Release

[ ]Acts of Legislation [ ]Other

Instrument Number: 30687

Extension: 000

File Number: 0000

Document Date: 12-18-2002

Consideration: _____

Water Body: _____

Reservations / Reverter: Y/Y

Original County: Hernando

Section: 27

Township: 22S

Range: 17E

Total Area / Area Unit: _____ (A) Acreage (S) Square Feet

Comments: Within Lease 3586

The information on this page was collected during the prep phase of scanning and is an aide for data entry. Please refer to the document for actual information.

PNE1

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

EASEMENT

Easement Number 30687

THIS INDENTURE, is made and entered into this 18th day of December, 2002, between the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, acting pursuant to its authority set forth in Section 253.03, Florida Statutes, hereinafter referred to as "GRANTOR", and JERRY E. GRIGG, his successors and assigns, hereinafter referred to as "GRANTEE".

WHEREAS, GRANTOR is the owner of the hereinafter described real property which is managed by the STATE OF FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION under Lease No. 3586; and

WHEREEAS, GRANTEE is the owner of an adjoining parcel of land which is more particularly described in Exhibit "B"("GRANTEE'S Property"); and

WHEREAS, GRANTEE desires an easement across hereinafter described real property for the installation, operation and maintenance of overhead power lines and poles; and

WHEREAS, the managing agency has agreed to the proposed use of this land under this instrument.

NOW THEREFORE, GRANTOR, for and in consideration of mutual covenants and agreements hereinafter contained, has granted, and by these presents does grant unto GRANTEE for the use and benefit of and appurtent to GRANTEE'S Property, a non-exclusive easement over and across the following described real property in Hernando County, Florida, to wit:

(See Exhibit "A" Attached)

subject to the following terms and conditions:

1. DELEGATIONS OF AUTHORITY: GRANTOR'S responsibilities and obligations herein shall be exercised by the Division of State Lands, Department of Environmental Protection.

2. TITLE DISCLAIMER: GRANTOR does not warrant or guarantee any title, right or interest in or to the property described in Exhibit "A" attached hereto.

3. TERM: GRANTOR does hereby grant to the GRANTEE and his successors and permitted assigns an easement for as long as the easement is used and maintained for private utilities to GRANTEE'S Property. If the easement is ever abandoned for private utility purposes, all right, title, and interest conveyed under this instrument shall automatically revert to GRANTOR, unless

sooner terminated pursuant to the provisions of this easement.

4. USE OF PROPERTY AND UNDUE WASTE: This easement shall be limited to the installation and maintenance of an overhead electrical power line and poles, upon and across the property described in Exhibit "A" during the term of this easement. This easement shall be non-exclusive. GRANTOR retains the right to engage in any activities on, over, below, or across the easement area which do not unreasonably interfere with GRANTEE'S exercise of this easement and further retains the right to grant compatible uses to third parties during the term of this easement.

GRANTEE shall dispose of, to the satisfaction of GRANTOR, all brush and refuse resulting from the clearing of the land for the uses authorized hereunder. If timber is removed in connection with clearing this easement, the net proceeds derived from the sale of such timber shall accrue to GRANTOR. GRANTEE shall take all reasonable precautions to control soil erosion and to prevent any other degradation of the real property described in Exhibit "A" during the term of this easement. GRANTEE shall not remove water from any source on this easement including, but not limited to, a watercourse, reservoir, spring, or well, without the prior written approval of GRANTOR. GRANTEE shall clear, remove, and pick up all debris including, but not limited to, containers, papers, discarded tools, and trash foreign to the work locations and dispose of the same in a satisfactory manner as to leave the work locations clean and free of any such debris. GRANTEE, its agents, successors, or assigns, shall not dispose of any contaminants including, but not limited to, hazardous or toxic substances, petroleum, fuel oil, or petroleum by-products, chemicals, or other agents produced or used in GRANTEE'S operations on this easement or on any adjacent state land or in any manner not permitted by law. GRANTEE shall be liable for all costs associated with any cleanup of the subject property, which is a result of GRANTEE'S operations and use of the subject property.

Upon termination or expiration of this easement GRANTEE shall restore the lands over which this easement is granted to substantially the same condition it was upon the effective date of this easement. GRANTEE agrees that upon termination or expiration of this easement all authorization granted hereunder shall cease and terminate.

If the lands described in Exhibit "A" are under lease to another agency, GRANTEE shall obtain the consent of such agency prior to engaging in

any use of the real property authorized herein.

5. PAYMENT: For this easement GRANTEE shall pay a total of $2,583. The entire payment shall be made by certified or cashiers check payable to the Department of Environmental Protection prior to final execution of this easement.

6. ASSIGNMENT: This easement shall not be assigned in whole or in part without the prior written consent of GRANTOR. Any assignment made either in whole or in part without the prior written consent of GRANTOR shall be void and without legal effect. No consent by Grantor will be required for an assignment made in connection with a conveyance or transfer of the GRANTEE'S Property.

7. RIGHT OF INSPECTION: GRANTOR or its duly authorized agents, representatives, or employees shall have the right at any and all times to inspect this easement and the works and operations of GRANTEE in any matter pertaining to this easement.

8. BINDING EFFECT AND INUREMENT: This easement shall be binding on and shall inure to the benefit of the heirs, personal representatives, legal representatives, successors and permitted assigns of the parties hereto, but nothing contained in this paragraph shall be construed as a consent by GRANTOR to any assignment of this easement or any interest therein by GRANTEE.

9. NON-DISCRIMINATION: GRANTEE shall not discriminate against any individual because of that individual's race, color, religion, sex, national origin, age, handicaps, or marital status with respect to any activity occurring within this easement or upon lands adjacent to and used as an adjunct of this easement.

10. INDEMNITY: GRANTEE hereby covenants and agrees to investigate all claims of every nature at its own expense, and to indemnify, protect, defend, save, and hold harmless GRANTOR and the State of Florida from any and all claims, actions, lawsuits, and demands of any kind or nature arising out of this easement.

11. COMPLIANCE WITH LAWS: GRANTEE agrees that this easement is contingent upon and subject to GRANTEE 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.

12. VENUE PRIVILEGES: GRANTOR and GRANTEE agree that GRANTOR has venue privilege as to any litigation arising from matters relating to this easement. Any such litigation between GRANTOR and GRANTEE shall be initiated and maintained only in Leon County, Florida.

13. ARCHAEOLOGICAL AND HISTORIC SITES: Execution of this easement 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.

14. PROHIBITIONS AGAINST LIENS OR OTHER ENCUMBRANCES: Fee title to the lands underlying this easement is held by GRANTOR. GRANTEE shall not do or permit anything to be done which purports to create a lien or encumbrance of any nature against the real property of GRANTOR including, but not limited to, mortgages or construction liens against the real property described in Exhibit "A" or against any interest of GRANTOR therein.

15. PARTIAL INVALIDITY: If any term, covenant, condition, or provision of this easement shall be ruled by a court of competent jurisdiction to be invalid, void, or unenforceable, the remainder shall remain in full force and effect and shall in no way be affected, impaired, or invalidated.

16. SOVEREIGNTY SUBMERGED LANDS: This easement does not authorize the use of any lands located waterward of the mean or ordinary high water line of any lake, river, stream, creek, bay, estuary, or other water body or the waters or the air space thereabove.

17. ENTIRE UNDERSTANDING: This easement sets forth the entire understanding between the parties and shall only be amended with the prior written approval of GRANTOR.

18. TIME: Time is expressly declared to be of the essence of this easement.

19. CONVICTION OF FELONY: If GRANTEE or any principal thereof is convicted of a felony during the term of this easement, such conviction shall constitute, at the option of GRANTOR, grounds for termination of this easement.

20. DEFAULT AND FORFEITURE: Should GRANTEE, at any time during the term of this easement, suffer or permit to be filed against it an involuntary, or voluntary, petition in bankruptcy or institute a composition or an

arrangement proceeding under Chapter X or XI of the Chandler Act or make any assignments for the benefit of its creditor; or should a receiver or trustee be appointed for GRANTEE'S property because of GRANTEE'S insolvency, and the said appointment not vacated within thirty days thereafter; or should GRANTEE'S easement interest be levied on and the lien thereof not discharged within thirty days after said levy has been made; or should GRANTEE fail promptly to make the necessary returns and reports required of it by state and federal law; or should GRANTEE fail promptly to comply with all governmental regulations, both state and federal; or should GRANTEE fail to comply with any of the terms and conditions of this easement and such failure shall in any manner jeopardize the rights of GRANTOR; then, in such event, and upon the happening of either or any of said events, GRANTOR shall have the right, at its discretion, to consider the same a default on the part of GRANTEE of the terms and provisions hereof, and, in the event of such default, GRANTOR shall have the option of either declaring this easement terminated, and the interest of GRANTEE forfeited, or maintaining this easement in full force and effect and exercising all rights and remedies herein conferred upon GRANTOR. The pendency of bankruptcy proceedings or arrangement proceedings to which GRANTEE shall be a party shall not preclude GRANTOR from exercising either option herein conferred upon GRANTOR. In the event GRANTEE, or the trustee or receiver of GRANTEE'S property, shall seek an injunction against GRANTOR'S exercise of either option herein conferred, such action on the part of GRANTEE, his trustee or receiver, shall automatically terminate this easement as of the date of the making of such application, and in the event the Court shall enjoin GRANTOR from exercising either option herein conferred, such injunction shall automatically terminate this easement.

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

22. PAYMENT OF TAXES AND ASSESSMENTS: GRANTEE shall assume full responsibility for and shall pay all liabilities that accrue to the easement

area or to the improvements thereon including any and all drainage and special assessments or taxes of every kind and all mechanic's or materialman's liens which may be hereafter lawfully assessed and levied against this easement.

23. AUTOMATIC REVERSION: This easement is subject to automatic termination and reversion to GRANTOR when, in the opinion of GRANTOR, this easement is not used for the purposes outlined herein, and any costs or expenses arising out of the implementation of this clause shall be borne completely, wholly and entirely by GRANTEE.

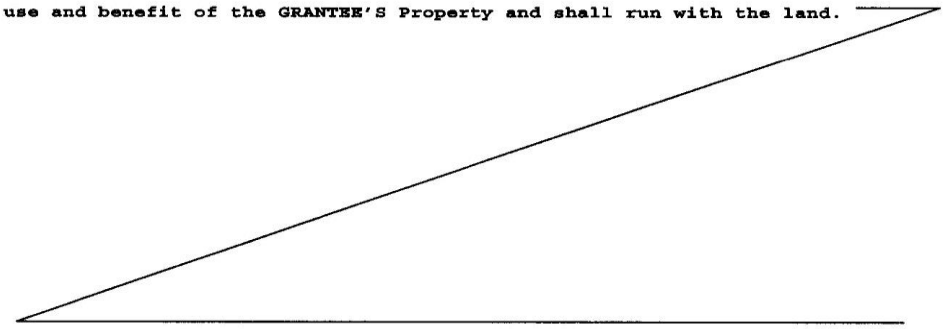
24. RECORDING OF EASEMENT: The GRANTEE, at its own expense, shall record this fully executed easement in its entirety in the public records of the county within which the easement site is located within fourteen days after receipt, and shall provide to the GRANTOR within ten days following the recordation a copy of the recorded easement in its entirety which contains the O.R. Book and Pages at which the easement is recorded. Failure to comply with this paragraph shall constitute grounds for immediate termination of this easement agreement at the option of the GRANTOR.

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

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

27. SPECIAL CONDITIONS: The following special conditions shall apply to this easement: None.

28. APPURTENANT: The easement granted herein is appurtenant to and for the use and benefit of the GRANTEE'S Property and shall run with the land.



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

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

Witness

By: ~~ROBERT J. LOVERN, ASSISTANT~~ DIRECTOR, DIVISION OF STATE LANDS, DEPARTMENT OF ENVIRONMENTAL PROTECTION

Print/Type Witness Name

"GRANTOR"

Witness

Print/Type Witness Name

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 18th day of December, 2002, by ~~Robert Lovern, Assistant~~ Director, Division of State Lands, Department of Environmental Protection, as agent for and on behalf of the Florida Board of Trustees of the Internal Improvement Trust Fund. ~~He~~ She is personally known to me.

Notary Public, State of Florida

Avis G. Lockett
Print/Type Name of Notary
MY COMMISSION # DD 000219 EXPIRES
September 19, 2004
BONDED THRU TROY FAIN INSURANCE, INC.

Commission Number:

Commission Expires:

Approved as to Form and Legality

By: _____
DEP Attorney

Witness
Print/Type Witness Name

Witness
Print/Type Witness Name

JERRY E. GRIGG

"GRANTEE"

STATE OF FLORIDA
COUNTY OF HERNANDO

The foregoing instrument was acknowledged before me this 22 day of OCTOBER, 2002 by Jerry E. Grigg. He is personally known to me or has produced _____ as identification.

Notary Public State of Florida

Print/Type Notary Name

Commission Number:

Commission Expires:

OFFICIAL NOTARY SEAL
D[illegible] SASSER
NOTARY PUBLIC STATE OF FLORIDA
COMMISSION NO. CC964553
MY COMMISSION EXP. SEPT 25,2004

EXHIBIT "A"

LEGAL DESCRIPTION OF THE EASEMENT

20.00 FOOT PRIVATE UTILITY EASEMENT:

A UTILITY EASEMENT ACROSS A 20 FOOT STRIP OF LAND LYING 10.00 FEET ON EACH SIDE OF A CENTER LINE DESCRIBED AS FOLLOWS: COMMENCE AT THE WEST 1/4 CORNER OF SECTION 27, TOWNSHIP 22 SOUTH, RANGE 17 EAST, HERNANDO COUNTY, FLORIDA; THENCE RUN ALONG THE EAST-WEST 1/4 SECTION LINE, S88°24'37"E, A DISTANCE OF 1330.09 FEET TO THE SW CORNER OF THE SE 1/4 OF THE NW 1/4 OF SAID SECTION 27; THENCE RUN N01°16'02"E ALONG THE WEST LINE OF THE SW 1/4 OF THE SE 1/4 OF THE NW 1/4 OF SAID SECTION 27, A DISTANCE OF 662.72 FEET TO THE SW CORNER OF PARCEL OF LAND DESCRIBED AS; THE WEST 1/2 OF THE NW 1/4 OF THE SE 1/4 OF THE NW 1/4 OF SAID SECTION 27;THENCE RUN ALONG THE WEST LINE OF SAID PARCEL, N01°16'02"E, A DISTANCE OF 176.95 FEET; THENCE RUN S88°43'58"E, A DISTANCE OF 54.10 FEET; THENCE RUN SOUTH 176.95 FEET TO A POINT OF BEGINNING; THENCE RUN ALONG SAID CENTER LINE SOUTH, A DISTANCE OF 178.83 FEET, THENCE RUN S87°38'08"E, A DISTANCE OF 582.41 FEET; THENCE RUN S76°44'25"E, A DISTANCE OF 482.60 FEET; THENCE RUN 29°49'43"E. A DISTANCE OF 375.13 FEET TO A POINT OF TERMINATION.

EXHIBIT "B"

LEGAL DESCRIPTION OF GRANTEE'S PROPERTY

** OFFICIAL RECORDS **
BK: 1296 PG: 514

This Document Prepared By and Return to:
David C. Sasser, Esq.
Johnston & Sasser, P.A.
29 S. Brooksville Avenue
Brooksville, FL 34601

FILE# 99-045604
HERNANDO COUNTY, FLORIDA

RCD Oct 01 1999 03:57pm
KAREN NICOLAI, CLERK

Parcel ID Number: R27 422 17 0000 0020 0000

DEED DOC STAMPS 140.00
10/01/99 _____ Deputy Clk

Warranty Deed

This Indenture, Made this 1st day of October, 1999 A.D., Between
The Palmore Family Trust, u/d/t dated February 22, 1988

of the County of Hernando, State of Florida, grantor, and
Jerry E. Grigg

whose address is: 8588 Ostrom Way, Brooksville, FL 34613

of the County of Hernando, State of Florida, grantee.

Witnesseth that the GRANTOR, for and in consideration of the sum of

----------TEN DOLLARS ($10)---------- DOLLARS,

and other good and valuable consideration to GRANTOR in hand paid by GRANTEE, the receipt whereof is hereby acknowledged, has granted, bargained and sold to the said GRANTEE and GRANTEE'S heirs, successors and assigns forever, the following described land, situate, lying and being in the County of Hernando State of Florida to wit:

The West 1/2 of the NW 1/4 of the SE 1/4 of the NW 1/4 of Section 27, Township 22 South, Range 17 East, Hernando County, Florida. TOGETHER WITH an easment for ingress and egress over and across a 30 foot strip of land lying 15.00 feet on each side of a center line described as follows: Beginning at a point 45.00 feet East of the West 1/4 corner of said Section 27, on the East-West 1/4 Section Line; thence run to a point 15.00 feet West of the SE corner of the West 1/2 of the NW 1/4 of the SE 1/4 of the NW 1/4 of said Section 27. TOGETHER WITH an easement for ingress and egress over, across and upon that part of the East 30.00 feet of the West 60.00 feet of the NW 1/4 of SW 1/4 of said Section 27, lying North of State Road 50.

SUBJECT TO mineral reservations recorded in deed book 107, page 402, public records of Hernando County, Florida.
SUBJECT TO terms and provisions of the Easement recorded in O.R. Book 1017, page 229, public records of Hernando County, Florida.

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

Witness Whereof, the grantor has hereunto set its hand and seal the day and year first above written.

ned, sealed and delivered in our presence:

The Palmore Family Trust, u/d/t dated February 22, 1988

Kristen L. Jarvis
inted Name: Kristen L. Jarvis
tness

By: Richard T. Palmore (Seal)
Richard T. Palmore, Trustee
P.O. Address: 5131 Springwood Drive, Spring Hill, FL 34609

inted Name:
tness

By: Norma Joan Palmore (Seal)
Norma Joan Palmore, Trustee
P.O. Address: 5131 Springwood Drive, Spring Hill, FL 34609

Page 10 of 10
Easement No. 30687
R/6/2000

11.2.5 Drainage Easement

DIVISION LOG # `1982 AGREEMENT NUMBER

AGREEMENT ROUTING REVIEW FORM

CONTRACTOR S&D FLORIDA SEVILLE, LTD / BOT

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

PROJECT TITLE CHASAHOWITZKA WMA - EASEMENT – DRAINAGE RETENTION POND AT SAVILLE

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 _X_ EASEMENT/DEED __LEASE (INCLUDES WMA OR FMA LEASES)

AGREEMENT BEGINNING DATE/EXECUTION 8/27/08 END DATE INDEFINITE OPTION FOR _____YEARS TOTAL

CONTRACT AMOUNT $_____ PAYMENT AMOUNT $_____

BILLING PERIODS: ___MONTHLY ___QUARTERLY ___ANNUALLY ___OTHER_____

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

****NEW EXPENDITURE:** (1) Attach a copy of the State Project checklist or, for Existing State Projects, show the CSFA No._____
CONTRACTS (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		11/12/09	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

11/17/09

Mospens, Richard

From: Given, Aaron
Sent: Thursday, November 29, 2007 8:41 AM
To: Mospens, Richard
Subject: RE: Drainage retention pond at Seville

Thanks for looking into this for us.

Aaron

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Aaron Given
Biological Scientist II
Florida Fish and Wildlife Conservation Commission
Chassahowitzka Wildlife Management Area
17260 Necklace Warbler Road
Brooksville, FL 34614
(352) 592-5634

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

From: Mospens, Richard
Sent: Wednesday, November 28, 2007 2:52 PM
To: Given, Aaron
Subject: RE: Drainage retention pond at Seville

Aaron,
I suggest you contact S & D Florida Seville, Ltd. (S&D) on the matter. Without going to DEP/DSL/BSM for their input, I feel confortable that I have an answer. In the deed you mentioned, under the parcel numbers on the first page, it is stated that the grantor, S & D, reserves a perpetual, non-exclusive easement for ingress, egress and drainage on the property described in Exhibit B. If you follow those legal descriptions (of which there are 4 and we are concerned with 4 drainage areas), the legal descriptions mention that the 1st one is along the south side of the Seville Pkwy ROW, while the other 3 are along the north ROW. Those three legal descriptions are 4, 5 and 9 courses (calls and distances) along the north side of the Seville Pkwy ROW. Also, if you follow the distances for each legal description, they are about the right length to match the general outlined shape in your map. Since S&D is stated to be responsible for the construction, installation, maintenance and repair of the drainage facilities, I suggest, subject to S&D confirming I am accurate, you install gates to each of the areas and make sure S&D has the lock combination or key to each gate. Let me know. Thanks. -- Rich

From: Given, Aaron
Sent: Wednesday, November 28, 2007 12:40 PM
To: Mospens, Richard
Subject: Drainage retention pond at Seville

Rich,

I am trying to figure out who, if anybody, has the easement for the 4 drainage retention areas located on the Seville tract of Chassahowitzka. The deed book # is 1215 and pg #'s are 1051-1059. Exhibit B describes the 4 retention areas (I think). I also attached a map. Let me know if you need more information.

Thanks,
Aaron

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Aaron Given
Biological Scientist II
Florida Fish and Wildlife Conservation Commission
Chassahowitzka Wildlife Management Area
17260 Necklace Warbler Road
Brooksville, FL 34614

11/29/2007
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

This Instrument Prepared By and Please Return To:

Wendi McAleese
American Home Title, Inc
6703 North Himes Avenue
Tampa, FL 33614

R

PARTS OF THIS DOCUMENT ARE OF POOR QUALITY AND MAY NOT BE LEGIBLE

** OFFICIAL RECORDS **
BK: 1215 PG: 1051

FILE# 98-038118
HERNANDO COUNTY, FLORIDA

RCD Sep 01 1998 10:36am
KAREN NICOLAI, CLERK

DEED DOC STAMPS 40257.00
09/01/98 Deputy Clk

A42.00

WARRANTY DEED

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

THIS INDENTURE, **made this** 27th day of August, A.D. 1998, between **S & D Florida Seville, Ltd., a Texas Limited Partnership**, whose address is 15851 Dallas Parkway Suite 1120, Dallas, Texas, 75248, 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 HernandoCounty, Florida, to-wit:

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

Property Appraiser's Parcel Identification Number: R07-421-18-0000-0010-0000, R04-421-18-0000-0010-0000, R09-421-18-0000-0010-0000, R10-421-18-0000-0010-0000 & R16-421-18-0000-0010-0000

Grantor hereby reserves unto Grantor, its successors and assigns, a perpetual, non-exclusive easement for ingress, egress, and drainage, including construction, installation, maintenance and repair of drainage facilities over, across, under and through the property described in Exhibit "B" attached hereto and incorporated herein by reference ("Retention Pond Easement"), together with the right to assign all of Grantor's rights, privileges and interests thereunder. Grantor acknowledges that Grantor, its successors and assigns shall be responsible for maintenance of the Retention Pond Easement, and for any damage to person or property which may occur on Grantee's property as a result of Grantor exercising any rights reserved hereunder. This easement shall run with the land and be binding upon Grantor, its successors and assigns.

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

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

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

Signed, sealed and delivered in the presence of:

(Signature of First Witness)

Bryan Gibson
Printed name of First Witness

S & D Florida Seville, Ltd., a Texas Limited Partnership

BY: Florida Seville GP, L.L.C., a Texas Limited Liability Company, its sole General Partner

BY:
Shaul C. Baruch, Manager

(Signature of Second Witness)

DALE P. BRYANT
Printed name of second Witness

STATE OF Texas
COUNTY OF Dallas

** OFFICIAL RECORDS **
BK: 1215 PG: 1052

The foregoing instrument was acknowledged before me this 24th day of August, 1998, by Shaul C. Baruch, Manager of Florida Seville GP, L.L.C., a Texas Limited Partnership, sole General Partner of S & D Florida Seville, Ltd., a Texas Limited Liability Company. Such person (notary Public must check applicable box):

(✓) is personally known to me
( ) produced a current driver license
( ) produced _____ as identification

STACY WHITNEY
MY COMMISSION EXPIRES
April 11, 2002

(NOTARY PUBLIC SEAL)

Stacy Whitney
Notary Public
Stacy Whitney
(Printed, Typed or Stamped Name of Notary Public)
Commission No.:
My Commission Expires: 4-11-02

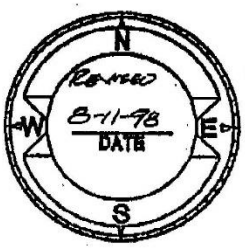
** OFFICIAL RECORDS **
BK: 1215 PG: 1053

EXHIBIT "A"

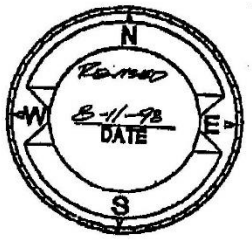
The South 1/2 of the Northeast 1/4, AND the Southwest 1/4 of the Northwest 1/4, AND the South 1/2, all lying and being in Section 7, Township 21 South, Range 18 East, Hernando County, Florida,
AND:
That part of Section 4, Township 21 South, Range 18 East, Hernando County, Florida lying Southerly and Westerly of U.S. Highway 98,
AND:
That part of Section 3, Township 21 South, Range 18 East, Hernando County, Florida lying Westerly of a Florida Power Corporation right-of-way as described in Official Records Book 111, Page 230, of the Public Records of Hernando County, Florida and Southerly of U.S. Highway 98,
AND:
That part of Section 10, Township 21 South, Range 18 East, Hernando County, Florida lying Westerly of a Florida Power Corporation right-of-way as described in Official Records Book 111, Page 230, of the Public Records of Hernando County, Florida,
AND
Section 9, Township 21 South, Range 18 East, Hernando County, Florida,
AND
The Northeast 1/4 of the Northeast 1/4 of Section 16, Township 21 South, Range 18 East, Hernando County, Florida,

LESS:
SEVILLE PARKWAY PHASE ONE as per the map or plat thereof recorded in Plat Book 27, Pages 24 through 26, inclusive, of the Public Records of Hernando County, Florida,
ALSO LESS:
That part of the East 2000.00 feet of the South 1/2 of the Northeast 1/4 of Section 7, Township 21 South, Range 18 East, Hernando County, Florida lying North of SEVILLE PARKWAY PHASE ONE as per the map or plat thereof recorded in Plat Book 27, Pages 24 through 26, inclusive, of the Public Records of Hernando County, Florida,
ALSO LESS:
A portion of the North 350.00 feet of Section 4, Township 21 South, Range 18 East, Hernando County, Florida lying Southerly and Westerly of U.S. Highway 98 and lying Easterly of a Florida Power Corporation transmission line easement as

Aanuttelga Hammock
S&D Florida Seville, LTD; Parcel 6
Sheet 1 of 4



described in Official Records Book 611, Page 299, of the Public Records of Hernando County, Florida, being more particularly described as follows:
For a Point of Reference commence at the Northwest corner of said Section 4; thence N.89°50'36"E. along the North boundary of said Section 4, a distance of 438.69 feet to a point on the Easterly boundary of said transmission line easement for a POINT OF BEGINNING; thence continue along said North boundary, a distance of 2215.04 feet to the North 1/4 corner of said Section 4; thence N.89°51'11"E. along said North boundary, a distance of 572.88 feet to a point on the Southerly right-of-way line of U.S. Highway 98; thence S.48°02'37"E. along said Southerly right-of-way line, a distance of 299.83 feet; thence departing said Southerly right-of-way line S.41°58'02"W., a distance of 200.83 feet to a point on the South boundary of said North 350.00 feet; thence S.89°51'11"W. along said South boundary, a distance of 660.63 feet; thence continue along said South boundary S.89°50'36"W., a distance of 2215.40 feet to a point on the Easterly boundary of said transmission line easement; thence departing said South boundary N.00°04'37"W. along said Easterly boundary, a distance of 350.00 feet to the POINT OF BEGINNING,
ALSO LESS:
A portion of the West 1/2 of Section 4, and a portion of the Northwest 1/4 of Section 9, all lying in and being a part of Township 21 South, Range 18 East, Hernando County, Florida, being more particularly described as follows:
For a POINT OF BEGINNING commence at the Northwest corner of said Section 4; thence N.89°50'39"E. along the North boundary of said Section 4, a distance of 438.79 feet to a point on the Easterly boundary of a Florida Power Corporation Power Transmission Line Easement as described in Official Records Book 611, Page 299 of the Public Records of Hernando County, Florida, lying 50.00 feet Easterly of the centerline of a power transmission line described in said easement; thence the following seven (7) courses along said Easterly boundary, 50.00 feet Easterly of and parallel with the centerline of said power transmission line, the end points of said courses being monumented with a 3/4 inch iron rod with an aluminum cap bearing the inscription "D.C. Johnson & Associates Survey Monument" set 50.00 feet Easterly from the center of an existing Power Transmission Line tower, (1) S.00°04'37"E., a distance of 471.56 feet; (2) S.00°04'41"E., a distance of 1208.50 feet; (3) S.00°04'51"E., a distance of 1468.56 feet; (4) S.00°04'24"E., a distance of 1287.99 feet; (5) S.00°04'22"E., a distance of 1172.91 feet; (6) S.00°05'12"E., a distance of 1447.65 feet; (7) S.00°05'04"E., a distance of 896.24 feet to a 3/4 inch iron rod with an aluminum cap bearing the inscription "D.C. Johnson & Associates Survey Monument" set on



Annutteliga Hammock
S&D Florida Saville, LTD; Parcel 6
Sheet 2 of 4

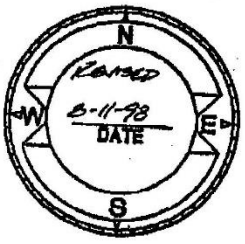
** OFFICIAL RECORDS **
BK: 1215 PG: 1055

the South boundary of the Northwest 1/4 of said Section 9; thence N.89°28'45"W. along said South boundary, a distance of 467.06 feet to the West 1/4 corner of said Section 9; thence N.00°14'11"W. along the West boundary of said Section 9, a distance of 2645.48 feet to the Southwest corner of said Section 4; thence N.00°17'17"E. along the West boundary of said Section 4, a distance of 2650.60 feet to the West 1/4 corner of said Section 4; thence N.00°19'21"E. along the West boundary of said Section 4, a distance of 2651.89 feet to the POINT OF BEGINNING,

ALSO LESS:

A portion of the land located in Sections 3 and 4, Township 21 South, Range 18 East, Hernando County, Florida, as recorded in Official Records Book 1102, Page 1664, of the public records of Hernando County, Florida, being more particularly described as follows:

Commence at a 3.5 inch by 3.5 inch concrete monument with a 1/4 inch nail and 3/4 inch disk marked Moorhead Eng. Co. marking the Southeast corner of the Southwest 1/4 of Section 3, Township 21 South, Range 18 East, Hernando County, Florida; thence N.00°15'06"E., along the East line of said Southwest 1/4, a distance of 1074.12 feet to the point of intersection with the Southerly right-of-way line of S.R. 700 (U.S. 98), DOT Section #0808.101; thence N.48°03'06"W. along said Southerly right-of-way line a distance of 2340.92 feet; thence S.41°56'54"W., a distance of 32.00 feet; thence N.48°03'06"W., a distance of 1000.00 feet; thence N.41°56'54"E., a distance of 32.00 feet; thence N.48°03'06"W., a distance of 200.91 feet to the point of intersection with the Westerly boundary line of a Florida Power Corporation Transmission Line right-of-way as described in O.R. Book 111, Page 230 of the Official Records of Hernando County, Florida for a POINT OF BEGINNING; thence departing said Southerly right-of-way line of S.R. 700, S.00°15'26"E., along said Westerly boundary line, a distance of 91.78 feet; thence leaving said boundary line N.56°33'12"W., a distance of 47.44 feet; thence S.41°56'54"W, a distance of 63.00 feet; thence N.48°03'06"W., a distance of 463.83 feet; thence N.41°56'54"E., a distance of 63.00 feet; thence N.48°03'06"W., a distance of 212.79 feet; thence S.60°20'37"W., a distance of 534.46 feet; thence N.40°48'35"W., a distance of 360.68 feet; thence N.52°21'22"E., a distance of 480.59 feet; thence N.48°03'06"W., a distance of 1771.97 feet to the point of intersection with the North line of Section 4, Township 21 South, Range 18 East, Hernando County, Florida; thence N.89°51'44"E., along said North line, a distance of 95.49 feet to the point of intersection with the Southerly right-of-way line of S.R. 700 (U.S.98), DOT Section #0808-101; thence departing said North

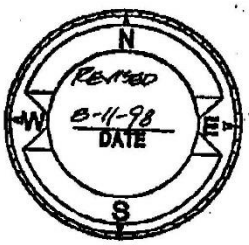


Annuttelga Hammock
S&D Florida Seville, LTD; Parcel 6
Sheet 3 of 4

line of Section 4, S.48°03'06"E., along said Southerly right-of-way line, a distance of 2802.63 feet to the POINT OF BEGINNING,
ALSO LESS:
A portion of the Southwest 1/4 of the Northwest 1/4 of Section 7, Township 21 South, Range 18 East, Hernando County, Florida, being more particularly described as follows:
For a POINT OF BEGINNING commence at the Southeast corner of the Southwest 1/4 of the Northwest 1/4 of said Section 7; thence N.00°10'20"W. along the East boundary of the Southwest 1/4 of the Northwest 1/4 of said Section 7, a distance of 1317.74 feet to the Northeast corner of the Southwest 1/4 of the Northwest 1/4 of said Section 7; thence N.89°31'16"W. along the North boundary thereof, a distance of 10.89 feet to the Northwest corner of Lot 8, Block 106 of Royal Highlands Unit No. 3, according to the map or plat thereof recorded in Plat Book 12, Pages 9 through 14 inclusive, of the Public Records of Hernando County, Florida; thence S.00°19'38"E. along the West boundary of said Royal Highlands Unit No. 3, a distance of 1317.77 feet to the Southwest corner of Lot 15 of Block 106 of said Royal Highlands Unit No. 3; thence S.89°24'03"E. along the Southerly boundary of said Lot 15, a distance of 7.33 feet to the POINT OF BEGINNING.

** OFFICIAL RECORDS **
BK: 1215 PG: 1056

Annutteliga Hammock
S&D Florida Seville, LTD; Parcel 6
Sheet 4 of 4



** OFFICIAL RECORDS **
BK: 1215 PG: 1057

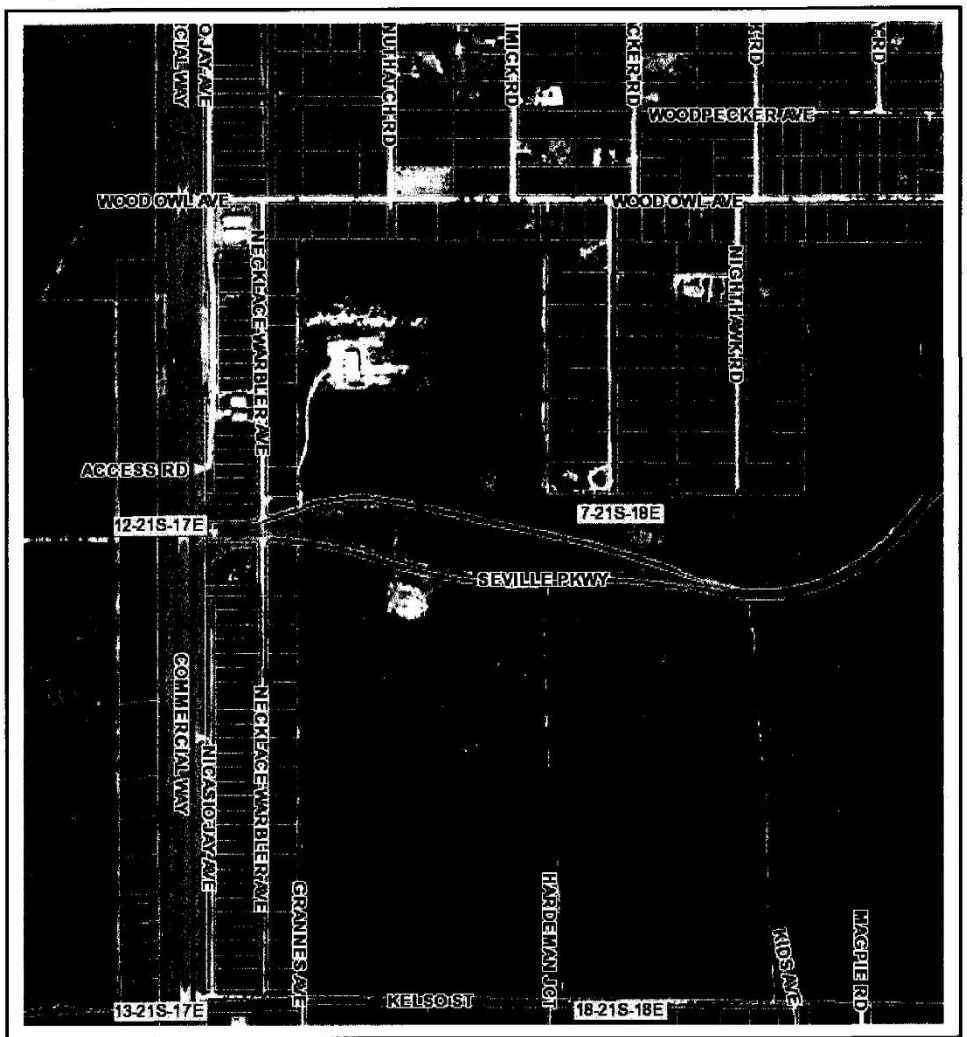
EXHIBIT "B"

A portion of the Southwest 1/4 of Section 7, Township 21 South, Range 18 East, Hernando County, Florida, being more particularly described as follows:
For a point of reference commence at the West 1/4 corner of said Section 7; thence S.00°04'39"W. along the West boundary of said Section 7, a distance of 275.94 feet to a non-tangent point of curvature, said point being on the Southerly right-of-way line of Seville Parkway as shown on record plat of Seville Parkway Phase One as per the map or plat thereof recorded in Plat Book 27, Pages 24 through 26, inclusive, of the Public Records of Hernando County, Florida; thence the following four (4) courses along said Southerly right-of-way line: (1) Easterly 390.42 feet along the arc of a curve to the right, said curve having a radius of 2256.22 feet, a central angle of 09°54'52", and a chord bearing and distance of S.77°51'03"E., 389.93 feet to a point of tangency; (2) S.72°53'47"E., a distance of 126.72 feet for a POINT OF BEGINNING; (3) S.72°53'47"E., a distance of 5.52 feet to a point of curvature; (4) Easterly 244.58 feet along the arc of a curve to the left, said curve having a radius of 2321.83 feet, a central angle of 06°02'08", and a chord bearing and distance of S.75°54'51"E., 244.46 feet; thence departing said Southerly right-of-way line S.16°33'05"W., a distance of 281.30 feet; thence N.72°48'41"W., a distance of 252.76 feet; thence N.17°11'19"E., a distance of 268.04 feet to the POINT OF BEGINNING.

AND:
A portion of the West 1/2 of Section 7, Township 21 South, Range 18 East, Hernando County, Florida, being more particularly described as follows:
For a point of reference commence at the West 1/4 corner of said Section 7; thence S.00°04'39"W. along the West boundary of said Section 7, a distance of 78.85 feet to a point on the Northerly right-of-way line of Seville Parkway as shown on record plat of Seville Parkway Phase One as per the map or plat thereof recorded in Plat Book 27, Pages 24 through 26, inclusive, of the Public Records of Hernando County, Florida; thence the following four (4) courses along said Northerly right-of-way line: (1) N.69°53'06"E., a distance of 8.25 feet to a point of curvature; (2) Easterly 518.46 feet along the arc of a curve to the right, said curve having a radius of 911.47 feet, a central angle of 32°35'28", and a chord bearing and distance of N.86°10'50"E., 511.50 feet to a point of tangency; (3) S.77°31'26"E., a distance of 383.40 feet for a POINT OF BEGINNING; (4) S.77°31'26"E., a distance of 20.80 feet; thence departing said Northerly right-of-way line N.28°26'26"E., a distance of 56.62 feet; thence S.61°57'40"E., a distance of 40.17 feet; thence N.58°02'20"E., a distance of 101.17 feet; thence N.01°57'40"W., a distance of 101.17 feet; thence N.61°57'40"W., a distance of 101.17 feet; thence S.58°02'20"W., a distance of 101.17 feet; thence S.01°57'40"E., a distance of 101.17 feet; thence S.61°57'40"E., a distance of 41.00 feet; thence S.28°26'26"W., a distance of 62.20 feet to the POINT OF BEGINNING.

non-tangent point of curvature; thence departing said Northerly right-of-way line Northwesterly 264.64 feet along the arc of a curve to the left, said curve having a radius of 257.87 feet, a central angle of 58°47'58", and a chord bearing and distance of N.40°09'47"W., 253.17 feet; thence N.46°30'54"W., a distance of 62.41 feet; thence N.68°14'32"W., a distance of 68.59 feet; thence S.55°40'12"W., a distance of 102.55 feet; thence S.31°33'58"E., a distance of 41.25 feet; thence S.48°34'34"E., a distance of 68.01 feet; thence S.81°46'39"E., a distance of 83.79 feet; thence N.27°34'38"E., a distance of 58.45 feet to a non-tangent point of curvature; thence Southeasterly 234.60 feet along the arc of a curve to the right, said curve having a radius of 230.77 feet, a central angle of 58°14'53", and a chord bearing and distance of S.39°21'01"E., 224.63 feet to the POINT OF BEGINNING.

Chassahowitzka WMA Office
Seville Parkway
Drainage Retention Ponds
Management Area Boundary



Hernando County Property Appraiser

Alvin R. Mazourek CFA - Brooksville, Florida - 352-754-4190

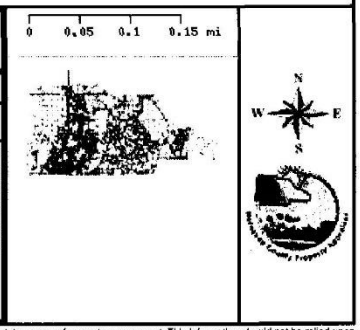
PARCEL: R07 421 18 0000 0010 0000 | KEY: 01100007

THAT PART OF E2000 FT OF S1/2 OF NE1/4 LYING N OF SEVILLE PARKWAY (SEE ORB 1215 PG 1051) (SEWAGE TREATMENT PLANT SITE)

Name: HERNANDO COUNTY (WATER & SEWER DIST)
Site: 11261 SEVILLE PKWY
Mail: 20 N MAIN ST RM 460 BROOKSVILLE FL 34601

Sales Info			
	6/23/1999	$100.00	V (D)
	12/27/1996	$9,250,000.00	V (M)
	10/1/1996	$100.00	V (D)

LandVal	$307,190.00
BldgVal	$0.00
JustVal	$307,190.00
Assd	$307,190.00
Exmpt	$307,190.00
Taxable	$0.00



This information was derived from data which was compiled by the Hernando County Property Appraiser Office solely for the governmental purpose of property assessment. This information should not be relied upon by anyone as a determination of the market value, ownership, or zoning of the property. Zoning information should be obtained from the Hernando County Development Department. No warranties, expressed or implied, are provided for the accuracy of the data herein, it's use, or it's interpretation. Although it is periodically updated, this information may not reflect the data currently on file in the Property Appraiser's office. The assessed values are NOT certified values and therefore are subject to change before being finalized for ad valorem assessment purposes.

Data Updated: 11/23/2007 | GIS Map Updated: 11/23/2007 | © Copyright 2003 All Rights Reserved - Hernando County Property Appraiser

11.2.6 Well Monitoring Agreement 1998

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

WELL MONITORING LICENSE AGREEMENT

THIS LICENSE AGREEMENT is hereby made and entered into this 13TH day of JANUARY, 1998, by the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, hereinafter referred to as "LICENSOR", and the SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT, a public body existing under Chapter 373, Florida Statutes, hereinafter referred to as "LICENSEE."

WITNESSETH:

WHEREAS, LICENSOR is the fee simple owner of certain real property located in Hernando County, Florida, as more particularly identified in Exhibit A, attached hereto and by reference made a part hereof; and

WHEREAS, LICENSEE desires to utilize LICENSOR'S property only for the purpose of constructing, operating and maintaining scientific equipment to be used for collecting hydrological and other scientific data; and

WHEREAS, LICENSOR is desirous of granting to LICENSEE a license for the aforementioned purpose.

NOW THEREFORE, for and in consideration of the terms, conditions, and mutual covenants hereinafter contained, LICENSOR and LICENSEE, both intending to be legally bound, hereby agree as follows:

1. LICENSOR hereby grants to LICENSEE, its agents, representative and employees the right, privilege, permission and license to utilize the property described in Exhibit "A", hereinafter referred to as "License Area", to locate, construct, install, operate, inspect, alter, improve, maintain, repair, remove and rebuild scientific equipment, for research and scientific purposes on, upon and across said License Area; and ingress to and egress from said License Area for the purpose of exercising the rights, privileges and license granted herein.

2. This License is granted for a term of thirty years from the date written above unless or until sooner terminated by LICENSOR or LICENSEE giving sixty days written notice to the other party of intention so to terminate.

3. LICENSOR retains the right to use the License Area in any manner not inconsistent with the rights granted to LICENSEE.

4. LICENSEE agrees that it does not and shall not claim at any time any interest or estate of any kind or extent whatsoever in the License Area, by virtue of this License Agreement or its occupancy or use hereunder.

5. In consideration of the privileges herein granted, LICENSEE will not claim any damages from LICENSOR in connection with or on account of any injuries or damages arising in or on the License Area while being used by LICENSEE and its agents, representatives and employees. The LICENSEE shall maintain a program of insurance covering its liabilities as prescribed by Section 768.28, F.S., and shall be responsible for the acts or omissions of its officers, employees, representatives, and agents in the event that such acts or omissions result in injury to persons or damage to property. LICENSOR does not warrant or represent that the License Area is safe or suitable for the purpose for which LICENSEE is permitted to use it, and LICENSEE assumes all risks in its use.

6. Prior to initial use of License Area by LICENSEE, LICENSEE shall give the Florida Game and Fresh Water Fish Commission, hereinafter referred to as "managing agency," at least forty-eight hours notification.

7. LICENSEE shall contact the Florida Geological Survey prior to drilling and shall submit well cuttings for the state repository if requested.

8. LICENSEE will provide copies of the monitoring results, as they become available, to the managing agency.

9. LICENSEE shall not allow the general public to access, utilize or go upon the License Area.

10. Clearing vegetation during installation or removal of the monitoring equipment without the consent and supervision of the managing agency is prohibited.

11. Upon termination of this License Agreement, LICENSEE shall, at LICENSEE'S sole cost and expense, remove all equipment, accessories, and material owned by LICENSEE from the License Area. Upon abandonment, each well will become a fixture on the well site which the LICENSEE will plug pursuant to Section 40C-3.531, F.A.C., and LICENSEE will restore said License Area to as good a condition as it was before LICENSEE entered upon it. LICENSEE will complete said removal, plugging and restoration within sixty days of the date upon which LICENSEE ceases its operations on the License Area.

12. Should LICENSOR elect to maintain one or more wells for its own use upon abandonment of any well by LICENSEE, the well(s) will remain unplugged and LICENSOR thereafter agrees to assume full responsibility for same.

13. The installation and removal of the monitoring well materials as well as restoration of the sites will be done under the supervision of the managing agency and a representative from the Division of Historical Resources, Department of State.

14. The License herein granted is subject to revocation by the LICENSOR if the License Area is not utilized for the purpose outlined in this License Agreement or if there is a change in ownership of the License Area.

15. This License Agreement is personal to LICENSEE and may not be assigned or transferred, without prior written approval of LICENSOR.

16. This License Agreement embodies the entire understanding of the parties and there are no further agreements or understandings, written or oral, in effect between the parties, relating to the subject matter hereof. This instrument may be amended or modified by an instrument of equal formality signed by the respective parties.

17. For purposes of this License Agreement, all notification shall be provided as follows:

Mr. Bob Clark
Southwest Florida Water
Management District
2379 Broad Street
Brooksville, Florida
34609-6899

Mr. Frank Montalbano
Florida Game and Fresh
Water Fish Commission
Division of Wildlife
620 South Meridian Street
Tallahassee, Florida
32399-1600

Ms. Tracy Peters
Department of Environmental Protection
Division of State Lands
3900 Commonwealth Boulevard
Mail Station 130
Tallahassee, Florida
32399-3000

18. The following special conditions shall apply to this License Agreement:

A. The License Area will not exceed 700 square feet in size.

B. Well construction per well will not exceed twenty-one days without the written consent of the managing agency.

C. If fencing is needed, LICENSEE shall install and maintain fencing at LICENSEE'S sole cost and expense. Fencing shall not exceed eight feet in height. LICENSEE shall provide to LICENSOR a set of keys to all fence gates.

D. LICENSOR shall not physically disturb the well casings or covers (water meter boxes) in any way without prior approval from LICENSEE.

E. Prior to entering the License Area, LICENSEE shall contact the managing agency.

IN WITNESSETH WHEREOF, the parties have caused this License Agreement to be executed on the day and year first above written.

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

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

Witness

Print or type name

Witness

Print or type name

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 28th day of January, 1998, by Daniel T. Crabb, Chief, Bureau of Land Management Services, Division of State Lands, 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
OFFICIAL NOTARY SEAL
PATRICIA TOLODAY
COMMISSION NUMBER
CC545665
MY COMMISSION EXPIRES
APR. 18,2000

Notary Public, State of Florida

Print/Type Notary Name

Commission Number:

Commission Expires:

Approved as to Form and Legality

By: _____
DEP Attorney

By: _____
SWFWMD Attorney

SOUTHWEST FLORIDA WATER
MANAGEMENT DISTRICT

Yolanda Velazquez
Signature of Witness
Yolanda Velazquez
Print or type name

By: E. D. Vergara
E. D. "Sonny" Vergara, Executive Director

Dianna M Brass
Signature of Witness
DIANNA M BRASS
Print or type name

(Seal)

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT SEAL 1961 FLORIDA

STATE OF FLORIDA
COUNTY OF HERNANDO

The foregoing instrument was acknowledged before me this 13TH day of JANUARY, 1998, by E. D. "Sonny" Vergara as the Executive Director of the SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT, a public body existing under Chapter 373, Florida Statutes, on behalf of the SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT. He is personally known to me.

OFFICIAL NOTARY SEAL
J R CLARK
NOTARY PUBLIC STATE OF FLORIDA
COMMISSION NO. CC563685
MY COMMISSION EXP. JUNE 19,2000

J. R. Clark
Notary Public, State of Florida
J.R. CLARK
Print/Type Notary Name
Commission Number: CC563685
Commission Expires: 6-19-2000

EXHIBIT "A"

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
Coastal Rivers Basin

SWF Parcel No. 15-020-037 May 15, 1997
Monitor Well Site No. NHT-8B

A portion of land lying in Section 11, Township 21 South, Range 17 East, Hernando County, Florida, being more particularly described as follows:

Commence at the monumented Southeast corner of Section 11, Township 21 South, Range 17 East, Hernando County, Florida;

Thence North 88°42'25"West, along the South line of said Section 11, a distance of 2192.73 feet;

Thence leaving said South line of Section 11, North 01°17'35"East, a distance of 437.30 feet;

Thence North 88°42'25" West, a distance of 40.00 feet to the **POINT OF BEGINNING;**

Thence continue North 88°42'25" West, a distance of 20.00 feet;

Thence North 01°17'35" East, a distance of 10.00 feet;

Thence South 88°42'25" East, a distance of 20.00 feet;

Thence South 01°17'35" West, a distance of 10.00 feet to the POINT OF BEGINNING.

Said parcel contains 0.0046 acres, more or less.

15020037.DOC\W.K.H.

EXHIBIT "A"

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
Coastal Rivers Basin

SWF Parcel No. 15-020-037 May 15, 1997
Monitor Well Site No. NHT-8B
Temporary Construction Easement

A portion of land lying in Section 11, Township 21 South, Range 17 East, Hernando County, Florida, being more particularly described as follows:

Commence at the monumented Southeast corner of Section 11, Township 21 South, Range 17 East, Hernando County, Florida;

Thence North 88°42'25"West, along the South line of said Section 11, a distance of 2192.73 feet;

Thence leaving said South line of Section 11, North 01°17'35"East, a distance of 392.30 feet to the **POINT OF BEGINNING;**

Thence North 88°42'25"West a distance of 100.00 feet;

Thence North 01°17'35"East a distance of 100.00 feet;

Thence South 88°42'25"East a distance of 100.00 feet;

Thence South 01°17'35"West a distance of 100.00 feet to the **POINT OF BEGINNING.**

Said parcel contains 0.23 acres, more or less.

15020037.E\W.K.H.

(11) 3586-B

ATWMLC1

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

AMENDMENT NUMBER 01 TO WELL MONITORING LICENSE AGREEMENT

THIS AMENDMENT is entered into this 2ND day of APRIL, 1999, by and between the BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA, hereinafter referred to as "LICENSOR" and the SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT hereinafter referred to as "LICENSEE"; WITNESSETH:

WHEREAS, LICENSOR, 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 January 13, 1998, LICENSOR and LICENSEE entered into a well monitoring license agreement; and

WHEREAS, LICENSOR and LICENSEE desire to amend the agreement to move the location of the wellsite approximately 50 feet to the east of previous site. 13-21S-17E

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

1. This agreement is amended to substitute the legal description of the premises, which is attached hereto as Exhibit "A" and made a part hereof for the legal description of the premises attached as Exhibit "A" to the agreement.

2. It is understood and agreed by LICENSOR and LICENSEE that in each and every respect the terms of the Well Monitoring License Agreement except as amended shall remain unchanged and in full force and effect and the same are hereby ratified, approved and confirmed by LICENSOR and LICENSEE.

IN WITNESS WHEREOF, the parties have caused this amended Well Monitoring License Agreement to be executed on the day and year first above written.

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

Witness

Panagiota D. Krassas
Print/Type Witness Name

Witness

Cheryl J. King
Print/Type Witness Name

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

"LICENSOR"

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 26th day of April, 1999, by Daniel T. Crabb, as Chief, Bureau of Public Land Administration, Division of State Lands, Florida Department of Environmental Protection, as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida. He is personally known to me.

Cheryl J. King
Notary Public, State of Florida

Print/Type Notary Name

Commission Number:

Cheryl J. King
MY COMMISSION # CC506744 EXPIRES
November 7, 1999
BONDED THRU TROY FAIN INSURANCE, INC.

Commission Expires:

Approved as to Form and Legality

By: _____
DEP Attorney

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Witness

By: _____
E. D. "Sonny" Vergara

DIANNA M BRASS
Print/Type Name

Executive Director
Title

Carolyn L Stout
Witness

E. D. "Sonny" Vergara
Print/Type Name

CAROLYN L. STOUT
Print/Type Name

"LICENSEE"

(OFFICIAL SEAL)

STATE OF FLORIDA
COUNTY OF HERNANDO

"LICENSEE"

(OFFICIAL SEAL)

2ND The foregoing instrument was acknowledged before me this ____ day of APRIL, 1999, by E. D. "Sonny" Vergara as Executive Director of the SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT, a public body existing under Chapter 373, Florida Statutes, on behalf of the SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT. He is personally known to me.

Notary Public, State of Florida
J.R. CLARK
Print/Type Notary Name

Commission Number:

Commission Expires:

OFFICIAL NOTARY SEAL
J R CLARK
NOTARY PUBLIC STATE OF FLORIDA
COMMISSION NO. CC568585
MY COMMISSION EXP. JUNE 19,2000

Approved as to Form and Legality

By: _____
SWFWMD Attorney

Page 3 of 6

SECTION 13, TOWNSH

DESCRIPTION

SWF Parcel No. 15-020-036
Monitor Well Site No. NHT-8C

May 21, 1997
Revised September 16, 1998

A portion of land lying in Section 13, Township 21 South, Range 17 East, Hernando County, Florida, being more particularly described as follows:

Commence at the monumented East one-quarter corner of Section 13, Township 21 South, Range 17 East, Hernando County, Florida;

Thence South 86°29'59"West, along the East-West one-half section line of said Section 13, a distance of 836.03 feet;

Thence leaving said East-West one-half section line of Section 13, North 03°30'01"West, a distance of 34.57 feet;

Thence South 86°29'59"West, a distance of 25.33 feet to the POINT OF BEGINNING;

Thence continue South 86°29'59"West, a distance of 20.00 feet;

Thence North 03°30'01"West, a distance of 80.00 feet;

Thence North 86°29'59"East, a distance of 20.00 feet;

Thence South 03°30'01"East, a distance of 80.00 feet to the POINT OF BEGINNING.

Said parcel contains 1600.00 square feet, more or less.

Exhibit A
Page 4 of 6
Amended Well Monitoring License Agreement

SWF Parcel No. 15-020-036 May 21, 1997
Monitor Well Site No. NHT-8C
Temporary Construction Easement

A portion of land lying in Section 13, Township 21 South, Range 17 East, Hernando County, Florida, being more particularly described as follows:

Commence at the monumented East one-quarter corner of Section 13, Township 21 South, Range 17 East, Hernando County, Florida;

Thence South 86°29'59"West, along the East-West one-half section line of said Section 13, a distance of 836.03 feet;

Thence leaving said East-West one-half section line of Section 13, South 03°30'01"East, a distance of 4.80 feet to the POINT OF BEGINNING;

Thence South 78°00'59"West, a distance of 202.21 feet;

Thence North 03°30'01"West, a distance of 269.20 feet;

Thence North 86°29'59"East, a distance of 200.00 feet;

Thence South 03°30'01"East, a distance of 239.37 feet to the POINT OF BEGINNING.

Said parcel contains 1.17 acres, more or less.

Exhibit A
Page 5 of 6
Amended Well Monitoring License Agreement

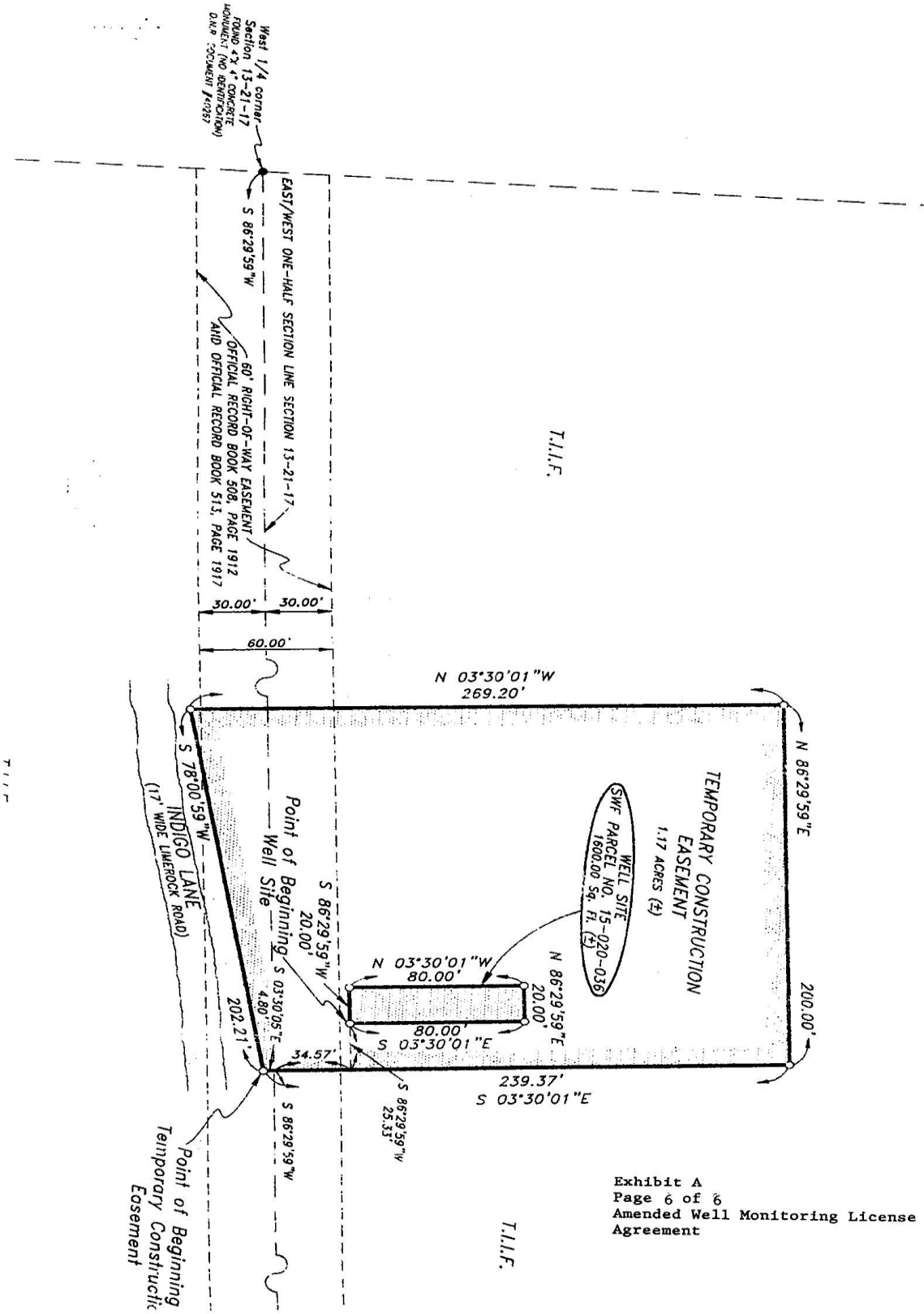
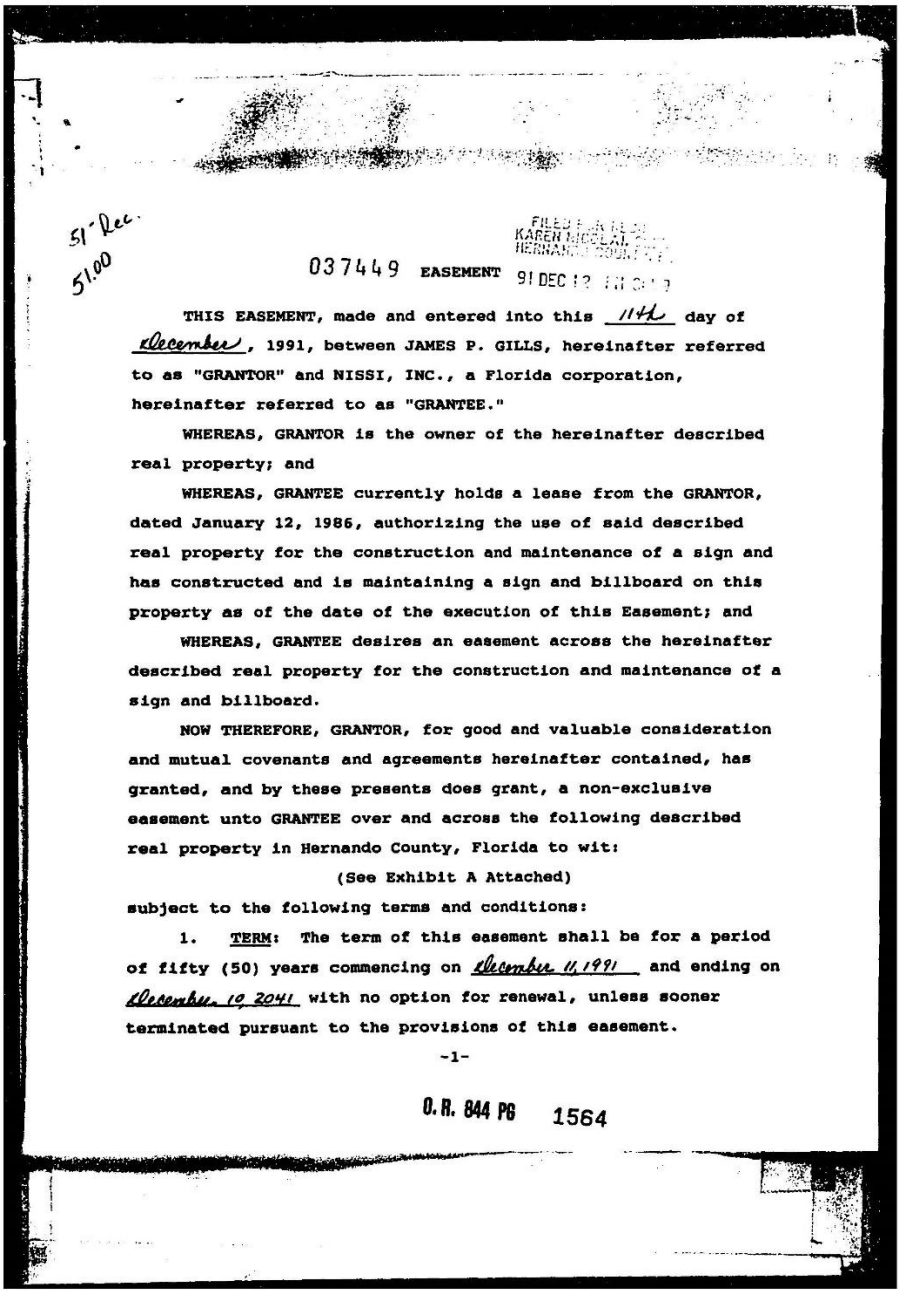


Exhibit A
Page 6 of 6
Amended Well Monitoring License Agreement

11.2.7 Easement No. 037499



51 Rec.
5100

037449 EASEMENT

FILED
KAREN NICOLAI
HERNANDO COUNTY FL
91 DEC 12 AM 9:12

THIS EASEMENT, made and entered into this 11th day of December, 1991, between JAMES P. GILLS, hereinafter referred to as "GRANTOR" and NISSI, INC., a Florida corporation, hereinafter referred to as "GRANTEE."

WHEREAS, GRANTOR is the owner of the hereinafter described real property; and

WHEREAS, GRANTEE currently holds a lease from the GRANTOR, dated January 12, 1986, authorizing the use of said described real property for the construction and maintenance of a sign and has constructed and is maintaining a sign and billboard on this property as of the date of the execution of this Easement; and

WHEREAS, GRANTEE desires an easement across the hereinafter described real property for the construction and maintenance of a sign and billboard.

NOW THEREFORE, GRANTOR, for good and valuable consideration and mutual covenants and agreements hereinafter contained, has granted, and by these presents does grant, a non-exclusive easement unto GRANTEE over and across the following described real property in Hernando County, Florida to wit:

(See Exhibit A Attached)

subject to the following terms and conditions:

1. TERM: The term of this easement shall be for a period of fifty (50) years commencing on December 11, 1991 and ending on December 10, 2041 with no option for renewal, unless sooner terminated pursuant to the provisions of this easement.

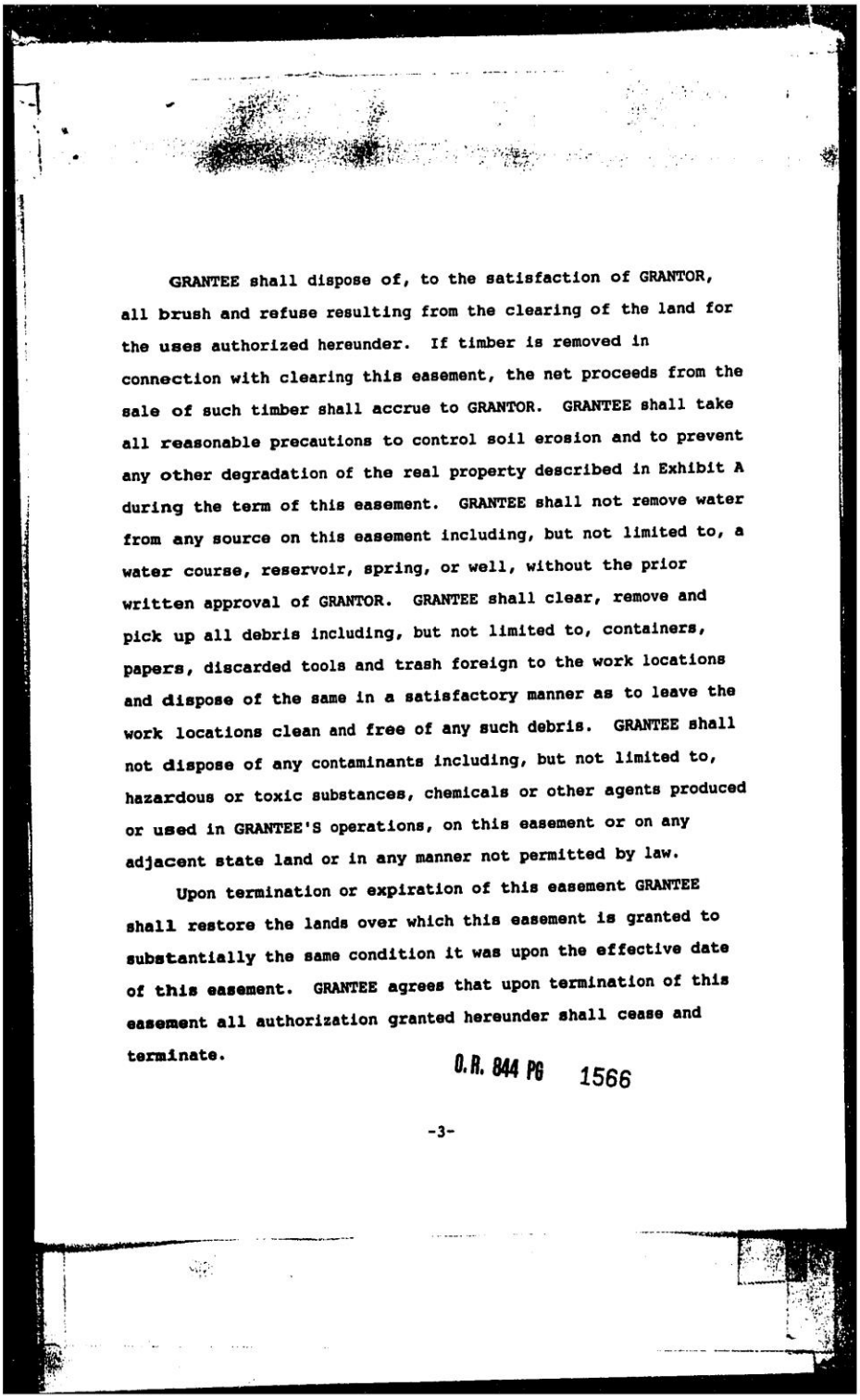
-1-

O.R. 844 PG 1564

2. USE OF PROPERTY AND UNDUE WASTE: This easement shall be limited to the construction and maintenance of a sign and billboard, upon and across the property described in Exhibit A during the term of this easement. This easement shall be non-exclusive. GRANTEE agrees that this sign and billboard shall not be used for advertising any business or product involving the use or sale of alcoholic beverages or tobacco. Further, GRANTEE agrees that this sign and billboard shall not be used for any message or advertising which promote activities on the adjacent property which would be inconsistent with the use of adjacent property as a wildlife management area. In the event this sign and billboard is destroyed as a result of a natural disaster, this easement shall automatically and immediately terminate and GRANTEE shall forfeit all right, title and interest in and to the easement. If this easement is terminated before the expiration of the easement's term as set forth in paragraph 1. hereof, GRANTEE shall execute and deliver a release or quit claim deed to GRANTOR which extinguishes all of GRANTEE'S right, title and interest in and to the easement. GRANTOR retains the right to engage in any activities on, over, below or across the easement area which do not unreasonably interfere with GRANTEE'S exercise of this easement and further retains the right to grant compatible uses to third parties during the term of this easement.

O.R. 844 PG 1565

-2-



GRANTEE shall dispose of, to the satisfaction of GRANTOR, all brush and refuse resulting from the clearing of the land for the uses authorized hereunder. If timber is removed in connection with clearing this easement, the net proceeds from the sale of such timber shall accrue to GRANTOR. GRANTEE shall take all reasonable precautions to control soil erosion and to prevent any other degradation of the real property described in Exhibit A during the term of this easement. GRANTEE shall not remove water from any source on this easement including, but not limited to, a water course, reservoir, spring, or well, without the prior written approval of GRANTOR. GRANTEE shall clear, remove and pick up all debris including, but not limited to, containers, papers, discarded tools and trash foreign to the work locations and dispose of the same in a satisfactory manner as to leave the work locations clean and free of any such debris. GRANTEE shall not dispose of any contaminants including, but not limited to, hazardous or toxic substances, chemicals or other agents produced or used in GRANTEE'S operations, on this easement or on any adjacent state land or in any manner not permitted by law.

Upon termination or expiration of this easement GRANTEE shall restore the lands over which this easement is granted to substantially the same condition it was upon the effective date of this easement. GRANTEE agrees that upon termination of this easement all authorization granted hereunder shall cease and terminate.

O.R. 844 PG 1566

-3-

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

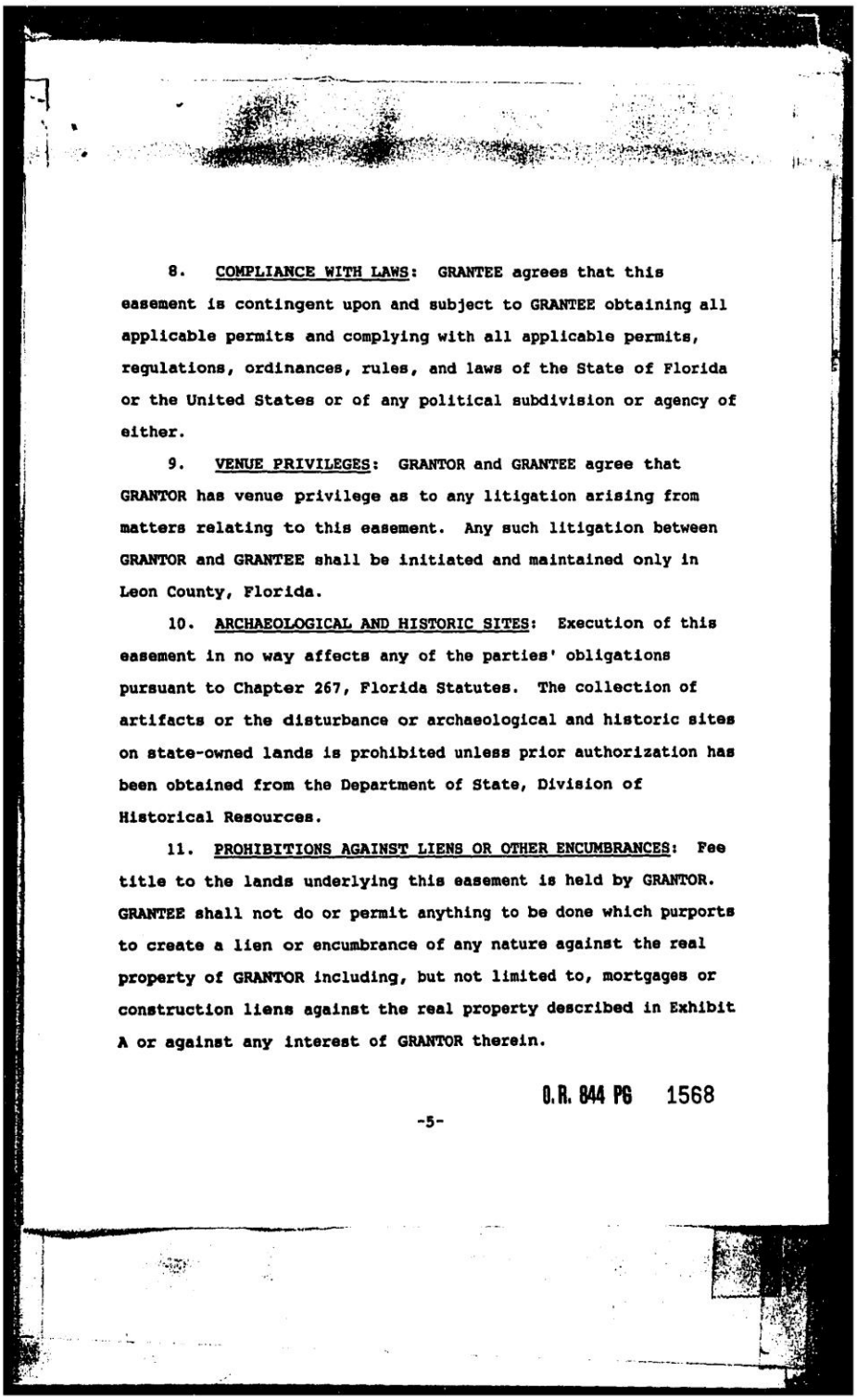
4. RIGHT OF INSPECTION: GRANTOR or its duly authorized agents, representatives or employees shall have the right at any and all times to inspect the easement and the works and operations of GRANTEE in any matter pertaining to this easement.

5. BINDING EFFECT AND INUREMENT: This easement shall be binding on and shall inure to the benefit of the heirs, executors, administrators, successors and assigns of the parties hereto, but nothing contained in this paragraph shall be construed as a consent by GRANTOR to any assignment of this easement or any interest therein by GRANTEE.

6. NON-DISCRIMINATION: GRANTEE shall not discriminate against any individual because of that individual's race, color, religion, sex, national origin, age, handicaps, or marital status with respect to any activity occurring within this easement or upon lands adjacent to and used as an adjunct of this easement.

7. INDEMNITY: GRANTEE hereby covenants and agrees to investigate all claims of every nature at its own expense, and to indemnify, protect, defend, save and hold harmless GRANTOR and its successors in interest from any and all claims, actions lawsuits and demands of any kind or nature arising out of this easement.

O.R. 844 PG 1567



8. COMPLIANCE WITH LAWS: GRANTEE agrees that this easement is contingent upon and subject to GRANTEE 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.

9. VENUE PRIVILEGES: GRANTOR and GRANTEE agree that GRANTOR has venue privilege as to any litigation arising from matters relating to this easement. Any such litigation between GRANTOR and GRANTEE shall be initiated and maintained only in Leon County, Florida.

10. ARCHAEOLOGICAL AND HISTORIC SITES: Execution of this easement in no way affects any of the parties' obligations pursuant to Chapter 267, Florida Statutes. The collection of artifacts or the disturbance or 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.

11. PROHIBITIONS AGAINST LIENS OR OTHER ENCUMBRANCES: Fee title to the lands underlying this easement is held by GRANTOR. GRANTEE shall not do or permit anything to be done which purports to create a lien or encumbrance of any nature against the real property of GRANTOR including, but not limited to, mortgages or construction liens against the real property described in Exhibit A or against any interest of GRANTOR therein.

O.R. 844 PG 1568

-5-

12. PARTIAL INVALIDITY: If any term, covenant, condition or provision of this easement shall be ruled by a court of competent jurisdiction to be invalid, void, or unenforceable, the remainder shall remain in full force and effect and shall in no way be affected, impaired or invalidated.

13. SOVEREIGNTY SUBMERGED LANDS: This easement does not authorize the use of any lands located waterward of the mean or ordinary high water line of any lake, river, stream, creek, bay, estuary, or other water body or the waters or the air space thereabove.

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

15. ENTIRE UNDERSTANDING: This easement set forth the entire understanding between the parties and shall only be amended with the prior written approval of GRANTOR.

16. TIME: Time is expressly declared to be of the essence of this easement.

17. ATTORNEYS' FEES: GRANTEE shall pay all costs, charges and expenses, including attorneys' fees and appellate attorneys' fees, in connection with any dispute arising out of this easement, including without limitation, any costs and fees incurred or paid by GRANTOR because of the failure on the part of GRANTEE to comply with and abide by each and every one of the stipulations, agreements, covenants and conditions of this easement, or incurred by GRANTOR in seeking any remedy available

O.R. 844 PG 1569

to GRANTOR as a result of such failure by GRANTEE.

18. DEFAULT: Should GRANTEE, at any time during the term of this easement, suffer or permit to be filed against it an involuntary, or voluntary, petition in bankruptcy or institute a composition or an arrangement proceeding under Chapter X or XI of the Chandler Act; or make any assignments for the benefit of its creditor; or should a receiver or trustee be appointed for GRANTEE's property because of GRANTEE's insolvency, and the said appointment not vacated within 30 days thereafter; or should GRANTEE's easement interest be levied on and the lien thereof not discharged within 30 days after said levy has been made; or should GRANTEE fail promptly to make the necessary returns and reports required of it by state and federal law; or should GRANTEE fail promptly to comply with all governmental regulations, both state and federal; or should GRANTEE fail to comply with any of the terms and conditions of this easement and such failure shall in any manner jeopardize the rights of GRANTOR; then, in such event, and upon the happening of either or any of said events, GRANTOR shall have the right, at its discretion, to consider the same a default on the part of GRANTEE of the terms and provisions hereof, and, in the event of such default, GRANTOR shall have the option of either declaring this easement terminated, and the interest of GRANTEE forfeited, or maintaining this easement in full force and effect and exercising all rights and remedies herein conferred upon GRANTOR. The pendency of bankruptcy proceedings or arrangement proceedings to

which GRANTEE shall be a party shall not preclude GRANTOR from exercising either option herein conferred upon it. In the event GRANTEE, or the trustee or receiver of GRANTEE's property, shall seek an injunction against GRANTOR's exercise of either option herein conferred, such action on the part of GRANTEE, his trustee or receiver, shall automatically terminate this easement as of the date of the making such application, and in the event the Court shall enjoin GRANTOR from exercising either option herein conferred, such injunction shall automatically terminate this easement.

19. PAYMENT OF TAXES AND ASSESSMENTS: Grantee shall assume full responsibility for and shall pay all liabilities that accrue to the easement area or to the improvements thereon including any and all drainage and special assessments or taxes of every kind and all mechanic's or materialman's liens which may be hereafter lawfully assessed and levied against this easement.

20. AUTOMATIC REVERSION: This easement is subject to automatic termination and reversion to GRANTOR when, in the opinion of GRANTOR, this easement is not used for the purposes outlined herein, and any costs or expenses arising out of the implementation of this clause shall be borne completely, wholly and entirely by GRANTEE.

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

O.R. 844 PG 1571

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

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

GRANTOR

Marilyn J Williams
Witness

James P. Gills (SEAL)

Lois J. Barnett
Witness

STATE OF FLORIDA
COUNTY OF Pinellas

The foregoing instrument was acknowledged before me this 11th day of December, 1991, by James P. Gills.

Marilyn J Williams (SEAL)
NOTARY PUBLIC

My Commission Expires:

MARILYN J. WILLIAMS
My Comm. expires Jan. 27, 1992

O.R. 844 PG 1572

Doc #: 11868 Vers: V1

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GRANTEE
NISSI, INC., a Florida corporation

Witness

Witness

By: _____
Lew Friedland
President
P.O. Box 11608
Tarpon Springs, FL
34688

(CORPORATE SEAL)

STATE OF Florida
COUNTY OF Pinellas

The foregoing instrument was acknowledged before me this 11th day of December, 1991, by Lew Friedland as President of NISSI, INC., a Florida corporation on behalf of the corporation.

_____ (SEAL)
NOTARY PUBLIC

My Commission Expires:

MARILYN J. WILLIAMS, V.T.
My Comm. expires Jan. 22, 1995
Bonded thru Notary Public Underwriters

This easement was prepared by Jacob D. Varn, Esquire, Carlton, Fields, Ward, Emmanuel, Smith & Cutler, P.A., Post Office Drawer 190, Tallahassee, Florida 32302. (Legal description provided by Grantor.)

(11/13/91)

O.R. 844 PG 1573

Doc #: 11688 Vers: V1

-10-

EXHIBIT A

LEGAL DESCRIPTION OF THE EASEMENT

For a point of reference commence at the N.E. corner of Section 24, Township 21 South, Range 17 East, Hernando County, Florida. Thence S-86 degrees 33 minutes 00 seconds-W, along the North line of said Section 24, 711.49 feet to a point on the West Right-of-Way line of U.S. Highway 19; Thence S-00 degrees 36 minutes 35 seconds-E, along said West Right-of-Way line, 1851.00 feet for a POINT OF BEGINNING; Thence continue S-00 degrees 36 minutes 35 seconds-E, 50.00 feet; Thence S-89 degrees 23 minutes 25 seconds-W, 110.00 feet; Thence N-00 degrees 36 minutes 35 seconds-W, 50.00 feet; Thence N-89 degrees 23 minutes 25 seconds-E, 110.00 feet to the Point of Beginning. Containing 0.13 acres more or less.

O.R. 844 PG 1574

Doc #: 11868 Vers: V1

-11-

A 6CT

11.2.8 Easement No. 003159

70

Karen Nicholl, Clerk of Circuit Ct. Hernando County, Florida By ____ D.C. 003159

R 6.50 D 1.00 Inst 1.00 B/C 1.00

KAREN NICHOLL, CLERK HERNANDO COUNTY, FL

94 JAN 27 11:13:44

O. R. 951 PG 1039

CORRECTED EASEMENT

THIS CORRECTED EASEMENT, made and entered into this 27th day of January, 1994, between JAMES P. GILLS, as to an undivided 94% interest, DALLAS SEMINARY FOUNDATION, INC., as Trustee of the James P. Gills Charitable Remainder Trust, as to an undivided 2% interest, and SUNCOAST FAMILY Y.M.C.A.'s, INC., a Florida not-for-profit corporation, as to an undivided 4% interest, hereinafter collectively referred to as "GRANTOR," and NISSI, INC., a Florida corporation, hereinafter referred to as "GRANTEE." P.O. Box 1608 Tarpon Springs, Fl. 34688-1608

WHEREAS, GRANTOR is the owner of the hereinafter described real property; and

WHEREAS, GRANTEE previously held a lease from the GRANTOR, dated January 12, 1986, authorizing the use of said described real property for the construction and maintenance of a sign and has constructed and is maintaining a sign and billboard on this property as of the date of the execution of the Easement; and

WHEREAS, GRANTEE desires an easement across the hereinafter described real property, consisting of two parcels, for the construction and maintenance of a sign and billboard; and

WHEREAS, GRANTOR previously granted an Easement for this purpose to GRANTEE, dated November 23, 1993, and recorded in Official Records Book 941 at page 1278 of the public records of Hernando County, Florida; and

WHEREAS, the previously granted easement, referred to in the

Prepared by:
JAKE VARN
CARLTONS Fields
P.O Drawer 190
TALLAHASSEE, FL. 32302

R Gulf Coast Title

preceding paragraph, contained an erroneous legal description of one of the parcels across which the easement agreed upon by the GRANTOR and GRANTEE was to lie; and

WHEREAS, GRANTOR attempted to correct this erroneous legal description by granting a Corrected Easement for this purpose to GRANTEE, dated December 6, 1993, and recorded in Official Records Book 946 at page 1274 of the public records of Hernando County, Florida; and

WHEREAS, the Corrected Easement referred to in the preceding paragraph corrected the legal description of the parcel erroneously described in the original Easement, but did not repeat the legal description of the other parcel contained in the original Easement.

NOW THEREFORE, GRANTOR, to correct the legal description of the parcel erroneously described in the original Easement and to correct the omission from the Corrected Easement of the legal description of the second parcel contained in the original Easement, and for good and valuable consideration and mutual covenants and agreements hereinafter contained, has granted, and by these presents does grant, a corrected non-exclusive easement unto GRANTEE over and across the following described real property in Hernando County, Florida to wit:

(SEE EXHIBIT "A" ATTACHED)

subject to the following terms and conditions:

1. TERM: The term of this easement shall be for a period of

fifty (50) years commencing on Nov. 23, 1993 and ending on Nov. 22, 2043 with no option for renewal, unless sooner terminated pursuant to the provisions of this easement.

2. USE OF PROPERTY AND UNDUE WASTE: This easement shall be limited to the construction and maintenance of a sign and billboard, upon and across the property described in Exhibit A during the term of this easement. This easement shall be non-exclusive. GRANTEE agrees that this sign and billboard shall not be used for advertising any business or product involving the use or sale of alcoholic beverages or tobacco. Further, GRANTEE agrees that this sign and billboard shall not be use for any message or advertising which promote activities on the adjacent property which would be inconsistent with the use of adjacent property as a wildlife management area. In the event this sign and billboard is destroyed as a result of a natural disaster, this easement shall automatically and immediately terminate and GRANTEE shall forfeit all right, title and interest in and to the easement. If this easement is terminated before the expiration of the easement's term as set forth in paragraph 1. hereof, GRANTEE shall execute and deliver a release or quit claim deed to GRANTOR which extinguishes all of GRANTEE'S right, title and interest in and to the easement. GRANTOR retains the right to engage in any activities on, over, below or across the easement area which do not unreasonably interfere with GRANTEE'S exercise of this easement and further

retains the right to grant compatible uses to third parties during the term of this easement.

GRANTEE shall dispose of, to the satisfaction of GRANTOR, all brush and refuse resulting from the clearing of the land for the uses authorized hereunder. If timber is removed in connection with clearing this easement, the net proceeds from the sale of such timber shall accrue to GRANTOR. Grantee shall take all reasonable precautions to control soil erosion and to prevent any other degradation fo the real property described in Exhibit "A" during the term of this easement. GRANTEE shall not remove water from any source on this easement including, but not limited to, a water course, reservoir, spring, or well, without prior written approval of GRANTOR. GRANTEE shall clear, remove and pick up all debris including, but not limited to, containers, papers, discarded tools and trash foreign to the work locations and dispose of any contaminants including, but not limited to, hazardous or toxic substances, chemicals or other agents produced or used in GRANTEE'S operations, on this easement or on any adjacent state land or in any manner not permitted by law.

Upon termination or expiration of this easement GRANTEE shall restore the lands over which the easement is granted to substantially the same condition it was upon the effective date of this easement. GRANTEE agrees that upon termination of this easement all authorization granted hereunder shall cease and

terminate.

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

4. RIGHT OF INSPECTION: GRANTOR or its duly authorized agents, representatives or employees shall have the right at any and all times to inspect the easement and the works and operations of GRANTEE in any matter pertaining to this easement.

5. BINDING EFFECT AND INUREMENT: This easement shall be binding on and shall inure to the benefit of the heirs, executors, administrators, successors and assigns of the parties hereto, but nothing contained in this paragraph shall be construed as a consent by GRANTOR to any assignment of this easement or any interest therein by GRANTEE.

6. NON-DISCRIMINATION: GRANTEE shall not discriminate against any individual because of that individual's race, color, religion, sex, national origin, age, handicaps, or marital status with respect to any activity occurring within this easement or upon lands adjacent to and used as an adjunct of this easement.

7. INDEMNITY: GRANTEE hereby covenants and agrees to investigate all claims of every nature at its own expense, and to indemnify, protect, defend, save and hold harmless GRANTOR and its successors in interest from any and all claims, actions lawsuits

and demands of any kind or nature arising out of this easement.

8. COMPLIANCE WITH LAWS: GRANTEE agrees that this easement is contingent upon and subject to GRANTEE 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.

9. VENUE PRIVILEGES: GRANTOR and GRANTEE agree that GRANTOR has venue privilege as to any litigation arising from matters relating to this easement. Any such litigation between GRANTOR and GRANTEE shall be initiated and maintained only in Leon County, Florida.

10. ARCHAEOLOGICAL AND HISTORIC SITES: Execution of this easement in no way affects any of the parties' obligations pursuant to Chapter 267, Florida Statutes. The collection of artifacts or the disturbance or 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.

11. PROHIBITIONS AGAINST LIENS OR OTHER ENCUMBRANCES: Fee title to the lands underlying this easement is held by GRANTOR. GRANTEE shall not do or permit anything to be done which purports to create a lien or encumbrance of any nature against the real property of GRANTOR including, but not limited to, mortgages or construction liens against the real property described in Exhibit A or against any interest of GRANTOR therein.

12. PARTIAL INVALIDITY: If any term, covenant, condition or provision of this easement shall be ruled by a court of competent jurisdiction to be invalid, void, or unenforceable, the remainder shall remain in full force and effect and shall in no way be affected, impaired, or invalidated.

13. SOVEREIGNTY SUBMERGED LANDS: This easement does not authorize the use of any lands located waterward of the mean or ordinary high water line of any lake, river, stream, creek, bay, estuary, or other water body or the waters or the air space thereabove.

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

15. ENTIRE UNDERSTANDING: This easement set forth the entire understanding between the parties and shall only be amended with the prior written approval of GRANTOR.

16. TIME: Time is expressly declared to be of the essence of this easement.

17. ATTORNEYS' FEES: GRANTEE shall pay all costs, charges and expenses, including attorneys' fees and appellate attorneys' fees, in connection with any dispute arising out of this easement, including without limitation, any costs and fees incurred or paid by GRANTOR because of the failure on the part of GRANTEE to comply with and abide by each and every one of the stipulations,

agreements, covenants and conditions of this easement, or incurred by GRANTOR in seeking any remedy available to GRANTOR as a result of such failure by GRANTEE.

18. DEFAULT: Should GRANTEE, at any time during the term of this easement, suffer or permit to be filed against it an involuntary, or voluntary, petition in bankruptcy or institute a composition or an arrangement proceeding under Chapter X or XI of the Chandler Act; or make any assignments for the benefit of its creditor; or should a receiver or trustee be appointed for GRANTEE'S property because of GRANTEE's insolvency, and the said appointment not vacated within 30 days thereafter; or should GRANTEE's easement interest be levied on and the lien thereof not discharged within 30 days after said levy has been made; or should GRANTEE fail promptly to make the necessary returns and reports required of it by state and federal law; or should GRANTEE fail promptly to comply with all governmental regulations, both state and federal; or should GRANTEE fail to comply with any of the terms and conditions of this easement and such failure shall in any manner jeopardize the rights of GRANTOR; then, in such event, and upon the happening of either or any of said events, GRANTOR shall have the right, at its discretion, to consider the same a default on the part of GRANTEE of the terms and provisions hereof, and, in the event of such default, GRANTOR shall have the option of either declaring this easement terminated, and the interest of GRANTEE

forfeited, or maintaining this easement in full force and effect and exercising all rights and remedies herein conferred upon GRANTOR. The pendency of bankruptcy proceedings or arrangement proceedings to which GRANTEE shall be a party shall not preclude GRANTOR from exercising either option herein conferred upon it. In the event GRANTEE, or the trustee or receiver of GRANTEE's property, shall seek an injunction against GRANTOR's exercise of either option herein conferred, such action on the part of GRANTEE, his trustee or receiver, shall automatically terminate this easement as of the date of the making such application, and in the event the Court shall enjoin GRANTOR from exercising either option herein conferred, such injunction shall automatically terminate this easement.

19. PAYMENT OF TAXES AND ASSESSMENTS: GRANTEE shall assume full responsibility for and shall pay all liabilities that accrue to the easement area or to the improvements thereon including any and all drainage and special assessments or taxes of every kind and all mechanic's or materialman's liens which may be hereafter lawfully assessed and levied against this easement.

20. AUTOMATIC REVERSION: This easement is subject to automatic termination and reversion to GRANTOR when, in the opinion of GRANTOR, this easement is not used for the purposes outlined herein, and any costs or expenses arising out of the implementation of this clause shall be borne completely, wholly and entirely by

GRANTEE.

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

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

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

Witness as to Grantor

Witness as to Grantor

GRANTOR

James P. Gills

[redacted]

Social Security No.

27 January 1994

Date signed by Grantor

ADDRESS: P.O. Box 1608

TARPON SPRINGS, FL. 34688-1608

Witness as to Grantor

Witness as to Grantor

DALLAS SEMINARY FOUNDATION, as Trustee of the James P. Gills Charitable Remainder Unitrust

By: _____
JERRY B. REEVES
Vice-President

By: _____
WENDELL G. JOHNSTON
Chairman of the Board

(CORPORATE SEAL)

75-2188543
F.E.I.D. No.

Jan. 25, 1994
Date signed by Grantor

Witness as to Grantor

Witness as to Grantor

SUNCOAST FAMILY Y.M.C.A.'S, INC.
a Florida not-for-profit corporation

By: _____
R. STEPHEN TARVER, President

(CORPORATE SEAL)

59-0810731
F.E.I.D. No.

26 JANUARY 1994
Date signed by Grantor

11

O.R. 951 PG 1049

STATE OF Florida
COUNTY OF Pinellas

The foregoing instrument was R. STEPHEN TARVER acknowledged before me this 26th day of January, 1994, by ~~James P. Gills~~, who is personally known to me or who has produced a valid driver's license as identification.

(NOTARY PUBLIC SEAL)

Josephine June Tellone
Notary Public

JOSEPHINE JUNE TELLONE
Printed, Typed or Stamped Name of Notary Public

Commission No. CC 264487

My Commission Expires: 4/13/97

STATE OF Texas
COUNTY OF Dallas

The foregoing instrument was acknowledged before me this 25th day of January, 1994, by Jerry B. Reeves and Wendell G. Johnston, Vice President and Chairman of the Board, respectively, of Dallas Seminary Foundation, as Trustee of the James P. Gills Charitable Remainder Unitrust, on behalf of Dallas Seminary Foundation. They are personally known to me or have produced valid driver's licenses as identification.

(NOTARY PUBLIC SEAL)

Jan Newsome
Notary Public

Jan Newsome
Notary Public
STATE OF TEXAS
My Comm. Exp. 9-8-97

Printed, Typed or Stamped Name of Notary Public

Commission No. _____

My Commission Expires: _____

12

O.R. 951 PG 1050

JAN-25-'94 17:47 ID:CARLTON FIELDS WARD TEL NO:3042220398 #196 P16

STATE OF FLORIDA
COUNTY OF PINELLAS

The foregoing instrument was acknowledged before me this 27th day of JANUARY, 1994, by JAMES P. GILS ~~R. Stephen Tarver, President of Suncoast Family Y.M.C.A.'s, Inc., a Florida not for profit corporation, on behalf of the corporation~~. He is personally known to me or has produced a valid driver's license as identification.

(NOTARY PUBLIC SEAL)

MARILYN J. WILLIAMS
State of Florida
My Comm. Exp. Jan. 25, 1998
Comm. # CC 167590
PERSONALLY KNOWN BY ME
PRODUCED I.D. _____

Marilyn J. Williams
Notary Public

Printed, Typed or Stamped Name of Notary Public

Commission No. _____

My Commission Expires: _____

O.R. 951 PG 1051

13

EXHIBIT "A"

Parcel 1:
DESCRIPTION
For a point of reference commence at the Northeast corner of Section 25, Township 21 South, Range 17 East, Hernando County, Florida.
Thence S.87°04'00"W. along the North line of said Section 25, a distance of 711.36 feet feet to a point on the West Right-of-Way line of U.S.Highway 19; Thence S.00°01'12"W. along said West Right-of-Way line, a distance of 1178.34 feet for a POINT OF BEGINNING; Thence continue S.00°01'12"W., a distance of 35.00 feet; thence N.89°58'48"W., a distance of 100.00 feet; Thence N.00°01'12"E., a distance of 35.00 feet; Thence S.89°58'48"E., a distance of 100.00 feet to the POINT OF BEGINNING.
Containing 0.068 acres more or less.

PARCEL 2

For a point of reference commence at the N.E. corner of Section 25, Township 21 South, Range 17 East, Hernando County, Florida. Thence S-87 degrees 04 minutes 00 seconds-W, along the North line of said Section 25, 711.36 feet to a point on the West Right-of-Way line of U.S. Highway 19; Thence S-00 degrees 01 minutes 12 seconds-W, along said West Right-of-Way line, 2198.34 feet for a POINT OF BEGINNING; Thence continue S 00 degrees 01 minutes 12 seconds-W, 50.00 feet; Thence N-89 degrees 58 minutes, 48 seconds-W, 110.00 feet; Thence 00 degrees 01 minutes 12 seconds-E, 50.00 feet; Thence S-89 degrees 58 minutes 48 seconds-E, 110.00 feet to the Point of Beginning. Containing 0.13 acres more or less.

O.R. 951 PG 1052

11.3 Public Hearing Notice, Advertisements, and Press Release

11.3.1 Public Hearing Notice

NOTICE

The Florida Fish and Wildlife Conservation Commission (FWC)
Announces a virtual

PUBLIC HEARING

for the

Chassahowitzka

Wildlife Management Area

Management Plan

Hernando County, Florida

7:00 P.M. Wednesday, October 28th, 2020

Connect to the meeting by going to
http://fwc.adobeconnect.com/chassahowitzka/

PURPOSE: To receive public comment regarding considerations for the FWC ten-year Land Management Plan for the Chassahowitzka Wildlife Management Area (WMA). This hearing is being held EXCLUSIVELY for discussion of the DRAFT Chassahowitzka WMA Management Plan. This meeting is not being held to discuss area hunting or fishing regulations. For more information on the process for FWC rule and regulation development go online to:

http://myfwc.com/about/rules-regulations/

A Management Prospectus for the Chassahowitzka WMA is available upon request. For a copy please contact Dylan Haase by email at Dylan.Haase@MyFWC.com or by phone at (850) 487-9102. Additional information can be found by visiting our public hearing website: https://myfwc.com/conservation/management-plans/upcoming/

11.3.2 Internal FWC Press Release

Help plan the future of Chassahowitzka Wildlife Management Area



Media contact: Melody Kilborn, 863-227-3830; Jamie Rager, 727-262-7642

Release Date: 10-14-2020

‹ All Articles

Tags:

WMA | Public Meeting

Photos available:
https://www.flickr.com/photos/myfwcmedia/sets/72157716410345307/

The Florida Fish and Wildlife Conservation Commission (FWC) will present a 10-year management plan for the Chassahowitzka Wildlife Management Area at a virtual public hearing on Wednesday, Oct. 28. All members of the public are invited to attend the 7 p.m. hearing via Adobe Connect. FWC staff will present the draft land management plan for the WMA and those in attendance will have the opportunity to comment and ask questions.

The meeting can be accessed via the following link: FWC.AdobeConnect.com/Chassahowitzka. Attendees are asked to sign in as a guest and make sure their speakers are turned on.

The Chassahowitzka WMA is on the Gulf coast of Florida in western Hernando County. Approximately 64 miles north of Tampa and 80 miles west of Orlando, it encompasses approximately 27,836 acres and offers many opportunities for outdoor recreation, including hunting, fishing, hiking, biking, cave diving and horseback riding.

This WMA conserves one of the largest coastal hardwood swamp forests along the Gulf of Mexico, south of the Suwannee River. Together with its intact and functioning freshwater, tidal and spring system communities, it provides significant watershed and water quality protection and important habitat for an array of imperiled, rare, and native wildlife and plant species.

"This draft plan will help specify how we can best conserve fish, wildlife, and other natural and cultural resources of the Chassahowitzka WMA for future generations, as well as provide fish- and wildlife-based outdoor recreation opportunities to the public," said Dylan Haase, FWC senior conservation planner.

To obtain a copy of the land management prospectus for the Chassahowitzka WMA, contact Dylan Haase at 850-487-9767 or Dylan.Haase@MyFWC.com. For more on the Chassahowitzka WMA, go to MyFWC.com/Viewing and select "Wildlife Management Area," then "lead areas."

For more information and background on management plans and their goals, visit MyFWC.com/Conservation and select "Terrestrial Conservation" then "Management."

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, visit MyFWC.com/Hunting and click on "Interactive Hunting Regulations."

11.3.3 Newspaper ad

VIRTUAL PUBLIC HEARING

The Florida Fish and Wildlife Conservation Commission (FWC) announces a virtual PUBLIC HEARING for the FWC Lead Managed Portions of Chassahowitzka Wildlife Management Area located in Hernando County, Florida.

FWC is conducting public hearings online to protect our communities due to COVID-19 (Coronavirus) social distancing guidelines. The public can watch and participate in these meetings for free using Adobe Connect, an online communications tool.

The meeting will start at **7:00 P.M. Wednesday, October 28th, 2020. Connect to the meeting by going to** http://fwc.adobeconnect.com/chassahowitzka/. Please sign in as guest and make sure your speakers are turned on.

PURPOSE: To receive public comment regarding considerations for FWC's ten-year Management Plan for the FWC Lead Managed Portions of Chassahowitzka Wildlife Management Area (CWMA).

This hearing is being held EXCLUSIVELY for discussion of the DRAFT Chassahowitzka 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 www.myfwc.com/about/rules-regulations/changes/

A Management Prospectus for Chassahowitzka WMA and copy of the agenda is available upon request from:

Florida Fish and Wildlife Conservation Commission, Land Conservation and Planning Group,
620 South Meridian Street
Tallahassee, Florida 32399-1600.
Telephone: (850) 487-9102
Email: Dylan.Haase@MyFWC.com

(10/16/2020)

11.3.4 Florida Administrative Register Ad

Notice of Meeting/Workshop Hearing

FISH AND WILDLIFE CONSERVATION COMMISSION

Freshwater Fish and Wildlife

The Florida Fish and Wildlife Conservation Commission announces a public meeting to which all persons are invited.

DATE AND TIME: October 28, 2020, 7:00 p.m.

PLACE: The FWC is conducting public hearings online to protect our communities due to COVID-19 (Coronavirus) social distancing guidelines. The public can watch and participate in these meetings for free using Adobe Connect, an online communications tool.

GENERAL SUBJECT MATTER TO BE CONSIDERED: The Florida Fish and Wildlife Conservation Commission (FWC) announces a virtual PUBLIC HEARING for the FWC Lead Managed Portions of Chassahowitzka Wildlife Management Area (WMA) located in Hernando County, Florida.

The FWC is conducting public hearings online to protect our communities due to COVID-19 (Coronavirus) social distancing guidelines. The public can watch and participate in these meetings for free using Adobe Connect, an online communications tool.

The meeting will start at 7:00 p.m. Wednesday, October 28th, 2020. Connect to the meeting by going to the following link: http://f\vc.adobeconnect.com/chassahowitzka/. Please sign in as guest and make sure your speakers are turned on.

PURPOSE: To receive public comment regarding considerations for FWC's ten-year Management Plan for the FWC Lead Managed Portions of Chassahowitzka WMA.

This hearing is being held EXCLUSIVELY for discussion of the DRAFT Chassahowitzka 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.

A copy of the agenda may be obtained by contacting: A Management Prospectus for Chassahowitzka WMA and copy of the agenda is available upon request from Dylan Haase at Dylan.Haase@MyFWC.com or (850)487-9102. 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: Dylan Haase at Dylan.Haase@MyFWC.com or (850)487-9102. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, I (800)955-8771 (TDD) or I (800)955-8770 (Voice).

For more information, you may contact: Dylan Haase at Dylan.Haase@MyFWC.com or (850)487-9102.

11.4 Public Input

11.4.1 Management Advisory Group Meeting Results

Chassahowitzka Wildlife Management Area (CWMA)
Management Advisory Group (MAG)

Consensus Meeting Results

September 23, 2020

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. The FWC does this by asking spokespersons for these stakeholders to participate in a half-day meeting to provide ideas about how FWC-managed lands should be protected and managed.

The MAG consensus meeting was held on the morning of *September 23rd, 2020* remotely via Microsoft Teams. The ideas found below were provided by stakeholders for consideration in the 2021 - 2031 Management Plan (MP). 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 the 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 order in which the ideas were received. All ideas will be considered equally by FWC staff in the development of the MP. 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:

Idea

1. **Continue prescribed fire to manage native habitats.** Prescribed fire is best and most economical tool for managing natural communities.

2. **Protect water resources on the management area.** The management area contains several freshwater springs and embedded wetlands, ensure to manage property in a way that protects those water resources.

Idea

3. **Maintain public access.** Public lands should remain available to the public to enjoy, ensure to preserve these facilities and allow for public interaction with the environment.

4. **Timber management.** Use timber management as a tool to reach the area's goals and objectives for managing natural communities when appropriate.

5. **Continue moving natural communities towards desired conditions.** To accomplish this includes a suite of management tools such as restoration, prescribed fire, timber management, and control of exotic and invasive plant and animal species.

6. **Better education on proper etiquette.** Ensure to have a robust standard of trail etiquette based on conservation knowledge. This etiquette includes not disturbing animals, be kind to other users, no littering, and furthering knowledge of how to use conservation lands. Look towards providing education to all user groups about safely and properly utilizing the natural space.

7. **Natural surface trail connections to neighboring lands.** Currently there is a push across the state for greenway systems. Work with the county to maximize efforts to provide connection to adjacent properties. This will help create more robust engagement from all user groups and gets community involved as much as possible, specifically younger demographics. This in turn can help continue to justify the need for providing conservation lands. Trail connections are being looked at across the country as it gets people outdoors, ultimately creates better land stewards and educates the public on why these lands have been conserved.

Idea

8. **Continue to provide long term preservation measures on the management area**. The function of these large natural areas is critical to the health and viability of the watershed. For an example, due to groundwater contamination in the Weeki Wachee Basin, linked to population growth and residential/commercial urban land uses, a DEP BMAP is in place to reduce nitrate contamination. These lands protect developed areas from storm surge and mitigate anthropogenic impacts. It is critical that the CWMA and areas incorporated into the CWMA receive the highest level of preservation protection possible to guard against development, conversion to other uses or resource management pressure from outside entities. Current protection measures in-place need to be reviewed periodically by legal staff and revised when needed to solidify long term preservation.

9. **Facilitate connection to State Road (SR) 50 on south end.** Currently, users can enter the area at the check in station, have about 6 miles of travel and then have to turn around and come back the way they came. Would make it easier if users could have access closer to SR 50 to make a loop and come back around.

10. **Coyote control.** Coyote populations are currently a problem on the area. Some suggestions include having a designated season or a couple of weekend hunts, this could be a fairly effective way of dealing with them. In the long-term would help the deer population by removing coyote. While feasibility of controlling populations may be difficult, should be a priority on the area.

11. **Remove impediments to surface hydrologic flow**. Impediments to natural surface flow may include raised roadbeds and trails, plugged culverts or accumulated debris. If this is a problem, projects should be identified, funded and implemented to restore natural hydrology.

12. **Continue exotic vegetation treatments on the area.** Exotic control is part of general native habitat management. Exotic infestation are coming into the area and need to ensure to keep up with treatments.

Idea

13. **Provide habitat for threatened and endangered species.** These activities are already happening on the area and land is managed well but there are threatened and endangered species that exist on the area to consider. Ensure habitat is managed to provide habitat for those species such as indigo snakes and gopher tortoises.

14. **Specific goals and objectives for each natural community in management plan.** Management plan does an above average job of stating specific objectives. Recommended that FWC staff consider having specific goals and objectives to mark how the area's natural communities are being managed. Makes it easier to be able to go back and assess the work that has been accomplished.

15. **Facilitate additional management efforts on Chassahowitzka Florida black bear subpopulation**. Due to the relatively low numbers of Florida Black bear in the Big Bend/ Chassahowitzka BMU, additional efforts should go into providing habitat protection; connectivity to adjacent lands; and working cooperatively with FWC Bear Management Staff and with stakeholders in Weeki Wachee, Glen lakes, Hernando beach, the Heather and Chassahowitzka to create Bear Wise Communities.

16. **Continue to allow compatible recreation uses on WMA.** All the recreational uses on the area currently seem to be compatible with managing for wildlife and natural communities, doesn't seem to be incompatible uses on the WMA. Continue recreational uses that are compatible such as hiking and hunting and no swamp buggy or ATV trails.

17. **Coordinate management efforts on neighboring agriculture lands.** Invite a representative of the management area to local working group meetings that USDA hosts. These meeting discuss local resource concerns with local agriculture producers, and work to coordinate efforts.

Idea

18. **Development of additional recreational facilities to improve public use.** Anything that would allow the public to better utilize the management area, look towards having some additional features to make the area user friendly to the public.

19. **Designate areas for dove hunting.** Has been some conflict in this area, especially during archery season. Many hunters don't utilize areas such as hammock for dove hunting. Look towards potentially designating a couple areas more conducive to dove hunting.

20. **Establish a monitoring program to document for wildlife species particularly for breeding and migratory species.** Implementation of the Chassahowitzka WMA Management Plan would benefit from having increased information and data on wildlife usage of select habitats, particularly for breeding birds nesting in the area and migrating birds during the spring and fall seasons. Inventory work could be supported by use of volunteer groups such as Hernando Audubon.

21. **Continue to implement WCPR strategy.** Wildlife Conservation Prioritization and Recovery strategy encompasses considerations needed to be accomplished to manage the area for imperiled and locally important species, as well as game species and other species of interest. Lays out surveys, data collection, monitoring and management of natural communities for these species. Ensure strategy is continued to be followed.

22. **Enhance existing safety provisions for wildlife crossings on adjacent roadways**. Make provisions to add wildlife crossings for roadways from a multi-agency perspective to enhance corridor use with the objective of reducing wildlife mortality, even if it results in reduced speed zones as an initial outcome. This can also be viewed as a public safety issue.

Idea

23. **Continue scrub management especially on south end.** During last Land Management Review, the area manager showed scrub management on south end of the property. While there are challenges in that area, it is worth continuing to maintain area and improve the habitat for scrub species.

24. **Continue to improve plant and animal species inventories.** The FWC is highly effective at documenting animal species. However, there is an opportunity to improve plant species lists. May be worth inviting groups such as Florida Native Plant Society, or having a BioBlitz, to develop a fairly decent list to know what you have and know what you are managing for.

25. **Look into walk-in permits for wild hog dog hunts.** Normally 75 permits are given out but turn out has been poor over last few years. It may be good to consider about 10-20 walk-in permits.

26. **Include an adaptive management component.** Adaptive management allows wildlife management projects to proceed in the face of uncertainty regarding involved species for habitat response. As more scientific information becomes available, changes can be made to project design(s) to improve the probability of project success. However, this does require monitoring during project implementation to gain the new information or gage species/habitat response.

27. **Continue to maintain and improve infrastructure on roads for public access and use.** Staff is working to manage the WMA for wildlife and their habitats, but we want to keep the public involved as well. This can be further accomplished by keeping up with road maintenance.

Idea

28. **Expand outreach and awareness on prescribed burns.** Many avenues to get information out. There is a large number of people in the community that have health problems, specifically respiratory problems. Prescribed burns can be medically challenging for some of the public. Recommend finding additional ways to get the announcement out for when prescribed burns are occurring. The public does not want to be caught unaware, as it can trigger a medical emergency. As well as we are currently going through COVID-19, many people who have contracted COVID-19 are having long-term respiratory issues. So, this may become a bigger problem in the future.

29. **Reestablish a driving tour.** In the past there was an on-road trail map however that tour was changed and there have been new road improvements. Encourage staff to look towards reimplementation of driving tour.

30. **Work to determine an exact usage policy.** Don't know what on the property is currently in place but encourage looking at capturing usage capacity using real numbers. Helps to understand community engagement and where efforts can be made to improve education. It is an important metric. Some places have broad usage capacity determination but do not have specific info to support their usage capacities.

31. **Include a resiliency and climate change component to management plan.** Important to include a component within the management plan that addresses such issues as sea level rise, storm surge during hurricane events, and fluctuations in precipitation patterns. Describe what these scenarios might mean for management of the Chassahowitzka WMA and include adaptation techniques.

Idea

32. **Design and construct hiking trail and Annutteliga Hammock tract.** Habitat on the north end of the Annutteliga Hammock tract has great looking sandhill. Currently there are only fire breaks that can be used as hiking/biking trails. Would like to see hiking trail developed in this area.

33. **Continue restoring ephemeral wetlands by removing trees.** Keep up the physical and mechanical removal of trees but may be able to maintain with just prescribed fire.

34. **Create habitat quality index.** Implementation of the management plan would benefit from having information on the quality of wildlife habitat within the Chassahowitzka WMA. Important to identify habitat(s) of high quality to be preserved and areas of lesser quality to be improved. Such as index would help to establish priorities for restoration or habitat enhancement.

35. **Regular meetings with neighboring agencies on collaborative management.** Look at gulf coast region as a whole and land that has been preserved as a wildlife corridor rather than managing properties independently.

36. **Increase education outreach on management of natural communities.** Public does not have the same knowledge base as staff may have. Important for the public to understand what preserving a natural habitat means. Public does not completely understand why certain tools are utilized and the public may push back due to global economic turndown. If people do not understand the activities necessary, they may not support it.

Written comments received by invited, but unable to attend, stakeholders:

Wes Calhoun-Florida Trail Association:

1. I've seen the trailhead for the Annutteliga Hammock Trail though I haven't yet hiked the trail, I believe there were hiking maps at the trailhead kiosk, so I'd encourage the FWC to maintain that. I've also helped reconstitute a trail in the World Woods Unit located near the Citrus Tract of the Withlacoochee State Forest (WSF) that's also called Annutteliga Hammock Trail. You might want to work with WSF to establish unique names for each trail, so people don't get confused and have portions of their hiking parties at two different locations miles apart. I recommend they call the trail either Annutteliga Hammock Unit Trail or Annutteliga Hammock East Trail. You might consider calling the trail in the CWMA by the name Annutteliga Hammock West Trail.

2. I stopped at the entrance to the CWMA at Rattlesnake Camp Road. I saw maps there and I believe the hiking trails were shown on it. That's a good thing to have for hikers. I hiked some of the trails years ago. Maps could be provided for gravel bicycle riders showing roads appropriate for gravel biking.

3. I recently joined a biking group and learned about gravel biking. These are bicyclists that enjoy riding bikes that are set up as racing bikes only with wide tires suitable for traveling rough roads. I am interested to know if CWMA would like to have gravel bicyclists on the roads in the WMA. It might be a way to get more people using the area. I can provide some liaison with the group if you like.

4. There is a program called Leave No Trace (http://lnt.org) that might be useful in establishing educational programs on trail etiquette. Also, if different types of trails are established (hiking, mountain biking, equestrian, etc.), etiquette for staying on designated trail for the particular use should be included.

5. Information on prescribed burns would be of interest to people planning to use trails or ride a bicycle on CWMA roads. A phone number or website for hike/ride leaders to use the day before or the day of an event would be very helpful.

6. Keep Florida Trail Association Suncoast Chapter in mind if you need help improving the hiking trail. Also, create a plan for maintaining the trail that includes fallen tree removal, mowing and brush-cutting, and general lopping and trimming of growth encroaching on the trail.

Vincent Morris – Florida Native Plant Society:

1. With the Seville golf course being turned into a pine plantation maybe there is an opportunity to connect the WMA's restoration sandhill tract to the parcel on SR19. This connectivity could provide for animal migrations inland as sea level rises and could provide a future hiking trail connector from the Withlacoochee State Forest to the coast.

2. Prepare for sea level rise. I am not sure exactly what to do about it, but the marshes and hydric hammock are already being eaten by the gulf and these communities may need assistance as they march further east.
3. Try to stay on the forefront of Brazilian Pepper management. This weed is difficult to manage in these coastal areas. This WMA could get inundated by Brazilian Pepper.

4. Put some mention of red-cockaded woodpecker management into the plan just in case some biologist in the future desires to manage the sandhills/flatwoods for them.

5. Try to improve mapping of listed/imperiled/FNAI/FWC tracked species. It seems there should be more documented listed species points on the map considering FWC biologists are often the most qualified to document them. I couldn't find the *Nolina brittoniana* point in the map for example. Species such as this could guide management and provide a reason to protect certain areas from destructive use.

Chassahowitzka Wildlife Management Area

MAG Meeting Participants

Name	**Affiliation**
Active Participants	
Steven Brinkley	FWC Area Biologist
Anne Blanchard	Southwest Florida Water Management District
Commissioner John Allocco	Hernando County District 3 County Commissioner
Michael Singer	Hernando County Planning Department
Michael Edwards	Florida Forest Service
Chris Becker	Department of Environmental Protection
Chelsie Miller	Natural Resources Conservation Service
Shane Richeson	Swamp Mountain Bike Club
Terry Griffin	Adjacent Private Landowner
Dan McKenna	Local Hunting Stakeholder
Tom St. Clair	Hernando County Audubon Society
Supportive Participants	
Josh Agee	FWC Habitat and Species Conservation (HSC), Regional Biologist
Cully Lord	FWC HSC, Assistant Regional Biologist
Victor Echaves	FWC HSC, District Biologist
Ethan Noel	FWC HSC, Regional Conservation Biologist
Tom M. Matthews	FWC Public Access Services Office (PASO)
Ben Rangel	FWC PASO
Mark Schulz	FWC Division of Hunting and Game Management
Jake Fitzroy	FWC Youth Conservation Centers Network
Eric Johnson	FWC Division of Freshwater Fisheries
Larame Ferry	FWC Land Conservation Coordinator
Invited but Unable to Attend	
Jason O'Donoughue	Division of Historical Resources
Dan Hipes	Florida Natural Areas Inventory
Major Roger Young	FWC Law Enforcement
Wes Calhoun	Florida Trail Association
Vince Morris	Florida Native Plant Society
Becky Card-Swerdloff	Nature Coast Back Country Horsemen
Brett Hemphill	Karst Underwater Research
FWC Planning Personnel	
Dylan Haase	Senior Conservation Planner, Facilitator

Hannah Klein	Land Conservation Planner, Recorder
Elias Haase	Administrative Assistant, Recorder

11.4.2 Public Hearing Report

PUBLIC HEARING REPORT

FOR

CHASSAHOWITZKA WILDLIFE MANAGEMENT AREA MANAGEMENT PLAN

HELD BY THE

CHASSAHOWITZKA WILDLIFE MANAGEMENT AREA MANAGEMENT ADVISORY GROUP

AND THE

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

OCTOBER 28, 2020

The following report documents the public input that was received at the Chassahowitzka Wildlife Management Area (CWMA) Management Advisory Group's (MAG) public hearing for the update to the Management Plan for CWMA that was held at 7:00-9:00 PM, on October 28, 2020 remotely via Adobe Connect due to COVID gathering restrictions.

CWMA Management Advisory Group Introduction:

The meeting was introduced by Mr. Tom St. Clair, a CWMA Management Advisory Group participant, who represented the CWMA MAG. Mr. St. Clair indicated that he was one of 11 stakeholders that attended the Florida Fish and Wildlife Conservation Commission (FWC) facilitated CWMA MAG meeting held on September 23, 2020. Mr. St. Clair stated that the Draft Management Plan was being presented tonight by FWC staff, and that copies of the draft plan and the CWMA MAG meeting report were available for download on their screens. Mr. St. Clair thanked everyone for attending and then introduced Ms. Dylan Haase, Senior Conservation Planner, FWC, to facilitate and coordinate the presentation of an overview of CWMA, FWC's planning process, and the draft components of the CWMA Draft Management Plan.

Presentation on an Overview of the CWMA and the FWC Planning Process:

Ms. Haase welcomed everyone and thanked the public for their attendance. Ms. Haase 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 CWMA, and not hunting and fishing regulations, indicating there is a separate public input process for FWC rule and

regulation development. Ms. Haase then described the materials that were available for download on their screens for public review, including the CWMA Draft Management Plan and the MAG Meeting Report and Accomplishment Report. Ms. Haase then presented the agenda for the public hearing and facilitated the introduction of all FWC staff in attendance to the audience. Ms. Haase then presented an overview and orientation of CWMA including a description of the natural communities, data about CWMA visitation, revenue and economic benefits generated for the state and region by the area, wildlife species, recreational opportunities found on the area, surrounding conservation lands, surrounding Florida Forever Program Land Acquisition Projects, acquisition history, etc. She also explained FWC's planning process for the management of the public conservation land and asked if there were any questions regarding that process.

Questions, Answers and Discussion on the CWMA Overview and FWC's Planning Process:

Ms. Haase 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. Ms. Haase again emphasized that the exclusive purpose for the public hearing was to collect public input regarding the Draft Management Plan for CWMA, 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.

No (further) questions or comments were received at this stage of the CWMA public hearing meeting.

Presentation of the CWMA Draft Management Plan:

At this point, Ms. Haase, began the presentation of the CWMA Draft Management Plan. Ms. Haase then completed and concluded the presentation of the CWMA Draft Management Plan.

Questions and Comments on the CWMA Draft Management Plan Presentation:

Ms. Haase asked if there were any comments or questions from the public regarding the Draft Management Plan and encouraged everyone to fill out a speaker card for public testimony. She informed them that all comments, questions, and public testimony will be duly considered equally by FWC.

Public Comment 1: An unidentified member of the audience provided the following comments and questions:

The approved LZ's North of chaz does help Florida National Guard, thank you

FWC Response: Ms. Haase, Senior Conservation Planner, responded:

Thank you, Mr. McCain, appreciate that. We will definitely keep that in mind and notate that.

Public Question 2: An unidentified member of the audience provided the following comments and questions:

Explore idea of overnight closed gate or more FWC officer presence to deter poachers. I see too many people sneaking in after dark and spot lighting for deer. I call when I see them.

FWC Response: Ms. Haase, Senior Conservation Planner, responded:

Absolutely. We will work with our law enforcement to make them aware. I don't know if Steve our area manager had anything to add. If that is something that you've been working with law enforcement, feel free to chime in otherwise we'll definitely make a note of that.

Mr. Steve Brinkley, CWMA Area Manager responded:

That's something we know about and we heard about, and there's a few things that tie our hands in that respect, but we'll continue to work with law enforcement like she said and try to come up with ways to deter that as much as possible.

Public Question 2: An unidentified member of the audience continued this line of comments:

I understand, thank you.

Public Question 3: An unidentified member of the audience provided the following comments and questions:

Why long leaf pine and not white oak (seems to go well in the WMA that is not swamp and provide more food for wildlife)? Ask hunters to share game camera data to help biologist. Where can I and other hunters send the data?

Mr. Steve Brinkley, CWMA Area Manager, responded:

Yes, so, this is a big part of our uplands at Chassahowitzka, specifically in the sandhill natural community type, which is longleaf pine overstory with some scattered turkey oats and a few other species but mostly longleaf pine and then grassy herbaceous understory.

So that's a diminishing habitat type throughout the coastal plain region, and since that's kind of imperiled that's what we managed for at Chassahowtizka because there's a lot of native wildlife species that depend on that habitat type. We do not mind some oaks around, and we leave them, because we realize that they are a food source for our wildlife. But the reality is that trees are big canopy and broadleaved and they cast a lot of shade and don't let that understory vegetation grow up like pines do. They also do not create fuel that helps prescribed fire like pines do. We have plenty of oaks on Chassahowitzka as it is, and I don't really foresee us ever planting any. Because of the reason our habitat types are more pine oriented. And as far as hunter sharing and camera data to help biologists, we do, we do get some pictures and things from hunters that want to share, mostly of bears and things like that. But we do have some

cooperation there, and it is very helpful. Hopefully, that answers your question. Additionally, feel free to send any pictures to me at steven.brinkley@myfwc.com.

No further questions or comments were received at this stage of the CWMA public hearing meeting.

Public Testimony on the CWMA Draft Management Plan:

No members of the public audience submitted speaker cards indicating their intention to provide formal public testimony. Ms. Haase again emphasized that the public hearing was for taking input regarding the CWMA Draft Management Plan and opened the floor for any further public comment.

No (further) questions or comments were received at this stage of the CWMA public hearing meeting.

Adjournment:

Ms. Haase asked if there were any other members of the public that wished to give public testimony or comment.

Public Comment 4: An unidentified member of the audience provided the following comments and questions:

Tilling "no vehicle roads" twice in one year may be hard to walk on for many people.

FWC Response: Ms. Haase, Senior Conservation Planner, responded:

I'm assuming that might be for prescribed burning purposes. Steve, do you want to speak to that.

Mr. Steve Brinkley, CWMA Area Manager, responded:

Yeah, those are our firebreaks I assume, and I realize that, but you know those things really grow up fast, especially in the summertime with vegetation. So that's part of our whole deal is to maintain those so that when and if wildfires start in our area we have a control line to use to stop them, or if forestry does that they have to fight those lines we generally try to till those well in advance of hunting season so that it's not so hard for y'all walk on during hunting season, but this year we kind of got held back and had to do it right before and, I apologize but that's just kind of what we have to do so in the future. We'll still try to do it well in advance so that they

have time to pack down a little bit, but when the season starts in September that's still a growing season so it's kind of hard to keep them in good shape. Fire control wise right before hunting season.

Public Question 2: An unidentified member of the audience continued this line of comments:

I understand, just a thing to think about. I really do appreciate all of you taking care of our Chaz.

No other speakers offered further comments.

Then Ms. Haase declared the public hearing adjourned.

11.5 Native Plant and Animal Species Lists

11.5.1 Native Plants

Scientific name	**Common name**
Acalypha gracilens	Slender threeseed mercury
Acer rubrum	Red maple
Acer saccharum ssp. *floridanum*	Florida maple
Agalinis divaricata	Pineland false foxglove
Agalinis fasciculata	Beach false foxglove
Agalinis plukenetii	Plukenet's false foxglove
Agalinis sp.	False foxglove
Ageratina jucunda	Hammock snakeroot
Amphicarpum muehlenbergianum	Blue maidencane
Amsonia ciliata	Fringed bluestar
Andropogon brachystachyus	Shortspike bluestem
Andropogon floridanus	Florida bluestem
Andropogon gerardii	Big bluestem
Andropogon glomeratus	Bushy bluestem
Andropogon glomeratus var. *glaucopsis*	Purple bluestem
Andropogon glomeratus var. *hirsutior*	Bushy bluestem
Andropogon gyrans	Elliott's bluestem
Andropogon sp.	Bluestem
Andropogon ternarius	Splitbeard bluestem
Andropogon virginicus var. *glaucus*	Chalky bluestem
Andropogon virginicus var. *virginicus*	Broomsedge bluestem
Anthenantia villosa	Green silkyscale

Arisaema triphyllum	Jack-in-the-pulpit
Aristida condensata	Big threeawn
Aristida mohrii	Mohr's threeawn
Aristida purpurascens var. *purpurascens*	Arrowfeather threeawn
Aristida sp.	Threeawn
Aristida spiciformis	Bottlebrush threeawn
Aristida stricta	Wiregrass
Aristolochia serpentaria	Virginia snakeroot
Arnoglossum ovatum	Ovateleaf Indian-plantain
Aronia arbutifolia	Red chokeberry
Asclepias humistrata	Pinewoods milkweed
Asclepias lanceolata	Fewflower milkweed
Asclepias tomentosa	Velvetleaf milkweed
Asclepias tuberosa	Butterflyweed
Asclepias verticillata	Whorled milkweed
Asemeia violacea	Showy milkwort
Asimina angustifolia	Slimleaf pawpaw
Asimina obovata	Bigflower pawpaw
Asimina pygmea	Dwarf pawpaw
Asimina reticulata	Netted pawpaw
Asimina sp.	Pawpaw
Asimina spatulata	Pawpaw
Axonopus furcatus	Big carpetgrass
Axonopus sp.	Carpetgrass
Baccharis halimifolia	Groundsel tree
Bacopa caroliniana	Lemon bacopa
Balduina angustifolia	Coastalplain honeycomb-head
Balduina sp.	Honeycomb-head
Baptisia lecontei	Pineland wild indigo
Bejaria racemosa	Tarflower
Berchemia scandens	Rattan vine
Berlandiera pumila	Soft greeneyes
Berlandiera subacaulis	Florida greeneyes
Bidens alba	Beggarticks
Bidens sp.	Beggarticks
Bulbostylis ciliatifolia	Capillary hairsedge

Bulbostylis sp.	Hairsedge
Bulbostylis warei	Ware's hairsedge
Callicarpa americana	American beautyberry
Callisia ornata	Florida scrub roseling
Calopogon tuberosus var. *tuberosus*	Tuberous grass-pink
Calystegia sepium ssp. *limnophila*	Hedge false bindweed
Campsis radicans	Trumpet creeper
Carex sp.	Sedge
Carphephorus corymbosus	Coastalplain chaffhead
Carphephorus odoratissimus	Vanillaleaf
Carpinus caroliniana	American hornbeam
Cartrema americanum	Wild olive
Cartrema sp.	Devilwood
Carya floridana	Scrub hickory
Carya glabra	Pignut hickory
Carya sp.	Hickory
Celtis laevigata	Sugarberry
Centella asiatica	Spadeleaf
Centrosema virginianum	Spurred butterfly pea
Cephalanthus occidentalis	Common buttonbush
Ceratiola ericoides	Florida rosemary
Cercis canadensis	Eastern redbud
Chamaecrista fasciculata	Partridge pea
Chamaecrista nictitans	Sensitive pea
Chamaecrista sp.	Sensitive pea
Chapmannia floridana	Florida alicia
Chaptalia tomentosa	Pineland daisy
Chasmanthium laxum	Slender woodoats
Chrysopogon pauciflorus	Florida false beardgrass
Chrysopsis gossypina ssp. *gossypina*	Cottony golden-aster
Chrysopsis latisquamea	Pineland golden-aster
Chrysopsis mariana	Maryland golden-aster
Chrysopsis scabrella	Coastalplain golden-aster
Chrysopsis sp.	Golden-aster
Chrysopsis subulata	Scrubland golden-aster
Cirsium sp.	Thistle
Cladina evansii	Evans' reindeer lichen

Cladium jamaicense	Jamaica swamp sawgrass
Cladium sp.	Swamp sawgrass
Cladonia evansii	Powder-puff lichen
Cladonia sp.	Reindeer lichens
Clethra alnifolia	Coastal sweet pepperbush
Clitoria mariana	Atlantic pigeon-wing
Cnidoscolus stimulosus	Tread-softly
Coelorachis sp.	Jointgrass
Coleataenia tenera	Bluejoint panicum
Commelina erecta	Whitemouth dayflower
Conoclinium coelestinum	Blue mistflower
Conradina canescens	False rosemary
Coreopsis sp.	Tickseed
Cornus foemina	Swamp dogwood
Crataegus michauxii	Michaux's hawthorn
Crataegus sp.	Hawthorn
Crocanthemum carolinianum	Carolina frostweed
Crocanthemum corymbosum	Pinebarren frostweed
Crotalaria rotundifolia	Rabbitbells
Crotalaria sp.	Rattlebox
Croton argyranthemus	Silver croton
Croton linearis	Pineland croton
Croton michauxii	Michaux's croton
Croton sp.	Croton
Cyperus croceus	Baldwin's flatsedge
Cyperus filiculmis	Wiry flatsedge
Cyperus ovatus	Pinebarren flatsedge
Cyperus sp.	Flatsedge
Dalea carnea var. *carnea*	Whitetassels
Dalea feayi	Feay's prairie clover
Dalea pinnata var. *pinnata*	Summer farewell
Dalea sp.	Prairie clover
Descurainia pinnata	Western tansymustard
Desmodium ciliare	Hairy small-leaf tick-trefoil
Desmodium sp.	Tick-trefoil
Desmodium strictum	Pinebarren tick-trefoil
Dichanthelium aciculare	Needleleaf witchgrass

Dichanthelium acuminatum var. *acuminatum*	Tapered witchgrass
Dichanthelium ensifolium var. *ensifolium*	Cypress witchgrass
Dichanthelium ensifolium var. *unciphyllum*	Cypress witchgrass
Dichanthelium erectifolium	Erectleaf witchgrass
Dichanthelium laxiflorum	Openflower witchgrass
Dichanthelium ovale	Eggleaf witchgrass
Dichanthelium portoricense	Hemlock witchgrass
Dichanthelium sp.	Witchgrass
Dichanthelium strigosum var. *strigosum*	Roughhair witchgrass
Digitaria sp.	Crabgrass
Diodia virginiana	Virginia buttonweed
Diospyros virginiana	Common persimmon
Distichlis spicata	Saltgrass
Drosera brevifolia	Dwarf sundew
Drosera capillaris	Pink sundew
Drosera sp.	Sundew
Dyschoriste oblongifolia	Oblongleaf twinflower
Edrastima uniflora	Clustered mille graines
Eleocharis baldwinii	Baldwin's spikerush
Eleocharis sp.	Spikerush
Elephantopus elatus	Tall elephantsfoot
Equisetum hyemale var. *affine*	Scouring rush
Eragrostis elliottii	Elliott's lovegrass
Eragrostis sp.	Lovegrass
Eragrostis spectabilis	Purple lovegrass
Erechtites hieraciifolius	Fireweed
Erigeron canadensis	Canadian horseweed
Erigeron sp.	Fleabane
Erigeron strigosus	Prairie fleabane
Erigeron vernus	Early whitetop fleabane
Eriocaulon compressum	Flattened pipewort
Eriogonum tomentosum	Dogtongue wild buckwheat
Erythrina herbacea	Coralbean
Euonymus americanus	American strawberrybush

Eupatorium capillifolium	Dogfennel
Eupatorium compositifolium	Yankeeweed
Eupatorium mohrii	Mohr's thoroughwort
Eupatorium rotundifolium	Roundleaf thoroughwort
Eupatorium sp.	Thoroughwort
Euphorbia sp.	Spurge
Euthamia caroliniana	Slender flattop goldenrod
Euthamia graminifolia	Flattop goldenrod
Fimbristylis dichotoma	Forked fimbry
Fimbristylis sp.	Fimbry
Fraxinus caroliniana	Carolina ash
Fraxinus pennsylvanica	Green ash
Fuirena scirpoidea	Southern umbrellasedge
Galactia elliottii	Elliott's milkpea
Galactia floridana	Florida milkpea
Galactia regularis	Eastern milkpea
Galactia sp.	Milkpea
Galium sp.	Bedstraw
Gaylussacia dumosa	Dwarf huckleberry
Gaylussacia frondosa	Blue huckleberry
Gaylussacia mosieri	Woolly huckleberry
Gaylussacia sp.	Huckleberry
Gelsemium sempervirens	Yellow jessamine
Gelsemium sp.	Jessamine
Geobalanus oblongifolius	Gopher apple
Gordonia lasianthus	Loblolly bay
Gymnopogon ambiguus	Bearded skeletongrass
Gymnopogon brevifolius	Shortleaf skeletongrass
Gymnopogon chapmanianus	Chapman's skeletongrass
Gymnopogon sp.	Skeletongrass
Helianthus angustifolius	Narrowleaf sunflower
Helianthus sp.	Sunflower
Heterotheca subaxillaris	Golden aster
Hieracium megacephalon	Coastalplain hawkweed
Hieracium sp.	Hawkweed
Houstonia procumbens	Roundleaf bluet
Hydrangea barbara	Climbing hydrangea

Hydrocotyle sp.	Marshpennywort
Hydrocotyle umbellata	Manyflower marshpennywort
Hydrolea corymbosa	Skyflower
Hymenocallis rotata	Spring-run spiderlily
Hypericum cistifolium	Roundpod St. John's wort
Hypericum fasciculatum	Peelbark St. John's wort
Hypericum hypericoides	St. Andrew’s cross
Hypericum myrtifolium	Myrtleleaf St. John's wort
Hypericum sp.	St. John's wort
Hypericum tenuifolium	Atlantic St. John's wort
Hypericum tetrapetalum	Fourpetal St. John's wort
Hypoxis juncea	Fringed yellow stargrass
Hyptis alata	Clustered bushmint
Ilex ambigua	Sand holly
Ilex cassine var. *cassine*	Dahoon
Ilex coriacea	Large gallberry
Ilex glabra	Gallberry
Ilex opaca var. *opaca*	American holly
Ilex sp.	Holly
Ilex vomitoria	Yaupon
Ipomoea hederifolia	Scarletcreeper
Ipomoea sagittata	Saltmarsh morning glory
Ipomoea sp.	Morning glory
Iris savannarum	Savanna iris
Itea virginica	Virginia willow
Iva microcephala	Piedmont marshelder
Juncus effusus ssp. *solutus*	Soft rush
Juncus roemerianus	Needle rush
Juncus sp.	Rush
Juniperus virginiana	Red cedar
Kalmia hirsuta	Hairy laurel
Kellochloa verrucosa	Warty panicgrass
Krigia virginica	Virginia dwarfdandelion
Lachnanthes caroliana	Carolina redroot
Lachnocaulon anceps	Whitehead bogbutton
Lachnocaulon sp.	Bogbutton
Lechea minor	Thymeleaf pinweed

Lechea mucronata	Hairy pinweed
Lechea sessiliflora	Pineland pinweed
Lechea sp.	Pinweed
Lechea torreyi	Piedmont pinweed
Lespedeza hirta	Hairy lespedeza
Lespedeza sp.	Lespedeza
Liatris elegans	Pinkscale gayfeather
Liatris pauciflora	Fewflower gayfeather
Liatris pauciflora var. *secunda*	Piedmont gayfeather
Liatris sp.	Blazing star
Liatris spicata	Dense gayfeather
Liatris tenuifolia	Shortleaf gayfeather
Limnobium spongia	Frog's-bit
Limonium carolinianum	Carolina sea lavender
Linum medium var. *texanum*	Stiff yellow flax
Linum sp.	Flax
Liquidambar styraciflua	Sweetgum
Lobelia glandulosa	Glade lobelia
Lobelia puberula	Downy lobelia
Lonicera sempervirens	Trumpet honeysuckle
Ludwigia maritima	Seaside primrosewillow
Ludwigia repens	Creeping primrosewillow
Ludwigia sp.	Primrosewillow
Lupinus diffusus	Skyblue lupine
Lupinus sp.	Lupine
Lupinus villosus	Lady lupine
Lycopodiella sp.	Club-moss
Lygodesmia aphylla	Rose-rush
Lyonia ferruginea	Rusty staggerbush
Lyonia fruticosa	Coastalplain staggerbush
Lyonia ligustrina var. *foliosiflora*	Maleberry
Lyonia lucida	Fetterbush
Lyonia mariana	Piedmont staggerbush
Lyonia sp.	Staggerbush
Magnolia grandiflora	Southern magnolia
Magnolia virginiana	Sweetbay
Mikania cordifolia	Florida Keys hempvine

Mikania scandens	Climbing hempvine
Mimosa quadrivalvis	Sensitive brier
Mimosa sp.	Sensitive plant
Mitchella repens	Partridgeberry
Mitreola sessilifolia	Swamp hornpod
Monarda punctata	Spotted beebalm
Morella caroliniensis	Evergreen bayberry
Morella cerifera	Wax myrtle
Muhlenbergia capillaris	Hairawn muhly
Nekemias arborea	Peppervine
Nymphaea elegans	Tropical royalblue waterlily
Nymphaea odorata	White waterlily
Nyssa sylvatica var. *biflora*	Swamp tupelo
Oclemena reticulata	Pinebarren aster
Oenothera simulans	Southern beeblossom
Oenothera sp.	Eveningprimrose
Opuntia austrina	Devil's-tongue
Opuntia sp.	Pricklypear
Orontium aquaticum	Goldenclub
Orthosia scoparia	Leafless swallowwort
Palafoxia feayi	Feay's palafox
Palafoxia integrifolia	Coastalplain palafox
Palafoxia sp.	Palafox
Panicum hemitomon	Mountain panic
Panicum sp.	Panic grass
Panicum virgatum	Switchgrass
Paronychia erecta	Squareflower
Paronychia patula	Pineland nailwort
Paronychia rugelii	Rugel's nailwort
Paronychia sp.	Nailwort
Parthenocissus quinquefolia	Virginia creeper
Paspalum setaceum	Thin paspalum
Paspalum sp.	Crowngrass
Passiflora incarnata	Purple passion-flower
Peltandra virginica	Green arrow arum
Penstemon multiflorus	Manyflower beardtongue
Persea borbonia	Red bay

Persea palustris	Swamp bay
Phlebodium aureum	Golden polypody
Phoebanthus grandiflorus	Florida false sunflower
Phoradendron leucarpum	Oak mistletoe
Phyla nodiflora	Turkey tangle fogfruit
Physalis arenicola	Cypresshead groundcherry
Physalis sp.	Groundcherry
Piloblephis rigida	Wild pennyroyal
Pinguicula pumila	Small butterwort
Pinus clausa	Sand pine
Pinus echinata	Shortleaf pine
Pinus elliottii	Slash pine
Pinus glabra	Spruce pine
Pinus palustris	Longleaf pine
Pinus sp.	Pine
Pinus taeda	Loblolly pine
Piptochaetium avenaceum	Blackseed needlegrass
Piriqueta cistoides ssp. *caroliniana*	Pitted stripeseed
Pityopsis graminifolia	Narrowleaf silkgrass
Pityopsis sp.	Silkgrass
Plantago virginica	Virginia plantain
Pleopeltis michauxiana	Resurrection fern
Pluchea baccharis	Rosy camphorweed
Pluchea longifolia	Longleaf camphorweed
Pluchea sp.	Camphorweed
Polygala lutea	Orange milkwort
Polygala nana	Candyroot
Polygala setacea	Coastalplain milkwort
Polygala sp.	Milkwort
Polygala verticillata	Whorled milkwort
Polygonum nesomii	Largeflower jointweed
Polygonum pinicola	Tall jointweed
Polygonum polygamum	October flower
Polypremum procumbens	Rustweed
Pontederia cordata	Pickerelweed
Proserpinaca palustris	Marsh mermaidweed
Proserpinaca pectinata	Combleaf mermaidweed

Prunus angustifolia	Chickasaw plum
Prunus caroliniana	Carolina laurelcherry
Prunus serotina	Alabama black cherry
Prunus umbellata	Flatwoods plum
Psilotum nudum	Whisk-fern
Psychotria nervosa	Wild coffee
Pteridium aquilinum	Braken fern
Pteridium sp.	Bracken fern
Pterocaulon pycnostachyum	Blackroot
Ptilimnium capillaceum	Mock bishopsweed
Quercus chapmanii	Chapman's oak
Quercus falcata	Southern red oak
Quercus geminata	Sand live oak
Quercus hemisphaerica	Laurel oak
Quercus incana	Bluejack oak
Quercus inopina	Scrub oak
Quercus laevis	Turkey oak
Quercus laurifolia	Swamp laurel oak
Quercus margarettae	Sand post oak
Quercus minima	Dwarf live oak
Quercus myrtifolia	Myrtle oak
Quercus nigra	Water oak
Quercus pumila	Runner oak
Quercus sp.	Oak
Quercus stellata	Post oak
Quercus virginiana	Live oak
Rhexia mariana	Pale meadowbeauty
Rhexia nuttallii	Nuttall's meadowbeauty
Rhexia petiolata	Fringed meadowbeauty
Rhexia sp.	Meadowbeauty
Rhus copallinum	Winged sumac
Rhynchosia reniformis	Dollarleaf
Rhynchosia sp.	Snoutbean
Rhynchospora ciliaris	Fringed beaksedge
Rhynchospora colorata	Starrush white-top
Rhynchospora fernaldii	Fernald's beaksedge
Rhynchospora grayi	Gray's beaksedge

Rhynchospora intermedia	Pinebarren beaksedge
Rhynchospora inundata	Narrowfruit horned beaksedge
Rhynchospora megalocarpa	Sandyfield beaksedge
Rhynchospora plumosa	Plumed beaksedge
Rhynchospora sp.	Beaksedge
Rosa palustris	Swamp rose
Rosa sp.	Rose
Rubus cuneifolius	Sand blackberry
Rubus pensilvanicus	Sawtooth blackberry
Rubus sp.	Blackberry
Rubus trivialis	Southern dewberry
Ruellia caroliniensis	Carolina wild petunia
Ruellia ciliosa	Ciliate wild petunia
Sabal minor	Bluestem palmetto
Sabal palmetto	Cabbage palm
Sabatia brevifolia	Shortleaf rosegentian
Saccharum giganteum	Sugarcane plumegrass
Sacciolepis striata	American cupscale
Sagittaria lancifolia	Bulltongue arrowhead
Sagittaria latifolia	Common arrowhead
Salicornia ambigua	Perennial glasswort
Salix caroliniana	Coastalplain willow
Salvia lyrata	Lyreleaf sage
Sambucus nigra ssp. *canadensis*	Elderberry
Samolus ebracteatus	Water pimpernel
Saururus cernuus	Lizard's tail
Schizachyrium sanguineum	Crimson bluestem
Schizachyrium scoparium	Little bluestem
Schizachyrium stoloniferum	Creeping little bluestem
Schoenus nigricans	Black bogrush
Scleria ciliata	Curtiss' nutrush
Scleria sp.	Nutrush
Scleria triglomerata	Whip nutrush
Scutellaria arenicola	Florida scrub skullcap
Scutellaria integrifolia	Helmet skullcap
Scutellaria sp.	Skullcap
Senna ligustrina	Privet wild sensitive plant

Sericocarpus tortifolius	Dixie aster
Setaria parviflora	Knotroot foxtail
Seymeria cassioides	Yaupon blacksenna
Seymeria pectinata	Piedmont blacksenna
Seymeria sp.	Blacksenna
Silphium compositum	Kidneyleaf rosinweed
Sisyrinchium angustifolium	Narrowleaf blue-eyed grass
Smilax auriculata	Earleaf greenbrier
Smilax bona-nox	Saw greenbrier
Smilax glauca	Cat greenbrier
Smilax laurifolia	Laurel greenbrier
Smilax pumila	Sarsaparilla vine
Smilax smallii	Lanceleaf greenbrier
Smilax sp.	Greenbrier
Solidago fistulosa	Pinebarren goldenrod
Solidago odora	Sweet goldenrod
Solidago odora var. *chapmanii*	Chapman's goldenrod
Solidago sp.	Goldenrod
Solidago stricta	Wand goldenrod
Sophronanthe hispida	Rough hedgehyssop
Sorghastrum nutans	Yellow Indiangrass
Sorghastrum secundum	Lopsided Indiangrass
Sorghastrum sp.	Indiangrass
Spartina alterniflora	Saltmarsh cordgrass
Spartina bakeri	Sand cordgrass
Spermacoce remota	Woodland false buttonweed
Sporobolus junceus	Pineywoods dropseed
Stillingia aquatica	Water toothleaf
Stillingia sylvatica	Queen's delight
Stylisma patens	Coastalplain dawnflower
Stylisma patens var. *angustifolia*	Narrowleaf coastalplain dawnflower
Stylisma sp.	Dawnflower
Stylosanthes biflora	Sidebeak pencil flower
Symphyotrichum adnatum	Scaleleaf aster
Symphyotrichum dumosum	Rice button aster
Symphyotrichum simmondsii	Simmonds' aster
Symphyotrichum sp.	Aster

Syngonanthus flavidulus	Yellow hatpins
Taxodium ascendens	Pond cypress
Taxodium distichum	Bald cypress
Telmatoblechnum serrulatum	Toothed midsorus fern
Tephrosia chrysophylla	Scurf hoary-pea
Tephrosia florida	Florida hoary-pea
Tephrosia sp.	Hoary-pea
Thalia geniculata	Alligatorflag
Thelypteris palustris var. *pubescens*	Marsh fern
Thelypteris sp.	Maiden fern
Tilia americana	Basswood
Tillandsia bartramii	Bartram's air-plant
Tillandsia floridana	Florida airplant
Tillandsia usneoides	Spanish moss
Toxicodendron radicans	Eastern poison ivy
Tragia smallii	Small's noseburn
Tragia sp.	Noseburn
Tragia urens	Wavyleaf noseburn
Tragia urticifolia	Nettleleaf noseburn
Trichostema dichotomum	Forked bluecurls
Trichostema setaceum	Narrowleaf bluecurls
Triodanis perfoliata	Clasping venus's looking-glass
Triplasis americana	Perennial sandgrass
Triplasis purpurea	Purple sandgrass
Triplasis sp.	Sandgrass
Typha latifolia	Broadleaf cattail
Ulmus americana	American elm
Utricularia sp.	Bladderwort
Vaccinium arboreum	Sparkleberry
Vaccinium corymbosum	Highbush blueberry
Vaccinium myrsinites	Shiny blueberry
Vaccinium stamineum	Deerberry
Verbena halei	Texas vervain
Vernonia angustifolia	Tall ironweed
Viburnum nudum	Possumhaw
Viburnum obovatum	Walter's viburnum
Viola lanceolata	Bog white violet

Viola palmata	Early blue violet
Viola sororia	Common blue violet
Viola sp.	Violet
Vitis aestivalis	Summer grape
Vitis rotundifolia	Muscadine
Vitis sp.	Grape
Vittaria lineata	Shoestring fern
Woodwardia areolata	Netted chain fern
Woodwardia virginica	Virginia chain fern
Xyris caroliniana	Carolina yellow-eyed grass
Xyris elliottii	Elliott's yellow-eyed grass
Xyris fimbriata	Fringed yellow-eyed grass
Xyris flabelliformis	Savannah yellow-eyed grass
Xyris sp.	Yellow-eyed grass
Yucca aloifolia	Spanish bayonet
Yucca filamentosa	Adam's needle
Yucca sp.	Yucca
Zanthoxylum clava-herculis	Hercules' club
Zornia bracteata	Viperina

11.5.2 Native Animals

Scientific Name	**Common Name**
Amphibians	
Lithobates catesbeianus	American bullfrog
Hyla gratiosa	Barking treefrog
Hyla chrysoscelis	Cope's gray treefrog
Eurycea quadridigitata	Dwarf salamander
Siren intermedia	Eastern lesser siren
Gastrophryne carolinensis	Eastern narrowmouth toad
Scaphiopus holbrookii	Eastern spadefoot
Acris gryllus	Florida cricket frog
Lithobates capito	Gopher frog
Siren lacertina	Greater siren
Hyla cinerea	Green tree frog
Pseudacris ocularis	Little grass frog
Bufo quercicus	Oak toad

Amphiuma pholeter	One-toed amphiuma
Notophthalmus viridescens	Peninsula newt
Rana grylio	Pig frog
Hyla femoralis	Pine woods treefrog
Pseudobranchus striatus	Northern dwarf siren
Rana sphenocephala	Southern leopard frog
Bufo terrestris	Southern toad
Hyla squirella	Squirrel tree frog
Amphiuma means	Two-toed amphiuma
Arachnids	
Neoscona arabesca	Arabesque orb-weaver
Mecynogea lemniscata	Basilica orb-weaver
Frontinella communis	Bowl and doily spider
Colonus sylvanus	Sylvana jumping spider
Anasaitis canosa	Twin-flagged jumping spider
Argiope trifasciata	Banded garden spider
Trichonephila clavipes	Golden silk orb-weaver
Peucetia viridans	Green lynx spider
Latrodectus mactans	Southern black widow
Argiope aurantia	Yellow garden spider
Phidippus regius	Regal jumping spider
Arthropods	
Scolopendra viridis	Florida blue centipede
Gonatista grisea	Grizzled mantid
Centruroides hentzi	Hentz striped scorpion
Chicobolus spinigerus	Ivory millipede
Anisomorpha buprestoides	Southern two-striped walkingstick
Birds	
Empidonax virescens	Acadian flycatcher
Corvus brachyrhynchos	American crow
Falco sparverius	American kestrel
Setophaga ruticilla	American redstart
Turdus migratorius	American robin
Pelecanus erythrorhynchos	American white pelican
Anhinga anhinga	Anhinga
Peucaea aestivalis	Bachman's sparrow
Haliaeetus leucocephalus	Bald eagle

Strix varia	Barred owl
Megaceryle alcyon	Belted kingfisher
Coragyps atratus	Black vulture
Mniotilta varia	Black-and-white warbler
Nycticorax nycticorax	Black-crowned night-heron
Setophaga striata	Blackpoll warbler
Setophaga caerulescens	Black-throated blue warbler
Passerina caerulea	Blue grosbeak
Cyanocitta cristata	Blue jay
Polioptila caerulea	Blue-gray gnatcatcher
Vireo solitarius	Blue-headed vireo
Anas discors	Blue-winged teal
Quiscalus major	Boat-tailed grackle
Pelecanus occidentalis	Brown pelican
Poecile carolinensis	Carolina chickadee
Thryothorus ludovicianus	Carolina wren
Bombycilla cedrorum	Cedar waxwing
Chaetura pelagica	Chimney swift
Spizella passerina	Chipping sparrow
Caprimulgus carolinensis	Chuck-will's-widow
Quiscalus quiscula	Common grackle
Columbina passerina	Common ground-dove
Chordeiles minor	Common nighthawk
Geothlypis trichas	Common yellowthroat
Accipiter cooperii	Cooper's hawk
Phalacrocorax auritus	Double-crested cormorant
Picoides pubescens	Downy woodpecker
Sialia sialis	Eastern bluebird
Tyrannus tyrannus	Eastern kingbird
Sturnella magna	Eastern meadowlark
Megascops asio	Eastern screech owl
Sayornis phoebe	Eastern phoebe
Pipilo erythrophthalmus	Eastern towhee
Contopus virens	Eastern wood peewee
Corvus ossifragus	Fish crow
Grus canadensis pratensis	Florida sandhill crane
Dumetella carolinensis	Gray catbird

Ardea herodias	Great blue heron
Myiarchus crinitus	Great crested flycatcher
Ardea alba	Great egret
Bubo virginianus	Great horned owl
Ardea herodias occidentalis	Great white heron
Tringa melanoleuca	Greater yellowlegs
Butorides virescens	Green heron
Catharus guttatus	Hermit thrush
Setophana citrina	Hooded warbler
Troglodytes aedon	House wren
Passerina cyanea	Indigo bunting
Charadrius vociferus	Killdeer
Ixobrychus exilis	Least bittern
Aramus guarauna	Limpkin
Melospiza lincolnii	Lincoln's sparrow
Egretta caerulea	Little blue heron
Lanius ludovicianus	Loggerhead shrike
Cistothorus palustris	Marsh wren
Falco columbarius	Merlin
Anas fulvigula	Mottled duck
Zenaida macroura	Mourning dove
Colinus virginianus	Northern bobwhite
Cardinalis cardinalis	Northern cardinal
Colaptes auratus	Northern flicker
Circus cyaneus	Northern harrier
Mimus polyglottos	Northern mockingbird
Setophaga americana	Northern parula
Parkesia noveboracensis	Northern waterthrush
Meleagris gallopavo osceola	Osceola wild turkey
Pandion haliaetus	Osprey
Seiurus aurocapilla	Ovenbird
Setophaga palmarum	Palm warbler
Dryocopus pileatus	Pileated woodpecker
Spinus pinus	Pine siskin
Setophaga pinus	Pine warbler
Setophaga discolor	Prairie warbler
Progne subis	Purple martin

Melanerpes carolinus	Red-bellied woodpecker
Vireo olivaceus	Red-eyed vireo
Melanerpes erythrocephalus	Red-headed woodpecker
Buteo lineatus	Red-shouldered hawk
Buteo jamaicensis	Red-tailed hawk
Agelaius phoeniceus	Red-winged blackbird
Platalea ajaja	Roseate spoonbill
Pheucticus ludovicianus	Rose-breasted grosbeak
Regulus calendula	Ruby-crowned kinglet
Archilochus colubris	Ruby-throated hummingbird
Piranga olivacea	Scarlet tanager
Buteo brachyurus	Short-tailed hawk
Egretta thula	Snowy egret
Falco sparverius paulus	Southeastern American kestrel
Piranga rubra	Summer tanager
Elanoides forficatus	Swallow-tailed kite
Melospiza georgiana	Swamp sparrow
Tachycineta bicolor	Tree swallow
Egretta tricolor	Tricolored heron
Baeolophus bicolor	Tufted titmouse
Cathartes aura	Turkey vulture
Catharus fuscescens	Veery
Eudocimus albus	White ibis
Vireo griseus	White-eyed vireo
Gallinago delicata	Wilson's snipe
Aix sponsa	Wood duck
Mycteria americana	Wood stork
Hylocichla mustelina	Wood thrush
Helmitheros vermivorum	Worm-eating warbler
Coturnicops noveboracensis	Yellow rail
Sphyrapicus varius	Yellow-bellied sapsucker
Coccyzus americanus	Yellow-billed cuckoo
Setophaga coronata	Yellow-rumped warbler
Vireo flavifrons	Yellow-throated vireo
Setophaga dominica	Yellow-throated warbler
Butterflies/Moths	
Atteva aurea	Ailanthus webworm moth

Vanessa virginiensis	American lady
Satyrodes appalachia	Appalachian brown
Datana major	Azalea caterpillar moth
Papilio polyxenes	Black swallowtail
Chrysendeton medicinalis	Bold medicine moth
Hermeuptychia sosybius	Carolina satyr
Hemiargus ceraunus	Ceraunus blue
Schinia gaurae	Clouded crimson moth
Lerema accius	Clouded skipper
Phoebis sennae	Cloudless sulphur
Junonia coenia	Common buckeye
Anatrytone logan	Delaware skipper
Papilio glaucus	Eastern tiger swallowtail
Seirarctia echo	Echo moth
Lerodea eufala	Eufala skipper
Composia fidelissima	Faithful beauty moth
Hyphantria cunea	Fall webworm moth
Hylephila phyleus	Fiery skipper
Ceratophaga vicinella	Gopher tortoise shell moth
Atlides halesus	Great purple hairstreak
Ascia monuste	Great southern white
Strymon melinus	Grey hairstreak
Agraulis vanillae	Gulf fritillary
Erynnis horatius	Horace's duskywing
Callophrys gryneus	Juniper hairstreak
Ancyloxypha numitor	Least skipper
Calephelis virginiensis	Little metalmark
Megisto cymela	Little wood-satyr
Urbanus proteus	Long-tailed skipper
Danaus plexippus	Monarch
Asbolis capucinus	Monk skipper
Enyo lugubris	Mournful sphinx moth
Thorybes pylades	Northern cloudywing
Panoquina ocola	Ocola skipper
Ponometia candefacta	Olive-shaded bird-dropping moth
Syngamia florella	Orange-spotted flower moth
Utetheisa ornatrix	Ornate bella moth

Papilio palamedes	Palamedes swallowtail
Euphyes pilatka	Palatka skipper
Phyciodes tharos	Pearl crescent
Phyciodes phaon	Phaon crescent
Antheraea polyphemus	Polyphemus moth
Danaus gilippus	Queen
Calycopis cecrops	Red-banded hairstreak
Dryocampa rubicunda	Rosy maple moth
Virbia rubicundaria	Ruddy holomelina
Epargyreus clarus	Silver-spotted skipper
Erynnis brizo	Sleepy duskywing
Wallengrenia otho	Southern broken-dash
Copaeodes minima	Southern skipperling
Xanthopastis regnatrix	Spanish moth
Papilio troilus	Spicebush swallowtail
Nastra lherminier	Swarthy skipper
Burnsius oileus	Tropical checkered-skipper
Epimecis hortaria	Tulip-tree beauty
Oligoria maculata	Twin-spot skipper
Cycnia collaris	Unexpected cycnia
Euptoieta claudia	Variegated fritillary
Limenitis archippus	Viceroy
Polites vibex	Whirlabout
Anartia jatrophae	White peacock
Eurytides marcellus	Zebra swallowtail
Dragonflies/Damselflies	
Celithemis amanda	Amanda's pennant
Tramea lacerata	Black saddlebags
Pachydiplax longipennis	Blue dasher
Ischnura hastata	Citrine forktail
Gomphus minutus	Cypress clubtail
Celithemis eponina	Halloween pennant
Erythrodiplax minuscula	Little blue dragonlet
Coryphaeschna ingens	Regal darner
Argia fumipennis	Variable dancer
Fishes	
Lepomis macrochirus	Bluegill

Poecilia latipinna	Sailfin molly
Insects	
Bombus pensyvanicus	American bumblebee
Myrmeleon sp.	Ant lion
Paroxya atlantica	Atlantic grasshopper
Bombus griseocollis	Brown-belted bumble bee
Bombus impatiens	Common eastern bumble bee
Dasymutilla occidentalis	Cow killer
Trigonopeltastes delta	Delta flower scarab
Pseudomyrmex gracilis	Elongate twig ant
Chicobolus spinigerus	Florida ivory millipede
Gonatista grisea	Grizzled mantid
Achurum carinatum	Long-headed toothpick grasshopper
Zelus longipes Linnaeus	Milkweed assassin bug
Campsomeris plumipes	Scoliid wasp
Chalcophora georgiana	Southern sculptured pine borer
Xylocopa micans	Southern carpenter bee
Neotibicen tibicen	Swamp cicada
Thyanta custator ssp. *custator*	Thyanta
Palpada albifrons	White-faced plushback
Mammals	
Lynx rufus	Bobcat
Tadarida brasiliensis	Brazilian free-tailed bat
Peromyscus gossypinus	Cotton mouse
Sigmodon hispidus	Cotton rat
Canis latrans	Coyote
Sylvilagus Floridanus	Eastern cottontail rabbit
Sciurus carolinensis	Eastern gray squirrel
Perimyotis subflavus	Tricolored bat
Nycticeius humeralis	Evening bat
Sus scrofa	Feral pig
Ursus americanus Floridanus	Florida black bear
Podomys Floridanus	Florida mouse
Urocyon cinereoargenteus	Gray fox
Sylvilagus palustris	Marsh rabbit
Dasypus novemcinctus	Nine-banded armadillo
Lontra canadensis	North American river otter

Lasiurus intermedius	Northern yellow bat
Peromyscus polionotus	Oldfield mouse
Procyon lotor	Raccoon
Lasiurus seminolus	Seminole bat
Sciurus niger niger	Southern fox squirrel
Myotis austroriparius	Southeastern myotis
Geomys pinetis	Southeastern pocket gopher
Glaucomys volans	Southern flying squirrel
Didelphis virginiana	Virginia opossum
Odocoileus virginianus	White-tailed deer
Mollusks	
Pomacea paludosa	Florida apple snail
Euglandina rosea	Rosy wolfsnail
Reptiles	
Alligator mississippiensis	American alligator
Nerodia fasciata	Banded water snake
Coluber constrictor	Black racer
Plestiodon laticeps	Broadhead skink
Tantilla relicta	Central Florida crowned snake
Coluber flagellum	Coachwhip
Sternotherus odoratus	Common musk turtle
Elaphe guttata	Corn snake
Chelydra serpentina	Common snapping turtle
Sistrurus miliarius	Dusky pigmy rattlesnake
Masticophis flagellum flagellum	Eastern coachwhip snake
Micrurus fulvius	Eastern coral snake
Crotalus adamanteus	Eastern diamondback rattlesnake
Sceloporus undulatus	Eastern fence lizard
Ophisaurus ventralis	Eastern glass lizard
Drymarchon corais	Eastern indigo snake
Farancia abacura	Eastern mud snake
Thamnophis sirtalis	Eastern or bluestripe garter snake
Ophisaurus attenuatus	Eastern slender glass lizard
Terrapene carolina	Florida box turtle
Storeria victa	Florida brown snake
Deirochelys reticularia	Florida chicken turtle
Agkistrodon piscivorus	Florida cottonmouth

Nerodia Floridana	Florida green water snake
Kinosternon subrubrum	Florida mud turtle
Pituophis melanoleucus	Florida pine snake
Storeria occipitomaculata	Florida redbelly snake
Cemophora coccinea	Florida scarlet snake
Nerodia fasciata	Florida water snake
Regina rigida	Glossy crayfish snake
Gopherus polyphemus	Gopher tortoise
Anolis carolinensis	Green anole
Scincella lateralis	Ground skink
Seminatrix pygaea	North Florida swamp snake
Pseudemys Floridana peninsularis	Peninsula cooter
Plestiodon egregius onocrepis	Peninsula mole skink
Thamnophis sauritus	Peninsula or bluestripe ribbon snake
Rhadinaea flavilata	Pine woods snake
Sistrurus miliarius	Pygmy rattlesnake
Opheodrys aestivus	Rough green snake
Lampropeltis triangulum	Scarlet kingsnake
Cnemidophorus sexlineatus	Six-lined racerunner
Apalone ferox	Softshell turtle
Plestiodon inexpectatus	Southeastern five-lined skink
Coluber constrictor	Southern black racer
Sceloporus undulatus	Southern fence lizard
Heterodon simus	Southern hognose snake
Diadophis punctatus	Southern ringneck snake
Regina alleni	Striped crayfish snake
Kinosternon baurii	Striped mud turtle
Elaphe obsoleta	Yellow rat snake

11.6 FNAI Ranking System

Elements and Element Occurrences

An **element** is any exemplary or rare component of the natural environment, such as a species, natural community, bird rookery, spring, sinkhole, cave, or other ecological feature.

An **element occurrence (EO)** is an area of land and/or water in which a species or natural community is, or was, present. An EO should have practical conservation value for the Element as evidenced by potential continued (or historical) presence and/or regular recurrence at a given location.

Element Ranking and Legal Status

Using a ranking system developed by NatureServe and the Natural Heritage Program Network, the Florida Natural Areas Inventory assigns two ranks for each element. The global rank is based on an element's worldwide status; the state rank is based on the status of the element in Florida. Element ranks are based on many factors, the most important ones being estimated number of Element Occurrences (EOs), estimated abundance (number of individuals for species; area for natural communities), geographic range, estimated number of adequately protected EOs, relative threat of destruction, and ecological fragility.

FNAI GLOBAL ELEMENT RANK

G1 = Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
G2 = Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
G3 = Either very rare and local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.
G4 = Apparently secure globally (may be rare in parts of range).
G5 = Demonstrably secure globally.
GH = Of historical occurrence throughout its range, may be rediscovered (e.g., ivory-billed woodpecker).
GX = Believed to be extinct throughout range.
GXC = Extirpated from the wild but still known from captivity or cultivation.
G#? = Tentative rank (e.g., G2?).
G#G# = Range of rank; insufficient data to assign specific global rank (e.g., G2G3).
G#T# = Rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definition as above (e.g., G3T1).
G#Q = Rank of questionable species - ranked as species but questionable whether it is species or subspecies; numbers have same definition as above (e.g., G2Q).
G#T#Q = Same as above, but validity as subspecies or variety is questioned.
GU = Unrankable; due to a lack of information no rank or range can be assigned (e.g., GUT2).
GNA = Ranking is not applicable because the element is not a suitable target for conservation (e.g. a hybrid species).
GNR = Element not yet ranked (temporary).
GNRTNR = Neither the element nor the taxonomic subgroup has yet been ranked.

FNAI STATE ELEMENT RANK

S1 = Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
S2 = Imperiled in Florida because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
S3 = Either very rare and local in Florida (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.
S4 = Apparently secure in Florida (may be rare in parts of range).
S5 = Demonstrably secure in Florida.
SH = Of historical occurrence in Florida, possibly extirpated, but may be rediscovered (e.g., ivory-billed woodpecker).
SX = Believed to be extirpated throughout Florida.
SU = Unrankable; due to a lack of information no rank or range can be assigned.
SNA = State ranking is not applicable because the element is not a suitable target for conservation (e.g. a hybrid species).
SNR = Element not yet ranked (temporary).

FEDERAL LEGAL STATUS

Legal status information provided by FNAI for information only. For official definitions and lists of protected species, consult the relevant federal agency.

Definitions derived from U.S. Endangered Species Act of 1973, Sec. 3. Note that the federal status given by FNAI refers only to Florida populations and that federal status may differ elsewhere.

C = Candidate species for which federal listing agencies have sufficient information on biological vulnerability and threats to support proposing to list the species as Endangered or Threatened.
E = Endangered: species in danger of extinction throughout all or a significant portion of its range.
E, T = Species currently listed endangered in a portion of its range but only listed as threatened in other areas
E, PDL = Species currently listed endangered but has been proposed for delisting.
E, PT = Species currently listed endangered but has been proposed for listing as threatened.
E, XN = Species currently listed endangered but tracked population is a non-essential experimental population.
T = Threatened: species likely to become Endangered within the foreseeable future throughout all or a significant portion of its range.
PE = Species proposed for listing as endangered.
PS = - An infraspecific taxon or population has federal status but the entire species does not - status is in only a portion of the species range.
PT = Species proposed for listing as threatened.
SAT = Treated as threatened due to similarity of appearance to a species which is federally listed such that enforcement personnel have difficulty in attempting to differentiate between the listed and unlisted species.
SC = Not currently listed, but considered a "species of concern" to USFWS.
DL = Delisted.
UR = Under review.

STATE LEGAL STATUS

Provided by FNAI for information only. For official definitions and lists of protected species, consult the relevant state agency.

Animals: Definitions derived from "Florida's Endangered Species and Species of Special Concern, Official Lists" published by Florida Fish and Wildlife Conservation Commission, 1 August 1997, and subsequent updates.

C = Candidate for listing at the Federal level by the U. S. Fish and Wildlife Service
FE = Listed as Endangered Species at the Federal level by the U. S. Fish and Wildlife Service
FT = Listed as Threatened Species at the Federal level by the U. S. Fish and Wildlife Service
FXN = Federal listed as an experimental population in Florida
FT(S/A) = Federal Threatened due to similarity of appearance
ST = State population listed as Threatened by the FFWCC. Defined as a species, subspecies, or isolated population which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat is decreasing in area at a rapid rate and as a consequence is destined or very likely to become an endangered species within the foreseeable future.
SSC = Listed as Species of Special Concern by the FFWCC. Defined as a population which warrants special protection, recognition, or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance, or substantial human exploitation which, in the foreseeable future, may result in its becoming a threatened species. (SSC* for Pandion haliaetus (Osprey) indicates that this status applies in Monroe county only.)
N = Not currently listed, nor currently being considered for listing.

Plants: Definitions derived from Sections 581.011, 581.185 and 581.185(2), Florida Statutes, and the Preservation of Native Flora of Florida Act, 5B-40.001. FNAI does not track all state-regulated plant species; for a complete list of state-regulated plant species, call Florida Division of Plant Industry, 352-372-3505 or see: https://www.flrules.org/gateway/ChapterHome.asp?Chapter=5B-40.

E = Endangered: species of plants native to Florida that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue; includes all species determined to be endangered or threatened pursuant to the U.S. Endangered Species Act.
T = Threatened: species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in number as to cause them to be Endangered.
CE = Commercially exploited: species native to the state which are subject to being removed in significant numbers from native habitats in the state and sold or transported for sale.
N = Not currently listed, nor currently being considered for listing.

Element Occurrence Ranking

FNAI ranks of quality of the element occurrence in terms of its viability (EORANK). Viability is estimated using a combination of factors that contribute to continued survival of the element at the location. Among these are the size of the EO, general condition of the EO at the site, and the conditions of the landscape surrounding the EO (e.g. an immediate threat to an EO by local development pressure could lower an EO rank).

A = Excellent estimated viability
A? = Possibly excellent estimated viability
AB = Excellent or good estimated viability
AC = Excellent, good, or fair estimated viability
B = Good estimated viability
B? = Possibly good estimated viability
BC = Good or fair estimated viability
BD = Good, fair, or poor estimated viability
C = Fair estimated viability
C? = Possibly fair estimated viability
CD = Fair or poor estimated viability
D = Poor estimated viability
D? = Possibly poor estimated viability
E = Verified extant (viability not assessed)
F = Failed to find
H = Historical
NR = Not ranked, a placeholder when an EO is not (yet) ranked.
U = Unrankable
X = Extirpated

*For additional detail on the above ranks see: http://www.natureserve.org/explorer/eorankguide.htm

FNAI also uses the following EO ranks:

H? = Possibly historical
F? = Possibly failed to find
X? = Possibly extirpated

The following offers further explanation of the H and X ranks as they are used by FNAI:

The rank of H is used when there is a lack of recent field information verifying the continued existence of an EO, such as (a) when an EO is based only on historical collections data; or (b) when an EO was ranked A, B, C, D, or E at one time and is later, without field survey work, considered to be possibly extirpated due to general habitat loss or degradation of the environment in the area. This definition of the H rank is dependent on an interpretation of what constitutes "recent" field information. Generally, if there is no known survey of an EO within the last 20 to 40 years, it should be assigned an H rank. While these time frames represent suggested maximum limits, the actual time period for historical EOs may vary according to the biology of the element and the specific landscape context of each occurrence (including anthropogenic alteration of the environment). Thus, an H rank may be assigned to an EO before the maximum time frames have lapsed. Occurrences that have not been surveyed for periods exceeding these time frames should not be ranked A, B, C, or D. The higher maximum limit for plants and communities (i.e., ranging from 20 to 40 years) is based upon the assumption that occurrences of these elements generally have the potential to persist at a given location for longer periods of time. This greater potential is a reflection of plant biology and community dynamics. However, landscape factors must also be considered. Thus, areas with more anthropogenic impacts on the environment (e.g., development) will be at the lower end of the range, and less-impacted areas will be at the higher end.

The rank of X is assigned to EOs for which there is documented destruction of habitat or environment, or persuasive evidence of eradication based on adequate survey (i.e., thorough or repeated survey efforts by one or more experienced observers at times and under conditions appropriate for the Element at that location).

11.7 Soil Series Descriptions

Map Unit Description

Hernando County, Florida

[Minor map unit components are excluded from this report]

Map unit: 1 - Adamsville fine sand, 0 to 2 percent slopes

Component: Adamsville (95%)

The Adamsville component makes up 95 percent of the map unit. Slopes are 0 to 2 percent. This component is on rises, coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 20 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 2 - Anclote fine sand, 0 to 2 percent slopes, ponded

Component: Anclote (85%)

The Anclote component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on Pamlico marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 6 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: 5 - Aripeka-Okeelanta-Lauderhill association

Component: Aripeka (35%)

The Aripeka component makes up 35 percent of the map unit. Slopes are 0 to 1 percent. This component is on rises on karstic marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits over limestone. Depth to a root restrictive layer, bedrock, paralithic, is 20 to 30 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 23 inches during July, August, September. 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. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Okeelanta (30%)

The Okeelanta component makes up 30 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of herbaceous organic material over sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 75 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Lauderhill (20%)

The Lauderhill 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 limestone. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is 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 75 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map Unit Description

Hernando County, Florida

Map unit: 6 - Arredondo fine sand, 0 to 5 percent slopes

Component: Arredondo (82%)

The Arredondo component makes up 82 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy marine deposits and/or 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 high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. 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: 9 - Basinger fine sand, 0 to 2 percent slopes

Component: Basinger (80%)

The Basinger 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 marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. 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 July, August, September, October. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 10 - Basinger fine sand, depressional, 0 to 1 percent slopes

Component: Basinger, depressional (92%)

The Basinger, depressional component makes up 92 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions, coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 14 - Candler fine sand, 0 to 5 percent slopes

Component: Candler (85%)

The Candler component makes up 85 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy marine deposits and/or sandy eolian deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4s. 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 - Candler fine sand, 5 to 8 percent slopes

Component: Candler (90%)

The Candler component makes up 90 percent of the map unit. Slopes are 5 to 8 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of eolian and sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map Unit Description

Hernando County, Florida

Map unit: 18 - EauGallie fine sand

Component: EauGallie, non-hydric (72%)

The EauGallie, non-hydric component makes up 72 percent of the map unit. Slopes are 0 to 2 percent. This component is on rises on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September. 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. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: EauGallie, hydric (10%)

The EauGallie, 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 is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during June, July, August, September. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 30 - Lacoochee fine sandy loam

Component: Lacoochee (70%)

The Lacoochee component makes up 70 percent of the map unit. Slopes are 0 to 1 percent. This component is on tidal marshes on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer, bedrock, paralithic, is 14 to 36 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is very frequently flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 8. This soil meets hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 30 percent. The soil has a strongly saline horizon within 30 inches of the soil surface.

Map unit: 35 - Myakka-Myakka, wet, fine sands, 0 to 2 percent slopes

Component: Myakka (70%)

The Myakka component makes up 70 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods, coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Myakka, wet (15%)

The Myakka, wet component makes up 15 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods, coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during July, August, September, October. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map Unit Description

Hernando County, Florida

Map unit: 37 - Okeelanta-Terra Ceia association

Component: Okeelanta (60%)

The Okeelanta component makes up 60 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of herbaceous organic material over sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 75 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Terra Ceia (30%)

The Terra Ceia component makes up 30 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of herbaceous organic material. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 75 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 39 - Paola fine sand, 0 to 8 percent slopes

Component: Paola (90%)

The Paola component makes up 90 percent of the map unit. Slopes are 0 to 8 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 0 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 41 - Pits

Component: Pits (70%)

Generated brief soil descriptions are created for major soil components. The Pits is a miscellaneous area.

Map unit: 42 - Pits-Dumps complex

Component: Pits (50%)

Generated brief soil descriptions are created for major soil components. The Pits is a miscellaneous area.

Component: Dumps (40%)

Generated brief soil descriptions are created for major soil components. The Dumps is a miscellaneous area.

Map unit: 43 - Pomello fine sand, 0 to 5 percent slopes

Component: Pomello (91%)

The Pomello component makes up 91 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges, coastal plains.

Map Unit Description

Hernando County, Florida

Map unit: 43 - Pomello fine sand, 0 to 5 percent slopes

Component: Pomello (91%)

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 moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 33 inches during July, August, September, October, November. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 0 within 30 inches of the soil surface.

Map unit: 47 - Sparr fine sand, 0 to 5 percent slopes

Component: Sparr (85%)

The Sparr component makes up 85 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 high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 23 inches during July, August, September, October. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3w. This soil 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: 49 - Tavares fine sand, 0 to 5 percent slopes

Component: Tavares (85%)

The Tavares component makes up 85 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of eolian or sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 50 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Map unit: 53 - Weekiwachee muck

Component: Weekiwachee (80%)

The Weekiwachee component makes up 80 percent of the map unit. Slopes are 0 to 1 percent. This component is on tidal marshes on marine terraces on coastal plains. The parent material consists of herbaceous organic material over sandy marine deposits over limestone. Depth to a root restrictive layer, bedrock, paralithic, is 30 to 40 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is very frequently flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 47 percent. Nonirrigated land capability classification is 8. This soil meets hydric criteria. The soil has a strongly saline horizon within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 50 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

Hernando County, Florida

Map unit: 100 - Waters of the Gulf of Mexico

Component: Waters of the gulf of mexico (100%)

Generated brief soil descriptions are created for major soil components. The Waters of the gulf of mexico is a miscellaneous area.

Map Unit Description

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

The Map Unit Description (Brief, Generated) report displays a generated description of the major soils that occur in a map unit. Descriptions of non-soil (miscellaneous areas) and minor map unit components are not included. This description is generated from the underlying soil attribute data.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

11.8 Natural Communities Descriptions

Natural Communities

Basin Marsh (~560 acres)

Basin marsh is an herb-dominated community that occurs in large, irregularly shaped depressions. On CWMA these depressions are generally associated with the large basin swamps in the sandhill-mesic flatwoods matrix. Sawgrass (*Cladium jamaicensis*) is the dominant plant in this community, often occurring in large homogenous stands. Outer edges of marshes may have a sparse to moderately dense cover of southern bayberry (*Morella cerifera*), groundsel tree (*Baccharis halimifolia*), red maple (*Acer rubrum*) and buttonbush (*Cephalanthus occidentalis*) over sand cordgrass (*Spartina bakeri*), maidencane (*Panicum hemitomon*) and various sedges and hydrophytic forbs. The deepest portions of basin marshes support white waterlily (*Nymphaea odorata*), bulltongue arrowhead (*Sagittaria lancifolia*) and pickerelweed (*Pontederia cordata*).

Basin Swamp (~1,406 acres)

Basin swamp occurs in irregularly shaped depressions within mesic flatwoods, mesic hammock, or hydric hammock communities on CWMA. The open to moderately dense canopy (25% to 75% coverage) generally is dominated by pond cypress (*Taxodium ascendens*), swamp tupelo (*Nyssa biflora*), green ash (*Fraxinus pensylvanica*), American elm (*Ulmus americana*), swamp laurel oak (*Quercus laurafolia*) and red maple. Sabal palm (*Sabal palmetto*) and slash pine (*Pinus elliottii*) are infrequent. Tall shrub cover is generally sparse to moderate (5 to 50%) and is usually dominated by southern bayberry, dahoon (*Ilex cassine*), popash (*Fraxinus caroliniana*), red maple, and buttonbush. The short shrub layer is generally sparse to moderate (5 to 50%) including fetterbush (*Lyonia lucida*), Virginia willow (*Itea virginica*), and highbush blueberry (*Vaccinium corymbosum*). Herbaceous cover generally is sparse to moderate (5 to 25%) including bulltongue arrowhead, false nettle (*Boemeria cylindrica*), taperleaf waterhorehound (*Lycopus rubellus*), spoon-flower (*Peltradra sagittifolia*), sawgrass, Virginia chain fern (*Woodwardia virginica*), toothed midsorus fern (*Telmatobechnum serrulatum*), royal fern (*Osmunda regalis* var*. spectabilis*), lizard's tail (*Saururus cernuus*), and sedges (*Rhynchospora miliacea*, *Carex gigantea*).

Baygall (~95 acres)

Baygall is a wetland that develops where water seepage is at or near the surface. This generally occurs in shallow depressions, drains in flatwoods, or linear edges down slope of scrub, sandhill or other well drained communities. Baygall on CWMA generally supports a moderately dense (40% to 60% coverage) canopy and midstory of sweet bay (*Magnolia virginiana*) and loblolly bay (*Gordonia lasianthus*). Slash pine also may be present in the canopy. Sweet bay and swamp bay (*Persea palustris*) form a dense midstory and tall shrub layer. Southern bayberry is a frequent tall shrub. There is a dense (50 to 100%) cover of fetterbush and saw palmetto (*Serenoa repens*). Herb cover is generally sparse to absent but may include cinnamon fern (*Osmunda cinnamomea*), royal fern, and sedges. Laurel greenbrier (*Smilax laurifolia*) is common throughout the shrub layer.

In the absence of fire, baygall vegetation will invade adjacent communities, particularly wet to mesic flatwoods. Frequent fire reduces or eliminates the canopy and tall shrub layer allowing for development of a dense shrub layer (often dominated by fetterbush).

Depression Marsh (~293 acres)

Depression marsh are shallow and generally rounded depressions with herbaceous vegetation that often occurs in concentric bands along the hydrologic gradient. A canopy is generally absent but may include an occasional slash pine, red maple or swamp tupelo. The shrub layer is typically sparse but may reach coverage of 50% or more depending on the time since last fire. Peelbark St. John's wort (*Hypericum fasciculatum*) is the most common shrub. Others include dahoon, gallberry (*Ilex glabra*), swamp bay, and fetterbush. Herb cover is 75 to 100%, principally represented by blue maidencane (*Amphicarpum mughlenbergianum*), maidencane, redtop panicum (*Coleataenia rigidula*), bluestem grasses (*Andropogon* spp.), Virginia chain fern, yellow-eyed grasses (*Xyris* spp.), sugarcane plumegrass (*Saccharum giganteum*), yellow hatpins (*Syngonanthus flavidulus*), bladderworts (*Utricularia* spp.), combleaf mermaidweed (*Proserpinaca pectinata*), grassy arrowhead (*Sagittaria graminea*), lemon bacopa (*Bacopa caroliniana*), narrowfruit horned beaksedge (*Rhynchospora inundata*), and sand cordgrass.

Fire suppression or burning only during winter months when the depressions hold water may allow establishment of a thick shrub layer or allow pines to become established in the depressions. This may reduce the hydroperiod and lead to succession of the community to baygall or dome swamp.

Dome Swamp (~338 acres)

Dome swamps are shallow, forested, circular to elliptic depressions in flatwoods. Pond cypress dominates the canopy; swamp tupelo and slash pine occasionally are present. The tall shrub layer is generally dominated by dahoon and southern bayberry; coverage ranges from 1 to 50% depending on canopy coverage, fire frequency, and hydrology. Short shrub cover is 1 to 25%, represented by fetterbush, and highbush blueberry. Herbaceous coverage is variable, usually represented by Virginia chain fern, bluestem grasses, pipeworts (*Eriocaulon* spp.), and southern waxy sedge (*Carex glaucescens*).

Hydric Hammock (~16,130 acres)

Hydric hammock occupies extensive acreage in the western portion of CWMA where it exists in a mosaic with basin swamp. There is a nearly closed, diverse canopy of swamp laurel oak, sabal palm, green ash, American elm, sweet bay, bald cypress (*Taxodium distichum*) and red maple. Sweetgum and slash pine are infrequent. There is a sub-canopy of sabal palm. The tall shrub cover is sparse to moderate (5 to 25% cover), composed of southern bayberry, red cedar (*Juniperus virginiana*), and dahoon. The short shrub layer is sparse and may include Virginia willow, bluestem palmetto (*Sabal minor*), needle palm (*Rapidophyllum histrix*), and highbush blueberry. Herb cover is sparse to moderate (1 to 25%) and includes lizard's tail, spoon-flower,

toothed midsorus fern, southern wood fern (*Dryopterus ludvicianus*), and sedges (*Rhynchospora miliacea*, *Carex* sp.). Leaf litter covers nearly 100 percent of the ground.

Mesic Flatwoods (~1,853 acres)

Mesic flatwoods are distributed throughout CWMA in narrow to broad transition areas between sandhill and basin swamp or hydric hammock. Typically, there is a sparse canopy of longleaf pine (*Pinus palustris*) and slash pine. The tall shrub layer may be represented by a few scattered red bay (*Persea borbonia*), southern bayberry, or encroaching oaks. The short shrub layer is generally a dense cover of saw palmetto and gallberry. Other common shrubs include fetterbush, shiny blueberry (*Vaccinium myrsinites*), huckleberry (*Gaylussacia* spp.), southern bayberry, and dwarf live oak (*Quercus minima*). Herbaceous cover within the mesic flatwoods is sparse to moderate (1 to 25%) and usually includes wiregrass (*Aristida stricta*), bottlebrush threeawn (*Aristida spiciformis*), bluestem grasses, blackroot (*Pterocaulon virgatum*), slender flattop goldenrod (*Euthamia caroliniana*), yellow-eyed grass (*Xyris caroliniana*), orange milkwort (*Polygala lutea*), candyroot (*Polygala nana*), yellow hatpins, and witchgrasses (*Dichanthelium* spp.).

Mesic Hammock (~406 acres)

Mesic hammock occurs on islands in the Chassahowitzka swamp (hydric hammock) and in a few mesic transition areas adjacent to basin wetlands. There is generally a canopy of live oak (*Quercus virginiana*), swamp laurel oak, and sabal palm. Sabal palm and red cedar are common in the subcanopy. Basswood (*Tilia americana*) is occasional. The tall shrub layer is composed of southern bayberry, sabal palm, tree sparkleberry (*Vaccinium arboreum*), yaupon (*Ilex vomitorium*), American hornbeam and swamp bay. Short shrub coverage is variable and may include saw palmetto, wild coffee (Psychotria nevosa), myrsine (*Myrsine cubana*), yaupon, and red bay. Herb coverage is sparse to moderate (5 to 50%) and dominated by slender woodoats (*Chasmanthium laxum*), panic grasses (*Panicum* spp.), and various sedges.

Salt Marsh (~156 acres)

Salt marsh along the CWMA is a low salinity marsh dominated by a nearly homogenous stand of sawgrass. The transition to hydric hammock has a sabal palm canopy and red cedar subcanopy and tall shrub layer. Giant leather fern (*Acrostichum danaeifolium*) dominates the herb cover along with sawgrass.

Sandhill (~3,981 acres)

Sandhill at CWMA generally has a canopy of widely spaced longleaf pine. There is a moderately dense (40% to 60% coverage) subcanopy and midstory of turkey oak (*Quercus laevis*). Sand live oak (*Quercus geminata*) has invaded many of the sandhills and is well established in the subcanopy and tall shrub layer. In severe cases, the sandhill has succeeded to xeric hammock. The tall shrub layer is generally sparse, represented by young turkey oak. The short shrub layer is dominated by saw palmetto, gopher apple (*Geobalanus oblongiolius*), shiny blueberry, and netted pawpaw (*Asimina reticulata*). High plant diversity can be found in the herbaceous layer of some sites. Common grasses include wiregrass, tall threeawn (*Aristida purpurascens*), various

bluestem grasses (*Andropogon gyrans*, *A*. *floridana*, *A*. *virginicus*), pineywoods dropseed (*Sporobolus junceus*), purple lovegrass (*Eragrostis spectabilis*), lopsided indiangrass (*Sorgastrum secundum*), and witchgrasses. Other common herbs include Florida greeneyes (*Berlandiera subacaulis*), narrowleaf silkgrass (*Pityopsis graminifolia*), coastalplain chaffhead (*Carphephorus corymbosus*), Elliott's milkpea (*Galactia elliottii*), spiked hoary-pea (*Tephrosia spicata*), scurf hoary-pea (*Tephrosia chrysophylla*), dogtongue wild buckwheat (*Eriogonum tomentosum*), tread softly (*Cnidoscolus stimulosus*), grassleaf gayfeather (*Liatris elegantula*), pinebarren goldenrod (*Solidago fistulosa*), wavyleaf noseburn (*Tragia urens*), silver croton (*Croton argyranthemus*), sidebeak pencil flower (*Stylosanthes biflora*), dollarleaf (*Rhynchosia reniformis*), and pineland wild indigo (*Baptisia lecontei*). Earleaf greenbrier (*Smilax auriculata*) is an occasional vine. Weedy species in sandhills include yankeeweed (*Eupatorium compositifolium*), poor Joe (*Diodia teres*), blackberry (*Rubus* spp.), camphorweed (*Heterotheca subaxillaris*), witchgrasses, and bluestem grasses.

Scrub (~199 acres)

Scrub occurs as isolated patched on islands in the hydric hammock and in a few sandhills on CWMA. Sand pine (*Pinus clausa*) is typically present in the canopy (sparse to dense), particularly on the islands and in the southern portion of the WMA. The shrub cover is generally dense (75 to 100%). Sand live oak is the dominant oak, generally covering 25 to 50 percent of the shrub strata. Chapman's oak (*Quercus chapmanii*), myrtle oak (*Quercus myrtifolia*), saw palmetto, and rusty staggerbush (*Lyonia ferruginea*) are frequent, each generally covering 5 to 25 percent of the shrub strata. Wild olive (*Cartrema americanum*), gallberry, garberia (*Garberia heterophylla*), blue huckleberry (*Gaylussacia frondosa* var. *tomentosa*) and shiny blueberry also may be present. Herb cover is generally sparse but may include sandyfield beaksedge (*Rhychospora megalocarpa*), sweet goldenrod (*Solidago odorata*), coastalplain chaffhead, and bracken fern (*Pteridium aquilinum*). Wiregrass is either absent or very sparse (<1% cover). Lichens (*Cladoni*a spp. and *Cladina* spp.) are occasional to abundant.

Scrubby Flatwoods (~35 acres)

Scrubby flatwoods occur in the transitional areas between scrub and mesic flatwoods and in portions within a matrix of flatwoods that are in a fire shadow or have burned less frequently and have developed an oak-dominated shrub layer. The vegetation is a combination of scrub and mesic flatwoods species. There typically is a sparse canopy of slash pine or longleaf pine. The tall shrub layer may be represented by sand live oak and Chapman's oak. The short shrub layer is generally a dense cover of sand live oak, Chapman's oak, myrtle oak, saw palmetto, gallberry, rusty staggerbush, coastalplain staggerbush (*Lyonia fruticosa*), and tarflower (*Bejaria racemosa*). Other common shrubs include fetterbush, shiny blueberry, huckleberry, and southern bayberry. Herbaceous cover within the scrubby flatwoods is sparse to moderate (1 to 25%) and usually includes wiregrass, bluestem grasses, and witchgrasses.

Sinkhole Lake (~1.7 acres)

Sinkhole lake occurs in three locations in association with sandhill and xeric hammock. They have steep banks with exposed limestone. The edge of the sinks is dominated by fetterbush and southern bayberry. Vegetation within the sink is sparse to moderate including white waterlily, maidencane, and other emergent herbs characteristic of depression marshes.

Spring-run Stream (~11 acres)

Spring-run stream flows from a couple of small springs within the Chassahowitzka swamp and is also represented by the Weeki Wachee River. Vegetation is generally sparse. In the swamp, it is represented by lizard's tail and spoon-flower along the edges of the stream. The Weeki Wachee River has a number of submersed aquatic plants that were not surveyed.

Tidal Creek (~12 acres)

Tidal creeks are saline creeks that are adjacent to the Gulf of Mexico that are either created by tidal fluctuations within the salt marsh community or are the lower, tidally influenced ends of blackwater streams. It should be noted that this is not a published natural community recognized by FNAI. This community did not contain any evident plant species. Tidal creek and the associated tidal marsh contain minimal disturbances.

Wet Flatwoods (~225 acres)

Wet flatwoods occur in association with mesic flatwoods. There typically is a sparse to moderately dense canopy of slash pine. The tall shrub layer is generally represented by southern bayberry, red bay, sweet bay, saw palmetto, and gallberry. The short shrub layer is generally a dense cover of fetterbush, gallberry, and saw palmetto. Herbaceous cover within the wet flatwoods is sparse (1 to 5%) and usually includes wiregrass, bottlebrush threeawn, bluestem grasses, and Carolina yellow-eyed grass. Cinnamon fern and Virginia chain fern may be present.

Wet Prairie (~7 acres)

Wet prairie is an herbaceous community found on continuously wet, but not inundated, soils on somewhat flat or gentle slopes between lower lying depression marshes, shrub bogs, or dome swamps and slightly higher wet or mesic flatwoods or dry prairie. At CWMA, there are two small, mapped prairies located in the southwestern corner of the WMA that is adjacent to Southwest Florida Water Management District lands just north of Cortez Blvd. Otherwise, wet prairie is an occasional inclusion in basin marsh in the addition. Soils in this area are mapped as the Aripeka-Okeelanta-Lauderhill association and include areas of swamp, marsh, hammock, and wet flatwoods in addition to these small extent prairies. However, unlike the mucky soils of this map unit, the soils of the small prairies have a loamy/clayey surface and may belong to the Bluff series, a soil commonly associated with the mapped soils. Black bogrush (*Schoenus nigricans*) was collected in the adjacent Weeki Wachee Preserve in 1998, also on a clayey soil. These wet prairies could be considered a calcareous variant of the typical form, somewhat intermediate to marl prairies which occur in South Florida.

The wet prairies at CWMA are assemblages of black bogrush and hairawn muhly (*Muhlenbergia capillaris*), similar to prairies found in parts of South Florida where limestone is near the surface. In slightly lower areas, sawgrass becomes more common and quickly becomes dominant in ditches and marshy ecotones to the adjacent swamp. Other common herbs include spadeleaf (*Centella asiatica*), early whitetop fleabane (*Erigeron vernus*), blueflower butterwort (*Pinguicula caerulea*), marsh mermaidweed (*Proserpinaca palustris*), and sugarcane plumegrass. Slender shrubs of water toothleaf (*Stillingia aquatica*) are occasional throughout the prairies and small islands of saw palmetto are occasional on higher areas. Slash pine, red cedar, swamp bay, and dahoon occur sporadically, primarily around the edge of the community.

Natural fires likely entered wet prairie from surrounding pinelands and burned through them when they were dry enough to carry fire. Natural fire return intervals are probably around 2-3 years. In the absence of fire, shrubs and trees can invade wet prairie and shade out the light-loving herbaceous species. Wet prairies are sensitive to relatively slight physical alterations to the soil surface which can permanently alter the hydrology. The two wet prairies at CWMA have signs of past disturbances including roads and ditches. These disturbances have lowered the soil surface in many areas and favored sawgrass dominance.

Xeric Hammock (~264 acres)

Xeric hammock on CWMA is present where former sandhill has not burned for many years and in transition areas from sandhill to wetland communities where fire has not burned sufficiently hot to retard live oak growth. There is typically a nearly closed canopy of sand live oak. Chapman's oak and myrtle oak may be present in the tall shrub layer. The short shrub layer is generally represented by saw palmetto (5 to 50% cover). Shiny blueberry and coastalplain staggerbush are infrequent. Herb cover is suppressed by abundant leaf litter and generally includes sedges (*Scleria* spp. and *Rhynchospora* spp.) and witchgrass. Wiregrass is sparse to absent.

Altered Landcover Types

Artificial Pond (~13 acres)

Borrow pits, Centralia mill pond

Borrow Area (~3 acres)

Upland borrow pit (sand pit).

Clearing (~5 acres)

Recent and historic clearings that have significantly altered the groundcover and/or overstory of the original natural community. CWMA clearings consist of clearings of unknown origins and a helicopter landing zone.

Developed (~14 acres)

Check stations, parking lots, buildings, maintained lawns.

Firebreak (~168 acres)

Firebreaks include long-term, routinely maintained features used to limit the spread of fire, but not frequently driven except in association with actions related to fire.

Linear feature (~1 acre)

Old firebreaks no longer in use.

Pine Plantation (~81 acres)

Areas altered by silvicultural activities. CWMA pine plantations consist of slash pine (*Pinus elliottii*). 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.

Restoration Natural Community

A restoration natural community is an altered landcover type where active restoration has been initiated in order to return the community to its historic state. CWMA has restoration mesic flatwoods, restoration sandhill, restoration scrub, restoration scrubby flatwoods, and restoration wet flatwoods. Restoration activities, such as pine thinning, longleaf pine planting, groundcover restoration, hydrology restoration, and removal of exotics and other undesirable vegetation, in conjunction with prescribed fire, will be used to restore these communities.

Road (~ 107 acres)

Roads at CWMA are areas that are paved or unpaved and intended for vehicular traffic.

Spoil Area (~7 acres)

Area where dredge or spoil material is deposited, may be re-colonized by plants.

Successional hardwood forest (~34 acres)

Closed-canopied forest dominated by fast growing hardwoods such as laurel oak (*Quercus hemisphaerica*), water oak (*Quercus nigra*), and/or sweetgum, often with remnant pines. These forests are either invaded natural habitat (i.e., mesic flatwoods, sandhill, upland pine, upland mixed woodland) due to lengthy fire-suppression or old fields that have succeeded to forest. The subcanopy and shrub layers of these forests are often dense and dominated by smaller individuals of the canopy species. Successional hardwood forests can contain remnant species of the former natural community such as turkey oak, saw palmetto, gallberry, and infrequently wiregrass (*Aristida stricta* var. *beyrichiana*). Additionally, species such as beautyberry (*Callicarpa americana*), muscadine (*Vitis rotundifolia*), and sparkleberry are common. Restoration of these forests includes mechanical tree removal and reintroduction of fire. Where characteristic herbaceous species (e.g., wiregrass) have been lost, reintroduction via seed or plants may be necessary to restore natural species composition and community function.

Utility Corridor (~6 acres)

Electric, gas, telephone right-of-ways.

11.9 Imperiled Plant Descriptions

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

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

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

Non-crested Eulophia (*Eulophia ecristata*) - Non-crested eulophia is a perennial, deciduous herb that prefers open areas, with at least filtered sunlight and no dense shrub competition in mesic flatwoods, pine rocklands, sandhills, scrub, scrubby flatwoods, and wet flatwoods. While this species may persist for long periods in xeric habitats without fire, occasional fire is needed to reduce competition and shading by shrubs. However, non-crested eulophia is dependent on frequent fire in moist habitats that experience rapid shrub growth, and prescribed fire should occur with a frequency that will create or maintain open areas, limit the shrub layer, and encourage diverse herbaceous cover.

Excessive site preparation and illegal collecting negatively affect this species; therefore, protect areas with known occurrences. Flowering, which occurs from July to September, or fruiting, which occurs from September to November, is the best time for conducting surveys or verifying species identity.

Garberia (*Garberia heterophylla*) - Garberia is a slow-growing perennial evergreen shrub that prefers partial to full sun and well-drained sandy soils in coastal strand, dry prairie, mesic flatwoods, sandhill, scrub, scrubby flatwoods, and xeric hammock. This species requires fire during the growing season that reduces the encroachment of woody species and creates open areas allowing sunlight to reach the ground. Garberia is well adapted to growing season fires by vigorously re-sprouting, strong seedling establishment, and producing flowers five months after exposure to fire. Altered fire regimes and fire suppression negatively affect this species, therefore, prescribed fire should follow appropriate natural community fire regimes and vary by season, frequency, and fire intensity to ensure species diversity. Flowering, which occurs from September to November, is the best time for conducting surveys or verifying species identity.

Crested Coral-root (*Hexalectris spicata*) - Crested coral-root is a leafless, mycotrophic (primarily obtains nutrients from mycorrhizal fungi) perennial orchid that prefers mesic to dry areas in maritime hammock, mesic hammock, upland hardwood forest, and shell mounds, and is typically associated with junipers (*Juniperus* spp.), pines (*Pinus* spp.), and especially oaks (*Quercus* spp.). Even though this species is not fire tolerant, staff should allow fire to naturally enter and extinguish within its habitats when feasible. Illegal collecting and soil disturbances negatively affect this species; therefore, protect areas with known occurrences from collection and avoid soil disturbance near areas with known occurrences. Flowering, which occurs from May to September, is the best time for conducting surveys or verifying species identity.

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

Catesby Lily (*Lilium catesbaei*) - Catesby Lily is a perennial herb and is the largest of any North American lily. This species prefers open areas in wet pine flatwoods and wet prairie, especially in pitcher plant bog with sphagnum. Unlike most lily species, pine lilies require warm, moist, acidic soil, and will grow in saturated soil conditions. This species requires a fire regime that includes frequent (2-3 years) fire to maintain and promote the open grassy habitats that it favors, with most

fire occurring during the growing season. This species thrives with disturbance from fire demonstrating a more vigorous flowering. Soil and hydrologic disturbances negatively affect this species; therefore, limit the impact of disruptive activities, and maintain and restore the natural hydrology where practicable. Flowering, which occurs from August to November, is the best time for conducting surveys or verifying species identity.

Cardinal Flower (*Lobelia cardinalis*) - Cardinal flower is a milky sapped tall perennial herb with large, brilliant red, two-lipped flowers on a tall stem. Few native plants have flowers of such intense color as the cardinal flower, so it is easily recognized at considerable distance when in bloom in the summer. This species prefers sunny areas near sources of water in bottomland forest, dome swamp, hydric hammock, floodplain swamp, 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, 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.

Angle Pod (*Matelea gonocarpos*) - Angle pod is an herbaceous, perennial vine and like other members of the *Matelea* genus, their leaves and stems produce a milky sap when cut or injured. This species prefers moist well-drained, sunny, or semi-shaded areas in alluvial forest, basin swamp, baygalls, blackwater streams, bottomland forest, hydric hammock, maritime hammock, mesic hammock, shell mounds, upland hardwood forest, and upland pine communities. Angle pod may occur along wooded roadsides, and on the edges of sinkholes. Even though angle pod occurs in upland pine communities, which require frequent fire (2-3 years), it is sensitive to fire, surviving in fire shadows. Managers should vary the seasonality and severity of prescribed burns and allow prescribed fires from adjacent fire-maintained communities to naturally burn into and naturally extinguish in their preferred communities. Since angle pod is difficult to distinguish from other similar species without flowers or fruits, flowering or fruiting is the best time for conducting surveys or verifying species identity. Angle Pod flowers from June to August, and fruiting occurs from August to October. Staff may be able to distinguish this species from other similar species by its yellow or greenish-brown petals without a network of veins, and its lance shaped fruits that are smooth. Soil and hydrologic disturbances negatively affect this species; therefore, limit the impact of disruptive activities, and maintain and restore the natural hydrology where practicable.

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

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

Blue-Flowered Butterwort (*Pinguicula caerulea*) and Yellow-Flowered Butterwort (*P. lutea*) - These butterworts are perennial carnivorous herbs that spend much of their life cycle as basal rosettes. They prefer open moist to wet sandy-peaty soils of pine flatwoods, wet prairie, and seepage bog and may occupy moist to wet ditches and roadsides. However, yellow-flowered butterwort frequently occupies somewhat drier habitats than other *Pinguicula* species. These species need a fire regime that includes frequent (2-3 years) growing season fires that reduce the encroachment of woody species and create open areas allowing sunlight to reach the ground. Soil and hydrologic disturbances negatively affect these species; therefore, maintain and restore the natural hydrology where practicable, and avoid using heavy machinery in wetlands with known occurrences of this species. Flowering, which occurs primarily from February to April, is the best time for conducting surveys or verifying species identity.

Gypsy-spikes (*Platanthera flava*) – Gypsy-spikes is a terrestrial perennial orchid that prefers full or partial sun and wet to moist, slightly acidic to slightly alkaline soils in alluvial forest, basin swamp, bottomland forest, floodplain swamp, hydric hammock, mesic flatwoods, wet flatwoods, and wet prairie. 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 prairie that include frequent (2-3 years) 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, 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.

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

Plume Polypody (*Polypodium plumula*) and Swamp Plume Polypody (*P. ptilodon*) - Plume polypody, endemic to Florida, is usually an epiphytic fern growing on tree branches, usually live oaks (*Quercus virginiana*), in bottomland forest, floodplain swamp, hydric hammock, mesic hammock, and sinkhole. Swamp plume polypody, also endemic to Florida, is usually a terrestrial

fern growing primarily around tree bases in basin swamp, hydric hammock, rockland hammock, and strand swamp. However, both species may occasionally grow on tree stumps and rocks within their preferred habitats. These species are sensitive to fire, and some of their preferred habitats occasionally burn during periods of drought. Hydrological disturbances negatively affect this species; therefore, staff should maintain and restore the natural hydrology where practicable. Surveys or species identification may occur throughout the year for these species.

Needle Palm (*Rhapidophyllum hystrix*) – Needle palm is a small shrubby palm that prefers basin swamp, bottomland forest, floodplain swamp, hydric hammock, mesic hammock, sinkhole, slope forest, and upland hardwoods forest. Even though this species is not fire tolerant, staff should allow fire to naturally enter and extinguish within its habitats when feasible. Illegal collecting and habitat alteration negatively affect this species; therefore, protect known occurrences and make sure not to negatively influence areas with known occurrences. Surveys or species identification may occur throughout the year for these species.

Saw Palmetto (*Serenoa repens*) - Saw palmetto is a small fan palm that grows in clumps or dense thickets in many natural communities in Florida, both wet and dry. This species does not require fire for its survival. However, many of its preferred communities require periodic or frequent fire. Most fires defoliate and top kill saw palmetto, but it resprouts soon after a fire. Illegal collecting of saw palmetto berries negatively affects this species; therefore, take precautions to protect berries from harvest. Saw palmetto is identifiable throughout the year.

Austin's dawnflower (*Stylisma abdita*) – Austin's dawnflower, endemic to peninsular Florida, is a small perennial vine that prefers open sandy areas within sandhills and scrub communities. The plant is small and inconspicuous, often almost hidden by grasses, other small plants, and even fallen leaves. Occasionally this species occurs in shaded areas beneath oaks (*Quercus* spp.) or slash pines (*Pinus elliottii*), but in these situations its leaves are generally lighter colored and larger, and the stem internodes are longer. This species requires a fire regime that reduces the encroachment of woody species and creates open areas allowing sunlight to reach the ground. Altered fire regimes and fire suppression negatively affect this species, therefore, prescribed fire should follow appropriate natural community fire regimes, varying by season, frequency, and fire intensity to ensure species diversity. Scrub management programs should strive to mimic natural processes that create the openings this species requires. Flowering, which occurs from April to November, or fruiting, which occurs from September to December, are the best times for conducting surveys or verifying species identity.

Giant Wild-pine (*Tillandsia utriculata*) – Giant Wild-pine is a sun-loving epiphyte (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 grows on stumps, tree trunks, and branches. However, large individuals may fall to the ground and successfully continue to live. This species occurs in many natural communities in Florida, both wet and dry. While they grow in communities that FWC typically does not actively manage, if conducting management activities near known

occurrences, make efforts to protect the plant and host plant from fire, chemicals, and mechanical treatments. When an individual plant occurs in a fire-maintained habitat, prior to conducting a prescribed fire, staff will take appropriate actions to protect known occurrences. Air-plants are experiencing massive population losses due to the Mexican bromeliad weevil (*Metamasius callizona*), an invasive pest, making the protection and management of these plants from other threats all the more critical. Flowering, which occurs throughout the year (the majority of flowering occurs from early spring to early fall), is the best time for conducting surveys or verifying species identity.

Coontie (*Zamia integrifolia*) - Coontie is a gymnosperm that produces seeds without flowers, and is an evergreen Cycad in the Zamiaceae family, which is 'relict' genera that predate the dinosaurs. This species prefers moist sunny to shaded areas in hydric hammock, maritime hammock, mesic flatwoods, mesic hammock, sandhills, scrub, scrubby flatwoods, shell mounds, upland hardwood forest, and xeric hammock. Florida arrowroot does not require fire. However, some of the natural communities in which this species occurs are fire adapted, and Florida arrowroot's thick, underground stems make it resistant to fires as this species resprouts after fire. Illegal collecting and intensive forestry practices, such as site preparation that involves drastic soil disturbance, negatively affect this species; therefore, protect areas with known occurrences, and if evidence of illegal activities is observed, notify the appropriate authorities. This species is identifiable while producing cones, which occurs throughout the year with the heaviest production occurring primarily from December-March.

11.10 Land Management Review

2019 Land Management Review Team Report for Chassahowitzka Wildlife Management Area

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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: Chassahowitzka Wildlife Management Area

Managed by: Fish & Wildlife Conservation Commission

Acres: 27,262 **Counties:** Hernando

Purpose(s) for Acquisition: to conserve the largest remaining coastal hardwood swamp along the Gulf of Mexico south of the Suwannee River, its intact and functioning freshwater, tidal and spring system communities, and to conserve the diversity of rare and endangered species.

Acquisition Program(s): CARL/P2000/SOR **Original Acquisition Date:** 4/12/85

Area Reviewed: Entire Property **Last Management Plan Approval Date:** 12/17/14

Review Date: 10/25/19

Agency Manager and Key Staff Present:

- Steve Brinkley, Manager
- Melisa Thompson
- Phil Rodgers

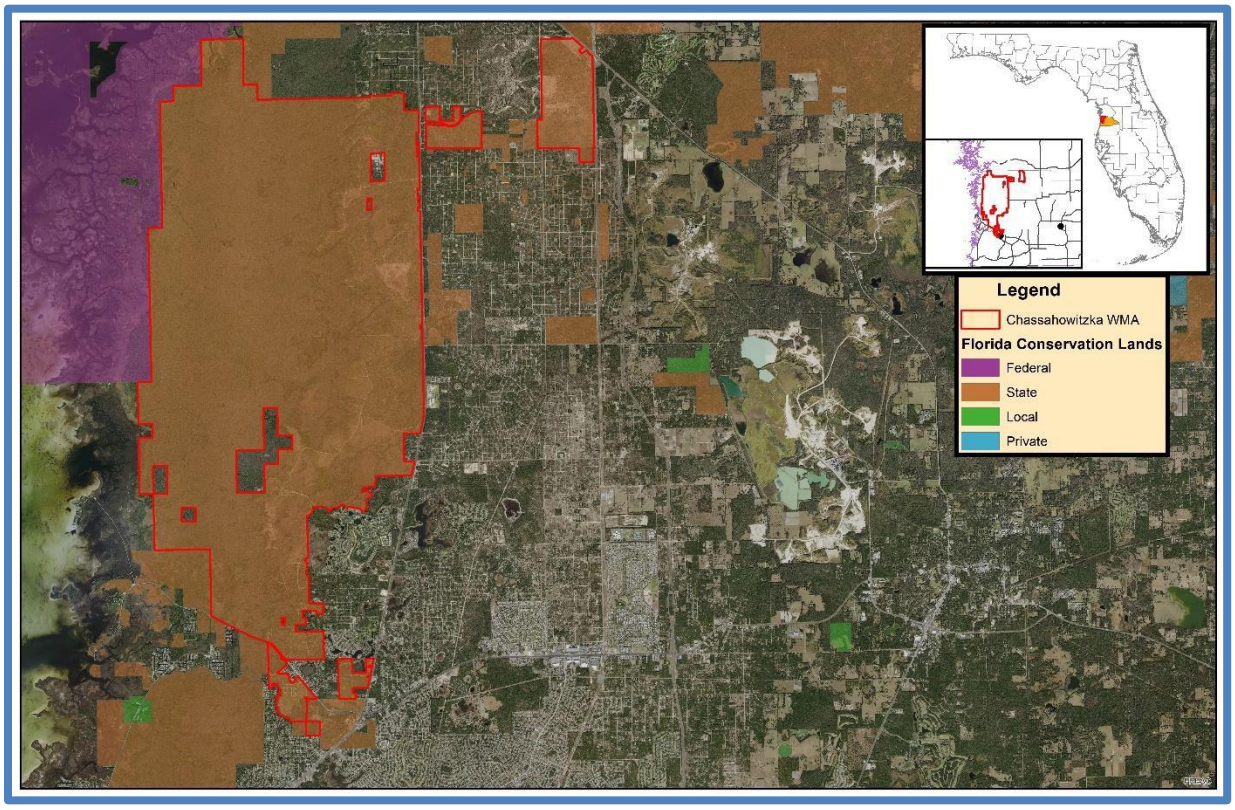
Review Team Members Present (voting)

- Chris Becker, DRP District
- Local Gov't., None
- Jennifer Myers, FWC
- Shannon Kennedy, DEP District
- Michael Edwards, FFS
- Anne Blanchard, SWFWMD
- Athena Philips, Cons. Organization
- Private Land Manager, None

Other Non-Team Members Present (attending)

- Keith Singleton, DEP/DSL
- Jim Surdick, FNPS
- Andrew Lawrence, FWC/IPM
- Victor Echaves, FWC
- Dylan Imlah, FWC

1.2 Property Map


Legend
Chassahowitzka WMA
Florida Conservation Lands
Federal
State
Local
Private

1.3. Overview of Land Management Review Results

Is the property managed for purposes that are compatible with conservation, preservation, or recreation?

Table 1: Results at a glance.

Major Land Management Categories	Field Review	Management Plan Review
Natural Communities / Forest Management	4.64	4.50
Prescribed Fire / Habitat Restoration	4.83	4.42
Hydrology	5.00	4.45
Imperiled Species	4.79	4.62
Exotic / Invasive Species	4.67	4.33
Cultural Resources	4.42	4.33
Public Access / Education / Law Enforcement	4.32	4.28
Infrastructure / Equipment / Staffing	4.56	N/A

Color Code (See Appendix A for detail)

Excellent	Above Average	Below Average	Poor

Yes = 6, 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*.

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 getting fire on the ground in a landscape with a myriad of challenges and transitioning to growing season burns. (6+, 0-)
2. The team commends the FWC for managing and monitoring game species on the management area. (6+, 0-)
3. The team commends the FWC for their efforts to consider the resident Florida black bear subpopulation during management activities by protecting potential denning habitat and maintaining forage and cover for bears on the CWMA. (6+, 0-)
4. The team commends the FWC for the restoration of sandhill through hardwood control and groundcover enhancement on the Seville and Annutteliga Hammock tracts of the CWMA to benefit the southern fox squirrel and other sandhill wildlife species. (6+, 0-)
5. The team commends the FWC manager for preparation of the overview document in advance of the LMR. (6+, 0-)

1.3.2. Consensus Recommendations to the Managing Agency

The following recommendations resulted from a discussion and vote of review team members. The next management plan update should include information about how these recommendations have been addressed:

1. The team recommends that the FWC improve plant inventory and list in the management plan. (5+, 0-, 1 abstain)

   Managing Agency Response: *In Fiscal Year 2010-11, the FWC contracted with the Florida Natural Areas Inventory (FNAI) to conduct a rare plant survey at the CWMA to identify existing populations of rare and imperiled plants. Surveys were conducted in October, March, and May to ensure adequate detection during peak flowering periods for rare plants whose range included the CWMA. The FNAI identified 14 rare plant species during the surveys, six of which were state listed*

as endangered at the time and eight of which were state listed as threatened. An additional 4 species were identified which are state listed as commercially exploited. In addition to the rare plant survey, the FWC contracts with FNAI on a 5-year rotation to conduct Objective-Based Vegetation Monitoring and FNAI Natural Community recertification. During these activities, FNAI records common and rare plants observed in survey areas on the CWMA. These observations, in addition to opportunistic observations, are included in FWC's databases and any new species documented will be incorporated in the management plan update for the area. Furthermore, FWC staff will continue to update the list as necessary and determine if additional plant surveys are appropriate.

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 mesic, wet, scrubby flatwoods, sandhill, xeric / mesic hammock, coastal salt marsh, depression marsh, dome swamp, spring-run stream / sinkhole lake, hydric hammock / basin swamp, and basin marsh.**
2. **Listed species, animals and plants in general, and specifically kestrels and gopher tortoise.**
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 sandhill, and flatwoods.**
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.**
9. **Hydrologic/geologic function, specifically roads and culverts, and ditches.**
10. **Resource protection, specifically boundary survey, gates and fencing, signage, and law enforcement presence.**
11. **Adjacent property concerns, land use, specifically expanding development, and inholdings and additions.**
12. **Public access, specifically roads and parking.**
13. **Environmental education and outreach, specifically wildlife, habitat management activities, interpretive facilities and signs, recreational opportunities, and management of visitor impacts.**
14. **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**:

1. ***The maintenance condition of the Natural Communities, specifically scrub, received a below average score. The review team is asked to evaluate, based on their perspective, what percent of the natural community is in maintenance condition. The scores range from 1 to 5, with 1 being 0-20% in maintenance condition, 2 being 21-40%, 3 being 41-60%, 4 being 61-80% and 5 being 81-100%.***

   Managing Agency Response: *The Chassahowitzka WMA (CWMA) contains a large amount of contiguous sandhill natural community (>5,000 acres), which is rare in the surrounding landscape. Scrub represents a small percentage of imperiled natural communities on the CWMA and the FWC has emphasized restoration and maintenance of existing sandhill. Of the approximately 230 acres of scrub within the CWMA, 92 acres were burned during the review period and an additional 76 acres were mechanically treated to alter vegetative structure and slow down succession. Very specific weather conditions are required to apply prescribed fire to about half of the scrub, which is surrounded by the wildland/urban interface and major roadways. The FWC plans to mechanically treat and apply prescribed fire to scrub as resources, time, and weather permit with the goal of improving more acres to maintenance condition, however, sandhill management will remain the priority.*

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)										
Mesic,Wet,Scrubby Flatwoods	I.A.1	4	3	4	5	4	4			4.00
Scrub	I.A.2	3	3	3	3	3	2			2.83
Sandhill	I.A.3	5	5	5	4	5	5			4.83
Xeric/Mesic Hammock	I.A.4	5	5	5	4	5	4			4.67
Coastal Salt Marsh	I.A.5	5	5	5	4	x	5			4.80
Depression Marsh	I.A.6		5	4	4	4	5			4.40
Dome Swamp	I.A.7	5	5	5	5	5	5			5.00
Spring Run Stream/Sinkhole Lake	I.A.8	5	5	5	5	4	5			4.83
Hydric Hammock/Basin Swamp	I.A.9	5	5	5	5	5	5			5.00
Basin Marsh	I.A.10	5	5	3	5	5	5			4.67
									Natural Communities Average Score	4.50
Listed species: Protection & Preservation (I.B)										
Animals	I.B.1	5	5		5	5	5			5.00

Kestrels	I.B.1.b	5	5	5	5	4	5			4.83
Gopher Tortoise	I.B.1.d	5	5	5	5	5	5			5.00
Plants	I.B.2	5	4	4	5	3	5			4.33
								Listed Species Average Score		4.79
Natural Resources Survey/Management Resources (I.C)										
Listed species or their habitat monitoring	I.C.2	5	5	5	5	5	5			5.00
Other non-game species or their habitat monitoring	I.C.3	5	5	5	4	5	5			4.83
Fire effects monitoring	I.C.4	4	4	5	5	4	5			4.50
Other habitat management effects monitoring	I.C.5	5	4	5	x	4	4			4.40
Invasive species survey / monitoring	I.C.6	4	5	4	5	4	4			4.33
Cultural Resources (Archeological & Historic sites) (II.A, II.B)										
Cultural Res. Survey	II.A	4	5	4	4	5	4			4.33
Protection and preservation	II.B	5	5	4	4	5	4			4.50
								Cultural Resources Average Score		4.42
Resource Management, Prescribed Fire (III.A)										
Area Being Burned (no. acres)	III.A.1	5	5	5	4	5	5			4.83
Frequency	III.A.2	5	5	5	3	4	4			4.33
Quality	III.A.3	5	5	5	4	5	5			4.83
								Resource Management, Prescribed Fire Average Score		4.67
Restoration (III.B)										
Sandhill	III.B.1	5	5	5	5	5	5			5.00
Flatwoods	III.B.2	5	5	5	5	5	5			5.00
								Restoration Average Score		5.00
Forest Management (III.C)										
Timber Inventory	III.C.1	5	4	5	4	5	5			4.67
Timber Harvesting	III.C.2	5	5	5	4	4	5			4.67
Reforestation/Afforestation	III.C.3	5	5	5	5	5	5			5.00
								Forest Management Average Score		4.78
Non-Native, Invasive & Problem Species (III.D)										
Prevention										
prevention - plants	III.D.1.a	5	5	5	4	5	5			4.83
prevention - animals	III.D.1.b	5	5	4	5	5	4			4.67
Control										
control - plants	III.D.2.a	4	5	5	4	5	5			4.67
control - animals	III.D.2.b	5	5	4	5	4	4			4.50
								Non-Native, Invasive & Problem Species Average Score		4.67
Hydrologic/Geologic function Hydro-Alteration (III.E.1)										
Roads/culverts	III.E.1.a	5	5	5	5	5	5			5.00
Ditches	III.E.1.b	5	5	x	x	5	5			5.00
								Hydrologic/Geologic function, Hydro-Alteration Average Score		5.00

Resource Protection (III.F)										
Boundary survey	III.F.1	4	5	4	5		4			4.40
Gates & fencing	III.F.2	4	4	4	5	5	3			4.17

Signage	III.F.3	4	5	5	4	5	5			4.67
Law enforcement presence	III.F.4	4	4	4	4	4	4			4.00
							Resource Protection Average Score			4.31
Adjacent Property Concerns (III.G)										
Land Use										
Expanding development	III.G.1.a	4	5	4	5	5	4			4.50
Inholdings/additions	III.G.2	5	4	4	5	5	4			4.50
Public Access & Education (IV.1, IV.2, IV.3, IV.4, IV.5)										
Public Access										
Roads	IV.1.a		5	5	3	5	5			4.60
Parking	IV.1.b		5	5	3	5	5			4.60
Boat Access	IV.1.c	4	5	x	2	4	4			3.80
Environmental Education & Outreach										
Wildlife	IV.2.a	3	5	4	5	4	5			4.33
Invasive Species	IV.2.b	3	5	3	x	4	4			3.80
Habitat Management Activities	IV.2.c	3	5	4		4	4			4.00
Interpretive facilities and signs	IV.3	3	5	4	5	5	5			4.50
Recreational Opportunities	IV.4	5	5	4	3	5	5			4.50
Management of Visitor Impacts	IV.5	5	5	5	4	5	5			4.83
							Public Access & Education Average Score			4.33
Management Resources (V.1, V.2, V.3. V.4)										
Maintenance										
Waste disposal	V.1.a	5	5	4	5	4	5			4.67
Sanitary facilities	V.1.b	5	5	4	5	5	5			4.83
Infrastructure										
Buildings	V.2.a	5	4	5	5	5	5			4.83
Equipment	V.2.b	5	5	5	5	5	5			5.00
Staff	V.3	4	3	4	3	5	5			4.00
Funding	V.4	4	4	4	4	5	3			4.00
							Management Resources Average Score			4.56
	Color Code:	Excellent		Above Average		Below Average		Poor		See Appendix A for detail

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)										
Mesic,Wet,Scrubby Flatwoods	I.A.1	5	4	4	5	5	4			4.50
Scrub	I.A.2	5	4	4	5	5	4			4.50
Sandhill	I.A.3	5	4	4	5	5	4			4.50
Xeric/Mesic Hammock	I.A.4	5	4	4	5	5	4			4.50
Coastal Salt Marsh	I.A.5	5	4	4	5	5	4			4.50
Depression Marsh	I.A.6	5	4	4	5	5	4			4.50
Dome Swamp	I.A.7	5	4	4	5	5	4			4.50
Spring Run Stream/Sinkhole Lake	I.A.8	5	4	4	5	5	4			4.50
Hydric Hammock/Basin Swamp	I.A.9	5	4	4	5	5	4			4.50
Basin Marsh	I.A.10	5	4	4	5	5	4			4.50
									Natural Communities Average Score	4.50
Listed species: Protection & Preservation (I.B)										
Animals	I.B.1	5	4		5	5	5			4.80
Kestrels	I.B.1.b	5	4	4	5	5	5			4.67
Gopher Tortoise	I.B.1.d	5	4	5	5	5	5			4.83
Plants	I.B.2	4	4	3	5	4	5			4.17
									Listed Species Average Score	4.62
Natural Resources Survey/Management Resources (I.C)										
Listed species or their habitat monitoring	I.C.2	5	4	4	5	5	4			4.50
Other non-game species or their habitat monitoring	I.C.3	5	4	4	5	5	4			4.50
Fire effects monitoring	I.C.4	4	4	4	5	4	4			4.17
Other habitat management effects monitoring	I.C.5	4	4	4	5	4	3			4.00
Invasive species survey / monitoring	I.C.6	5	4		5	4	4			4.40
Cultural Resources (Archeological & Historic sites) (II.A, II.B)										
Cultural Res. Survey	II.A	5	4	4	4	5	4			4.33
Protection and preservation	II.B	5	4	4	4	5	4			4.33
									Cultural Resources Average Score	4.33
Resource Management, Prescribed Fire (III.A)										
Area Being Burned (no. acres)	III.A.1	5	4	4	5	5	5			4.67
Frequency	III.A.2	5	4	3	5	5	5			4.50
Quality	III.A.3	5	4	4	4	4	5			4.33
									Resource Management, Prescribed Fire Average Score	4.50

Restoration (III.B)										
Sandhill	III.B.1	5	4	4	5	4	4			4.33
Flatwoods	III.B.2	5	4	4	5	4	4			4.33
								Restoration Average Score		4.33
Forest Management (III.C)										
Timber Inventory	III.C.1	5	4	4	5	4	5			4.50
Timber Harvesting	III.C.2	5	4	4	5	4	5			4.50
Reforestation/Afforestation	III.C.3	5	4	4	5	4	5			4.50
								Forest Management Average Score		4.50
Non-Native, Invasive & Problem Species (III.D)										
Prevention										
prevention - plants	III.E.1.a	5	4	4	4	4	5			4.33
prevention - animals	III.E.1.b	5	4	4	4	4	4			4.17
Control										
control - plants	III.E.2.a	5	4	4	5	4	5			4.50
control - animals	III.E.2.b	5	4	4	5	4	4			4.33
								Non-Native, Invasive & Problem Species Average Score		4.33
Hydrologic/Geologic function, Hydro-Alteration (III.E.1)										
Roads/culverts	III.F.1.a	5	4	4		4	5			4.40
Ditches	III.F.1.b	5	4			4	5			4.50
								Hydrologic/Geologic function, Hydro-Alteration Average Score		4.45
Resource Protection (III.F)										
Boundary survey	III.G.1	5	4	4	4	4	5			4.33
Gates & fencing	III.G.2	5	4	3		5	3			4.00
Signage	III.G.3	4	4	4		5	4			4.20
Law enforcement presence	III.G.4	5	4	4	3	4	4			4.00
								Resource Protection Average Score		4.13
Adjacent Property Concerns (III.G)										
Land Use										
Expanding development	III.H.1.a	5	4	4	5	4	4			4.33
Inholdings/additions	III.H.2	5	4	5	4	5	5			4.67
Discussion of Potential Surplus Land Determination	III.H.3	5	4	5	5	5	5			4.83
Surplus Lands Identified?	III.H.4	5	4	5	5	5	5			4.83
Public Access & Education (IV.1, IV.2, IV.3, IV.4, IV.5)										
Public Access										
Roads	IV.1.a	5	4	4	4	5	5			4.50
Parking	IV.1.b	5	4	4	3	5	5			4.33
Boat Access	IV.1.c	4	4	4		5	5			4.40

Environmental Education & Outreach										
Wildlife	IV.2.a	4	4	4		5	5			4.40
Invasive Species	IV.2.b	4	4	3		5	4			4.00
Habitat Management Activities	IV.2.c	4	4	4		5	4			4.20
Interpretive facilities and signs	IV.3	5	4	4		5	5			4.60
Recreational Opportunities	IV.4	5	4	5		5	5			4.80
Management of Visitor Impacts	IV.5	5	4	5		4	5			4.60
									Public Access & Education Average Score	4.43
Managed Area Uses (VI.A, VI.B)										

Existing Uses										
Hunting	VI.A.1	5	5	4	5	5	4			4.67
Fishing	VI.A.2	5	5	4	4	5				4.60
Bird Watching	VI.A.3	5	5	5	4	5	5			4.83
Hiking	VI.A.4	5	5	5	3	5	5			4.67
Bicycling	VI.A.5	5	5	5	3	4	5			4.50
Wildlife Viewing/Nature Photography	VI.A.6	5	5	5	4	5	5			4.83
Canoeing	VI.A.7	5	5	5	3	5	5			4.67
Swimming	VI.A.8	5	5	4	5	4	4			4.50
Cave Diving	VI.A.9	5	5	4	5	4	4			4.50
Driving Tour	VI.A.10	5	5	4		5	4			4.60

Color Code: Excellent | Above Average | Below Average | Poor

Missing Vote | Insufficient Information

See Appendix A for detail

Appendix A: Scoring System Detail

Explanation of Consensus Commendations:

Often, the exceptional condition of some of the property's attributes impress review team members. In those instances, team members are encouraged to offer positive feedback to the managing agency in the form of a commendation. The teams develop commendations generally by standard consensus processes or by majority vote if they cannot obtain a true consensus.

Explanation of Consensus Recommendations:

Subsection 259.036(2), F.S., specifically states that the managing entity shall consider the findings and recommendations of the land management review. We ask team members to provide general recommendations for improving the management or public access and use of the property. The teams discuss these recommendations and develop consensus recommendations as described above. We provide these recommendations to the managing agency to consider when finalizing the required ten-year management plan update. We encourage the manager to respond directly to these recommendations and include their responses in the final report when received in a timely manner.

Explanation of Field Review Checklist and Scores, and Management Plan Review Checklist and Scores:

We provide team members with a checklist to fill out during the evaluation workshop phase of the Land Management Review. The checklist is the uniform tool used to evaluate both the management actions and condition of the managed area, and the sufficiency of the management plan elements. During the evaluation workshop, team members individually provide scores on each issue on the checklist, from their individual perspective. Team members also base their evaluations on information provided by the managing agency staff as well as other team member discussions. Staff averages these scores to evaluate the overall conditions on the ground, and how the management plan addresses the issues. Team members must score each management issue 1 to 5: 1 being the management practices are clearly insufficient, and 5 being that the management practices are excellent. Members may choose to abstain if they have inadequate expertise or information to make a cardinal numeric choice, as indicated by an "X" on the checklist scores, or they may not provide a vote for other unknown reasons, as indicated by a blank. If a majority of members failed to vote on any issue, that issue is determined to be irrelevant to management of that property or it was inadequately reviewed by the team to make an intelligent choice. In either case staff eliminated the issue from the report to the manager.

Average scores are interpreted as follows:

Scores 4.0 to 5.0 are Excellent

Scores 3.0 to 3.99 are Above Average

Scores 2.0 to 2.99 are Below Average

Scores 1.0 to 1.99 are considered Poor

11.11 Management Plan Terms

Management Plan Goals and Objectives

Terms and Definitions

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

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

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

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

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

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

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

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

Imperiled species: A species or subspecies that is listed by the U.S. Fish and Wildlife Service as Endangered or Threatened; Florida Fish and Wildlife Conservation Commission (FWC) as Endangered, Threatened, or Special Concern; Florida Department of Agriculture and Consumer Services (FDACS) as Endangered or Threatened; or is tracked by Florida Natural Areas Inventory (FNAI) as globally or state Critically Imperiled or Imperiled. Imperiled Species does NOT refer to species that are on the FDACS list of commercially exploited plants that are not Endangered or Threatened.

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

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

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

Natural community/habitat/ecological improvement: Similar to restoration but on a smaller less intense scale. Typically includes small scale vegetation management activities, spot treatments of invasive 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 invasive 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 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 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 invasives 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 the final determination rests with the Director of the Division of Historical Resources.

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

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

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

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

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

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

11.12 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

November 15, 2021

Dylan Hasse, Senior Conservation Planner
Land Conservation and Planning Subsection
Florida Fish and Wildlife Conservation Commission
Tallahassee, FL

Dear Dylan,

By virtue of this letter, we are updating and continuing our agreement that it is unnecessary for your office to request FNAI Element Occurrence data for each land management plan you prepare, under the following conditions:

- FNAI will continue to provide our Florida Element Occurrence Map Package to FWC on a quarterly basis
- The FNAI GIS data will be available to FWC staff for reference and incorporation as required in management plan review and preparation with the following restrictions.
- FWC will limit spatial reference to Element Occurrence locations in public documents to the Management Area level (i.e., EOs will not be displayed on public maps to protect sensitive resources, habitats, and data sources)
- For Management Areas less than 160 acres in size, FWC will not list occurrences of resources (i.e., species and natural communities) coded as Data Sensitive. If desired, these sensitive resources can be included in a table as a count of occurrences and resource (e.g., three additional occurrences of two species/resources are coded as sensitive)
- When possible, FWC should use the FNAI provided Element Occurrence polygons, and consider the Representational Accuracy and Locational Uncertainty of each record, when determining which species occur on a Management Area

The FNAI Data Manager currently provides this update to FWC staff on a quarterly basis. Current FWC contacts are Rene Baumstark, Christi Santi, Steven Nicholl, Kristal Walsh, Kristen Sella, and yourself. We are pleased to continue this beneficial collaboration with the Florida Fish and Wildlife Conservation Commission.

Sincerely,

Frank Price
Assistant 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

11.13 FWC Agency Strategic Plan

The Florida Fish and Wildlife Commission

Strategic Plan
2020-2024

May 6, 2020

This plan was written by the FWC 2020 Strategic Plan Development Team for the dedicated staff of the FWC, specifically designed with leaders and supervisors in mind with the intention of fostering and reinforcing our agency culture, core operations, and strategic approach to our conservation mission.

From the Executive Director

Balancing the needs of Florida's fish and wildlife resources with a diverse, growing population of people can be complicated and challenging. It is our honor to be the agency that is entrusted to take care of these resources on behalf of all Florida residents and visitors. The FWC team strives every day to uphold this public trust. An important element of effective management and administration is focusing on strategic priorities that are vital in accomplishing our overall mission and adjusting resources accordingly. This reallocation must be done while continuing to attend to day to day functions. It is critical to accurately identify these developing issues and set forth a strategy to address them. This formula is the basis for a strategic plan. As with any plan, it works best if it is a collaborative effort, with everyone having the opportunity to provide input in the planning process and identify emerging issues that require strategic solutions. We have put together diverse teams to develop the FWC's strategic plan, to encompass the major issues affecting our agency as a whole.

I also firmly believe that strategic plans are less about a printed document, and more about the process and collaboration necessary to achieve such a plan. The benefits of this process are seen and continued far beyond printing the final draft.

The success of this effort – of our mission – rests upon the shoulders of each and every one of us. Whether you work in the field or in an office, whether you're a scientist, technician, accountant, law enforcement officer, administrative assistant, or programmer, your unique skills and expertise are necessary to continue the good work of conservation that we do every day as well as the strategic work we will be taking up over these next five years. As you read through this plan, I challenge you to look for ways that you can help make a difference. I also ask that you challenge your co-workers to leverage their skills and talents for the good of our mission as well. The future of Florida's fish and wildlife conservation depends on our collective and diverse perspectives, backgrounds, contributions, creativity, and energy.

Respectfully yours,
Eric Sutton

Vision & Values

The mission of the FWC is to manage fish and wildlife resources for their long-term well-being and the benefit of people. Every organization has an identity that is forged not only by what it does, but by how it conducts itself. The values embedded in our mission and expressed in the vision of FWC leadership are to make quality decisions by being dynamic, science-based, efficient, ethical, collaborative, competent, and committed to the vitality of the state and its environment.

We envision...

a Florida where fish and wildlife are abundant and thriving in healthy and connected natural landscapes with vital working lands and waterways; where natural resources are valued and safely enjoyed by all; and wherein natural systems support vibrant human communities and a strong economy.

We work diligently to conserve fish and wildlife in a manner that honors the public trust that has been vested in us through Florida's constitution. This is based in long-standing law and traditions commonly referred to as the "Public Trust Doctrine." This doctrine is steeped in the principle that fish and wildlife should be managed for the public, and reflects the belief that certain resources are an intergenerational inheritance, held in trust by government for the benefit of all current and future residents and visitors.

Consistent with this tradition, we strive to reinforce an inclusive culture that provides for public access, public input, technical assistance groups, stakeholder and public outreach, open communication, work teams, and shared decision making. The FWC encourages scientific inquiry and diversity of thought, and actively promotes these values with our public engagement efforts. The core concepts of these values are derived from a set of nationally accepted Wildlife Governance Principles that have been developed over time and focus efforts on conservation.

Additionally, we strive to make proactive resource decisions based on the best available science, balanced with social, economic and political interests, to create durable solutions with enforcement and managerial practicality. We empower staff to act locally on behalf of the agency to ensure decision making is as close to the issues as possible. We must cultivate a diverse and inclusive culture that cares and includes values of integrity, professionalism, dedication, and adaptability, and create environment that is inclusive and supports diverse opinions and voices in decision making at all levels.

Wildlife Governance Principles

Wildlife governance will:

- Be adaptable and responsive to citizens' current needs and interests, while also
- being forward-looking to conserve options of future generations.
- Seek and incorporate multiple and diverse perspectives.
- Apply social and ecological science, citizens' knowledge, and trust administrators' judgment.
- Produce multiple, sustainable benefits for all beneficiaries.
- Ensure that trust administrators are responsible for maintaining trust resources and allocating benefits from the trust.
- Be publicly accessible and transparent.
- Ensure that trust administrators are publicly accountable.
- Include means for citizens to become informed and engaged in decision making.
- Include opportunities for trust administrators to meet their obligations in partnerships with non-governmental entities.
- Facilitate collaboration and coordination across ecological, jurisdictional, and ownership boundaries.

Our Core Values

Resource Stewardship We are passionate about Florida's natural resources and use our expertise to manage and conserve fish and wildlife

Service Excellence We are solution-oriented and committed to achieving wildlife and fisheries conservation results, and efficiently meeting the needs of the public and stakeholders

Teamwork and Collaboration We communicate openly and work together effectively to achieve our common goals We appreciate the value of diverse backgrounds, expertise, and ideas, and incorporate multiple perspectives into decision making

Professional Integrity We operate honestly and ethically, and apply our processes, rules, and regulations in a consistent manner that engenders a climate of trust and fairness

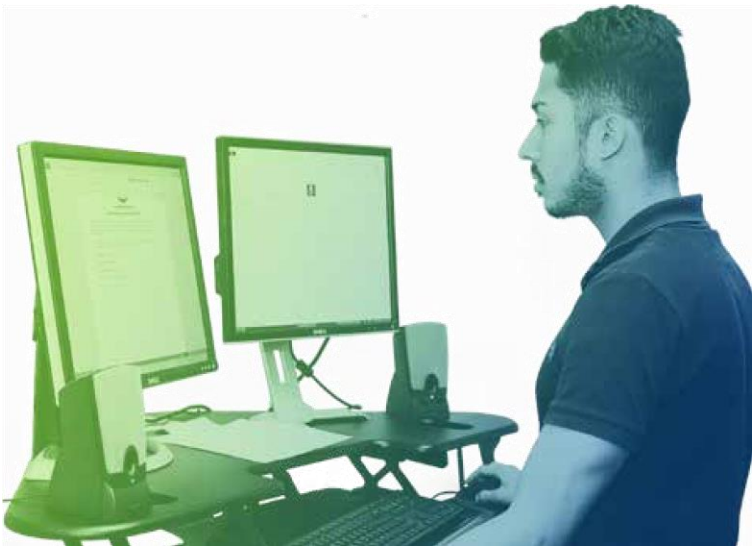
Scientific and Technical Excellence We use our science-based expert knowledge, technology, and other available resources to achieve high-quality work

Accountability We set challenging goals for our achievement and hold ourselves accountable for the results

Business Practices

In addition to our core values, we also strive to follow a core business model that addresses how best to deliver our vision, strategy, and mission through key practices. These include:

- ♦ Thinking proactively and strategically to anticipate challenges and opportunities while taking actions that contribute to the achievement of long-term interests.
- ♦ Coordinating science, resource management, enforcement, and research.
- ♦ Providing a safe and healthy environment where the public can enjoy Florida's resources and waterways.
- ♦ Providing an excellent experience for our customers.
- ♦ Creating and maximizing the use of integrated work and issue teams.
- ♦ Continually striving to improve processes and efficiency for the benefit of residents and visitors.
- ♦ Leveraging technology.
- ♦ Integrating leadership development.
- ♦ Optimizing fiscal management.
- ♦ Adapting to new and emerging needs for communication.



These core values and business practices are further defined in, and serve as, the foundation of our internal communications programs, hiring practices, and annual employee evaluation process, embedding these principles into the fabric of our organization and making them meaningful to employees in their daily activities.

Overview of Strategic Planning

2014-2019 Strategic Initiatives

Boating as a Gateway to Conservation and the Outdoors: Strengthen and promote the conservation connections of boating while protecting people and natural resources and improving boating related opportunities.

Conflict Wildlife: Maintain the support and appreciation of fish and wildlife through sustainable coexistence by reducing human wildlife conflict.

Conservation through Innovation – Marine Fisheries Management: Enhance marine fisheries through the expansion of progressive and collaborative management techniques.

Conservation through Innovation – Private Lands: Partner with private landowners as a key to enhanced conservation.

Expanding Participation in Conservation: Expand partnerships and FWC programs to encourage diverse youth and families to be more involved in the future of conservation.

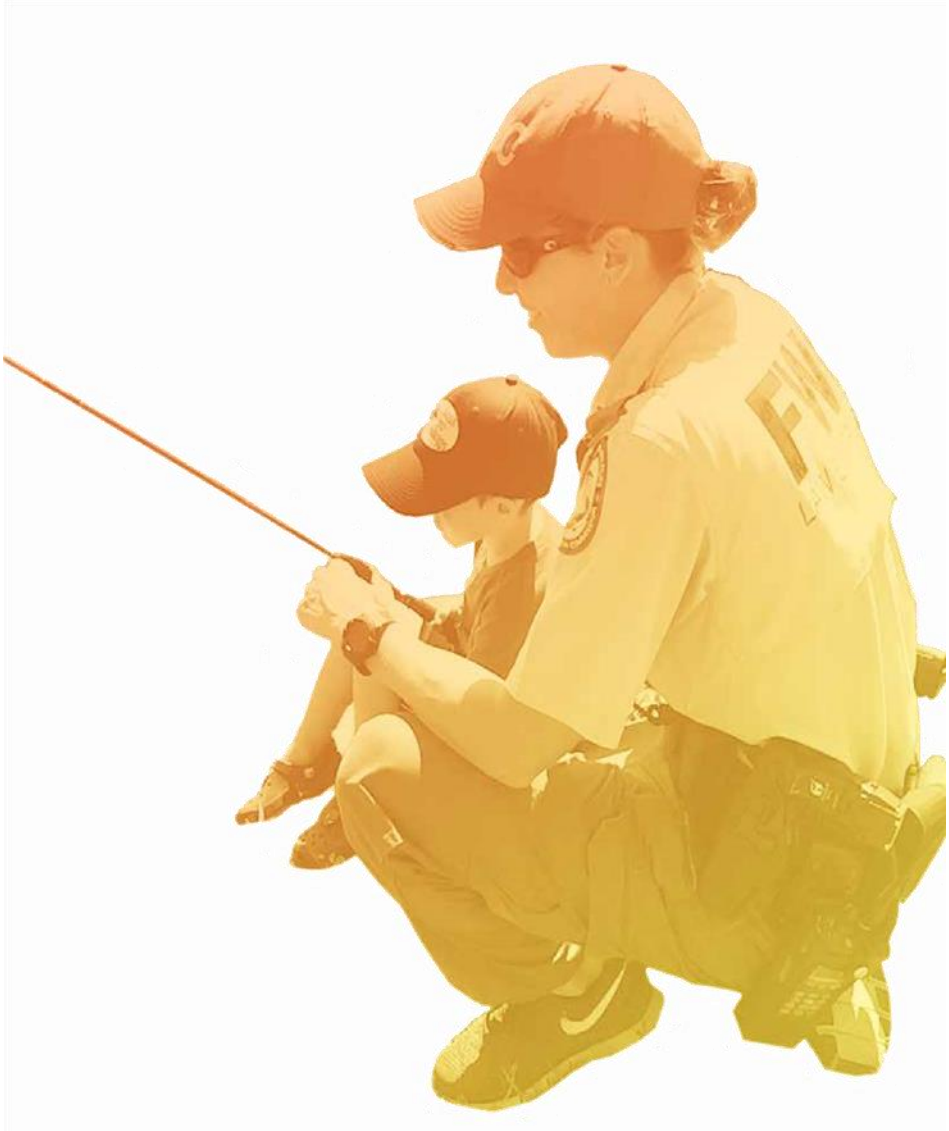
Imperiled Species Management Plan: Improve the status of imperiled species to effectively reduce the risk of extinction.

Running the Business: Establish an internal infrastructure that identifies the areas of business operations and practices that represent high risk, prioritize them, and modify them to address risks.

We have been developing strategic and operational plans since the FWC's inception in 1999. Our first planning effort focused on developing the structure and culture of a newly-formed agency. Subsequent plans similarly focused on norms and values, including development of a collaborative and team-based culture. The strategic planning effort that resulted in the "FWC Agency Strategic Plan 2014-2019" was the first time we incorporated a large-scale, highly collaborative process to determine how to focus the strength of the agency on the most essential conservation challenges while ensuring safe and enjoyable public access to Florida's fish and wildlife resources. The 2014-2019 strategic plan identified agency Themes, Goals, and Strategies to define the conservation work required to achieve our mission. Hundreds of staff from across the agency at multiple levels worked in teams to create 109 measurable objectives across each of the five Themes, which were then prioritized by each Regional Leadership Team before being presented to our Commissioners. Executive leadership used that guidance, along with elements from other planning efforts, to develop seven Strategic Initiatives. These initiatives emphasized areas where we wanted to focus attention, discipline, and resources to make significant conservation gains over the subsequent five to 10 years. Strategic work is complex and takes considerable planning and developmental investment to accomplish. Cross-divisional teams worked together to further define the Sis, develop implementation plans,

and operationalize key portions of the initiatives. The work that was accomplished on these seven SIs created a foundation for furthering more effective strategic thinking, planning, and implementation of meaningful and long-lasting conservation efforts for Florida's fish and wildlife resources. The 2014-2019 Sis are now becoming part of the broader conservation work that we do and will continue to influence operational planning moving forward

The current strategic plan builds upon the knowledge gained and lessons learned from all our prior strategic planning efforts. The purpose of our agency strategic planning is to leverage our values and behaviors as an agency with our strategic planning is to leverage our values and behaviors as an agency with our operational workforce to produce significant conservation outcomes that align with an ever-changing world to better position ourselves in the future



Strategic Landscape

We must be strategic in identifying our emerging issues and opportunities to put our agency in the best position to achieve our mission. We must adapt to take advantage of changing technology, seize opportunities to improve our fiscal and operational resources, increase efficiencies, and align priorities across the agency. In order to adapt to a changing environmental, economic, and socio-political landscape, we must first understand and define the environment in which we work. This plan is focused on aligning our agency resources to address our strategic opportunities. The issues, challenges, and risks we face will be addressed in division operational plans and priorities.

Issues We Face

- Maintaining the significance of natural resources as pillars of the community and economy.
- Habitat loss and degradation.
- Climate change impacts.
- Water quality and water quantity issues.
- Changes in public views of wildlife and conservation.
- Impacts from invasive and invasive species on natural systems.
- Natural disasters and disease outbreaks.

Challenges we must address:

- Static revenue streams.
- Increasing program costs and infrastructure improvement needs.
- Loss of institutional knowledge with an unprecedented rate of upcoming retirements.
- Recruiting and retaining qualified employees.
- Leveraging legislative support for agency operations.
- Maintaining an adequate level of research, monitoring programs, and population assessments for fish and wildlife resource management.
- Balancing state and federal regulatory authorities and reducing unneeded regulatory burdens while ensuring sustainable species populations and protecting habitat.
- Securing habitat for fish and wildlife in the face of increasing development pressure.
- Managing aquatic systems and resources without control over water quality, quantity, timing, and distribution

♦Gaining public support for conservation and management

♦ Shifts in demographics, changing attitudes toward conservation, and declining percentages of hunters and anglers, which all impact our relevancy to the public

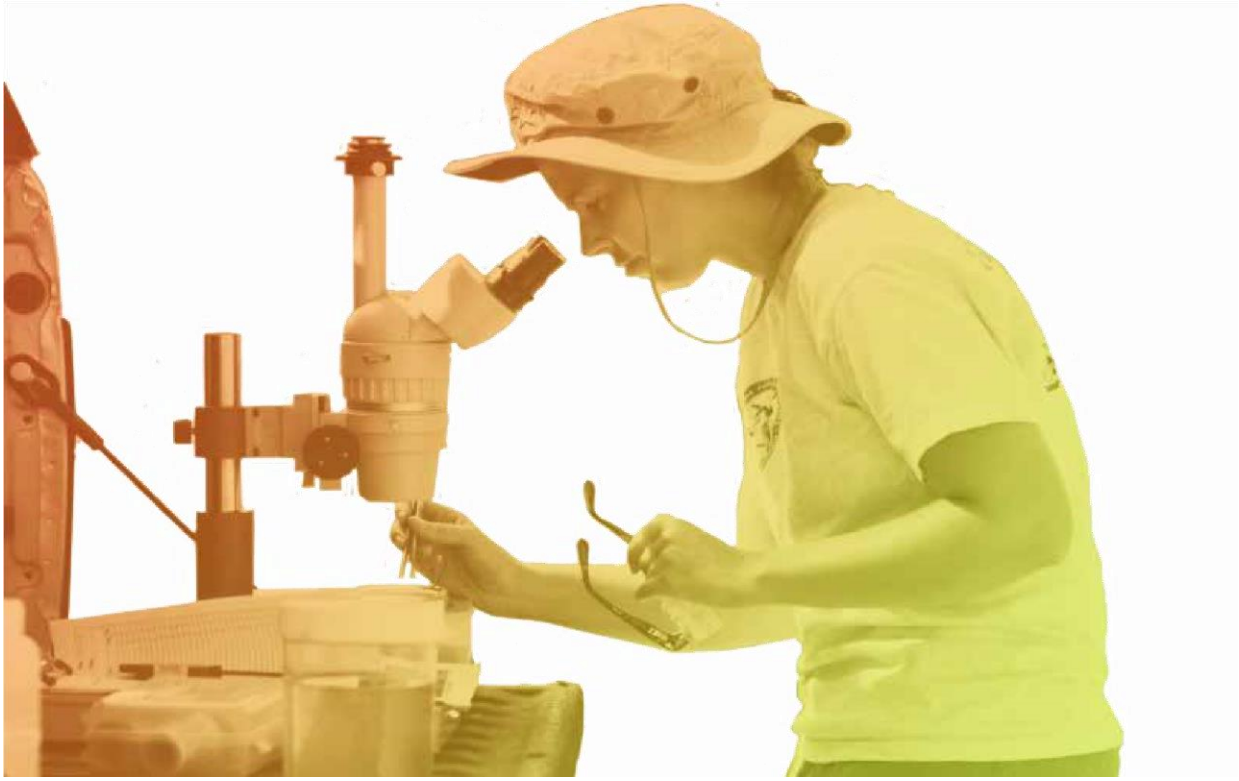
Meeting the Challenges

We have a broad scope of core work that keeps us focused on our mission This core work is the foundation of our agency and provides the basis for building a culture of strategic planning and doing To address the identified challenges through strategic and operational planning, we must invest in the people, programs, and technology that best advance our highest priorities, which requires that we sunset low-priority activities, programs, or service. We must foster an agency culture and capacity to accept, understand, engage, and serve people with different interests and uses of fish, wildlife, and habitats We must demonstrate fairness, honesty, and compassion; practice dedication and adaptability; and include diverse opinions throughout our decision-making processes



As demographics change across the state, it becomes increasingly important to develop practices and processes that are responsive to the changing nature-based values of the public. We must focus on providing a safe environment for people to enjoy Florida's natural resources and the outdoors; adapt to the impacts of social media on communication; increase focus, capacity, and use of social sciences into agency conservation and management decisions and public engagement strategies; and foster cultural acceptance of hunting and fishing.

As we maintain a high level of core work and increase strategic planning and doing as part of our foundation, we will have a greater workload than the available resources can address. This will require a priority-based approach, meaning some work will not be completed. We will need to increase the efficient use of our existing resources through realignments and decrease work on lower priority activities. We will need to work with our legislative team to secure the resources necessary for agency operations and priority issues, and leverage stakeholder relationships and partnerships to increase capacity for conservation work. We will integrate research, management, and law enforcement to focus on emerging threats, landscape conservation, and a holistic approach to watershed management. This will be accomplished through partnerships, leveraging funding sources, implementing existing plans, and fostering locally-led conservation. Achieving our conservation goals will require us to think strategically across the agency and prioritize our operations to meet the challenges that lie ahead.



Our Organization

The core work of the FWC is broad and forms the basis from which strategic effort springs. Maintaining our core competencies and work is critical to our success and this section contains an overview of the core work areas within the FWC. This is by no means an all-encompassing description of the multifaceted work conducted throughout the agency. Additional information on each of the divisions, offices, and the institute can be found within the "Programs of the FWC" annual report as well as within each division's operational plans. This agency strategic plan focuses on a small portion of our overall work with the intent of identifying areas of strategic focus, using our existing work as the foundation.

Moreover, it is important to note that our agency's structure is intentionally organized into inter-dependent parts that must work together to achieve our mission. Divisions serve as the main operational elements, while offices provide critical support functions across the entire agency. Regions then serve to ensure geographic continuity of policy and programs across the state. This structure necessitates strong collaboration and teaming amongst all parts of the FWC. We then carry this heavy focus on working together outside of the agency and actively engage partners, stakeholders, and the public in our decision making and implementation.

FWC

Florida Fish and Wildlife Conservation Commission

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

The FWC consists of more than 3,000 employees, including 848 sworn law enforcement officers. All personnel work together to protect and manage more than 575 species of wildlife, 200 species of freshwater fish, and 500 species of saltwater fish. The FWC works to balance the needs of these fish and wildlife species and the habitats that support them with the needs of Florida's growing population of more than 21 million residents and record numbers of visitors coming to the state – well over 100 million annually.



The Commissioners

The FWC's seven Commissioners are appointed by the Governor and confirmed by the Florida Senate to five-year terms. Their constitutional duty is to exercise the " . . .regulatory and executive powers of the state with respect to wild animal life and fresh water aquatic life and shall also exercise regulatory and executive powers of the state with respect to marine life, except that all license fees and penalties for violating regulations shall be as provided by law ."

OED

Office of the Executive Director

The Office of the Executive Director provides coordination, oversight, and support for FWC operations. It provides policy guidance, fosters accountability, and promotes continual improvement among the agency's divisions and offices. To address important conservation issues, OED coordinates and supports strong engagement of Commissioners and facilitates effective interaction with agency customers; stakeholders; federal, state, and local elected officials; federal and state agencies; and FWC staff. Further responsibilities include maintaining facilities and infrastructure and leading efforts to strategically focus agency staff and resources on conservation priorities. OED staff work closely with the agency's Senior Leadership Team to ensure effective integration of agency activities and programs across all divisions and offices.



There are multiple functions within OED, with some primary functions including media relations and informing residents and visitors about fish and wildlife resources; quickly and efficiently issuing licenses and permits for recreational fishing and hunting and for commercial saltwater and freshwater fishing; providing oversight for the agency's administrative functions such as disbursements, financial management, procurement, leasing, and property; managing an automated information technology environment that is reliable, secure, cost-effective, and responsive; and working closely with division, regional, and office directors to identify and coordinate programs with boundary-spanning implications that will benefit the FWC.

Fish and Wildlife Research Institute

FWRI

The Fish and Wildlife Research Institute provides timely information and guidance to protect, conserve, and manage Florida's fish and wildlife resources through effective research and technical knowledge.

The work done by the Fish and Wildlife Research Institute reaches far beyond the confines of the FWC. Research conducted on habitats, freshwater and marine fisheries, harvested and imperiled species, and other important plant and wildlife communities in Florida is used by federal, state, and local governments; universities; recreational and commercial fishing interests; recreational hunting and boating interests; nongovernmental organizations; and the public. FWRI integrates its research activities with management efforts of other FWC divisions.



Primary work areas within FWRI include conducting monitoring, assessments, mapping, and research to support development of management practices to protect and improve the quality of habitat and diversity of wildlife on state managed lands; maintaining an extensive collection of fish and invertebrate specimens and providing data management services and scientific library services; integrating research on predicted or emerging threats to fish and wildlife conservation, such as climate change; and acquiring and distributing biological and ecological information critical for the science based management, conservation, restoration, and wise use of Florida's fish and wildlife resources .

Freshwater Fisheries Management

FFM

The Division of Freshwater Fisheries Management manages, enhances, and conserves Florida's freshwater aquatic life for public benefit.

The Division of Freshwater Fisheries Management is responsible for directing the management and identifying the research needs of freshwater fisheries within public lakes, rivers, streams, and canals, with efforts focused on improving the fish populations and their habitats to benefit anglers and other stakeholders. This is accomplished through strategies revolving around improving aquatic habitat; increasing access; improving freshwater sport and commercial fisheries; stocking sportfish; regulations; developing management plans; increasing aquatic

stewardship; and building partnerships with state, county, and city governments, industry leaders, and freshwater stakeholders. FFM has developed a private-public partnership through the TrophyCatch conservation and marketing program, which uses citizen science to provide valuable information that contributes to the management of Florida's trophy bass fisheries. Special projects, such as the high school fishing program and kids' fishing clinics, encourage responsible fishing practices and help bolster future generations' understanding of and personal investment in the conservation of fish and wildlife resources.



Primary work areas include evaluating freshwater resources through surveys and inventories of fish populations and angler use; maintaining Fish Management Areas that provide access and promote fishing; developing aquatic habitat enhancement/restoration projects; producing fingerling and subadult fish for stocking in public waters to enhance fisheries, provide new opportunities, supplement urban pond populations, and for youth events; and work with communities surrounding major freshwater resources so they appreciate the intrinsic value and economic importance of the resource and the fishery .

HSC

Habitat and Species Conservation

The Division of Habitat and Species Conservation ensures healthy populations of all native wildlife and their habitats on a statewide basis.

The Division of Habitat and Species Conservation integrates scientific data with applied habitat and species management to maintain stable or increasing populations of fish and wildlife. Conservation integration efforts focus on the ecosystem or landscape scale to provide the greatest benefits to the widest possible array of fish and wildlife species. Accomplishing this mission requires extensive collaboration and partnering with local, state, and federal agencies to maintain diverse and healthy fish and wildlife populations for the benefit of all Floridians and visitors, which provides direct ecological, economic, aesthetic, scientific, and recreational benefits.



Primary work areas include managing, maintaining, enhancing, and restoring native natural habitats on 1.4 million acres, assisting cooperators with wildlife management on another 4.5 million acres, and working with partners to connect and expand public conservation lands; providing technical assistance to private landowners to implement wildlife conservation strategies; restoring, enhancing, and managing publicly-owned aquatic resources to improve the ecological health of freshwater, estuarine, and marine habitats; directing, coordinating, and funding control of invasive upland plants on public conservation lands and invasive aquatic plants in public waterways; developing and implementing high-priority conservation activities to improve conditions for native and imperiled wildlife; addressing human wildlife interactions and managing the impact of native and nonnative fish and wildlife species; reviewing growth management and regulated land and water use project proposals that have potential to impact Florida's fish, wildlife, and habitat resources; and promoting, facilitating, and expanding nature-based tourism, recreational opportunities, and public participation in conservation .

HGM

Hunting and Game Management

The Division of Hunting and Game Management manages and conserves game wildlife for the future, while fostering safe and responsible hunting.

The Division of Hunting and Game Management uses scientifically proven game-management strategies and professional expertise to conserve game wildlife and perpetuate sustainable hunting opportunities on public and private lands statewide. The Division also manages public shooting sports facilities throughout the state and offers hunter safety programs to foster safe, responsible hunting.



Primary work areas include managing Florida's wild game populations using science, leadership, and key partnerships; providing opportunities for responsible and sustainable hunting on public and private lands; working with stakeholders and partners to coordinate support for hunting-related activities; providing hunter safety courses and special events to ensure Florida hunters are well prepared to be safe, responsible, and conservation minded; and constructing and managing public shooting ranges located throughout the state.

Law Enforcement

LE

The Division of Law Enforcement protects Florida's natural resources and people through proactive and responsive law enforcement services.

The FWC Division of Law Enforcement, comprised of 1,043 members including 848 sworn law enforcement officers, operates in six regions throughout the state. FWC officers are responsible for uniformed patrol and investigative law enforcement services on more than 8,400 miles of coastline, more than 13,000 square miles of offshore waters, and more than 34 million acres of land encompassing a variety of habitats including private lands, wildlife management areas, state parks, and forests.



Primary duties include protecting Florida's fish and wildlife and their habitats, and providing law enforcement services that protect public safety throughout the state of Florida. The division also provides support for state Emergency Operations Center activities and readiness for natural disasters and mutual aid requests. Personnel also engage in targeting illegal black markets and trafficking in fish and wildlife, conduct federal fisheries enforcement patrols, help to regulate the Florida seafood industry, and enforce rules related to captive wildlife.

Some internal programs undertaken by the division include professional recruitment efforts of new officers; providing world-class training and recruit instruction; conducting progressive advanced training; implementing the division career development programs; and providing intelligence information to officers in the field. The DLE enhances boating safety and waterway experiences through maintenance and repair of approximately 244 boat ramps, construction of new boat ramps, and placement and maintenance of waterway markers.

Marine Fisheries Management

MFM

The Division of Marine Fisheries Management manages Florida's marine fisheries for their long-term sustainability, their economic benefits, and for the enjoyment of the public.

The Division of Marine Fisheries Management works with stakeholders, federal agencies, other states, and regional councils to manage and provide outreach on more than 500 marine fish and invertebrates. The division also

provides expertise, monitoring, and grant funding for the deployment of artificial reefs; recovers lost or abandoned lobster and crab traps; conducts wholesale-dealer audits; provides agency comments on proposed development projects that may affect marine resources; and issues special activity licenses for harvest of species for research and educational purposes. This division additionally provides outreach and education to introduce people to the sport of fishing, instill ethical angling values, and ensure comprehension of marine fisheries regulations



Primary work areas include compiling fishery data, coordinating with other government agencies and research institutions, and soliciting information from the public regarding fishery management strategies for state saltwater fisheries regulations; serving as liaison between the FWC Commissioners, interstate fisheries commissions, and federal fishery management councils that manage marine fish species such as snapper and grouper in federal and interstate waters; promoting responsible recreational and commercial fishing activities; and administering the statewide artificial reef programs.

Approach to the Future

Strategic Framework

Maintaining the FWC's core work is foundational to achieving our mission and continuing our success of achieving conservation. Enforcement and education, public engagement, species and habitat management, comprehensive research, freshwater and marine fisheries enhancement, sustaining game wildlife as a public resource, and operating within responsible business practices are all components of the exceptional work we do every day. These central functions comprise the majority of our time and effort, and continuing to excel in this work is key to successfully conserving Florida's fish and wildlife and their habitats into the future.

Currently, considerable effort is spent responding to urgent challenges. Much of this work is reactive in nature, rapidly consumes resources, and ultimately pulls focus from identified priorities. A refined approach to the future – one that results in a more agile and focused organization – is necessary to minimize time spent reacting and increase time spent making progress toward our strategic priorities. By increasing the portion of work we do that is strategic, focused, and proactive, we can better adapt to our changing environment, integrate strategic solutions into our operations to address specific issues, and position ourselves to successfully conserve fish and wildlife into the future (Figure 1).

The strategic approach presented here is a framework for infusing strategy into our operations and ultimately positioning the FWC to proactively address known challenges, capitalize on opportunities, and continue to successfully fulfill our mission. Investing time in strategic priorities is necessary to sustain the model for fish and wildlife conservation that the FWC has built. The conservation gains realized through focused planning and dedicated action are both worthwhile and essential. When strategic initiatives become fully integrated into the core components of the work we do, we achieve long-term, sustainable success.



Figure 1. Currently, a significant portion of our effort is spent reacting to urgent issues. With a shift to a more proactive, forward-focused approach, through time we can reduce the overall amount of reactive efforts by using approaches that address future challenges.



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Establishing Dynamic Strategic Initiatives

Identifying strategic priorities at the agency, division, and section/ program level is an important component of a future-focused approach. Strategic initiatives are intended to leverage areas of strategic importance and strengthen conservation efforts. SIs are distinguished as proactive, timely, and important topics requiring increased focus and a shift in resources. SIs are not a response to urgent, reactive challenges, nor are they a shift in course due to opportunities to address topics of lower priority. They are those critically important conservation efforts that focus on future opportunity or alignment, require dedicated attention, challenge us to work across organizational lines, and for which a shift in resources or change in operational structure may be required.

Initiatives will be selected through an ongoing process that includes environmental scanning and staff input. Strategic planning will include feedback and ongoing discussion with each division to clarify emerging issues and priorities. A cross-divisional strategic planning team will compile input, identify common themes across the agency, and evaluate potential initiatives. This team will produce recommendations on strategic areas of focus for agency and division-level initiatives to be discussed with each division leadership team and by the FWC's Executive Leadership Team. Collectively, the ELT will determine which issues become agency-level initiatives. Then, with support from the agency's strategic planning team, initiative sponsors will coordinate cross-divisional work to further describe the initiative and develop clear objectives and timelines.

Strategic initiatives:

- Realize significant benefits for conservation that otherwise would not occur.
- Are forward-focused instead of reactive.
- Need directed increase in agency focus.
- Span section or division boundaries.
- Require resource reallocation.
- May necessitate realignment or organizational transformation.

To ensure available resources are fully focused on priorities, no more than three agency SIs will be active at any given time. Limiting the number of topics we are addressing through a strategic shift in resources is intended to yield more progress in each initiative more quickly than when resources are divided among numerous initiatives. Initiatives will develop clearly defined objectives from the onset and will be evaluated annually. Many topics identified through consideration of influences, challenges, and opportunities may be urgent in nature and require cross-divisional coordination at an operational level. While only a subset of these topics will be active as an SI at any given time, we will continue to design our core work to sustainably address urgent needs by working across organizational boundaries. As this intentionally necessitates an adaptive approach, we will reassess this process after another five-year period to improve our development of strategic initiatives moving forward.

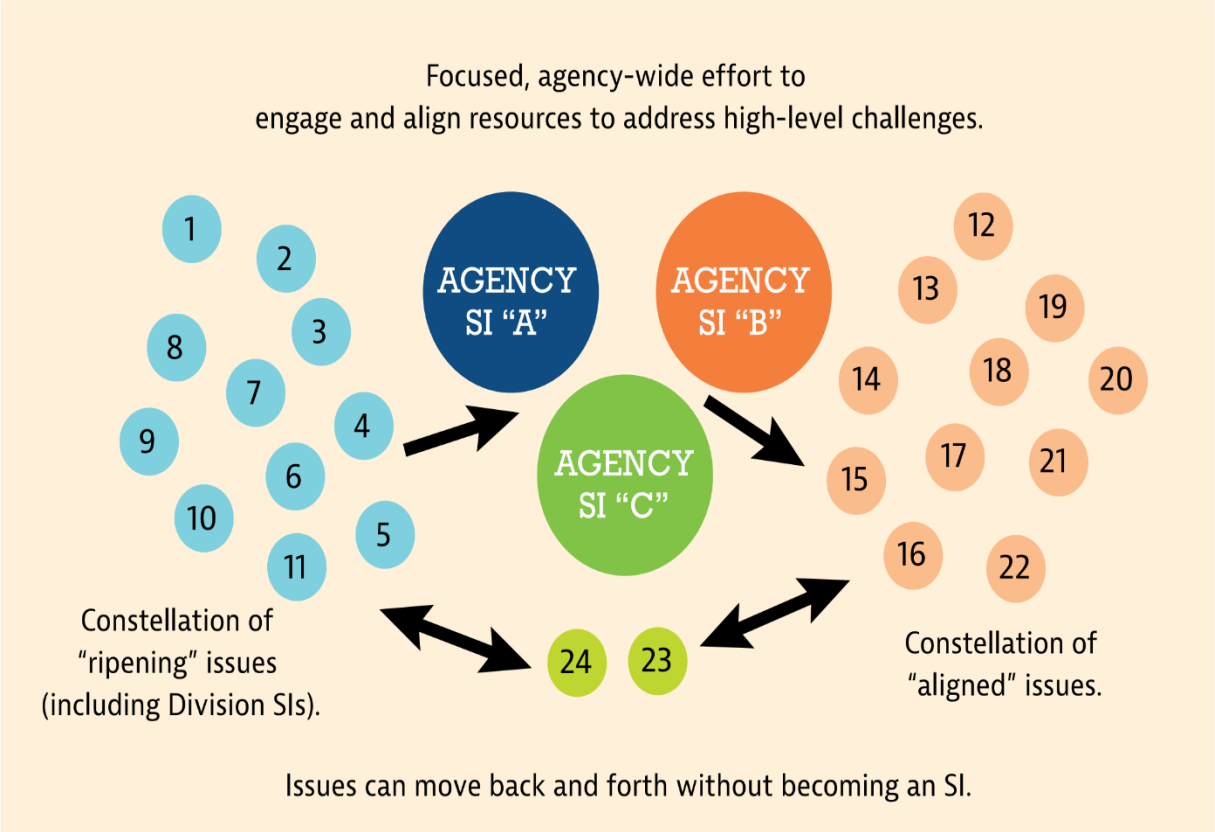


Figure 2. Dynamic Strategic Initiatives for 2020-2024

There will be no more than three agency strategic initiatives at any one time with no more than three strategic initiatives per division. Initiatives can change when special emphasis is no longer needed, and they will be tracked as part of the strategic plan framework.

Integrative Work Planning

To help weave strategic thinking into the fabric of the FWC, we will identify initiatives at multiple levels of the agency (e. g., division, section, and program initiatives) to both support agency initiatives and integrate the strategic framework into the structure of our core work . While key issues will be addressed through agency initiatives, division initiatives are also critical to addressing important topics. Sections and programs may also identify initiatives by shifting focus to a refined set of topics. Divisions, sections, and programs are encouraged to apply a framework similar to the one presented here to identify priorities requiring a strategic approach and develop timely initiatives to address them. Like agency-level initiatives, these will have a refined focus, so no more than three initiatives will be active for a division at any given time. Divisions with a significant role in an agency initiative will assume the agency initiative as one of up to three initiatives on which to focus as a division. This framework is founded on each division, section, and program initiating proactive strategies in addition to maintaining operational priorities. To achieve this, divisions may need to identify operational activities that no longer warrant agency focus and evaluate where capacity can be created to refocus on proactive topics. With strategic efforts active at the agency, division, and potentially section and program levels, we will strive to align vertically to leverage resources and coordinate efforts (Figure 3).

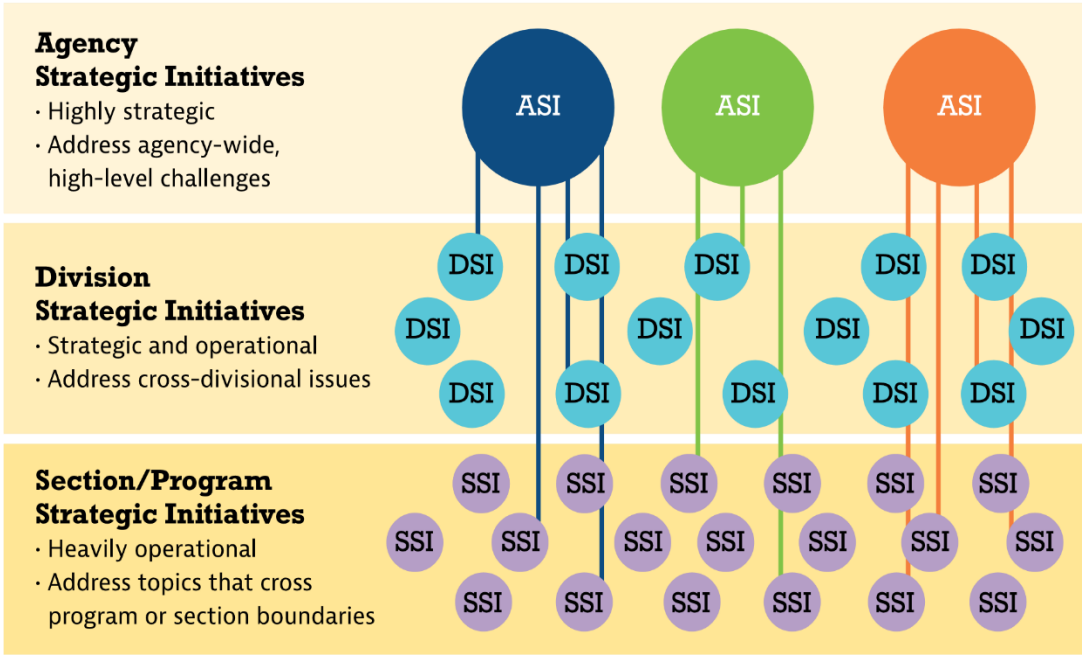


Figure 3. Strategic initiatives at the agency, division, and section or program levels. Vertical alignment of effort and coordination supports progress toward initiatives at multiple levels within the agency.

Future-focused Conservation

FWC's 2020-2024 strategic plan is built upon the idea that we must be intentional in our work to conserve Florida's fish and wildlife resources, so they are available for current and future generations. Our success in this arena directly depends on our individual and collective action, and accountability for achieving our mission. Guided by this strategic approach, shaped by our values and fueled by our passion, we will work together to build the Florida we envision: a Florida where fish and wildlife are abundant and thriving in healthy and connected natural landscapes with vital working lands and waterways; where natural resources are valued and safely enjoyed by all; and wherein natural systems support vibrant human communities and a strong economy.



Strategic Initiatives: 2020

Agency Initiatives

From October 2019 through March 2020, the agency strategic planning team worked with division leadership teams to determine the next round of SIs (this process is outlined in Appendix 1). The ELT collectively affirmed the initial three agency SIs and discussed initiative alignment under the new strategic approach. Moving forward, initiative sponsors will coordinate cross-divisional work to establish clear milestones and time frames for achieving objectives under the following areas of strategic focus:

Invest Inward

A strong foundation to maintain our core functions is critical to sustaining the important work we do and achieving our mission. **Investing Inward** means focusing on key challenges within our agency that, when addressed, position us to better accomplish sustainable conservation into the future. These challenges include: 1) staff retention, recruitment, capacity, and distribution; 2) infrastructure improvements, facilities, technology, and equipment; and 3) cultivating a culture that cares through investing in morale, professional development, diversity, and inclusion.

Landscape Conservation

The **Landscape Conservation** initiative will define a unified conservation vision to be implemented at the local level and fit within a broadly agreed-upon conservation target. This conservation vision should be one that can be shared with and implemented by internal and external, public and private partners to achieve broad-scaled, long-lasting conservation outcomes. Conservation delivery at the local level will require that we develop a network of local, state, federal, and private partners to provide technical and financial resources (data, information, assistance, funding opportunities) and a stable communication network.

Relevancy, Engagement, and Support

Recognizing the need to adapt to Florida's changing demographics and values by improving agency engagement and service to broader constituencies, **Relevancy, Engagement, and Support** focuses on the need to enhance conservation through broader engagement, identify available capacity for and challenges to reaching and servicing more constituents, and establish logical steps to helping the public understand the impact that fish and wildlife conservation has on their quality of life and mental and physical well-being. This includes increasing both social and financial support for conservation.

Division Initiatives

The input provided by division leadership to determine agency strategic initiatives was also used to determine division initiatives. As outlined in the strategic framework section, divisions with a significant role in an agency strategic initiative will assume the agency initiative as one of their three division initiatives. The initiatives in Figure 4 were identified as the most timely to address at the agency and division levels. Division initiatives were also affirmed by the ELT. Each initiative will be further described by divisions as part of their workplans.

Many division initiatives align with the broader agency initiatives but will address discrete challenges relevant to the core work of those divisions. This alignment increases the focus and shift of resources towards these topics through both strategic and operational approaches and unifies work across the agency. Some divisions also have initiatives that do not directly align with agency initiatives but do represent important, timely topics that divisions, programs, and sections will strategically address. The constellation of initiatives at the agency and division levels illustrates the alignment of strategic work proposed in Figure 3.

Strategic Alignment

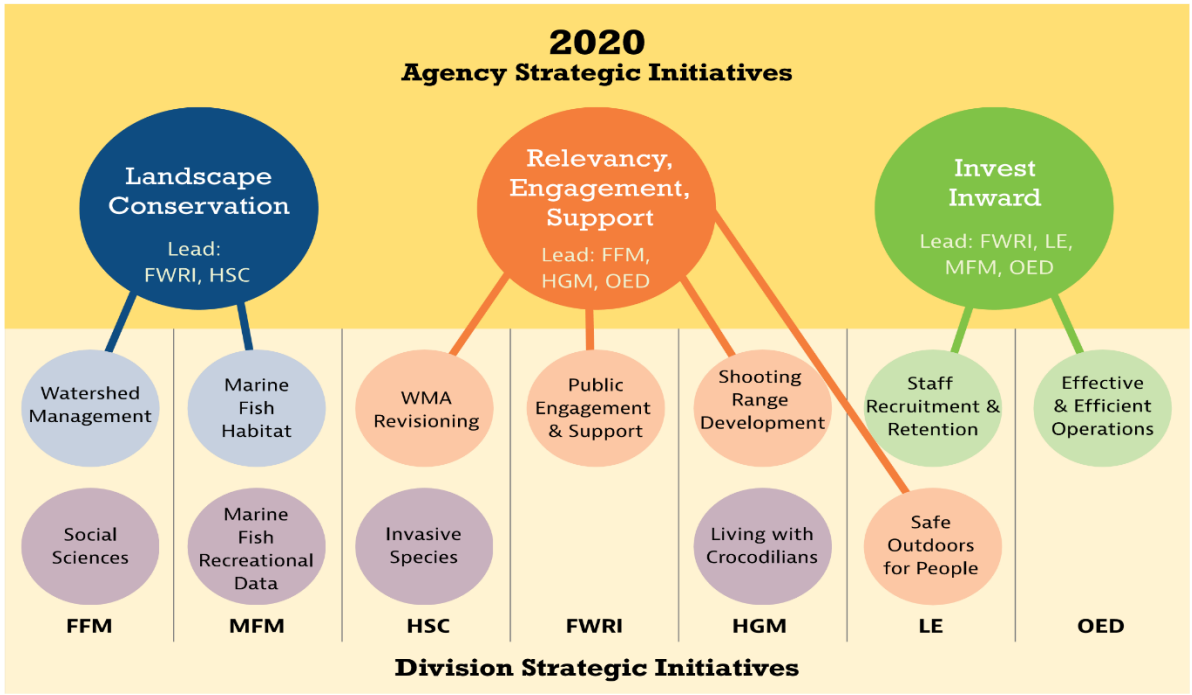


Figure 4. Vertical alignment between the agency and division initiatives shows multiple tiers of support for the broad initiative topics.

APPENDIX 1

2020 Strategic Initiative Selection Process

Division leadership teams provided input on timely initiatives to the agency strategic planning team throughout the selection process. A number of challenges and opportunities were identified through a questionnaire and follow-up discussions. Common themes emerged among the initiatives proposed by each division, and alignment was strong in several themes. These themes may affect each division in unique ways, but they represent agency-wide challenges that require a directed focus to fully address.

Table 1 on the following page is a process illustration of preliminary initiatives from the first round of data analysis. Development of agency and division initiatives went through several iterations of division-level review through the ELT as concepts evolved and solidified, eventually becoming the 2020 Strategic Initiatives outlined in Figure 4.



Table 1. Common themes were identified from the initiatives, influences, and challenges put forward by each division. This crosswalk represents proposed initiatives and alignment among agency-wide challenges. This information guided the initiative selection process for 2020.

Proposed Initiatives

	Agency Initiatives	Division Initiatives
FFM	Wildlife conflict	Lake management plans
	Watershed management	Chipola and shoal bass
	Social sciences	Largemouth bass
FWRI	Relevancy	Staff recruitment and retention
	Landscape conservation	Integrative research on events
	Diversify and revenue	Integrative research on events modernize
	Integrate research and management	
	K-12 and new resident education	
HGM	Landscape conservation	Implement R3 plan
	Expand participation in conservation	Shooting range construction
	Living with crocodilians campaign	
	Wildlife conflict	
HSC	Infrastructure improvement	WMA re-visioning (relevancy)
	Landscape conservation	HSC's role in landscape conservation
	Relevancy	
	Invasive species	
LE	Invest inward	Reinforce culture that cares
	Public service	Recruit and retain quality staff
	Science and conservation	Safe environment for people
MFM	Invasives	Maximize productivity, capacity
	Wildlife trafficking	Marine fish habitat
	Corals	Marine fish recreation
	Invest inward	data collection
OED	Internal focus/invest inward	OED organizational management
	Human dimensions and social science	
	Connectivity with other D/Os	
	Effective, efficient operations	

Common Themes

Invest Inward
- Staff: recruitment, retention, pay, capacity, distribution
- Infrastructure: facilities, technology
- Funding: stable sources
- Culture that cares: training, morale, professional development, diversity

Landscape Conservation
- Watershed management
- Integrate science with management
- WMA re-visioning
- Landscape conservation prioritization
- Marine and freshwater habitat

Relevancy, Engagement, and Support
- For fish and wildlife conservation
- For FWC as an agency
- Safe environment for people
- EPIC, R3, K-12 education
- Public service (good work)

Social Science and Human Dimensions
- Apply to management decisions
- Increase capacity to gather social science
- Increase value in FWC
- Use to influence behaviors
- Maintain focus on relevancy

Wildlife Conflict and Invasives
- Native species conflict
- Nonnative wildlife
- Invasive plants
- Aquaculture
- Trafficking and trade
- Living with crocodilians

Operational: Proactive Research and Development/Other
- Climate change
- Marine fish recreational data
- Largemouth bass
- Corals ♦Shooting Range Construction

11.14 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 honeybees 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 Honeybee 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 fire lines 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 becoming 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 Honeybee 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 affect 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.

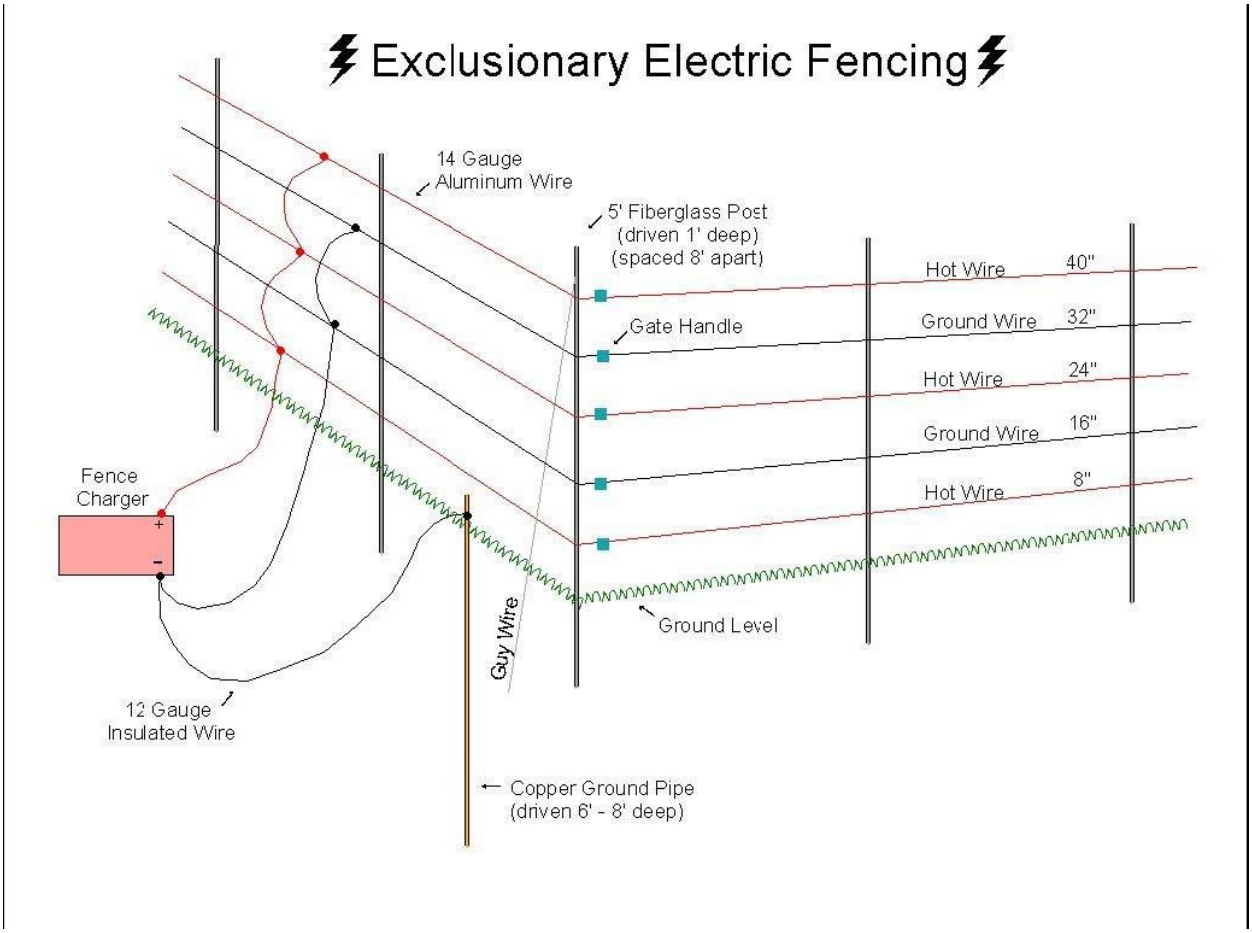
Tips to improve the effectiveness of your electric fence to deter black bears:

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 HONEYBEE 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 Honeybee 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 Honeybees (AHB) (USDA-ID) or other approved methods by FDACS on a yearly basis or as requested.

3. Honeybee 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 honeybees with respect.

RANDOM

SELECTION PROCESS

FOR VACANT APIARY SITE

When an apiary site becomes available the following procedure is used to randomly select the next apiarist (beekeeper) for an available apiary site on a WMA or WEA. Only those who have been evaluated and deemed qualified to be an apiarist on a WMA/WEA through the Apiary Application process will be eligible for this selection process. The steps below will be followed by the THCR Contract Manager when a site becomes available to be filled by a qualified apiarist:

1. The THCR Contract Manager will maintain an "Apiary Wait List Folder" on the THCR SharePoint for each WMA/WEA with apiary sites.
2. A wait list is either created or updated when an Apiary Application(s) is received by the THCR Contract Manager from a qualified apiarist.
3. Upon receipt of an apiary site application, the THCR Contract Manager will review the WMA/WEA folder to see if there is an "Apiary Wait List".
4. If a list exists then the qualified applicant will be added to the list.
5. When an apiary site becomes available if there are more than one qualified apiarist then these apiarists will be contacted by certified letter to determine their interest.
6. The letter will request a response within 10 working days to make them eligible for the random drawing.
7. If there is no response or is negative then that apiarist will not be included in the random drawing and the name will be removed from the waiting list*.
8. If only one apiarist responds positively to the certified letter then the available site will be awarded to that interested apiarist.
9. If there are no apiarists on a wait list or all responses are negative then apiarists who currently have site(s) under Agreement and where not on the waiting list will be

contacted to see if any have interest in the available site. If more than one responds then the random drawing process will be used to determine who will be awarded the site.

10. Steps to be performed by the THCR Contract Manager to execute the random selection for an available apiary site are listed below:

    a. The names of each interested apiarist will be noted on a 1" X 2" piece of paper and folded in half.

    b. The pieces of paper will be inserted into a "black film canister" which has a snap top and placed into a container and stirred up prior to the selection.

    c. A non-biased person will be selected to reach into the bowl (which will be held above the selection person's eyesight) and randomly select one of the canisters.

    d. The canister will be opened by the person performing the selection and the name is read aloud for those in attendance. Everyone in attendance will sign a witness sheet.

    e. The apiarist whose name is selected will be awarded the available site.

    f. A new Agreement will be developed by the THCR Contract Manager.

*****A new apiary application must be submitted once requestor's name is removed from a waiting list.

11.15 Prescribed Burn Plan

Chassahowitzka Wildlife Management Area
Prescribed Burning Plan
Update September 2020

INTRODUCTION

Fires, naturally occurring or man-induced, are an integral part of the ecology of the southern pine (*Pinus spp.*) region (Miller 1963) and have maintained a firedependent plant community in the southeast for countless years. Exclusion of fire reduces nutrient cycling and changes the vegetative community from an open canopy system to a closed one. The growth of dense brush shades out firedependent plants, including listed species, and has an adverse effect on firedependent wildlife such as the gopher tortoise. Exclusion of fires allows plant community successional stages to progress until a climax hardwood community exists. Extensive areas covered by dense brush can lose much of their value for wildlife. Additionally, heavy fuel accumulation results in increased wildfire hazard.

Prescribed burning is used extensively in forestry and wildlife management for fuel reduction, brush control, disease and insect control, site preparation, and wildlife habitat improvement. It is a recommended tool for management of such game animals as white-tailed deer (*Odocoileus virginianus*), northern bobwhite quail (*Colinus virginianus*), mourning dove (*Zenaida macroura*), and wild turkey (*Meleagris gallopavo*) (U.S. Forest Service 1969, Stoddard 1971). The value of prescribed fire to these and other animals, such as raptors and some songbirds, is well documented (Givens 1962, Miller 1963, Stoddard 1963). Prescribed fire benefits wildlife by reducing underbrush density and improving access, promoting the growth of succulent vegetation, and lowering browse to the feeding height of deer. Additionally, it benefits aesthetic values and enhances growth and fruiting of important wildlife food plants, such as dewberries (*Rubus spp.*) and blueberries (*Vaccinium spp.*) (Halls 1977).

BURN OBJECTIVES

The Florida Fish and Wildlife Conservation Commission (FWC) will use prescribed fire on the Chassahowitzka Wildlife Management Area (CWMA) as a habitat management tool exclusively, or in conjunction with other management techniques to accomplish a variety of objectives. The primary objective for using prescribed fire on the CWMA is to restore and/or maintain fire-dependent native habitat communities. This will result in preserving native plant communities while simultaneously improving wildlife habitat. Secondary objectives for the use of prescribed fire include the maintenance of early successional habitats, timber management, and hazardous fuel reduction. Early successional habitats are important for many species of wildlife found on the CWMA. Timber management is also an important objective in many of the burn units. Prescribed fire will be used as a prep tool prior to forest regeneration to help release recently planted longleaf pine, to reduce understory vegetation prior to marking timber for sale, and to prepare a clean seed bed for natural pine regeneration.

The derived benefits from prescribed burning on the CWMA include not only long-term preservation of native plant communities and improved wildlife habitat, but numerous others as well:

Reduction of fuel loads, which will help to prevent or mitigate effects of wildfires.

Enhancement of the area's aesthetics by controlling undesirable vegetation.

Control of exotic plant species.

Improved public access.

Increased success of longleaf pine regeneration.

DESCRIPTION OF AREA

The CWMA is located between Weeki Wachee and Homosassa on US Highway 19. US Highway 19 borders the main parcel of the CWMA to the east. Nearby roads include US Highway 98 to the north, State Road 50/County Road 550 to the south, and the Suncoast Parkway to the east. There are three tracts of land disjunct from the main CWMA tract, the Seville tract, the Annutteliga Hammock tract, and the Church parcel. The Seville tract is just east of US Highway 19 and on the north and south sides of Seville Parkway. The Annutteliga Hammock tract lies south of US Highway 98 and west of the Suncoast Parkway. The Church parcel is bordered on the east by US Highway 19, on the north by The Heather neighborhood, on the west by the Weeki Wachee Hills neighborhood, and on the south by the Weeki Wachee Springs State Park.

The CWMA contains 34,120 acres of land including the western portion of the property (approximately 5,580 acres) that is managed by the United States Fish and Wildlife Service (USFWS), and 704 acres in the southwestern corner that is managed by the Southwest Florida Water Management District (SWFWMD). FWC manages the remaining 27,836 acres of CWMA. The property is comprised of 31 community types as mapped by the Florida Natural Areas Inventory (FNAI) (Figure 1). Table 1 contains a list of community types within CWMA and their associated acreages. Brief descriptions of the FNAI identified natural communities, including the recommended frequency of fire for fire-maintained communities (FNAI 2010), are found in Appendix A.

PRESCRIBED BURNING PROGRAM

Firebreaks

Natural features (e.g., drains, creeks, rivers, and swamps) and existing roads are utilized as firebreaks whenever feasible. Many of the roads that are utilized as firebreaks are maintained for public access and management. Fire lines disked to mineral soil will be used when necessary. Nearby vegetation may be mowed or chopped to reduce fire intensity along firebreaks.

Size and Arrangement of BURN UNITs

One-hundred fifty-one burn units totaling 10,698 acres have been delineated on the CWMA (Figure 2), averaging 71 acres in size (range: 1 - 454 acres). Ideally, burns should be conducted at 2-5-year intervals, or in some cases, in consecutive years if objectives are not accomplished. Burn units will be burned in a mosaic pattern when possible so species with small home ranges, such as bobwhite quail, have nearby escape cover. If burn days are limited due to weather constraints, several burn units may be burned on the same day.

Burn prescription

A standardized FWC prescription (Appendix B) will be used to prepare the prescription for each burn. The prescriptions will be prepared by a Commission employee who has completed the Florida Forest Service (FFS) Certified Burn Manager training. Prescription content will be unique for each burn and will include, among other things, the burn unit(s) location and description, firing methods, contingencies, desired weather parameters, personnel and equipment, safety measures, smoke management, and measurable objectives of the burn.

Type of Burn

Most burns will begin with a backfire along the downwind side of the unit. The rest of the unit will be burned with spot, flank, or headfires, depending on fuel loads and desired fire intensity. Burns will be ignited using ground crews instead of aerial ignition due to the relatively small size of burns at CWMA and the high cost of aerial ignition. Drone use for aerial ignition could be used in the future if and when that technology becomes proven and readily available.

Season and Time of Day

Prescribed burning of sandhill and pine flatwoods in units with little or no burn history will be conducted during the dormant season (October - March). When the heavy fuel loads have been reduced, burns will be switched to primarily growing season (April - September). Growing season burns are also favorable for bears as it reduces the risk of burning a den site. Burning potential den sites, such as thick areas along swamp edges, during January through April will be avoided whenever possible. Exceptions will be made if it is determined that an initial burn is necessary during that time period to reduce fuel loads and burn windows are small. Burning will be conducted during daylight hours. Night burning is currently not allowed in the CWMA area due to poor smoke dispersal at night and the proximity to urban areas and major roadways. Night burning will be an option in the future if restrictions ease and if favorable conditions exist and permits can be obtained.

Optimal Weather Conditions

For most of the CWMA, winds out of the east are typically desired for burning. Easterly winds will push fire and smoke away from US Highway 19 and away from nearby communities. Westerly seabreezes are most common during the spring and summer months but can occur at any time of year. Seabreezes have been known to occur as early as 11:00 am on the area. Burns will begin as early as possible to mitigate wind shifts, especially during the spring and

summer. Units lying farther inside the WMA, away from US Highway 19, and units in the Seville tract can be burned with westerly winds and a good dispersion (40-70). Burn units that are close to residences and roads will also require a good dispersion during the day and the following night. Additionally, a predicted wind direction that pushes smoke away from these areas will be utilized.

Other parameters, such as days since last rain, minimum relative humidity, and KBDI will be prescribed based on burn objectives for the unit(s) and containment concerns. We will strive not to burn on days that are deemed too volatile or days in which we are not meeting our objectives.

Smoke Management

Direction, volume, and dissipation of smoke from prescribed burning on CWMA are of primary concern due to the proximity of smoke-sensitive areas. Areas that may be affected by smoke, or particulates carried by smoke, under optimum burning conditions are US Highway 19 (eastern boundary), State Route 50/County Road 550 (to the south), US Highway 98 (to the north) and the Suncoast Parkway (to the east). The amount of urban interface increases further south toward Weeki Wachee. There are numerous neighborhoods that share a border with CWMA and some houses back up directly to the burn units. There is a school complex, which is a designated smoke sensitive area, directly across US Highway 19 from one of the burn units. Other smoke sensitive areas include hospitals along State Route 50 and all surrounding highways.

To minimize smoke problems, burning should be conducted when the atmosphere is slightly unstable, with the mixing height at a minimum of 1,700 feet and transport wind speed at a minimum of 9 mph. Additionally, the use of backfires, as prescribed, will produce less smoke and consume fuel more completely than head firing (Mobley et al. 1973, Southern Forest Fire Laboratory 1976, Crow and Shilling 1983). The use of backfires can be difficult in larger burn units as time often does not allow for completion of the burn in one day. Also, fires that burn for long periods of time, such as backfires, undergo increased chance of wind shifts that can lead to a dangerous situation. Additional fire lines are needed to use the backfire technique exclusively in larger units. Therefore, this method will only be used as burn unit and weather conditions allow. For most burns, we will use a backfire to establish a black baseline against the downwind firebreak and other firing techniques to burn out the remainder of the unit more quickly.

Smoke management is difficult during night burns because smoke often stays close to the ground and smoke drift is difficult to predict. Smoke tends to seek lower areas (along streams and creeks) and may drift across surrounding highways. Night burning is unlikely to be used in the CWMA area for the above reasons. However, if allowed and conditions are favorable for a safe night burn, the burn will be approached with caution and in close association with the FFS to avoid threats to public safety.

Personnel

Under ideal conditions, burning can be conducted with 3-6 crew members. A typical crew consists of one to two ignition personnel, one to two suppression crews, and a burn boss. The FFS often stands by with a dozer-plow unit on complex burns. Commission personnel who are FFS-certified for prescribed burning will boss the burns. Personnel from other state and federal agencies (e.g., SWFWMD, FFS, Department of Environmental Protection, and the US Forest Service) will be used as additional crew members if they are available and needed. Any person participating on an FWC prescribed burn must meet the minimum training and experience requirements as described in the FWC's Division of Habitat and Species Conservation (HSC) Prescribed Burning and Wildfire Suppression Standards (Appendix C).

Equipment

All members of the fire crew will wear, at a minimum, the personal protective equipment required by FWC's HSC Prescribed Burning and Wildfire Suppression Standards (Appendix C). Type V and VI engines, tractor-plows, farm tractors, ATVs, UTVs, and other equipment may be used as conditions require. ATV drip torches, handheld drip torches, flares, and/or a pyroshot dragon egg launcher will be used for ignition depending on burn unit conditions and fire intensity needs. Smoke caution signs for nearby roads will be deployed as necessary.

Permits and Notifications

A permit will be obtained from the FFS on the afternoon before or the morning of the burn in accordance with FS 590.125. Notification will be given to:

1) Hernando County Sherriff's Office and Fire Department
2) Residents of inholdings and surrounding areas that request notification
3) FWC LE/Florida Highway Patrol dispatch (email)
4) Southwest Regional Staff (email)

Evaluation of Burn

Burns will be evaluated informally during and shortly after each burn by comparing burn objectives with burn effects. During the burn, rate of spread, flame height, fire intensity, and general fire behavior will be evaluated. Post-burn evaluations will include fuel consumption amounts, pine tree crown scorch, pine tree mortality, and hardwood topkill. Periodic Objective Based Vegetation Monitoring (OBVM) data will be used to determine if the fire frequency and intensity is maintaining the desired vegetative composition and structure for the major fire-maintained communities, which are sandhill, mesic flatwoods, wet flatwoods, and scrub at CWMA.

Special Considerations

Special attention will be given to ensure our burns do not adversely affect adjacent landowners and nearby roads. We will minimize smoke impacts on nearby roads and residents by utilizing a smoke screening map, the FFS smoke screening tool, and responding to changing weather conditions during the burn. Smoke signs will be placed on roadways near the burn if there is a

chance smoke will affect those roadways either during the burn or during the night(s) following the burn. Burn bosses will coordinate with law enforcement agencies (Florida Highway Patrol (FHP), local Sherriff's Department, and/or FWC Law Enforcement) to help monitor smoke and visibility on roadways following burns when needed. Lighted smoke signs may be requested from FHP if needed along US Highway 19 or US Highway 98.

Attention will be given to the safety of private inholdings and surrounding residences. The firebreaks around the inholdings and near residences will be reinforced and, in some cases, a pumper unit and/or a fire plow will be stationed nearby to expedite response time to the area if required.

Sensitive wildlife resources will be depicted on burn maps and protected. Infrastructure within the burn unit will be depicted on burn maps and protected as well. To provide a variety of food and cover for black bears, fire will not be forced into all upland fire shadows within burn units and areas inside swamps that rarely burn. Also, in consideration of black bears, burns during the bear denning season (January - April) will be in units with little or no denning habitat and conducted in a way to minimize the potential impact on bear dens.

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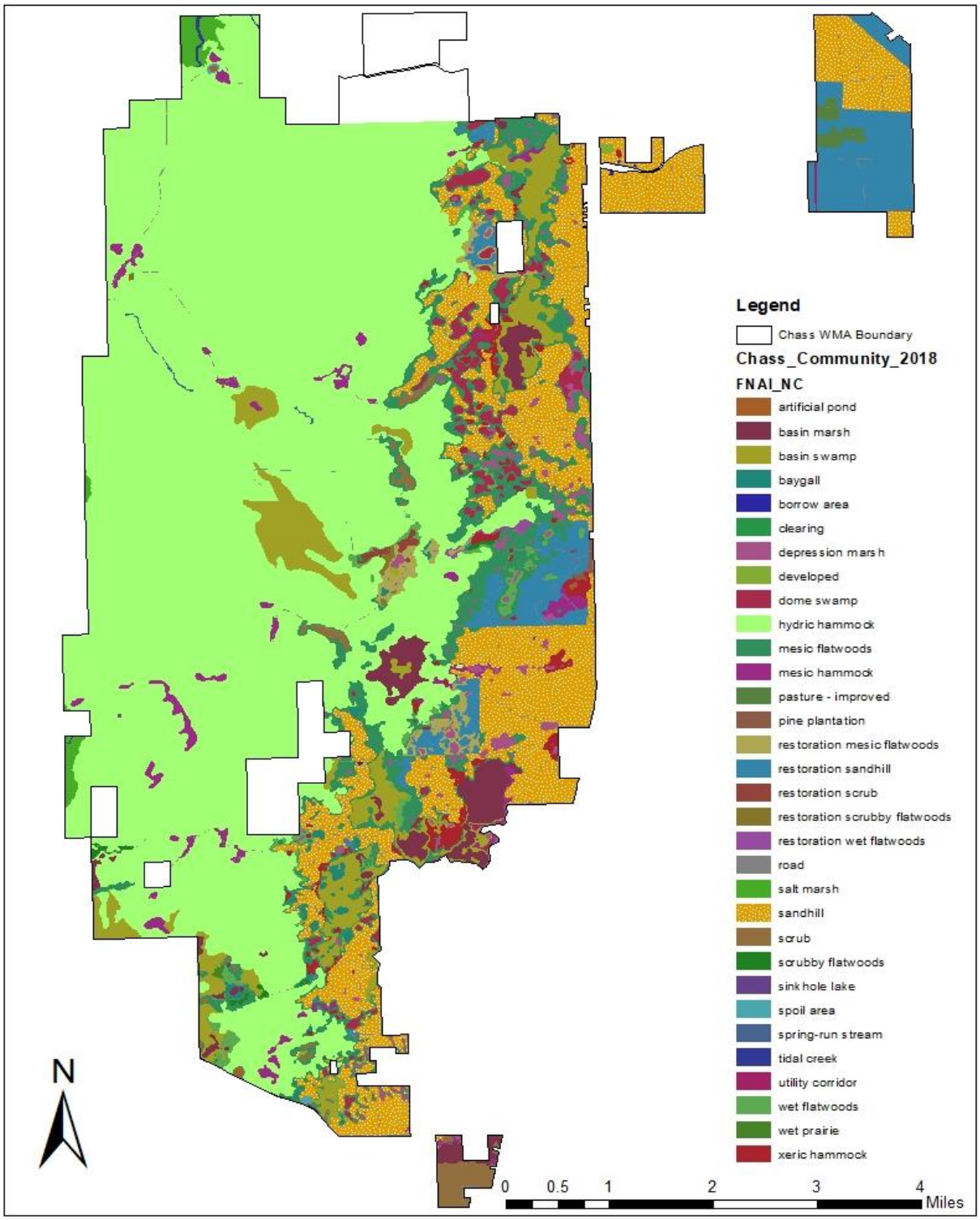


Figure 1. CWMA Community Types.

Table 1. CWMA Community Types and Acreages.

#	Natural Community Type	Fire Maintained Community?	Acres
1	Artificial Pond	No	13.78
2	Basin Marsh	Yes	554.24
3	Basin Swamp	No	1398.61
4	Baygall	No	87.62
5	Borrow Area	No	2.99
6	Clearing	No	5.15
7	Depression Marsh	Yes	298.85
8	Developed	No	8.76
9	Dome Swamp	No	338.66
10	Hydric Hammock	No	15513.22
11	Mesic Hammock	No	346.43
12	Pasture - Improved	Yes	65.04
13	Pine Plantation	Yes	16.78
14	Restoration Mesic Flatwoods	Yes	206.11
15	Restoration Sandhill	Yes	1168.50
16	Restoration Scrub	Yes	26.90
17	Restoration Scrubby Flatwoods	Yes	13.10
18	Restoration Wet Flatwoods	Yes	20.16
19	Road	No	269.36
20	Salt Marsh	No	155.85
21	Sandhill	Yes	3989.91
22	Scrub	Yes	201.96
23	Scrubby Flatwoods	Yes	34.46
24	Sinkhole Lake	No	1.71
25	Spoil Area	No	7.33
26	Spring Run Stream	No	11.91
27	Tidal Creek	No	12.63
28	Utility Corridor	No	6.32
29	Wet Flatwoods	Yes	218.92
30	Wet Prairie	Yes	7.19
31	Xeric Hammock	No	274.57

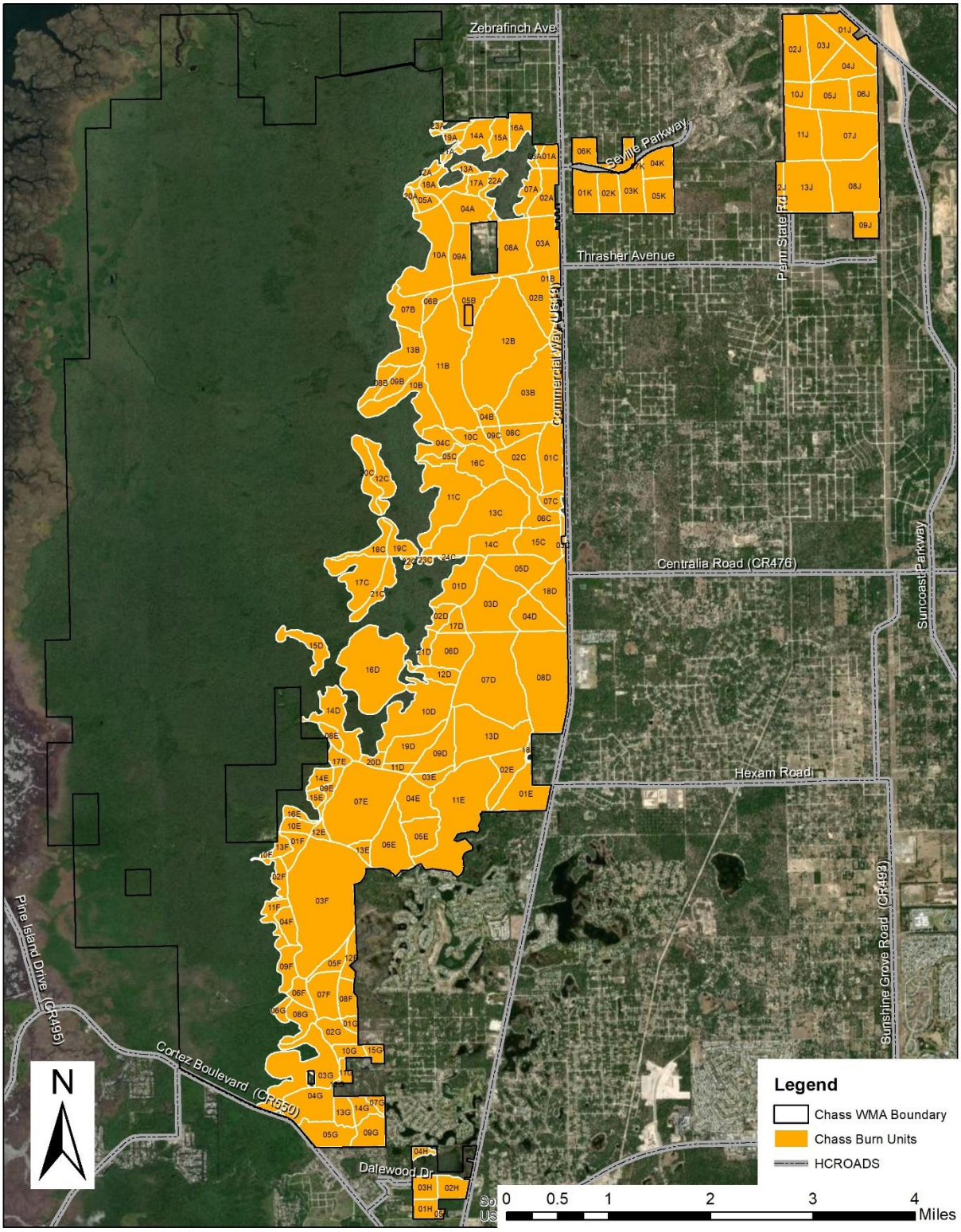

Zebrafinch Ave
Seville Parkway
Thrasher Avenue
Penn State Rd
Commercial Way (US 19)
Centralia Road (CR476)
Suncoast Parkway
Hexam Road
Pine Island Drive (CR495)
Cortez Boulevard (CR550)
Sunshine Grove Road (CR493)
Dalewood Dr
N
Legend
Chass WMA Boundary
Chass Burn Units
HCROADS
0 0.5 1 2 3 4
Miles

Figure 2. CWMA Burn Units.

APPENDIX A

FIRE MAINTAINED NATURAL COMMUNITY SHORT DESCRIPTIONS

- **Basin Marsh** – basin with peat or sand substrate; seasonally inundated; statewide excluding Keys; occasional fire; largely herbaceous; maidencane, sawgrass, bulltongue arrowhead, pickerelweed, Baker's cordgrass, white water lily, coastalplain willow.
- **Depression Marsh** – small, isolated, often rounded depression in sand substrate with peat accumulating toward center; surrounded by fire-maintained community; seasonally inundated; still water; statewide excluding Keys; frequent or occasional fire; largely herbaceous; maidencane, sawgrass, pickerelweed, longleaf threeawn, sand cordgrass, peelbark St. John's wort.
- **Mesic Flatwoods** – flatland with sand substrate; mesic; statewide except extreme southern peninsula and Keys; frequent fire (2-4 years); open pine canopy with a layer of low shrubs and herbs; longleaf pine and/or slash pine, saw palmetto, gallberry, dwarf live oak, wiregrass.
- **Pasture - improved** – dominated by planted non-native or domesticated native forage species; cleared of their native vegetation; planted with bahiagrass and to a lesser extent with Bermudagrass or pangolagrass; weedy native species are often common and include dogfennel, many species of flatsedge, carpetgrasses, crabgrasses, and rustweed among many others; frequent fire (2-5 years) to maintain or restore to original community type.
- **Pine plantation** – altered by silvicultural activities; 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 and may be very shrubby or vine-dominated or open at ground level; activities such as thinning and burning (1-5 years) can restore plantations with intact native groundcover to the former natural community.
- **Restoration natural community** – Former altered landcover type or successional natural community (pine plantation, xeric hammock, etc.) where active restoration is ongoing to return the community to its historic state. Examples of restoration activities include pine thinning, longleaf pine planting, groundcover restoration, hydrology restoration, and removal of exotics and other undesirable vegetation. In historically pyrogenic restoration natural communities, restoration activities are accompanied by the application of prescribed fire.
- **Sandhill** – upland with deep sand substrate; xeric; Panhandle to central peninsula; frequent fire (1-3 years); savanna of widely spaced longleaf pine and/or turkey oak with wiregrass understory.
- **Scrub** – upland with deep sand substrate; xeric; statewide except extreme southern peninsula and Keys, mainly coastal in Panhandle; occasional or rare fire (usually 5-20 years); open or dense shrubs with or without pine canopy; sand pine and/or scrub oaks and/or Florida rosemary.
- **Scrubby Flatwoods** – flatland with sand substrate; xeric-mesic; statewide except extreme southern peninsula and Keys; occasional fire (5-15 years); widely scattered pine canopy over saw palmetto and scrub oaks; longleaf pine, sand live oak, myrtle oak, Chapman's oak, saw palmetto, wiregrass.
- **Wet Flatwoods** – flatland with sand substrate; seasonally inundated; statewide except extreme southern peninsula and Keys; frequent fire (2-4 years for grassy wet flatwoods, 5-10 years for shrubby wet flatwoods); closed to open pine canopy with grassy or shrubby understory; slash pine, pond pine, large gallberry, fetterbush, sweetbay, cabbage palm, wiregrass, toothache grass.
- **Wet Prairie** – flatland with sand or clayey sand substrate; usually saturated but only occasionally inundated; statewide excluding extreme southern peninsula; frequent fire (2-3 years); treeless, dense herbaceous community with few shrubs; wiregrass, blue maidencane, cutthroat grass, wiry beaksedges, flattened pipewort, toothache grass, pitcherplants, coastalplain yellow-eyed grass.

ALTERED AND NON-FIRE-MAINTAINED COMMUNITY SHORT DESCRIPTIONS

- **Artificial pond** – water retention ponds, cattle ponds, etc.
- **Basin Swamp** – typically large basin wetland with peat substrate; seasonally inundated; still water or with water output; Panhandle to central peninsula; occasional or rare fire; forest of cypress/tupelo/mixed hardwoods; pond cypress, swamp tupelo.

- **Baygall** – slope or depression wetland with peat substrate; usually saturated and occasionally inundated; statewide excluding Keys; rare or no fire; closed canopy of evergreen trees; loblolly bay, sweetbay, swamp bay, titi, fetterbush.
- **Borrow area** – dry or wet depression resulting from past or present mining operation; phosphate pits and upland borrow pits (sand pits, clay pits, etc.).
- **Clearing** – dove fields, wildlife food plots, recent or historic clearings that have significantly altered the groundcover and/or overstory of the original natural community (old homesites, etc.).
- **Developed** – check stations, ORV use areas, parking lots, buildings, maintained lawns (as part of recreational, business, or residential areas), botanical or ornamental gardens, campgrounds, recreational, industrial, and residential areas.
- **Dome Swamp** – small or large and shallow isolated depression in sand/marl/limestone substrate with peat accumulating toward center; occurring within a fire-maintained community; seasonally inundated; still water; statewide excluding Keys; occasional or rare fire; forested, canopy often tallest in center; pond cypress, swamp tupelo.
- **Hydric Hammock** – lowland with sand/clay/organic soil over limestone or with high shell content; mesic-hydric; primarily eastern Panhandle and central peninsula; occasional to rare fire; diamond-leaved oak, live oak, cabbage palm, red cedar, and mixed hardwoods.
- **Mesic Hammock** – flatland with sand/organic soil; mesic; primarily central peninsula; occasional or rare fire; closed evergreen canopy; live oak, cabbage palm, southern magnolia, pignut hickory, saw palmetto.
- **Road** – Paved or unpaved.
- **Salt Marsh** – estuarine wetland on muck/sand/or limestone substrate; inundated with saltwater by daily tides; statewide; occasional or rare fire; treeless, dense herb layer with few shrubs; saltmarsh cordgrass, needle rush, saltgrass, saltwort, perennial glasswort, seaside oxeye.
- **Sinkhole Lake** – typically deep, funnel-shaped depression in limestone base; statewide; predominantly without surface inflows/outflows, but frequently with connection to the aquifer; clear, alkaline, hard water with high mineral content (calcium, bicarbonate, magnesium).
- **Spoil area** – area where dredge or spoil material is deposited, may be re-colonized by plants.
- **Spring-run Stream** – perennial watercourse with deep aquifer headwaters and clear water, circumneutral pH and, frequently, a solid limestone bottom; panhandle to central peninsula.
- **Tidal Creek** – branching, meandering channels that form the conduit for water between salt marshes and open water.
- **Utility corridor** – electric, gas, telephone right-of-ways.
- **Xeric Hammock** – upland with deep sand substrate; xeric; primarily eastern Panhandle to central peninsula; rare or no fire; closed canopy of evergreen hardwoods; sand live oak, saw palmetto.

APPENDIX B

Prescribed Burning Prescription

Florida Fish and Wildlife Conservation Commission

WMA/WEA: Click here to enter managed area	**Management Lease/Agreement Number:** Enter number
Burn Manager: Burn manager name	**Customer Number:** Number
Burn Manager Certification Number: Number	**County of Burn:** County
FFS Certified Burn Authorization Number:	**Date of Burn:** Date of burn
Authorization Date and Time Period:	

Burn Unit Names/Numbers	Acres	Section(s)	Township	Range	Last Burn Date
Unit name/number	Acres	Section	Township	Range	Date
Unit name/number	Acres	Section	Township	Range	Date
Unit name/number	Acres	Section	Township	Range	Date
Unit name/number	Acres	Section	Township	Range	Date
Total	Total Acres				

Latitude/Longitude or Road Intersection to Assist with Emergency Locate: Enter Lat/Long and/or intersection

Nearest Helicopter Landing Zone and Coordinates: Click here to enter. LZ should be in open grassy or asphalt/concrete area; not sandy.

Unit Description and Habitat Composition - Attach Maps of Area to be Burned

Overstory Description and Basal Area if Applicable: Click here to enter description

Understory Description: Click here to enter description

Fuel Loading – May Vary for Different Areas of the Burn Unit (Very Heavy, Heavy, Moderate, Light, Very Light): Click here to enter fuel loading

Known Duff or Muck Locations: Click here to enter duff or muck locations

Hazards, Infrastructure and Wildlife Features to Protect: Click here to enter along with locations

Description and Condition of Fire Breaks: Click here to enter description and make sure firebreaks (internal and external) are shown on map	
Other Important Stand Parameters if Applicable: Click here to enter parameters	
Restoration Burn ☐ **Maintenance Burn** ☐	
Burn History and Vegetative Description of Surrounding Units (and/or attach map): Click here to enter surrounding unit information	
Emergency Contacts (can be attachment)	
FFS Dispatch: Click here to enter number	
FFS Forest Area Supervisor(s): Click here to enter contact info	
Local Fire Departments: Click here to enter number	
Local Hospitals or Emergency Care Centers: Click here to enter number	
FHP: Click here to enter number	**DOT:** Click here to enter number
FWC Dispatch: Click here to enter number	
Other: Click here to enter	
Notifications (e-mail group, adjacent landowners, schools, airports, media, etc): Click here to enter notifications or include attachment with notifications	
Minimum Number of Personnel to be Used on the Burn: Enter minimum number of personnel	
Personnel Names and Crew Assignments: Click here to enter personnel/assignments	
Equipment and Suppression Tools to be Used on Burn: Click here to enter equipment/tools	

Purpose of Burn: Click here to enter purpose
Measurable Burn Objectives: Click here to enter objectives
Season and Time of Day to Meet Objectives: Click here to enter season/time of day for fire to meet your objectives
Firing Plan and Ignition Method/Pattern: Click here to enter plan/pattern
Intensity Desired to Meet Purpose and Objective: Click here to enter intensity
Contingencies (includes safety zones, escape routes, secondary control lines, escape response procedures): Click here to enter contingencies
Mop-up and Monitoring Standards: Click here to enter standards
Declaring the Fire Out Standards: Click here to enter standards

Smoke Management
Smoke Sensitive Areas Identified Using "A Guide for Prescribed Fire in Southern Forests" Smoke Screening Tool? ☐ Yes ☐ No
Any Critical Smoke Sensitive Areas Identified? ☐ Yes ☐ No **If "Yes", Do Not Burn Under Current Prescription, or Provide Additional Smoke Monitoring and Mitigation Procedures in the Smoke Management Plan. Work with Florida Forest Service on Approval to Burn When Identifying Critical Smoke Sensitive Areas That May Be Impacted.**
Downwind/Downdrainage Smoke Sensitive Areas and Distance from Burn: Click here to enter areas
Other Smoke Sensitive Areas and Distance from Burn: Click here to enter areas
Smoke Management Plan (attach smoke management screening maps): Click here to enter smoke management plan
Is There Potential for Smoke to Impact a Public Roadway? ☐ Yes ☐ No **If yes, you need to erect smoke warning signs. Contact FHP if smoke will impact a federal or state roadway (not including WMA roads). Contact local LE agencies as needed to inform them of potential smoke impacts.**
Plan for Monitoring Smoke During and After the Burn to Assess Visibility Issues if Applicable: Click here to enter smoke monitoring plan

WEATHER PARAMETERS	Desired Parameters	Forecast Conditions – Attach Fire Weather Forecast and Spot Weather Forecast. Use Separate Form for Actual Weather Readings
Surface (20') Wind Direction	Desired wind directions	Located on Forecast.
Surface (20') Wind Speed	Desired wind speeds	Located on Forecast
Transport Wind Direction	Desired wind directions	Located on Forecast
Transport Wind Speed	Desired wind speeds	Located on Forecast
Minimum Mixing Height	Minimum mixing height	Located on Forecast
Dispersion Index (DAY)	Desired dispersion range	Located on Forecast
Dispersion Index (NIGHT)	Desired minimum dispersion	Located on Forecast
Maximum Temperature	Desired max temperature	Located on Forecast
Minimum Relative Humidity	Desired minimum humidity	Located on Forecast
Minimum Fine Fuel Moisture	Desired minimum fuel moisture	Estimated Fine Fuel Moisture.
KBDI	Desired max KBDI	KBDI
LVORI	Desired max night LVORI	Located on Forecast
Fire Danger Index	Do Not Populate	FDI
Days since ½" Rain	Desired days since ½" rain	Actual
Additional Field	Additional Field Parameter	
Additional Field	Additional Field Parameter	
FIRE BEHAVIOR		
Rate of Spread	Desired rate of spread	Pertinent Observations on Evaluation
Starting Time	Desired starting time	Actual Starting Time Below
Flame Length	Desired flame length	Pertinent Observations on Evaluation

PRE-BURN CHECKLIST – Check off as completed prior to burn.
BURN MANAGER: Check each item to indicate compliance. ☐ All prescription requisites met. ☐ Authorization obtained. ☐ All equipment required on scene and fully operational. ☐ Each crew member has required personal gear and clothing. ☐ Appropriate steps have been taken to ensure crew and public safety including signs for visitors and motorists

CREW BRIEFING – Check off as discussed prior to burn.
☐ Objectives of burn. ☐ Exact area of burn including unit size and boundaries (ensure crew members have maps). ☐ Hazards discussed (volatile fuels, spotting potential, weak points in perimeter lines, terrain features, fences, ditches, etc.). ☐ Predicted weather and anticipated fire behavior/smoke dispersal discussed. ☐ Crew assignments made. ☐ Weather monitoring assignment made. ☐ Ignition technique and pattern. Holding method(s). ☐ Location of extra equipment, fuel, water, vehicle keys. ☐ Authority and communications; conduct radio check. ☐ Contingencies covered including escape routes or procedures. ☐ Sources of nearest assistance. Nearest phone and emergency numbers. ☐ Special instructions regarding smoke management, contact with the public and others. ☐ Safety briefing. Any EMTs on burn crew? ☐ Mop-up standards discussed. ☐ Arrange next day inspection and mop-up assignments. ☐ Questions? ☐ Crewmembers given opportunity to decline participation (is there anything that is going to prevent full physical performance?). ☐ Conduct test burn.

Prescription Prepared by: Name	**Date/Time Prescription Prepared/Updated:**
Burn Manager Signature/Date/Time:	
Start Time:	**Completed Time:**
Time Crew Released:	**Time Burn Manager Left Burn Unit:**
Date Fire Declared Out:	**Evaluated Objectives, Recorded Pertinent Burn Notes, and Entered into LMIS** ☐

Evaluation Notes

Additional Pages

APPENDIX C

Florida Fish and Wildlife Conservation Commission
Division of Habitat and Species Conservation
Policies and Procedures

Subject: **Prescribed Burning and Wildland Fire Suppression Standards**

Policy:

The following policy shall apply to all Division of Habitat and Species Conservation (DHSC) employees, volunteers and contractors engaged in prescribed burning or wildland fire suppression activities. The policy also applies to all other Florida Fish and Wildlife Conservation Commission (FWC) employees and volunteers engaged in prescribed burning or wildland fire suppression activities conducted through the DHSC. Prescribed burning or wildland fire suppression efforts that DHSC funds through grants, cost-share agreements, or other methods not conducted on DHSC-managed lands are outside the scope of this policy; however, DHSC staff physically participating in these burns are required to comply with the policy. This policy will be reviewed and any appropriate edits made at least once every 3 years.

Background and General Guidelines:

Wildland fire has been a major force shaping Florida landscapes for thousands of years. Florida's plant communities are the result of surface water conditions and frequent lightning ignitions across its vast landscape. Many plant communities experienced fire every few years and wildlife species adapted to these fire-maintained habitats. Floridians have consistently used fire as a land management tool and the Florida legislature recognizes the importance of prescribed burning per Chapter 590.125 F.S.

Likewise, DHSC recognizes the importance of prescribed fire for Florida's diverse wildlife and the habitats that sustain them. As Florida continues to lose natural wildlife habitat, prescribed fire is more important than ever in maintaining and enhancing our remaining natural areas. As FWC is the lead managing agency on more than 1.4 million acres of the Wildlife Management Area (WMA) system, DHSC regularly conducts burns on these lands, and others, for wildlife management, hazardous fuel reduction, and ecological purposes. DHSC also provides financial support and technical assistance for conducting prescribed burns outside of the WMA system.

In addition to conducting prescribed burning, DHSC employees are periodically asked to assist the Florida Forest Service (FFS) with wildland fire suppression efforts, particularly during declared wildfire emergencies. Working on prescribed fires or wildfires is an inherently dangerous and risky activity that can result in significant property damage, personal injury, or loss of life. Therefore, it is necessary to establish standards for training and certification to ensure DHSC employees, volunteers and contractors have the appropriate skills and knowledge to perform these activities safely and effectively. Employees are encouraged to obtain higher levels of training and certification as warranted and approved through supervisory channels.

The majority of DHSC wildland fire activities occur within the Wildlife and Habitat Management Section (WHM). However, other Sections within DHSC have employees that participate in wildland fire activities. To ensure efforts are not duplicated, this policy designates specific WHM staff positions as the point of contact or lead on coordination for prescribed fire and wildland fire suppression activities conducted through DHSC.

Employees are responsible for acquiring (with agency funds and supervisor approval) and maintaining all required personal protection equipment. Immediate supervisors are responsible for ensuring that direct reports have all the required training to participate in wildland fire activities. WHM Regional Wildlife Biologists will be responsible for coordinating applicable wildland fire training and incident reviews through the WHM Section Leader or their designee.

All prescribed burns shall be conducted in compliance with all laws regulating the use of prescribed fire; specifically Chapter 590.125(3), Florida Statutes and Chapter 5I-2, Florida Administrative Code. When a DHSC employee, volunteer or private contractor is the burn manager, burn prescriptions shall be prepared using the FWC Prescribed Burning Prescription form and contain all the required elements per Chapter 5I-2.006 Florida Administrative Code, as well as all other applicable information requested on the prescription form. Prescriptions shall be prepared with employee and public safety as the highest priority. All prescribed burns shall be conducted as a certified prescribed burn within prescription, and managed by a Certified Prescribed Burn Manager.

All prescribed fires conducted on FWC lead WMAs shall be documented within the WHM Land Management Information System according to the procedures and schedules determined by the WHM Section Leader.

Chapter 1 Prescribed Burning

Prescribed Burn Participation: This section establishes the training, certification, and experience standards required for members of a prescribed burn team. These standards apply to all DHSC burn crew members, regardless of the location of the burn, and for all non-DHSC crew members on burns managed by DHSC staff.

A. Crew Member Trainee: Those who do not meet the requirements for Crew Member shall be classified as a Crew Member Trainee. A Crew Member Trainee may participate in prescribed burning activities provided that they are under the direct supervision of a Crew Member. A Crew Member may supervise no more than one Crew Member Trainee. No more than 40% of the burn crew shall be Crew Member Trainees*.

   ** For prescribed burns conducted during a DHSC-coordinated training course, Crew Members may supervise more than one Crew Member Trainee, and more than 40% of the burn crew may be Crew Member Trainees.*

B. Crew Member: Crew members may participate independently in prescribed burning activities. They shall have successfully completed the following National Wildfire Coordinating Group (NWCG) courses:

1) Introduction to the Incident Command System (I-100 or ICS-100);
2) Basic Wildland Firefighter Training (S-130);
3) Introduction to Wildland Fire Behavior (S-190);
4) All participants on a prescribed burn crew shall have successfully completed fire shelter or fire shelter refresher training within the past 12 months;
5) At least once every 36 months, all DHSC employees on a prescribed burn crew shall take an agency-approved wildland fire refresher training course.

C. Prescribed Burn Manager Mentee: Prescribed burn manager mentees may serve as burn manager to fulfill the responsibilities of acquiring DHSC and Florida Certified Prescribed Burn Manager status. Mentee must be under the direct supervision of a DHSC Certified Prescribed Burn Manager on prescribed burns that will be used to qualify them for DHSC certified prescribed burn manager status. They shall have successfully completed the following level of training and have the specified level of experience:

1) The FFS Florida Certified Prescribed Burn Manager Training Course;
2) I-100 or ICS-100, S-130 and S-190;
3) Participated on at least five prescribed burns;
4) Enrolled in or completed the DHSC Prescribed Burn Manager Mentoring Program, when adopted.

D. Certified Prescribed Burn Manager: A DHSC Certified Prescribed Burn Manager may request prescribed burn authorizations and serve as burn manager. They shall have successfully completed the following level of training, and have the specified certification and level of experience:

1) I-100 or ICS-100, S-130 and S-190;
2) FFS Prescribed Burn Manager Certification*(per section 590.125, Florida Statutes and 5I-2, Florida Administrative Code);
3) Participated on at least ten prescribed burns;
4) DHSC employees and volunteers must successfully complete the DHSC Certified Prescribed Burn Manager Mentoring Program to become a burn manager. Burn managers certified prior to the implementation of the mentoring program may be required to complete all or part of the mentoring program at the discretion of the WHM Regional Biologist.

***Note: Any employee aspiring to become a Certified Prescribed Burn Manager must obtain certification within three years of completing the Florida Certified Prescribed Burn Manager Training Course. Otherwise they must re-take the full course to become**

certified. If the certification lapses, the employee may re-certify by successfully completing the Distance Learning course if they served as burn manager on five or more burns. Otherwise they must re-take the full course to regain certification.

E. Prescribed Burn Engine (Pumper Unit/Brush Truck) Operator: To independently operate a water-delivery engine in support of prescribed burns, crew members shall have successfully completed the following level of NWCG training and have the specified level of experience:

1) Qualified at or above Crew Member level for prescribed burning;
2) Demonstrated proficiency in operation of water-delivery engines to supervisor; ***or*** successful completion of Southern Area Engine Academy (S-211 and SA-214) or Engine Operator (PMS 419);
3) Participated on at least five prescribed burns.

F. Prescribed Burn Bulldozer Plow Unit Operator: To independently operate a dozer plow unit during prescribed burns, crew members shall have successfully completed the following level of training and have the specified level of experience:

1) Qualified at or above Crew Member level for prescribed burning;
2) The wildland fire portion of FFS Basic Fire Control Training (or equivalent training);
3) Participated on at least five prescribed burns;
4) Experience and demonstrated proficiency to supervisor operating a dozer plow unit.

G. Prescribed Burn Aerial Plastic Sphere Dispenser (PSD) Operator: To independently operate a PSD from an aircraft during a prescribed burn, crew members shall have successfully completed the following level of training and have the specified level of experience:

1) Qualified at or above Crew Member level for prescribed burning;
2) Completed an aerial PSD training workshop;
3) Participated on at least five prescribed burns.

Chapter 2 Wildland Fire Suppression

Wildland Fire Suppression Participation: The leadership of FFS, or other entity, may request assistance from FWC during a wildland fire suppression incident. This request will usually be for a wildland fire strike team to conduct mop-up operations. A wildland fire strike team consists of one wildland fire strike team leader, and two wildland fire strike team members per Type V or VI engine. Occasionally there will be a request for a bulldozer operator to facilitate mop-up operations. Standards for strike team members and leaders are outlined below. In addition, requests may be made for personnel to fill positions on a suppression incident that are not covered by the following standards. The decision to assist, and the level of assistance provided,

on fire suppression incidents will be made by the DHSC Division Director or their designee. Coordination of all requests will be handled by the WHM Section Leader or their designee.

A. Wildland Fire Strike Team Member: To participate on wildland fire strike teams in support of suppression efforts, strike team members shall have successfully completed the following level of training and have the specified level of experience:

1) I-100 or ICS-100, S-130 and S-190;
2) Southern Area Engine Academy or PMS 419*;
3) Participated on at least ten prescribed burns and/or wildland fire suppression incidents.
4) All participants on a wildland fire suppression incident shall have successfully completed fire shelter or fire shelter refresher training within the past 12 months.
5) At least once every 36 months, all DHSC employees on a wildland fire suppression incident shall take an agency-approved wildland fire refresher training course.

*Employees who have not yet completed Southern Area Engine Academy or PMS 419 can be approved by the WHM Section Leader or their designee to serve on a wildland fire strike team. Exceptions can be granted when available strike team personnel are not sufficient to meet the requested need. Training and experience levels should be considered when approving exceptions.

B. Wildland Fire Strike Team Leader: To serve as team leader for wildland fire strike teams in support of suppression efforts, strike team members shall have completed the following level of training and have the specified level of experience **in addition to that required to participate as a wildland fire strike team member:**

1) Basic Incident Command System (I-200 or ICS-200);
2) Experience as a Certified Prescribed Burn Manager on at least ten prescribed burns and experience as a Wildland Fire Strike Team Member on at least one incident.

C. Wildland Fire Bulldozer Plow Unit Operator: To independently operate dozer fire-plow units in support of suppression efforts, strike team members shall have completed the following level of training and have the specified level of experience:

1) I-100 or ICS-100, S-130 and S-190;
2) The wildland fire portion of Basic Fire Control Training (or equivalent);
3) Participated on at least ten prescribed burns or wildland fire suppression incidents;
4) Experience and demonstrated proficiency to supervisor operating a dozer plow unit.

Chapter 3 Safety

3.1 Personal Protective Equipment (PPE): Required Personal Protective Equipment for all wildland fire activities includes*:

A. Flame Resistant Shirt and Pants, or Jumpsuit
B. Wildland Fire Hard Hat
C. Leather Gloves
D. Leather Boots – ≥8" Lace-up
E. Eye Protection
F. Hand-held Radio
G. Fire Shelter

*Safety considerations and/or vegetation types may dictate that crew members wear additional equipment or in some cases deviate from the above required equipment. The burn manager/strike team leader shall determine what PPE will be worn by their crew to maximize safety, and shall document any deviations from the above list on their burn prescription or wildfire crew briefing report.

3.2 Physical Standards: Prescribed burning and fire suppression are physically demanding activities. Each prescribed burn crew/strike team member shall maintain a fitness level that will allow full participation in these activities. It is the burn crew/strike team member's responsibility to make the burn manager/strike team leader aware of any limitations that may restrict or prevent full participation.

DHSC employees shall maintain a fitness level that adheres to the standards of the DHSC Prescribed Burner Physical Fitness Program once adopted.

3.3 Mobile Equipment: The following is a list of required items for mobile equipment used during wildland fire activities. Mobile equipment includes all-terrain vehicles, utility vehicles, airboats, swamp buggies, trucks, tractors, and bulldozers.

A. An ABC fire extinguisher that has been inspected, serviced, and maintained in accordance with the manufacturer's maintenance procedures shall be in or on all mobile equipment. Below are minimum extinguisher sizes (net extinguishing agent weights):
    1) All-terrain and utility vehicles – 2.5 pound
    2) Trucks and tractors – 5 pound
    3) Bulldozers and Swamp Buggies – 10 pound (could be two 5 pound extinguishers)
    4) Vessels – 5 pound (could be two 2.5 pound extinguishers)
B. All-terrain vehicles, utility vehicles, swamp buggies, and trucks used in the interior of a burn unit shall have an operational winch.
C. All mobile equipment used in the interior of a burn unit shall have an operational water delivery system with at least five gallons of water.

3.4 Public Safety: All wildland fire operations shall be conducted in a manner that protects the public and minimizes the potential adverse impacts of both smoke and fire. Prescriptions shall be prepared with public safety as the highest priority.

Chapter 4 Incident Reviews

This chapter outlines the procedure for reviewing a prescribed fire whose results include negative consequences on DHSC managed lands or from a burn managed by a DHSC burn manager. The purpose of a fire-related incident review is to gather facts regarding the incident and, if possible, recommend actions that may help minimize the chance of reoccurrence.

4.1 Fire-related Incident: A fire or smoke related incident that includes any of the following:

A. FFS Notice of Violation;
B. Conducting a burn outside of the prescription;
C. Fire leaves the prescribed burn unit and resources in addition to the burn crew are utilized;
D. Fire leaves the WMA system;
E. Prescribed burn activities cause property damage or personal injury;
F. Post-burn combustion poses a threat to public safety, property, or natural resources.

4.2 Reporting of Fire-related Incidents: The burn manager shall notify the appropriate WHM Regional Biologist about the incident as soon as possible, but no later than 8:30 am the day after the fire-related incident occurred. For extended post-burn combustion, the burn manager shall notify the regional biologist if it becomes apparent that the combustion and/or associated smoke may pose a threat to public safety, property, or natural resources. The Regional Biologist shall notify the WHM Section Leader or their designee of the incident as soon as possible. The notification should include the following:

A. Date, time, and location of incident;
B. Brief description of the incident and current status;
C. Other agencies or entities assisting;
D. Resources needed.

4.3 Fire-related Incident Review: The WHM Section Leader shall determine the need for and the scope of fire-related incident reviews. The WHM Section Leader or their designee will coordinate the incident review. Within 60 days of completing a fire-related incident review, the reviewer(s) shall submit a report to the DHSC Division Director for approval.

Approved: _____ 11-14-19
Division Director Date

11.16 Wildlife Conservation and Prioritization and Recovery Program Strategy (WCPR)

Chassahowitzka Wildlife Management Area

Wildlife Management Strategy

December 2019

Florida Fish and Wildlife Conservation Commission
Division of Habitat and Species Conservation
Wildlife and Habitat Management Section

A product of the Wildlife Conservation Prioritization and Recovery Program

Executive Summary

The Florida Fish and Wildlife Conservation Commission's (FWC) Wildlife and Habitat Management Section (WHM) takes a proactive, science-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 Chassahowitzka Wildlife Management Area (CWMA). The foundation for FWC's management is an understanding of Florida's natural communities, and the ecological processes that affect the richness and abundance of the plant and animal species which inhabit them. By restoring and maintaining natural communities, management will benefit the greatest suite of native species reliant upon those natural communities. Monitoring select species can indicate whether natural community management is having the desired effect on wildlife. To maximize the potential wildlife conservation benefit, staff considers the role of CWMA in regional and statewide conservation initiatives throughout the process.

Section 1 introduces the reader to the Strategy.

Section 2 describes historic and ongoing habitat management and monitoring actions on the property.

Section 3 provides an assessment of the area's role in the conservation of locally important species. This section includes habitat management, monitoring, coordination recommendations, and measurable objectives identified during the Wildlife Conservation, Prioritization and Recovery Program (WCPR) workshop.

Section 4 identifies coordination and "beyond the boundaries" opportunities that will assist in conserving these species.

Maintaining 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 CWMA. As such, we would like to highlight the agency, local, and statewide experts that helped shape the discussion on CWMA, including Amy Clifton, Kevin Kemp, Luis Gonzalez, Terry Doonan, Kevin Enge, Anna Farmer, Craig Faulhaber, Dan Hipes, Brooke Talley, Brian Scheick, Chris Tucker, Kelly O'Connor, 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.

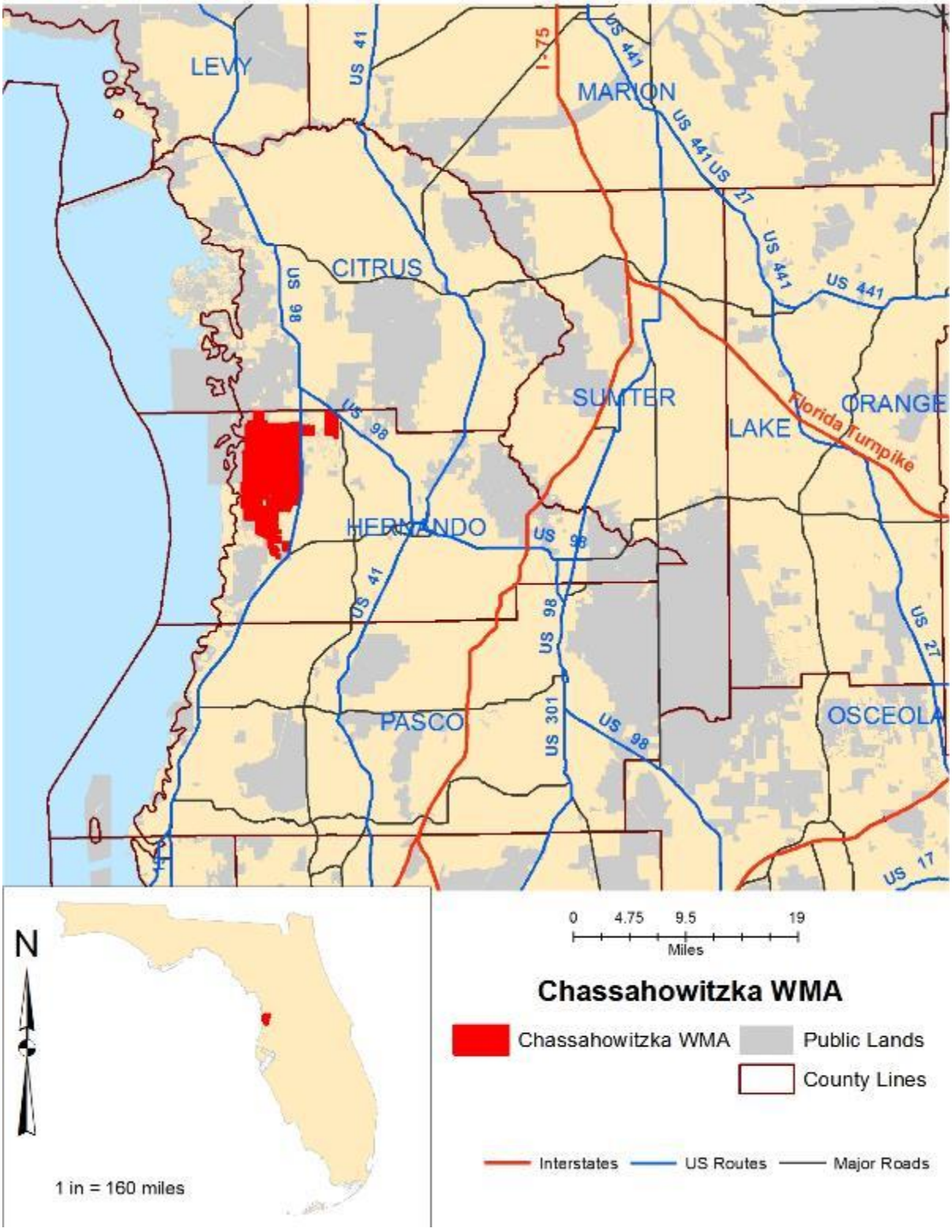
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Acronym List

BA	Basal Area
BBS	Breeding Bird Survey
BSR	Biological Status Review
CARL	Conservation and Recreational Lands Program
CPI	Coastal Plains Institute
CR	County Road
CWD	Chronic Wasting Disease
CWMA	Chassahowitzka Wildlife Management Area
DEP	Department of Environmental Protection
DMU	Deer Management Unit
FFS	Florida Forest Service
FNAI	Florida Natural Areas Inventory
F.S.	Florida Statutes
FWC	Florida Fish and Wildlife Conservation Commission
FWRI	Fish and Wildlife Research Institute
ISMP	Imperiled Species Management Plan
LTDS	Line Transect Distance Sampling
MU	Management Unit
OBVM	Objective-Based Vegetation Management
OCPS	Office of Conservation Planning Services
SaMP	Survey and Monitoring Protocol (database)
SAP	Species Action Plan
SFA	Species Focal Area
SMA	Strategic Management Area
SWFWMD	Southwest Florida Water Management District
WCPR	Wildlife Conservation Prioritization and Recovery (program)
WEA	Wildlife and Environmental Area
WHM	Wildlife and Habitat Management (section)
WMA	Wildlife Management Area

Locator Map


LEVY
MARION
CITRUS
SUMTER
LAKE
ORANGE
HERNANDO
PASCO
OSCEOLA
US 41
I - 75
US 441
US 27
US 98
Florida Turnpike
US 301
US 17
N
1 in = 160 miles
0 4.75 9.5 19
Miles
Chassahowitzka WMA
Chassahowitzka WMA
Public Lands
County Lines
Interstates
US Routes
Major Roads

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 are then managed 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 those 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 WCPR program created this Wildlife Management Strategy for CWMA to document the area's role in wildlife conservation, to ensure the management needs for wildlife 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

In 1985, Florida purchased 15,455 acres in Hernando County from the Lykes Brothers and the Turner Corporation to create CWMA and to conserve the large coastal swamp ecosystem and unique wildlife system in the vicinity. Funds for this purchase were made available from the Conservation and Recreational Lands (CARL) program and a share of funds appropriated from the Preservation 2000 Inholdings and Additions series. An additional 150 acres were added in 1988 as part of a mitigation project involving the loss of red-cockaded woodpecker (*Picoides borealis*) habitat in Marion County and several tracts have been added since that time. In 1996, the first tract of the Weeki Wachee First Magnitude Springs Project was purchased, and several smaller parcels have since been added. The Annutteliga Hammock CARL Project resulted in the addition of the 390-acre Seville Tract in 1998, and acquisition efforts continue to date for the purchase of wetlands along the coast and uplands along US 19. In 2017-18, FWC transferred

management of the 389-acre Weeki Wachee tract to the Department of Environmental Protection (DEP). In 2018-19, the 700-acre Zebrafinch tract was added as mitigation for the Suncoast Parkway extension. This, and other information about the historic status of the WMA is available in the Chassahowitzka WMA Management Plan.

The current size of CWMA is 34,557 acres. Lead agency status on 27,132 acres is assigned to FWC because of the hardwood swamp mosaic of the landscape and associated diversity of flora and fauna. The United States Fish and Wildlife Service is the lead agency on 6,736 acres. This section is a part of the greater Chassahowitzka National Wildlife Refuge, a 31,000-acre refuge composed of saltwater bays, estuaries and brackish marshes at the mouth of the Chassahowitzka River. The Southwest Florida Water Management District (SWFWMD) is lead on 689 acres. The Florida Department of Agriculture and Consumer Services, Florida Forest Service (FFS) is a cooperating agency on CWMA. The FFS provides authorizations for prescribed burning, assists with wildfire control, and provides assistance with timber management on CWMA.

2.1: Past Management

Prior to acquisition, primary land uses on CWMA included timber production, pine tar operations, agriculture (citrus, cattle) and recreation (hunting, trapping). Virgin timber was harvested in the late 1800s, and logging operations continued until all marketable timber was removed. The old logging town of Centralia is located within CWMA and is protected as a cultural resource. Historically, wildfires likely burned portions of the landscape periodically, but at the time of acquisition, much of the uplands were degraded due to fire suppression or conversion to pine plantation. In some portions of the mesic flatwoods, the wax myrtle (*Myrica cerifera*)/ gallberry (*Ilex glabra*) understory exceeded 8 feet in height and significantly reduced the quality of wildlife forage. In the sandhills, the combination of past logging activity reducing pine density and subsequent fire suppression that created an overgrown oak component led to degradation of this natural community. Sand pines (*Pinus clausa*) grew into dense thickets in fire suppressed scrub, making the reintroduction of prescribed fire challenging within the surrounding wildland urban interface.

2.2: Current Management

Actively managed natural communities include mesic flatwoods (1,868 acres), restoration mesic flatwoods (206 acres), wet flatwoods (217 acres), restoration wet flatwoods (20 acres), sandhill (3,997 acres), restoration sandhill (1,169 acres), scrub (202 acres), restoration scrub (27 acres), scrubby flatwoods (33 acres), and restoration scrubby flatwoods (13 acres). Natural communities designated as ‘restoration’ are a formerly altered landcover type where active restoration is ongoing within the natural community. Other upland communities actively managed on the area include improved pasture (63.8 acres) and pine plantation (15 acres). Staff

restore and maintain natural community structure and function using prescribed fire, mechanical treatments, and chemical treatments.

Managers will continue to emphasize natural community management to promote high-quality habitat to support wildlife, including listed and game species. Since implementation of the 2009 Strategy, FWC has increased the average acreage burned per year and also has shifted to a higher percentage of habitat burned during the growing season. The large amount of sandhill, which requires frequent (2-3 year rotation) prescribed fire, residual issues with historic fire suppression, and components of the surrounding landscape such as major roads and neighborhoods combine to increase the challenges of applying prescribed fire on CWMA. Managers will prioritize management to maintain sandhill that is currently in good condition, while working to reduce the amount of sandhill that is not receiving frequent fire. This will include an emphasis on early growing season prescribed fire, and mowing to create and maintain open areas. Area staff's work to restore the structure and function of natural communities on CWMA results in a return to early successional habitat conditions that benefits species such as the gopher tortoise (*Gopherus polyphemus*), as well as other listed and locally important species. Staff will engage in protection of non-fire maintained natural communities, such as xeric hammock, that are often found in small pockets within larger expanses of sandhill or mesic flatwoods, as these communities provide food and cover for wildlife.

Mechanical treatments are an important component of management on the area. Since 2004-05, approximately $75,000 from the National Wild Turkey Federation has been used to fund mechanical treatments to improve habitat on CWMA. Staff have applied mechanical treatments to approximately 4,516 acres since the implementation of the 2009 Strategy. This includes chainsawing/chemical treatments and shredding to achieve objectives in the Fox Squirrel SMA. Managers use mowing to prepare firelines and maintain roadsides and wildlife openings. Staff also use shredding, roller-chopping, chainsawing, and chemical treatments to reduce hardwood encroachment in upland habitats.

Forest management on CWMA includes the use of timber harvest where appropriate. FWC, in cooperation with FFS, follows the 2016 CWMA Timber Management Plan as a long-range planning tool to guide management of timber resources on CWMA. Managers have used timber harvests to address higher than desired basal area (BA), fire damage and black turpentine beetle infestations (e.g., salvage cuts), and pine plantation management. Additional thinning will occur as needed to open the canopy and provide sunlight for herbaceous ground cover improvement. Managers have planted longleaf pine on 827 acres since 2009 and will continue to use planting as a management tool to enhance upland communities on CWMA. In 2019, staff will implement pine cone surveys as indices of productivity to identify areas that should be prioritized for prescribed fire to promote natural pine regeneration.

In 2009, the Coastal Plains Institute (CPI) conducted an inventory of wetlands on CWMA. The assessment included an inventory of 345 potential wetlands, of which 271 were assessed as ephemeral wetlands. Surveyors found 20% of the ephemeral wetlands to be in good

ecological condition, with no immediate concerns requiring management action. Woody vegetation encroachment was identified as a concern in 35% of the wetlands. CPI defined woody encroachment as having greater than 5% of the wetland basin covered by encroaching woody vegetation that has become clearly established during a dry period and/or fire suppression. Surveyors identified 95 wetlands as containing some degree of woody encroachment, but most were considered in the early stages of woody encroachment and CPI recommended using prescribed fire to treat the woody encroachment. Since the assessment, FWC has applied prescribed fire to most of the uplands surrounding ephemeral wetlands on CWMA, allowing fire to burn across wetlands wherever possible to prevent and reduce woody encroachment. Since 2012, FWC has used chainsaws to treat 16 wetlands (23 acres) where prescribed fire alone has not suitably impacted woody encroachment. Staff scheduled three wetlands for treatment in 2019, and FWC will continue to treat woody encroachment in ephemeral wetlands where it is not controlled with prescribed fire alone. FWC also avoids disking firelines along or through wetlands where possible and, since the CPI inventory, has abandoned or moved firelines that were damaging to wetlands. Finally, surveyors observed feral hog damage in 67% of the wetlands. The hog population on CWMA is relatively low and public hunting is the primary means of control for feral hogs.

Staff use herbicides to control excessive or site-inappropriate oaks and invasive non-native species. A large portion of the exotic issues on CWMA are due to adjacent landowner refuse and ground disturbance from timber and mechanical treatment activities. Exotic species that are known to occur on CWMA include: cogongrass (*Imperata cylindrica*), natal grass (*Melinis repens*), Johnson grass (*Sorghum halepense*), ravenna-grass (*Ripidium ravennae*), castor bean (*Ricinus communis*), Spanish lantana (*Lantana camara*), Caesar's weed (*Urena lobata*), Peruvian water primrose (*Ludwigia peruviana*), Chinese tallow (*Sapium sebifera*), Chinaberry tree (*Melia azedarach*), camphor tree (*Cinnamoman camphora*), mimosa (*Albizia julibrissin*), skunk vine (*Paederia foetida)*, air potato (*Dioscorea bulbifera*), Japanese climbing fern (*Lygodium japonicum),* tropical soda apple *(Solanum viarum),* and showy rattlebox *(Crotolaria spectabilis*). Staff treat infestations of these species as needed and have applied treatment to approximately 1,571 acres since 2009.

FWC contracted a comprehensive hydrology assessment on CWMA in 2010-11, as recommended in the previous Strategy. FWC continues to follow recommendations from this assessment by installing and maintaining low-water crossings and culverts as appropriate to maintain and enhance natural hydrological functions.

2.3: Planned Management

Over the next 10 years, maintenance and enhancement of current upland communities will be the focus of habitat management on CWMA. The actions outlined below will improve habitat for several listed and locally important species that use upland communities, including

gopher tortoise, southeastern American kestrel (*Falco sparverius paulus*), and southern fox squirrel (*Sciurus niger niger*).

Prescribed Fire

- Staff plan to apply prescribed fire to approximately 2,500 acres of fire-adapted communities per year.
- Staff will continue to strive for a 2-3 year average fire return interval in sandhill.
- Managers will continue considering bears in prescribed fire planning and operations by avoiding prescribed fire along swamp edges during the denning season and using techniques that allow for patchy burns.

Timber Management

- Staff will continue implementing the CWMA Timber Management Plan.
- Per recommendations in the Plan, staff will continue planting longleaf on former off-site sand pine plantation, and replant longleaf as needed in habitats that require them.

Mechanical Treatments

- Staff will utilize appropriate mechanical treatments to reduce height and coverage of woody species and saw palmetto (*Serenoa repens*), to favor herbaceous species.
- Staff plan to continue mowing along firebreaks and roads to promote open habitat. When native plants are flowering, staff will avoid mowing those areas to leave nectar sources for butterflies and other pollinators.
- Staff will continue mowing to create wildlife openings.
- Staff plan to continue to consider bears in mechanical treatment planning and operations by avoiding treatments along swamp edges during the denning season, avoiding treatments of natural fire shadows, and allowing for patchy treatments that leave areas of untreated vegetation.
- Staff plan to avoid mechanical treatment of swamp ecotone habitat.

Chemical Treatments

- As needed, staff will use herbicide treatment to control invasive non-native vegetation (cogongrass, Japanese climbing fern, tropical soda apple, Caesar's weed, etc.).
- Where past fire suppression resulted in excessive hardwoods, staff may use chemical treatments to reduce excessive hardwoods.

Ephemeral Wetlands

- Staff will continue to allow prescribed fire to burn across ephemeral wetlands.
- As needed, staff will-remove pines or hardwood species that are encroaching into wetlands.

2.4 Strategic Management Areas

The 2009 WCPR Strategy established Strategic Management Areas (SMAs) to improve habitat for the southern fox squirrel and Florida scrub-jay (*Aphelocoma coerulescens*), and to maintain cover for Florida black bears (*Ursus americanus floridanus*). Creating conditions for

the safe application of prescribed fire and subsequent maintenance of natural communities were common goals for the southern fox squirrel and Florida scrub-jay SMAs. The Florida Black Bear SMA focused on maintaining an area of dense vegetation to provide cover for bears.

The Fox Squirrel SMA (Figure 1) was designated to draw attention to the potential role of the Annutteliga Hammock and Seville tracts for southern fox squirrels. The SMA contained 816 acres of potential fox squirrel habitat in the 2 tracts. The SMA goal was to manage the natural communities to optimize the potential for fox squirrels and ensure management is done in consideration of the needs of this species. The two SMA objectives were to reduce the oak overstory to meet the Objective-Based Vegetation Management (OBVM) desired future conditions for sandhill by 2015 and to apply prescribed fire within the SMA three times by 2020.

FWC accomplished the SMA goal and objectives by conducting multiple hardwood treatments within the SMA to reduce the oak overstory, thinning timber on Annutteliga Hammock tract, and applying prescribed fire multiple times since implementation of the Strategy. FWC received a federal grant to conduct the initial hardwood treatment in 2010 and funded the remainder of the treatments via the Threatened and Non-Game Species program and in-house funding. The current condition of habitat within the SMA is exceptional, and overall the establishment of the SMA served to increase the amount of suitable fox squirrel habitat on CWMA. Ongoing efforts to maintain natural community structure and function on CWMA will continue to provide fox squirrel habitat within the SMA and it is not necessary to continue to designate these areas as an SMA.

In 2012, FWC revised the original WCPR Strategy for CWMA to include a Florida Black Bear SMA in Management Unit (MU) 997 on the Weeki Wachee tract of the WMA (Figure 2). This SMA was intended to draw attention to a critical area of CWMA for long-term use by black bears and to limit management of habitat within the SMA to only those actions that are necessary for boundary maintenance or dealing with emergencies. This SMA provided a dense, forested area adjacent to areas that bears use heavily, providing cover and escape habitat. Furthermore, it provided a connection between suitable bear habitat south of CWMA and the main part of the area north of County Road (CR) 550. In 2018, FWC transferred management responsibility to DEP for the Weeki Wachee tract south of CR 550, including the SMA. FWC no longer retains management authority over the SMA, and it will not be included in the current Strategy. DEP intends to manage this area as it has been managed by FWC, including maintaining areas of dense vegetation for bears. FWC also provided bear-proof trash containers for use at the parking area.

The Florida Scrub-Jay SMA (Figure 3) included 291 acres of the Weeki Wachee Tract. The goal was to restore and maintain habitat in suitable conditions for scrub-jays to occupy the area in the future. The objective was to restore the habitat within the SMA to suitable conditions for occupation by scrub-jays by 2019. FWC accomplished the goal through the use of timber harvest to remove sand pines, mechanical treatment to reduce the oak overstory, and prescribed fire. Despite this effort, surveyors have not documented scrub-jays on CWMA or in the vicinity

during the lifespan of the previous Strategy. The bulk of the SMA is located south of CR 550 and is included in the area now managed by DEP. Approximately 229 acres of scrub remain under FWC management north of CR 550. Due to the relatively small amount of scrub available on CWMA and the lack of evidence that scrub-jays occur in this area, the scrub-jay is not a locally important species on CWMA, and an SMA is no longer required.

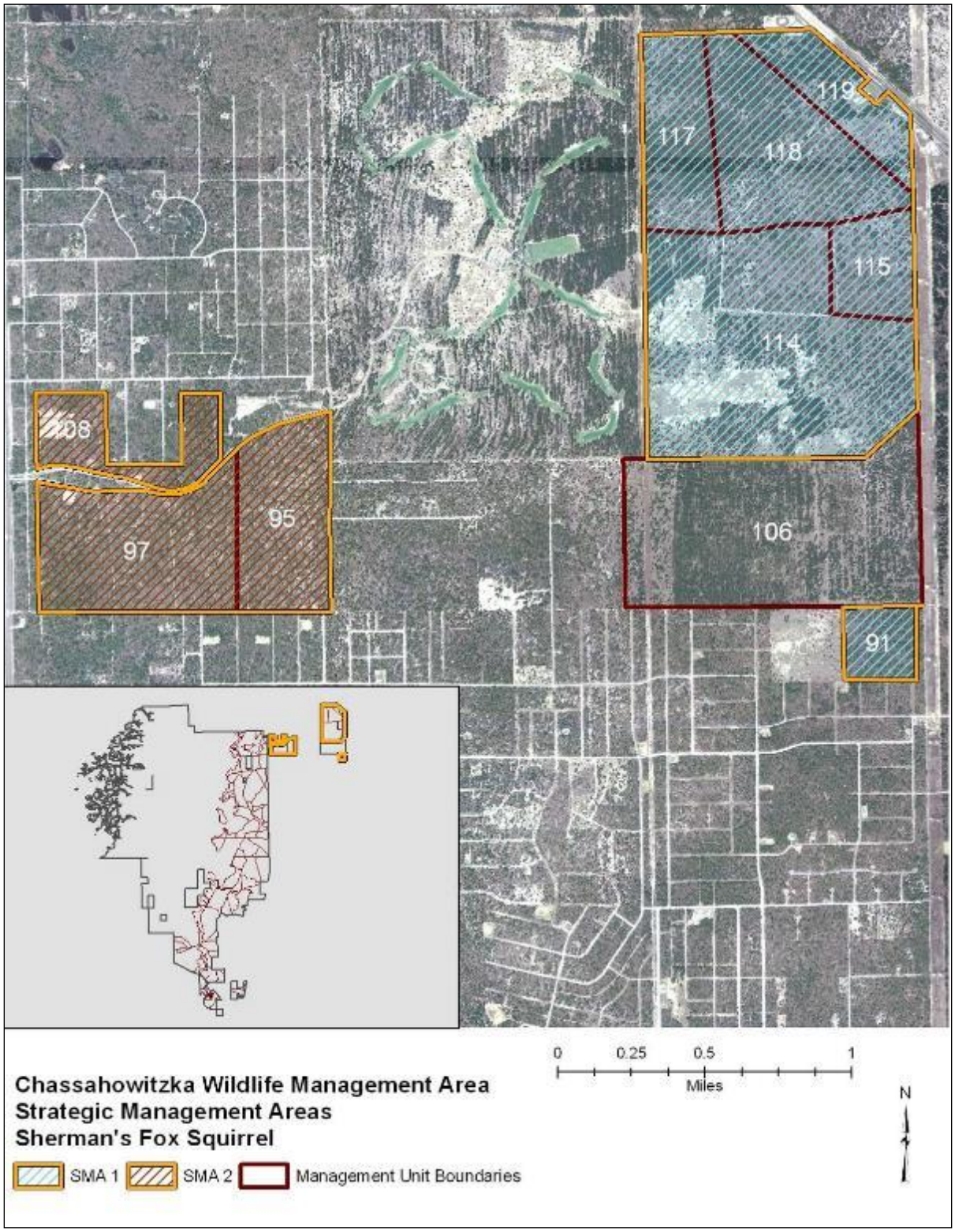


Figure 1. Management units in which specific actions were prescribed in the 2009 Strategy to benefit the southern fox squirrel on Chassahowitzka WMA.

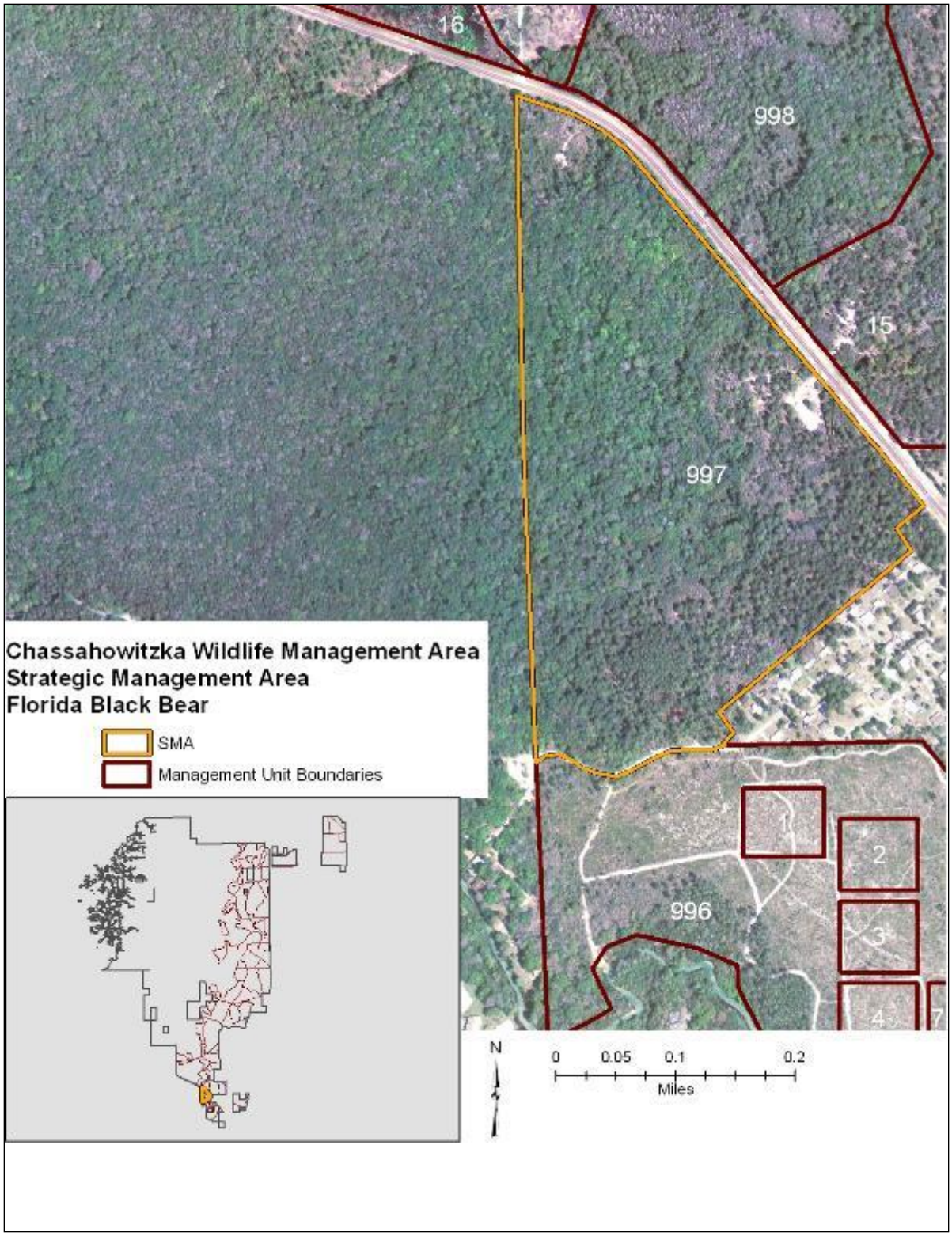


Figure 2. Management units in which specific actions were prescribed in the 2009 Strategy to benefit the Florida black bear on Chassahowitzka WMA.

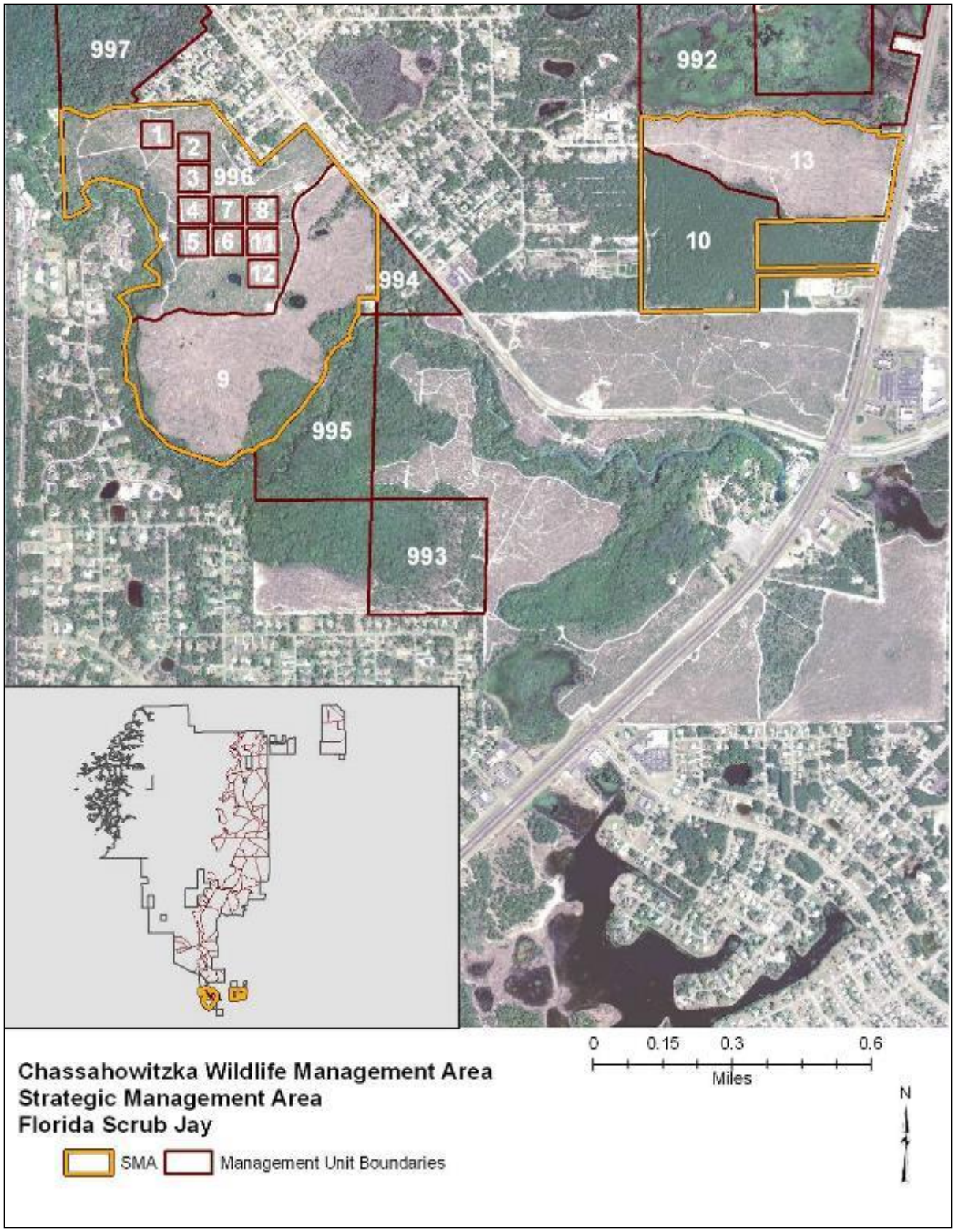


Figure 3. Management units in which specific actions were prescribed in the 2009 Strategy to benefit the Florida scrub-jay on Chassahowitzka WMA.

2.5: Monitoring

Monitoring recommendations in the 2009 Strategy included: continuing annual Breeding Bird Surveys (BBS), conducting gopher tortoise surveys, conducting gopher frog call surveys, monitoring nest boxes for southeastern American kestrel, conducting call surveys for Florida scrub-jays, conducting time-area counts for southern fox squirrels pending protocol development, and opportunistically monitoring other species of interest. Except for the fox squirrel surveys, staff accomplished these monitoring recommendations during the 10-year lifetime of the Strategy. Protocol development for the fox squirrel survey was not the responsibility of local staff, and statewide species experts determined the proposed method was not appropriate. In addition to the annual BBS, FWC initiated call-back surveys for Bachman's sparrow (*Peucaea aestivalis*) in 2017.

In addition to monitoring actions outlined in Section 3 of this Strategy, staff conduct annual nightjar surveys, maintain 13 bluebird boxes (*Sialia sialis*), band mourning doves (*Zenadia macroura*), and operate check stations during all open hunting seasons except for raccoon (*Procyon lotor*) seasons and migratory bird hunting days that are not within another open season. Harvest data are maintained on all animals hunted on CWMA.

Species-Specific Monitoring

The Area-Specific Species Assessments contain more details about these monitoring actions. Species that will continue to be monitored specifically are:

- Gopher tortoise
- Bachman's sparrow
- Southeastern American kestrel
- Wild turkey
- Colonial bats
- White-tailed deer

Species Inventories

Conducting periodic species inventories on lands within the WMA system accomplishes several purposes: species inventories enable staff to provide an up-to-date species list for the area, enhance species lists for cryptic, fossorial, or nocturnal species, and may alert staff to potential species declines that warrant further investigation. Additionally, conducting a species 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 plans to repeat them approximately every 10 years. Surveys on CWMA will include a drift fence array for reptiles and amphibians, small mammal trapping, migratory bird point-counts, meso-mammal surveys, 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 ensure that FWC-managed lands maintain up-to-date area-specific documented species lists, 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. Staff 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 for staff 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:

- Striped newt (*Notophthalmus perstriatus*)
- Eastern diamond-backed rattlesnake (*Crotalus adamanteus*)
- Eastern indigo snake (*Drymarchon couperi*)
- Florida pine snake (*Pituophis melanoleucus mugitus*)
- Short-tailed kingsnake (*Lampropeltis extenuata*)
- Southern hog-nosed snake (*Herodon simus*)
- Brown-headed nuthatch (*Sitta pusilla*)
- Florida sandhill crane (*Grus canadensis pratensis;* nests or dependent young)
- Florida scrub-jay (*Aphelocoma coerulescens*)
- Limpkin (*Aramus guarauna;* nests or dependent young)
- Imperiled wading birds (nesting colonies)
- Short-tailed hawk (*Buteo brachyurus*)
- Southeastern American kestrel (*Falco sparverius paulus;* breeding season, mid-March to July)
- Southern bald eagle (*Haliaeetus leucocephalus*)
- Swallowed-tailed kite (*Elanoides forficatus;* nests or nesting behavior only)
- Florida black bear (*Ursus americanus floridanus;* sows with cubs)
- Homosassa shrew (*Sorex longirostris eionis*)
- Southern fox squirrel (*Sciurus niger niger;* novel locations, nests or young)

Section 3: Species Assessments

Creating these assessments for locally important species on CWMA 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. Staff used references, in addition to the ISMP, which included: statewide potential habitat models, created by FWC's Fish and Wildlife Institute (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 March 12-13, 2019, at which area managers, species experts, and section leaders reviewed the draft species assessments and discussed CWMA's potential role in the conservation of locally important species. To determine management actions needed for each species, workshop participants considered: the species' status on the area; the current condition of the area's natural communities; the amount and spatial arrangement of the species' potential habitat on the area and adjacent lands; the species' response to management; and any local overriding factors (e.g., status of species in the region, local declines or extirpations). Additionally, staff considered management actions identified in FWC's Species Action Plans (SAPs), Regional Assessments, and the area's Management Plan. Using the information from the workshop, staff drafted the Strategy and sent it to species experts for review. Following the review, the Strategy was finalized and implemented.

This section summarizes the assessment for each species discussed in the workshop and the actions agreed on by workshop participants. 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: Gopher frogs were removed from the list of Species of Special Concern with the adoption of the ISMP in 2016, and following the creation of the Gopher Frog SAP. Gopher frogs were first documented on CWMA during drift fence surveys in 1995 and 1996. Since the implementation of the 2009 Strategy, local staff have conducted call surveys, and FWRI periodically dip-netted gopher frog ponds on CWMA. Dip-net surveys in 2010 detected gopher frog tadpoles in 7 of the 21 ponds surveyed. Subsequent dip-net surveys in the past few years have also detected gopher frogs. Surveyors established gopher frog call survey

route with 11 stations in 2013, and call surveys detected gopher frogs in 2014 at 2 stations but did not detect them in 2017.

This species is management responsive and the interspersion of upland and ephemeral wetland habitat on CWMA provides good opportunity for maintaining and enhancing habitat for gopher frogs. 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. They rarely move more than one mile from breeding habitat.

Habitat Management: Ongoing efforts to restore natural community structure and function on CWMA will continue to provide suitable habitat for gopher frogs. Frequent growing season fire in both upland and wetland habitat will improve conditions for this species. Whenever possible, FWC conducts prescribed burns in late spring or early summer when wetlands are dry so that fire carries through the basins. Efforts to reduce the hardwood midstory in the uplands surrounding potential breeding wetlands include a combination of mechanical treatments, as described in Section 2, and prescribed fire. Whenever possible, staff avoid placing firebreaks along wetland ecotones because they can alter or destroy the herbaceous component preferred by this species and other amphibians, as well as prevent fire originating in the uplands from reaching the wetlands. If necessary, wet-lining can be an alternative to mineral firebreaks. Staff also use mechanical treatment to reduce woody encroachment in wetlands, as described in Section 2.

A combination of mechanical treatments, herbicide treatments, and prescribed fire may be necessary in overgrown sites where the use of fire alone is not effective. When using these methods, FWC will continue taking precautions to prevent soil rutting and overspray from herbicides that could damage desirable herbaceous vegetation.

Monitoring: Call surveys are no longer considered the most appropriate method to use to monitor gopher frogs, and the SAP for the Gopher Frog identifies the need for a monitoring program, which may give more guidance on monitoring on CWMA. Until further guidance is available, gopher frog call surveys will be discontinued on CWMA.

As part of inventory-style monitoring, FWC will conduct a general drift fence survey of herpetofauna to maintain an accurate herpetofauna species list for CWMA. Gopher frogs should also be recorded in future FWRI dip net surveys and may be detected during gopher tortoise surveys.

During dip-net surveys, FWRI noted possible signs of amphibian disease in gopher frog tadpoles. FWRI is developing a proposal for a statewide amphibian disease project and will include CWMA in that effort if they are funded.

Area's Role: The role of CWMA in the conservation of the gopher frog is to provide suitable breeding and foraging habitat to support the local population. Staff will support the achievement of this role by continuing to apply prescribed fire in upland communities, ensuring

fire carries through ephemeral wetlands whenever possible, and treating hardwood encroachment in ephemeral wetlands.

3.2: Gopher Tortoise

Current Condition: The gopher tortoise is State-designated Threatened and a candidate for federal listing, making it a high statewide priority. The gopher tortoise is common on CWMA, and Florida Natural Areas Inventory (FNAI) completed surveys in 2011 and 2017, showing CWMA had a stable population. Surveyors estimate the current population at approximately 1,491 individuals distributed over 2,129 hectares (5,261 acres) of habitat, with a density of 0.7 tortoises per hectare. The burrows were classified by size (small, medium, large) and the size distribution indicated a healthy population with recent recruitment. Surveyors documented most burrows in sandhill, with some located in restoration sandhill, planted pines, scrub, improved pasture, mesic flatwoods, and xeric hammock.

Habitat Management: The gopher tortoise is a management-responsive species that can serve as an indicator of properly managed upland grass and pine communities. Gopher tortoises prefer xeric upland communities maintained with fire to promote the groundcover on which the species feeds. Ecologists often consider the gopher tortoise a keystone species because many other species use their burrows, including species such as the Florida mouse and gopher frog.

FWC's Gopher Tortoise Management Plan outlines actions to improve the status of the species. The plan recommends managing potential tortoise habitat to achieve the conditions identified for FNAI reference sites, primarily with prescribed fire. The current prescribed fire program and ground cover enhancement efforts will improve the quality and quantity of habitat for gopher tortoises. Species experts recommend a fire return interval for much of the potential gopher tortoise habitat on CWMA of 1-3 years. Additionally, the plan recommends actions to prevent direct mortality and collapsing burrows during management activities, such as flagging burrows in advance of mechanical treatments that use heavy equipment. When using contractors to conduct mechanical treatments, FWC ensures they take precautions for tortoises and tortoise burrows by marking burrows in advance of mechanical treatment.

Monitoring: FWC has adopted use of a Line Transect Distance Sampling (LTDS) monitoring protocol for population monitoring of the gopher tortoise throughout its range. The LTDS method estimates gopher tortoise population size and density, which allows managers the ability to track changes in the population through multiple repetitions. CWMA has been identified as a priority for long-term monitoring, therefore an objective is to:

1. Continue to monitor the gopher tortoise population with the accepted protocol.

Area's Role: The role of CWMA is to continue to provide habitat for gopher tortoises to support the recovery of the species. The area goal is to maintain or improve habitat quality to allow for an increase in the population of gopher tortoises on the area. By continuing efforts to maintain the appropriate structure and function of natural communities to better suit the gopher tortoise, CWMA will fulfill the area's role in the recovery of this species.

3.3: Upland Snakes

Current Condition: CWMA contains a large amount of upland habitat that is suitable for use by several snake species, including the eastern indigo snake (*Drymarchon couperi;* federally-Threatened), Florida pine snake (*Pituophis melanoleucus mugitus;* state-Threatened), southern hog-nosed snake *(Heterodon simus)*, short-tailed kingsnake (*Lampropeltis extenuata;* state-Threatened), and eastern diamond-backed rattlesnake (*Crotalus adamanteus*). Species experts believe populations of these snake species are declining in Florida.

Staff have opportunistically documented eastern indigo snakes and eastern diamond-backed rattlesnakes within the past 5 years on CWMA. There are historical records of southern hog-nosed snakes and Florida pine snakes for the area. In 2016, FWRI released the 'Status Assessments of the Southern Hog-nosed Snake, Florida Pine Snake, Short-tailed Kingsnake, and Eastern Diamond-backed Rattlesnake in Florida' report. The study area for these assessments included CWMA and surrounding Hernando County. During this study, surveyors documented a short-tailed kingsnake immediately adjacent to CWMA and on nearby Chinsegut Wildlife and Environmental Area (WEA), as well as within the greater Annutteliga Hammock neighborhood. Observers have documented eastern diamond-back rattlesnakes on CWMA, and a Florida pine snake on The Dunes Golf Course, Brooksville, adjacent to CWMA. Southern hog-nosed snakes were not documented on CWMA but were found on other conservation areas in the vicinity, including Perry Oldenburg WEA and the Citrus and Croom WMAs.

Habitat Management: These snakes are associated with xeric uplands in Florida, including sandhill. Eastern indigo snakes and eastern diamond-backed rattlesnakes also commonly inhabit scrubby flatwoods and have been documented in mesic flatwoods, hardwood hammocks, marsh edges, and pasture. The eastern diamond-backed rattlesnake also occurs in hydric habitats. The 2016 FWRI report indicated that CWMA contains >1,000 hectares of high-quality habitat for the short-tailed kingsnake.

Ongoing efforts to restore natural community structure and function on CWMA will continue to provide suitable habitat for upland snakes. Management actions that maintain or enhance habitat for these species include prescribed fire and mechanical treatments that restore natural community structure and function. Staff plan to retain stumps and other coarse woody debris during land management activities as potential refuge sites. The short-tailed kingsnake can possibly be found in long-unburned xeric hammock, and will benefit from FWC's efforts to protect pockets of xeric hammock within surrounding mesic flatwoods or sandhill.

Thinning of pine plantations or pine flatwoods is beneficial to indigo snakes because it opens the canopy to promote understory development. Staff plan to shift timber management towards longer rotations and the establishment of site-appropriate species.

Habitat management recommendations for upland snakes include avoiding stump removal as it removes an alternative refugia for snakes, especially in areas without gopher tortoises, as well as lighting burn piles from only one side to allow for escape. During timber

activities, managers will follow the recommendations to use low-intensity site preparation (i.e., prescribed fire, light mechanical work) over more intensive actions like root raking.

Monitoring: Because there is no adequate species-specific monitoring technique available, FWC will continue to opportunistically monitor these species. Surveyors will conduct general herpetological drift-fence surveys during inventory-style monitoring, and drift fence arrays in upland habitats will 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 using gopher tortoise burrows may be documented during future gopher tortoise burrow-scoping surveys. While these surveys will not provide population-level information, they can at least indicate that the site is being used by upland snakes and contributing to their conservation.

Area's Role: The role of CWMA is to enhance and maintain the suitability of habitat to support upland snakes. Staff will support the achievement of this role by continuing to restore pine communities through frequent prescribed fire, timber harvests to thin pines as needed, and mechanical and chemical treatments to reduce hardwood midstory, while following recommendations to retain some stumps and woody debris. However, even if FWC management continues to accommodate the needs of these species, the persistence of upland snakes likely depends on management actions occurring on adjacent public and private lands.

3.4: Bachman's Sparrow

Current Condition: Bachman's sparrows are recognized as 'indicator species' whose continued presence indicates well-managed pine communities. Bachman's sparrow observations have increased at CWMA and in the surrounding area since the implementation of the previous Strategy. A BBS route has been monitored on CWMA since 1996, and staff initiated species-specific annual avian point counts for Bachman's sparrow in 2017. Eleven stations are located on the Chassahowitzka tract, one on the Seville tract, and two on the Annutteliga Hammock tract. During these surveys, staff documented Bachman's sparrows in both years at the same two stations each year. Regionally, Bachman's sparrows are frequently observed on Citrus WMA and other public lands and there is an eBird record located on the Chassahowitzka tract from 2017.

The Bachman's sparrow is a habitat specialist that is closely associated with natural communities containing diverse herbaceous groundcover maintained by frequent fire. The occurrence of fire is critical to sustaining this species, as use of an area by Bachman's sparrows declines rapidly beginning about 18 months post-fire, and the species may abandon habitat if fire is excluded for >3 years. The species requires open spaces between grass clumps since it spends most of its time on the ground. Potential habitat for this species on CWMA primarily consists of sandhill and mesic flatwoods.

Habitat Management: Frequent use of prescribed fire improves habitat quality for Bachman's sparrows, and is the primary land management tool recommended to restore and

maintain habitat for the species on CWMA. Since males use small shrubs as singing perches, it is important to retain some small patches of shrubs during mechanical treatments.

Monitoring: Since the Bachman's sparrow can serve as a habitat indicator, continued monitoring can help gauge the effectiveness of restoration efforts. Trends in distribution and relative abundance are expected to increase over time as habitat improves. Therefore, we identified the following objective related to monitoring:

1. Continue to monitor the Bachman's sparrow population to confirm that management is resulting in a stable or growing population.

Area's Role: The role of CWMA in the conservation of the Bachman's sparrow is to provide suitable breeding and foraging habitat to support the regional population. The area goal is to maintain or improve habitat quality to allow for an increase in the population of Bachman's sparrows on the area. Staff will achieve this role by continuing to restore pine communities through prescribed fire, timber harvests to thin pines as needed, and mechanical and chemical treatments to reduce hardwood midstory.

3.5: Southeastern American Kestrel

Current Condition: The southeastern American kestrel is State-listed Threatened and a Southeastern American Kestrel SAP was approved in 2013. CWMA falls within Kestrel Management Unit 4 (Brooksville Ridge) as proposed in the SAP. The FWC's Biological Status Review (BSR) of the southeastern American kestrel identified the Brooksville Ridge and vicinity as 1 of 4 kestrel sub-populations in Florida based on distribution data. Southeastern American kestrels are frequently observed on the Annutteliga Hammock and Seville tracts of CWMA, and less frequently on the Chassahowitzka tract. Staff have documented kestrels breeding in multiple nest boxes on CWMA, and on both private and public lands in the vicinity, including kestrel nests in red-cockaded woodpecker cavities on Citrus WMA.

Southeastern American kestrels prefer open habitat types for foraging and snags for nesting or perching. Ideal habitats include old fields and sandhill forests with open tree canopies (ideally $\leq 25\%$) and scattered clumps of shrubs or brush piles that harbor small mammals, lizards, snakes and other prey. Preferred ground cover is dominated by grasses at the most 1 foot high with patches of bare ground and shrubs interspersed. The timber removal and fire suppression that occurred prior to State acquisition decreased the suitability of the area for this species, but efforts to restore natural communities and management for mature pines will continue to provide benefits to this species.

Habitat Management: Staff will continue to restore natural community structure and function on CWMA, which will provide suitable habitat for kestrels. Kestrels use the Annutteliga Hammock and Seville tracts, partially due to the quality of the natural communities on those tracts, but is also influenced by off-site factors. Kestrels occupied nest boxes at Annutteliga Hammock prior to the extensive natural community enhancements due to the large power line and a golf course immediately adjacent to that tract. Management actions that

maintain or enhance habitat for this species include prescribed fire, natural community restoration, and management that favors mature stands of longleaf pine.

Species Management: 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. Currently, FWC maintains and monitors nine southeastern American kestrel boxes on CWMA. Staff installed six kestrel nest boxes on CWMA in 2008, and kestrels immediately began using two boxes at the Annutteliga Hammock tract, and an additional box was installed in 2011. Staff then installed a box at the Seville Tract in 2016, and in 2018 discovered an occupied kestrel box installed prior to the 2009 WCPR Strategy. In coordination with species experts, staff will determine if it is appropriate to remove or relocate boxes. FWC maintains the boxes annually in coordination with the Southwest Region Volunteer Coordinator, and periodically assesses micro- and macro-habitat conditions to ensure the boxes continue to provide functional breeding habitat.

Monitoring: Southeastern American kestrels are monitored using the WCPR Southeastern American Kestrel Nest Box Protocol. FWC's Southwest Region Volunteer Coordinator manages volunteers who conduct the maintenance and monitoring of the nest boxes and assist with nest box construction. Local and regional FWC staff assist as needed, and enter data into SaMP. In addition to nest box monitoring, staff document southeastern American kestrels opportunistically during the breeding season (mid-March to July). Objectives are to:

1. Maintain kestrel nest boxes annually and ensure that habitat in the vicinity of the nest boxes is suitable for breeding kestrels.
2. Monitor kestrel nest boxes annually and enter results into SaMP.

Area's Role: The role of CWMA is to provide suitable habitat for southeastern American kestrels that will contribute to conservation of the regional population. Staff will continue the management of pine communities through frequent prescribed fire, timber harvests to thin pines as needed, and mechanical and chemical treatments to reduce hardwood midstory.

3.6: Upland Game Birds

Current Condition: Part of the purpose of acquisition by the state was to provide recreational opportunities to the public, which includes managing for game species and hunting opportunities. The wild turkey (*Meleagris gallopavo*) and northern bobwhite quail (*Colinus virginianus*) are game species that occur on CWMA. Turkey are relatively common on the area, and opportunistic observations of bobwhite quail appear to be increasing in recent years.

Turkeys can be hunted on CWMA during a month-long fall archery season, and with a quota permit during a 2-day youth spring turkey hunt or three 3-day spring turkey hunts. In the 2018-19 fiscal year, hunters harvested 11 turkeys on CWMA, all during the spring season. Bobwhite quail can be hunted during the archery, muzzleloading gun, and general gun seasons at CWMA that occur during the fall and early winter. During FY 2018-19, hunters checked 39 quail at the check station on CWMA.

These species are typically associated with open canopy forests and grassland communities dominated by warm-season grasses, legumes, and patchy bare ground. Bobwhite prefer a mosaic of different cover types and succession levels, and they use areas with herbaceous cover for brooding and patches and corridors of bare ground for brooding and foraging. Roosting habitat or escape cover for quail consists of shrubs and other thickets. Turkeys require forested areas for roosting, nesting habitat that is composed of areas of dense groundcover vegetation, grassy open areas with abundant insects for brood-rearing and foraging, and moderately dense vegetation for escape cover during foraging or brood-rearing.

Habitat Management: Ongoing efforts to restore natural community structure and function on CWMA will continue to provide suitable habitat for upland game birds. Management actions that maintain or enhance habitat for these species include prescribed fire, natural community restoration, and management that favors a mosaic of successional stages. FWC conducts natural community management that benefits wild turkeys by conducting early growing season prescribed fire to promote suitable habitat conditions and by using mechanical treatments, including mowing, to create open areas that can be used by these species for foraging.

Monitoring: Staff monitor turkey annually on CWMA using opportunistic observations, harvest data, and turkey camera surveys. Staff monitor bobwhite quail using opportunistic observations, harvest data, and annual BBS.

In fiscal year 2017-18, FWC restarted the use of turkey camera surveys to develop a minimum turkey population estimate on CWMA. The purpose of these surveys is to make an index of changes in the minimum population estimate over time, and not to provide scientific or statistically reliable population estimates. CWMA has a relatively low-density turkey population and a large amount of potential habitat. The quality of this habitat is expected to increase over time through ongoing management activities. Data collected from surveys is sent to FWC's Wild Turkey Program Coordinator in the Hunting and Game Management Program, and staff will continue to coordinate with them to set bag limits for wild turkey.

Area's Role: The role of CWMA is to provide suitable habitat to support the local population of wild turkeys and northern bobwhite quail. Staff will support this role through continued management of pine communities, applying frequent prescribed fire, conducting timber harvests to thin pines as needed, and conducting mechanical and chemical treatments to reduce hardwood midstory.

3.7: Colonial Bats

Current Condition: There are eight species of bats in Florida considered colonial; gathering in groups to form maternity and/or hibernation colonies. The Florida Bat Conservancy conducted acoustic surveys in 2007 and detected three of these species on the area [Brazilian free-tailed bat (*Tadarida brasiliensis*); southeastern myotis (*Myotis austroriparius*); evening bat; (*Nycticeius humeralis*)]. Rafinesque's big-eared bat (*Corynorhinus rafinesquii*) *was not detected*

during the 2007 surveys but it's possible this species would use the hardwood swamp. Big brown bats (Eptesicus fuscus) were not detected, and their distribution in central Florida may not include the WMA. Surveyors also detected three other bat species that are not considered colonial [tri-colored bat (*Perimyotis subflavus*); northern yellow bat (*Lasiurus intermedius*); Seminole bat (*Lasiurus seminolus*)]. Eastern *red bats (Lasiurus borealis) and hoary bats (Lasiurus cinereus) were not detected, possibly because surveys were not conducted in the winter when these species would be present on the area.*

CWMA occurs in proximity to the Withlacoochee Caves Critical Wildlife Area in Citrus County, which supports both maternity colonies of southeastern myotis and hibernation colonies of tri-colored bats. Marion County also has several known maternity roosts for southeastern bats. While no known caves are available on site, CWMA is in an area of karst geology, so undocumented cave roosts may occur in the vicinity.

Habitat Management: This group of bats uses a variety of natural communities, many of which are not actively managed. Further, species-specific habitat management recommendations are not available for bats. Protecting roosting habitat and known roosts should be a priority during management activities. Large hollow trees, particularly hardwoods or cypress in the hydric hammock, are potential roost sites and should be protected if we document one in an actively-managed community. Bat houses should be protected during habitat management activities by reducing vegetation heights prior to burning and avoiding direct impacts to the house.

Species Management: In 2007, a local Boy Scout troop installed four bat houses on CWMA. Some of the original houses have been replaced or removed due to poor location. Currently, staff maintain four roosts, each consisting of two bat houses mounted on a pole. These roosts are periodically occupied, most likely by Brazilian free-tailed bats. Bat houses will be maintained in a condition that is conducive to occupancy.

Monitoring: Staff will continue to monitor bat houses using the SaMP Bat House Occupancy Assessment Protocol.

To better understand CWMA's role in bat conservation, FWC should conduct a survey to define a current list of all bat species that occur on the WMA. While no 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 will be included in the effort to conduct periodic species inventory surveys on CWMA, and will also contribute to ongoing long-term bat monitoring efforts by FWC and other partners. The objective is to:

1. Continue to monitor bat houses on CWMA.

Area's Role: The area's role is to continue to provide suitable foraging and roosting habitat for bats using CWMA. With the existence of known roosts and a large amount of potential foraging habitat, CWMA has an opportunity to participate in regional bat conservation, alongside neighboring conservation lands. Management on CWMA will continue to promote

opportunities for bats to roost and forage on the area, and staff will fulfill its role by protecting roosts sites if they're found on the area.

3.8: Florida Black Bear

Current Condition: The Big Bend Bear Management Unit, as described in the 2012 FWC Bear Management Plan, contains the critically small Chassahowitzka subpopulation of Florida black bears. This subpopulation is the smallest of seven in the state and may only contain about 20 individuals. An FWRI report in 2012 to update the distribution of this subpopulation identified only 11 bears, with a minimum density of 0.027 bears/km^2. This study included DNA analysis of hair samples collected from a grid of barbed-wire hair snares used to estimate occupied bear range because bear numbers were too low to generate a valid abundance estimate using mark-recapture methods. Experts used GIS analysis of reported sightings, vehicle-bear collisions, and hair snares visited by bears to create a detailed but subjective range map for the Chassahowitzka bear population, but no snares were set east of U.S. 19 because reported sightings were extremely low. Researchers believed bears in this subpopulation occupied public lands west of U.S. 19 in the coastal portions of Citrus, Hernando, and Pasco counties, which includes CWMA. Surveyors found hair samples on snares on CWMA and Weeki Wachee Preserve, further illustrating the importance of these areas for black bears.

Between 2010-2016, bear sightings in the eastern and central parts of these counties has increased, although they remain infrequent and scattered. In 2016, researchers analyzed the bear distribution statewide with a distribution model that extended the occupied range of the Chassahowitzka subpopulation a few miles east of U.S. 19 because of those scattered locations; however, the vast majority of bear locations in this area remained west of U.S. 19. Of the 11 bears sampled in this study, only 2 were female. Three bears were from the Ocala bear population, indicating possible movement between population areas. However, experts do not know whether the Ocala genetics came in through natural dispersal, from a release, or a combination thereof. At least one of the three bears with Ocala genetics was a nuisance bear that FWC captured between main bear population areas and released in CWMA because it was closer.

Additional studies of this population include several projects completed by graduate students prior to the implementation of the previous Strategy. From 1997-2003, the University of Kentucky, FWC and SWFWMD conducted three ecological studies of the Chassahowitzka bear population. These studies estimated that the population contained approximately 20 individuals. Experts estimate that 50 individuals are necessary for short-term survival and greater than 200 for long-term population persistence. During the study period, successful reproduction was documented. The study methods were not designed to monitor cub survival, but one of the nine cubs handled by researchers was documented alive a year later and two of those nine cubs were sampled as adults in the 2009-2010 hair snare study discussed above.

In 2012, FWC revised the original WCPR Strategy for CWMA to include a SMA for bears in MU 997 on the Weeki Wachee tract of CWMA. FWC no longer manages this tract, and DEP plans to manage the parcel in a manner consistent with the SMA and actions that benefit bears. However, the majority of natural communities on CWMA are typed as hydric hammock, which will continue to provide a significant amount of non-actively managed bear habitat on the area, regardless. See Section 2 for a full discussion on this SMA.

Although vehicle-bear collisions aren't as common here as other areas, roads are a major threat to bears in the Chassahowitzka subpopulation due to its extremely small size and isolation. Habitat fragmentation and increased pressure from development are also problems for this subpopulation. FWC manages habitat along US 19, a major road that bisects the Chassahowitzka tract from the larger Annutteliga Hammock area, on a shorter fire return interval to maintain open conditions and discourage bear use along the road. Upcoming extensions to the Suncoast Parkway include a wildlife crossing in the vicinity of the Annutteliga Hammock tract.

Habitat Management: Bears depend on a mosaic of natural communities that produce a variety of foods throughout the year, in addition to denning habitat, which is also essential. Some of the ongoing management actions, such as mechanical treatment and frequent fire, in the mesic flatwoods may have a temporary negative effect on Florida black bears by reducing available palmetto mast and denning habitat during and soon after the burns. However, most plant communities that bears depend on benefit from a regular interval of prescribed fire, and bears take advantage of new growth resulting from prescribed burns.

The previous Strategy contained an objective to develop and implement a CWMA Black Bear Habitat Management Plan (renamed Prescription during development). This objective was developed to address concerns about the use of mechanical treatment and prescribed fire in mesic flatwoods on CWMA, and the possible impacts to saw palmetto thickets for foraging and denning habitat. To complete this Prescription, WHM staff worked with FWRI to assess bear habitat on CWMA and identify objectives, strategies, and actions to ensure habitat management and other activities allow the area to continue to contribute to the conservation of the Chassahowitzka bear population.

The objectives outlined in the Prescription were to maintain adequate denning habitat, promote and maintain adequate foraging habitat, and promote and maintain appropriate travel and escape cover and corridors. Staff developed strategies and actions to ensure objectives were met. This included identifying approximately 2,000 acres (primarily mesic flatwoods) to manage at the longer end of the fire return interval, allowing for thicker vegetation conditions to promote denning and cover. Additional strategies and actions described in the Prescription were already ongoing considerations in habitat management and included in general burn planning and habitat management techniques on the area. These include: avoiding prescribed fire and mechanical treatment along swamp edges during the denning season; avoiding mechanical treatment of natural fire shadows; ensuring the retention of select xeric hammock patches during management

of the surrounding sandhill; and allowing for patchy burns and mechanical treatments which leave areas of untreated vegetation.

Challenges to implementation of the Prescription have included the need for additional firelines to separate mesic flatwoods from sandhill in areas where the mesic flatwoods should be burned on a longer rotation, as well as increased difficulty in burning mesic flatwoods on the longer rotation. This has allowed for increased fuel build-up in these areas, which can result in more intense burns that tend not to leave patchy areas unburned and can cause increased pine mortality.

After extensive discussion at the WCPR workshop, including a field review of habitat included in the Prescription, FWC determined it is no longer necessary to keep select mesic flatwoods on a longer fire return interval, as long as FWC continues to take steps to protect bear denning habitat during management activities and ensures that current and future management staff recognize the importance of taking considerations for bears during management activities. This will be accomplished via the WCPR Strategy and by continuing to include considerations for bears during the habitat management planning process on CWMA.

Monitoring: Staff will participate in the CWMA portion of statewide monitoring efforts as needed and will continue to opportunistically document bears on CWMA.

Area's Role: The role of CWMA in the conservation of the Florida black bear is to provide suitable habitat to support the Chassahowitzka subpopulation. The likelihood that bears will continue to occur on CWMA is influenced by conditions that are outside the control of area managers. The small population size and associated genetic issues is a factor, as are continued landscape-scale habitat loss and fragmentation occurring in the vicinity of CWMA. However, the area's large hydric hammock, diversity of natural communities, and management that provides a variety of forage types and cover will ensure that CWMA continues to provide habitat for bears. To ensure that CWMA continues to fulfill its role for the Florida black bear, the objective is to:

1. Continue to consider the habitat requirements of bears during habitat management activities on CWMA.

3.9: Florida Mouse

Current Condition: Surveyors documented the Florida mouse on CWMA in small mammal surveys conducted in 2006 and 2007. Additional surveys have not been conducted, and the current status is unknown. However, Florida mice have been documented recently at Perry Oldenburg WEA, Janet Butterfield Brooks WEA, and Chinsegut WEA. As such, we believe Florida mice continue to persist at CWMA. FWC removed the Florida mouse from the Species of Special Concern list with the 2016 adoption of the ISMP.

Habitat Management: Biologists consider the Florida mouse an obligate commensal of the gopher tortoise that 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. By continuing ongoing efforts to restore natural community

structure and function on CWMA, managers will continue to provide suitable habitat for the Florida mouse. Florida mice inhabit sandhill, scrubby flatwoods, and scrub natural communities. Florida mice are most abundant in areas supporting early-successional vegetation shortly after fires, and their populations decline as natural communities become more densely vegetated, shadier, and more mesic.

Monitoring: Staff will monitor Florida mouse as part of a general small mammal survey conducted every 10 years. As detection of Florida mice during small mammal surveys can be higher in areas containing gopher tortoise burrows, FWC will ensure that the survey is conducted in a manner that is likely to detect Florida mice, if they are present.

Area's Role: The role of CWMA in the conservation of the Florida mouse is to provide suitable breeding and foraging habitat to support the local population. Staff will achieve this role by continuing to restore pine communities through prescribed fire, timber harvests to thin pines as needed, and mechanical and chemical treatments to reduce hardwood midstory.

3.10: Homosassa Shrew

Current Condition: The Homosassa shrew is a sub-species of the southeastern shrew that has not been documented on CWMA. Researchers originally believed the 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 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 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 was conducted 2017 and determined that the Homosassa shrew did not warrant listing. Species experts completed a new SAP in 2018 that addresses the ongoing need for more information about the status, distribution, and natural history of the species.

Habitat Management: Ongoing efforts to restore natural community structure and function on CWMA will continue to provide suitable habitat for shrews. 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. Shrews primary prey is earthworms, spiders, and other invertebrates. Management actions that substantially reduce downed woody debris or lead to excessive drying of soils are detrimental to shrews and will be avoided on CWMA.

Monitoring: Species specific monitoring for Homosassa shrews will not be conducted. FWC will conduct a small mammal survey as described in Section 2.3, which may result in detection of this species. Staff will report incidental observations or specimens captured during small mammal surveys or drift fence herpetofauna surveys to the Mammal Taxa Coordinator in the Species Conservation Planning Section.

Area's Role: The role of CWMA in the conservation of the Homosassa shrew is to provide suitable breeding and foraging habitat to support the local population. Staff will help achieve this role by continuing to maintain the natural integrity of the hydric hammock, restore pine communities through prescribed fire, historic community restoration, and other appropriate natural community management efforts.

3.11: Southern Fox Squirrel

Current Condition: The ISMP approved in 2016 retained the southern fox squirrel (formerly the Sherman's fox squirrel) as a Species of Special Concern due to insufficient data available to the 2011 BSR. The original Sherman's fox squirrel SAP recommended research to establish the distribution, habitat use and genetic structure in Florida became available providing additional data for determining the status. A new BSR conducted in 2017 including this new data found the fox squirrel did not meet the criteria for listing as threatened. Species experts have revised the SAP, which proposed the creation of species focal areas (SFA) to focus conservation efforts. CWMA falls within the proposed Brooksville Ridge SFA, which is a high priority area in the SAP.

Staff commonly observe fox squirrels on CWMA and have documented breeding on the WMA. The size and status of the regional population on CWMA and adjacent private properties is unknown, but fox squirrels occur on other conservation and private lands in the vicinity. Experts do not know whether the management area could independently sustain a population, so the long-term viability of the southern fox squirrel is dependent on regional conditions.

Habitat Management: Ongoing efforts to restore natural community structure and function on CWMA will continue to provide suitable habitat for fox squirrels. 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 will continue management actions that maintain or enhance habitat for this species including prescribed fire, natural community restoration, and management that favors mature stands of longleaf pine with the retention of a mature oak component.

The previous Strategy identified an SMA to draw attention to the potential role of the Annutteliga Hammock and Seville tracts for southern fox squirrels. This SMA is no longer needed as management met the SMA goal and objectives. See Section 2 for a discussion of this SMA.

Monitoring: Staff will record opportunistic observations of southern fox squirrels in novel areas, with juveniles, or nests. The previous Strategy identified an objective to conduct time-area counts for fox squirrels within the SMA, pending protocol development. Species experts did not develop a protocol, and therefore species-specific monitoring on CWMA was not conducted due to a lack of protocol development. If a monitoring protocol is developed for fox squirrels and CWMA is identified by species experts as an area where species-specific surveys are recommended, staff will work with experts as appropriate to implement surveys.

Area's Role: By continuing to provide suitable foraging and nesting sites for southern fox squirrels, CWMA can fulfill its role in supporting the regional population of the species. CWMA contributes a large amount of intact, suitable habitat for fox squirrels but conditions in the surrounding landscape are also a factor in regional conservation. The SWFWMD manages several parcels within the greater Annutteliga Hammock area, some of which are close to CWMA's tracts. These parcels, and other larger private parcels, are a priority for acquisition and management to further increase the amount of habitat and connectivity to benefit the regional fox squirrel population in this area.

3.12: White-Tailed Deer

Current Condition: White-tailed deer (*Odocoileus virginianus*) are a priority game species on CWMA. Hunting was established as a recreational activity on CWMA in 1992 and continues to be a focus of management on the area. In 2013, staff recommended a rule change to prohibit the harvest of antlerless deer on CWMA. This was in response to a noticeable decline in hunter success rates and deer survey population indices. The rule was adopted and took effect in 2014. In 2015, FWC established deer management units (DMU) throughout Florida and CWMA falls within DMU C3, which restricts legal harvest to bucks with at least one antler having two or more points and having at least one antler five inches or greater in length. These antler restrictions are designed to reduce the harvest of 1.5-year-old bucks. On CWMA during the 2018-19 hunting season, all harvested bucks that were aged were in the 2.5 year-old age class or older. While not definitive, the combination of the prohibition of antlerless harvest and antler restrictions appear to be having a positive impact on the CWMA deer population as reflected in increased hunter success rates and population indices. Habitat management in the past 10 years has been successful at removing hardwood and sand pine encroachment and applying frequent prescribed fire. This has returned sunlight to the ground, and significantly increasing the quality and quantity of available forage, which also has a positive impact on the deer population. In 2018, CWMA staff conducted a line distance transect spotlight survey that yielded an estimate of about 1 deer per 27 acres. Results from this survey indicate that the population is continuing to rebound from a sharp decline between 2009 and 2013.

Deer season on CWMA includes an archery season (mid-September – mid-October), a 3-day muzzleloading gun season (late October), and a general gun season (early November – late December). During the first nine days of archery season, the entire 3-day muzzleloading gun season, and the first nine days of the general gun season, 150, no-cost, quota permits are issued for each hunt. After the quota period has ended for archery and general gun seasons, hunting deer is allowed by any hunter with a valid Florida hunting license, deer permit, and WMA permit. During each of these three hunts there are exemptions for individuals who meet the criteria (e.g., age > 65, etc.) as explained in the CWMA brochure.

Habitat Management: White-tailed deer are habitat generalists and thrive where different natural communities are interspersed and there are extensive ecotones or "edge" habitats. Deer

are primarily browsers eating a wide variety of leaves, buds, hard and soft mast, and forbs. Deer are attracted to areas of disturbance where tender new shoots are available for forage. Prescribed fire serves as an important deer habitat management tool. The post-fire response of tender new plant shoots, in addition to the increased diversity of forbs and other herbaceous species which result from a consistent burn frequency, provides excellent browse for deer. Non-fire maintained natural community types, such as xeric hammock, are also important to deer for food and cover. These habitats are commonly found in small pockets within larger expanses of sandhill or flatwoods at CWMA. CWMA staff takes measures to protect and preserve these hammock pockets when burning the larger, surrounding habitat types.

Monitoring: Staff monitor white-tailed deer on CWMA via annual spotlight counts conducted during the summer and harvest data collected at the check station.

The check station is located at the main entrance to the WMA and is staffed by seasonal check station operators during all deer hunting seasons on CWMA. Staff collect deer data from harvested animals including, date, sex, age (when possible), weight, breeding condition, and antler measurements. Aging is done by evaluating tooth wear and replacement on jawbones of harvested deer from hunters who voluntarily allow the jawbone to be extracted. Because hunters must approve jawbone extraction, not all deer are able to be aged. Staff also collect biological samples to submit to FWRI for chronic wasting disease (CWD) monitoring.

Area's Role: The role of CWMA in white-tailed deer conservation is to provide suitable habitat and manage harvest to sustainably provide 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 excess hardwood midstory, while retaining some oaks and other hardwoods to provide mast. Staff will continue to help monitor for CWD by collecting and submitting biological samples to FWRI. Finally, staff will consider feedback from hunters when recommending adjustments to area regulations to attempt to maintain hunter satisfaction.

3.13: Potential Species

Current Condition: With continued management of natural communities CWMA has the potential to support two species, the federally-Endangered red-cockaded woodpecker and the brown-headed nuthatch. Staff have not documented either species on the area, but they do occur in the surrounding landscape. In addition, in 1988, 150 acres were added to CWMA to mitigate for the loss of red-cockaded woodpecker habitat in Marion County. There is a 2016 eBird occurrence of a brown-headed nuthatch documented on the Chassahowitzka tract, but staff have not detected them during the annual BBS or during field work. Brown-headed nuthatches occur at Citrus and Croom WMAs. The nearest red-cockaded woodpecker population is at Citrus WMA.

These species require older pine forests (>35 years for nuthatches and 60 years for red-cockaded woodpeckers). These species prefer pine stands with BAs of 35-50 ft^2/acre and 40-80

ft^2/acre, respectively. Monitoring by OBVM in 2016 indicated that the BA in pine forests on CWMA is lower than the preference for these species in many areas. In time, the BA and forest age will become more suitable for use by these species. In the interim, FWC will consider their needs during habitat management activities to ensure the area's future potential to support these species is intact.

Habitat Management: Ongoing efforts to restore natural community structure and function on CWMA will enhance suitability for these species over time. FWC will consider the BA requirements for these species during timber management to ensure the area eventually can support them.

Brown-headed nuthatches are primary cavity nesters and prefer open stands of mature pines managed with frequent fire. 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 of <10 inches for cavity excavation. Staff will continue snag protection during management activities, which can maintain suitable cavity trees for this species to excavate.

The red-cockaded woodpecker requires open, mature pine woodlands that have a diversity of grass, forbs, and shrubs. This species is management responsive and can be an indicator of properly managed pine stands. It is often considered an umbrella species as many other species benefit from management designed for this species. Red-cockaded woodpeckers nest in cavities in mature live pines and will use artificial cavity inserts. Optimal foraging and nesting habitat for the species includes a reduced hardwood component and limited hardwood mid-story height. As such, the planned management that focuses on the application of prescribed fire and managing for mature pine stands will create conditions suitable for this species.

Monitoring: FWC has conducted an annual BBS on CWMA since 1996. If nuthatches are detected during the BBS or documented opportunistically, FWC will evaluate whether to add the brown-headed nuthatch to the call-back surveys for Bachman's sparrows. Red-cockaded woodpeckers will also be opportunistically documented, and FWC will assess their needs should they begin occupying CWMA.

Area's Role: The role of CWMA is to develop conditions that support future occupation of the area by these species.

Section 4: Coordination and Beyond the Boundaries Considerations

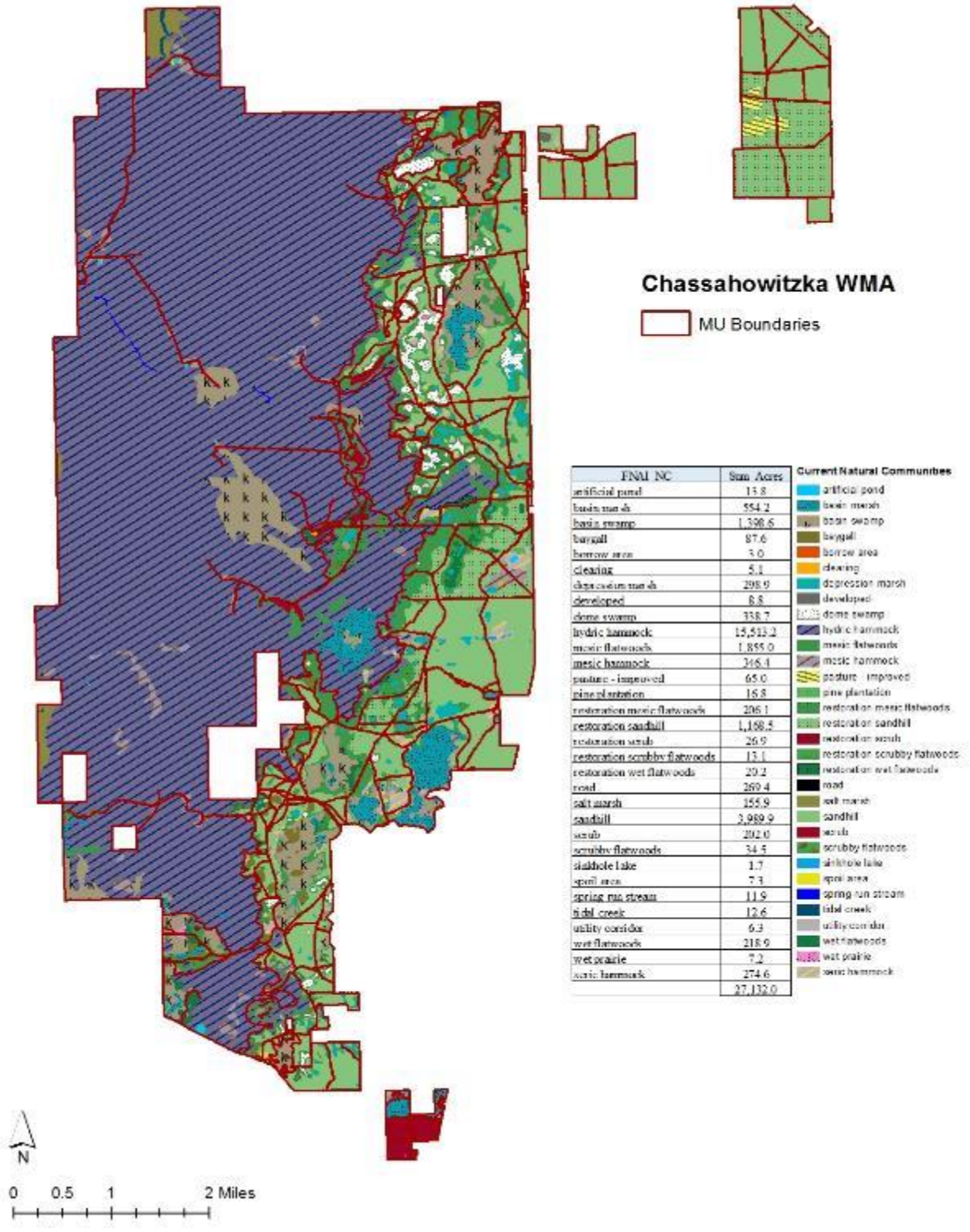
As discussed in the above assessments, several locally important species could potentially disperse between CWMA and neighboring conservation lands. While the current condition and management of CWMA and neighboring lands provides an opportunity to further the conservation of many imperiled and locally important species, significant changes in management or land use beyond the boundaries may have a significant impact on some species. Significant anthropogenic features of the region (such as Highway 19 and the Sun Coast Parkway Extensions) may restrict eastward connectivity of certain populations, but the sheer

amount of linear habitat along the western coastline provides a north-south corridor for numerous listed and locally important species. For these reasons, local and regional WHM staff will continue collaborating with the Office of Conservation Planning Services (OCPS) environmental commenting to ensure conditions across the boundary will contribute to wildlife populations also occurring on CWMA.

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 are dependent on the availability of suitable habitat on adjacent private lands. As such, the actions of adjacent landowners could contribute to the persistence of some wildlife species in the surrounding region. Area staff should make every effort to cooperate on the conservation of imperiled and locally important species with adjacent private landowners, if applicable. The OCPS can assist landowners interested in cooperation with CWMA staff.

CWMA staff currently coordinate with staff from other FWC 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 FFS, SWFWMD, and FNAI. These partners provide invaluable assistance with surveys, timber sales, prescribed burning, and other technical assistance.

Appendix 1. CWMA Natural community map with GIS-based acreages.



FNAI_NC	Sum_Acres
artificial pond	13.8
basin marsh	554.2
basin swamp	1,398.6
baygall	87.6
borrow area	3.0
clearing	5.1
depression marsh	298.9
developed	8.8
dome swamp	338.7
hydric hammock	15,513.2
mesic flatwoods	1,855.0
mesic hammock	345.4
pasture - improved	65.0
pine plantation	15.8
restoration mesic flatwoods	206.1
restoration sandhill	1,168.5
restoration scrub	26.9
restoration scrubby flatwoods	13.1
restoration wet flatwoods	20.2
road	269.4
salt marsh	155.9
sandhill	3,989.9
scrub	202.0
scrubby flatwoods	34.5
sinkhole lake	1.7
spoil area	7.3
spring run stream	11.9
tidal creek	12.6
utility corridor	6.3
wet flatwoods	218.9
wet prairie	7.2
xeric hammock	274.6
	27,132.0

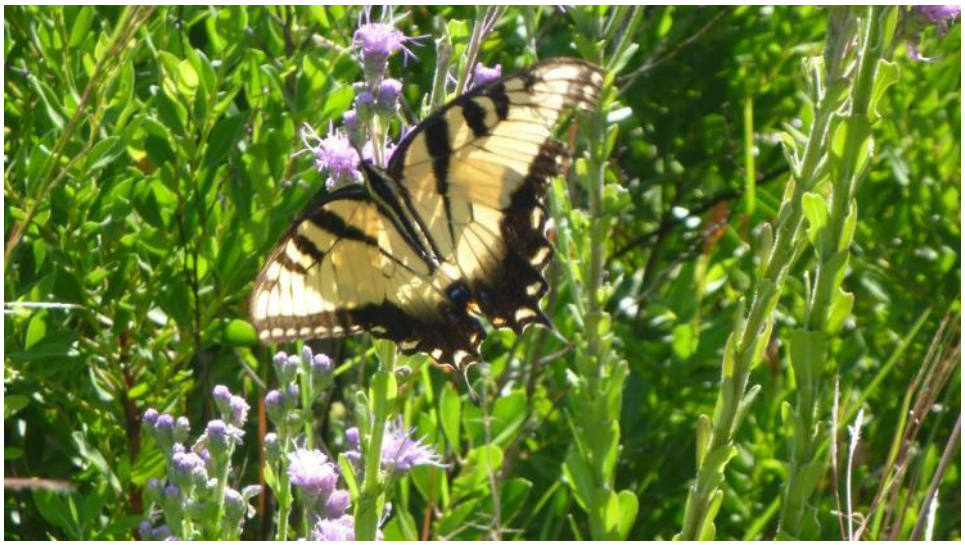
Current Natural Communities
artificial pond
basin marsh
basin swamp
baygall
borrow area
clearing
depression marsh
developed
dome swamp
hydric hammock
mesic flatwoods
mesic hammock
pasture - improved
pine plantation
restoration mesic flatwoods
restoration sandhill
restoration scrub
restoration scrubby flatwoods
restoration wet flatwoods
road
salt marsh
sandhill
scrub
scrubby flatwoods
sinkhole lake
spoil area
spring run stream
tidal creek
utility corridor
wet flatwoods
wet prairie
xeric hammock

Appendix 2. CWMA locally important species.

Species	**Location in Document**
Bachman's sparrow (*Peucaea aestivalis*)	Species Assessments
Brown-headed nuthatch (*Sitta pusilla*)	Document Occurrence
Colonial bats (multiple species)	Species Assessments
Common nighthawk (*Chordeiles minor*)	Monitoring
Eastern bluebird (*Sialia sialis*)	Monitoring
Eastern diamond-backed rattlesnake (*Crotalus adamanteus*)	Species Assessments
Eastern indigo snake (*Drymarchon couperi*)	Species Assessments
Florida black bear (*Ursus americanus floridanus*)	Species Assessments
Florida mouse (*Podomys floridanus*)	Species Assessments
Florida pine snake (*Pituophis melanoleucus mugitus*)	Species Assessments
Florida sandhill crane (*Grus canadensis pratensis*)	Document Occurrence
Florida scrub-jay (*Aphelocoma coerulescens*)	Document Occurrence
Gopher frog (*Lithobates capito*)	Species Assessments
Gopher tortoise (*Gopherus polyphemus*)	Species Assessments
Homosassa shrew (*Sorex longirostris eionis*)	Species Assessments
Limpkin (*Aramus guarauna*)	Document Occurrence
Mourning dove (*Zenaida macroura*)	Monitoring
Northern bobwhite quail (*Colinus virginianus*)	Species Assessments
Red-cockaded woodpecker (*Picoides borealis*)	Species Assessments
Short-tailed hawk (*Buteo brachyurus*)	Document Occurrence
Short-tailed kingsnake (*Lampropeltis extenuata*)	Species Assessments
Southeastern American kestrel (*Falco sparverius paulus*)	Species Assessments
Southern fox squirrel (*Sciurus niger niger*)	Species Assessments
Southern hognose snake (*Heterodon simus*)	Species Assessments
Southern bald eagle (*Haliaeetus leucocephalus*)	Document Occurrence
Striped newt (*Notophthalmus perstriatus*)	Document Occurrence
Swallow-tailed kite (*Elanoides forficatus)*	Document Occurrence
Wading birds (multiple species)	Document Occurrence
White-tailed deer (*Odocoileus virginianus*)	Species Assessments
Wild turkey (*Meleagris gallopavo*)	Species Assessments

11.17 Recreation Master Plan

Recreation Plan
for
Chassahowitzka WMA



Florida Fish and Wildlife Conservation Commission

Office of Public Access and
Wildlife Viewing Services

July 2014

Chassahowitzka Wildlife Management Area
Recreation Master Plan

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I. Introduction

Purpose of Plan/Planning Process

This Recreation Master Plan serves as a guide for providing recreational and educational experiences focused on wildlife viewing and nature study on Chassahowitzka Wildlife Management Area (CWMA). The RMP contains specific recommendations for recreational enhancements and educational products and programs. It also provides guidelines for monitoring recreation-related use to ensure resource protection and meaningful visitor experiences. The plan was developed by the Florida Fish and Wildlife Conservation Commission (FWC) Office of Public Access and Wildlife Viewing Services (PAWV) in collaboration with Chassahowitzka Field Staff with input from other FWC divisions and a Technical Assistance Group of recreational stakeholders.

Location

(Figure 1)

The Chassahowitzka Wildlife Management Area is located in Hernando County, Florida and is managed by the Florida Fish and Wildlife Conservation Commission (FWC).
Bordered on the west by the Chassahowitzka National Wildlife Refuge (CNWR), a portion of which is established as part of CWMA, this 34,597 acre conservation area is part of a nearly unbroken crescent of public conservation lands stretching 200 miles from Pasco County to the Apalachicola River. CWMA contains diverse natural communities that sustain a large variety of wildlife species. Extensive hardwood swamps in association with uplands creates good habitat conditions for wildlife and allows for seasonal movement of animals in response to fluctuating water levels and food supplies. The CWMA contributes to the conservation of an array of imperiled and other native wildlife including the Florida black bear (*Ursus americanus floridanus*), gopher tortoise (*Gopherus polyphemus*), Florida mouse (*Podomys floridanus*), Eastern indigo snake (*Drymarchon couperi*), and Sherman's fox squirrel (*Sciurus niger shermani*). The WMA supports opportunities for hunting, fishing, wildlife viewing, hiking, bicycling, paddling, cave and cavern scuba-diving, horseback riding, and scenic driving.

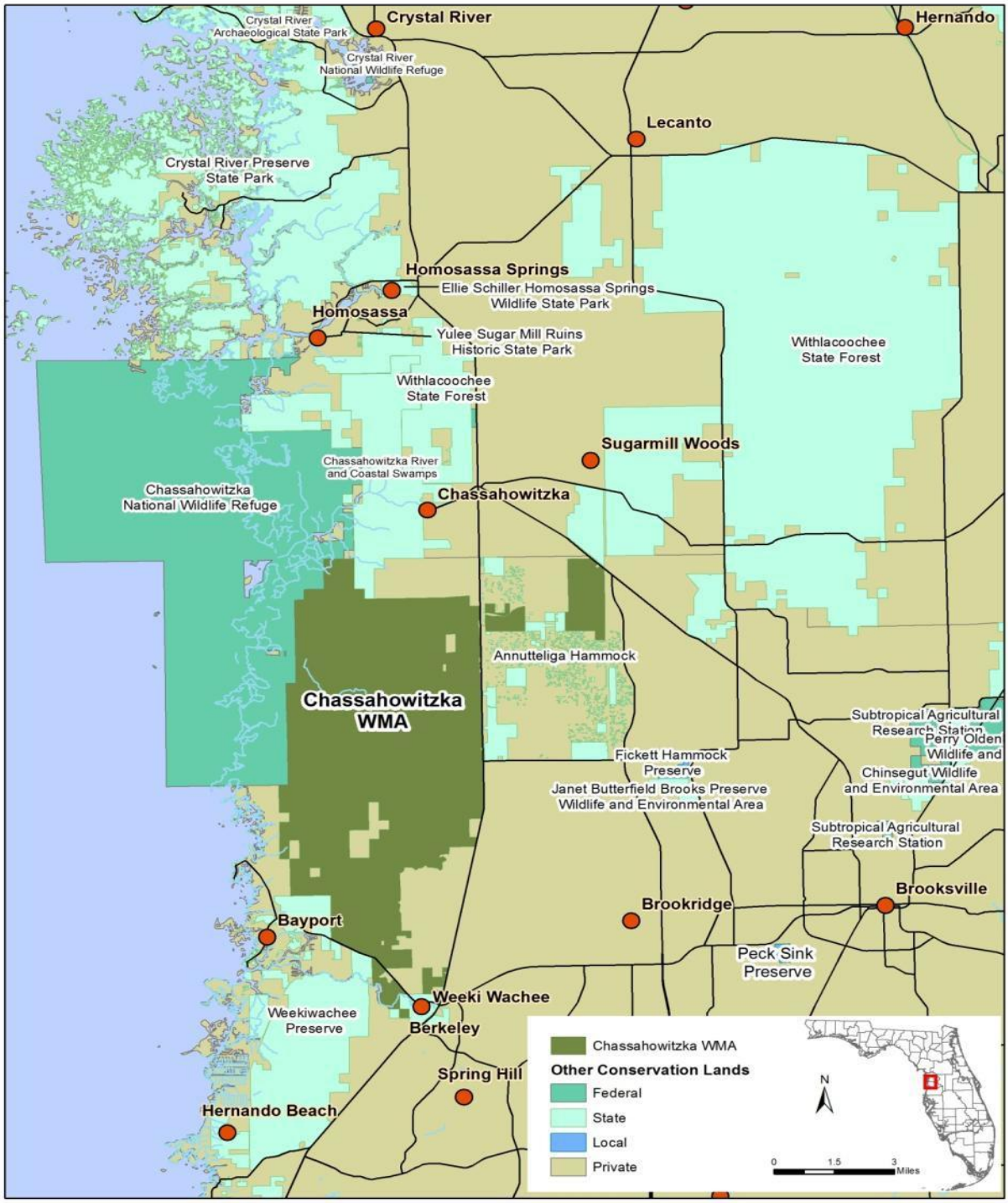

Crystal River
Hernando
Crystal River Archaeological State Park
Crystal River National Wildlife Refuge
Lecanto
Crystal River Preserve State Park
Homosassa Springs
Ellie Schiller Homosassa Springs Wildlife State Park
Homosassa
Yulee Sugar Mill Ruins Historic State Park
Withlacoochee State Forest
Withlacoochee State Forest
Sugarmill Woods
Chassahowitzka River and Coastal Swamps
Chassahowitzka National Wildlife Refuge
Chassahowitzka
Annutteliga Hammock
Chassahowitzka WMA
Subtropical Agricultural Research Station
Perry Olden Wildlife and
Fickett Hammock Preserve
Chinsegut Wildlife and Environmental Area
Janet Butterfield Brooks Preserve Wildlife and Environmental Area
Subtropical Agricultural Research Station
Brooksville
Brookridge
Bayport
Peck Sink Preserve
Weeki Wachee
Weekiwachee Preserve
Berkeley
Spring Hill
Hernando Beach
Chassahowitzka WMA
Other Conservation Lands
Federal
State
Local
Private
N
0
1.5
3
Miles

Figure 1: Chassahowitzka WMA Location 1

II. Resource Inventory

Topography and Hydrology

The CWMA is characterized by relatively flat topography. The uplands range in elevation from 10 to 20 feet above mean sea level (MSL), with higher elevations associated with a low ridge of relict coastal dunes. The bottomlands are typically less than 10 feet above MSL.
There are no launch sites for paddlecraft on the WMA but there is excellent paddling in the nearby Gulf of Mexico, Chassahowitzka River, and Weeki Wachee River. Diving is popular in Buford Spring and Eagle Nest Sink for experienced cave divers.

Natural Communities

(Figure 2)
Hydric hammock, mostly in the western portion of the property, comprises 57% of the WMA, making it the most prevalent natural community on CWMA. Sandhill, the next most common community at 15%, is found primarily on the east and south side of the WMA. Mesic flatwoods represent 7% of the area and are found interspersed on the east side in a matrix with sandhill. Basin swamp makes up 5% of the WMA. Pine plantation, basin marsh, restoration sandhill, and scrub each comprise 2 % of the area, and the remaining 13 natural communities each represent 1% or less of the area. Several of these natural communities are ecologically or recreationally significant. For example, scrub and sandhill have a number of unique and rare plant and animal species with low growing vegetation and sparse understory respectively, making them excellent communities for wildlife viewing and hiking trails.

Most of the natural communities on CWMA are in excellent condition and represent benchmark examples of native north Florida landscapes. They would be appropriate for interpretation of land management practices.

Sensitive Areas

CWMA is home to the largest area of coastal hardwood swamp south of the Suwannee River along the Gulf of Mexico. The water quality, natural hydrology, and wetlands are particularly sensitive to physical disturbance, which may impact the diversity of rare and endangered species found in these ecosystems as well as the freshwater, tidal and spring system functionality and the communities dependent on them. Scrub areas are home to a diverse array of sensitive plant and animal species, and sandhill areas have an understory of wiregrass. Access to these areas should be controlled and monitored to avoid damage.

Wildlife and Plant Species

Wildlife viewing can be good at almost any spot on the WMA, especially near the freshwater swamps and in the upland areas. Neotropical migrants such as common nighthawks, blue

grosbeaks, and a variety of warblers, offer seasonal variety. Approximately 235 bird species are documented or expected to occur on the area and several are among the "top 40 most sought-after birds" compiled by the PAWV Wildlife Viewing Section: Bachman's sparrow, bald eagle, hairy woodpecker, black skimmer, Florida burrowing owl, purple gallinule, sandhill crane, wood stork, and swallow-tailed kite.

Over 100 species of butterflies have been identified in Hernando County and many may occur on the area including common buckeye, cassius blue, Eastern black swallowtail, barred yellow sulphur, confused cloudywing, Cofaqui giant-skipper, great purple hairstreak, Eastern tiger swallowtail, Henry's elfin hairstreak, monarch, Meske's skipper, painted lady, question mark, Texan crescent and zebra heliconian.

Other species of particular interest to visitors include the Eastern indigo snake, Florida mouse, Florida black bear, gopher tortoise, gopher frog, Sherman's fox squirrel, Florida pine snake, nine species of bats, and bobcats. There are also several imperiled plant species found on CWMA including angle pod, blue-flower butterwort, cardinal flower, *Garberia*, nodding pinweed, and yellow-flowered butterwort.

Cultural Resources

The Florida Master Site File contains 26 archaeological and historic sites recorded within the boundary of CMWA. Archaeological sites include a lithic scatter site, a homestead, campsites, and middens ranging from prehistoric to Spanish-American War and World War I. Historic sites include a turpentine camp, lumber mill, ceramic scatter, and building remains.

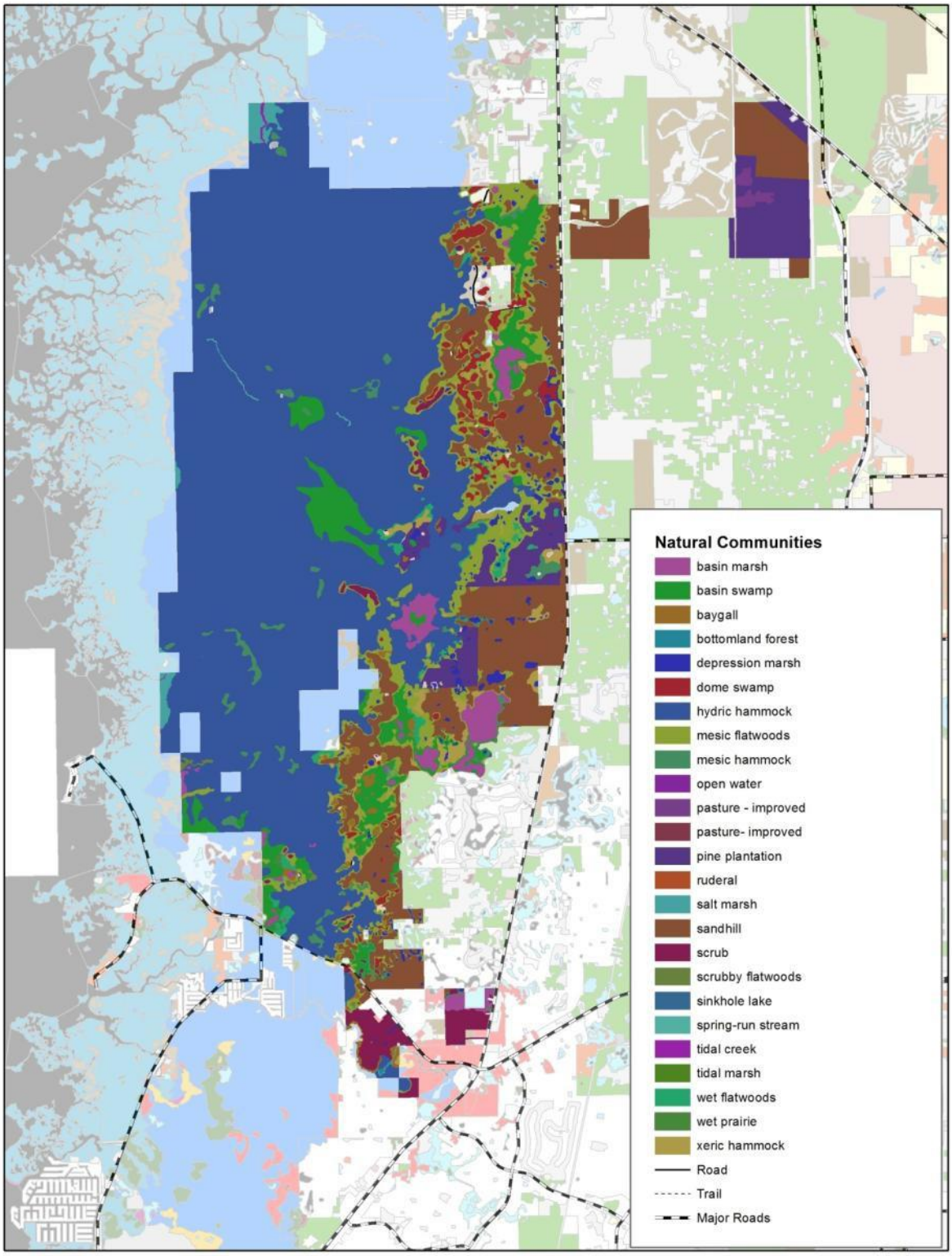

Natural Communities
basin marsh
basin swamp
baygall
bottomland forest
depression marsh
dome swamp
hydric hammock
mesic flatwoods
mesic hammock
open water
pasture - improved
pasture- improved
pine plantation
ruderal
salt marsh
sandhill
scrub
scrubby flatwoods
sinkhole lake
spring-run stream
tidal creek
tidal marsh
wet flatwoods
wet prairie
xeric hammock
Road
Trail
Major Roads

Figure 2: Chassahowitzka WMA Natural Communities

Scenic Resources

CWMA offers a variety of scenic vistas including springs, creeks, cypress swamps, hydric hammock, sandhill, and scrubby flatwoods. The sinkhole lakes and floodplain swamps along the spring-runs are particularly scenic. They feature a sparse to moderate understory, a high canopy and a variety of aquatic and epiphitic plants. Scrub areas are home to several species that are rare, endangered, threatened or of special concern and may provide visitors with views of these uncommon flora and fauna. Karst formations such as the Eagle Nest Sink and Buford Spring are of particular interest to experienced cave divers. Seasonal wildflowers at CWMA include white water lily (*Nymphaea odorata*), tarflower (*Bejaria racemosa)*, common buttonbush (*Cephalanthus occidentalis),* coastalplain chaffhead (*Carphephorus corymbosus*), and yellow-eyed grasses (*Xyris* sp.).

Resource Management

The FWC's resource management goals for the area include supporting swamp and upland natural communities, while working cooperatively with partner agencies to adequately protect the hydrological resources the WMA. To accomplish this objective, the FWC is restoring and improving wildlife habitat, implementing prescribed fire, managing imperiled species, and eliminating or controlling nonnative, invasive plants through mechanical and chemical treatments. Plants such as air potato (*Dioscorea bulbifera*), Japanese climbing fern (*Lygodium japonicum*), and cogongrass (*Imperata cylindrica*) are problematic on the area.

III. Recreation Planning Context

The 2010 population estimate for Hernando County was 173,104 people with a projected growth to 201,023 (16.1% increase) in 2020 and 262,388 (51.6% increase) by 2040 (Office of Economic and Demographic Research 2013). Hispanic or Latino groups comprise 10.3% of the county's population (US Census 2010). The proportion of Hispanic or Latino residents in Hernando County is currently fifty percent lower than the statewide percentage, and the African American population proportion in the county is almost seventy five percent lower than the statewide percentage. In other respects, the population demographics of Hernando County fall closely in line with statewide proportion. These demographic data will inform the design of infrastructure and interpretive materials in order to accommodate the full spectrum of potential visitors to the WMA.

	Hernando County		Florida		
Race/Ethnicity	**#**	**%**	**#**	**%**	**Difference**
Hispanic or Latino	17,796	10.3%	4,223,806	22.5%	-12.2%
Non-Hispanic or Latino	154,982	89.7%	14,577,504	77.5%	12.2%
White	154,598	89.5%	14,109,162	75.0%	14.5%
African American	8,816	5.1%	2,999,862	16.0%	-10.9%
Asian	1,859	1.1%	454,821	2.4%	-1.3%
American Indian/Alaskan Native	613	0.4%	71,458	0.4%	0.0%
Native Hawaiian/Pacific Islander	74	0.0%	12,286	0.1%	-0.1%
Other	3,318	1.9%	681,144	3.6%	-1.7%
2 or more	3,500	2.0%	472,577	2.5%	-0.5%

Population age distribution is slightly older than the state distribution with a larger percentage of people over 65 and all other age groups being close to the statewide percentages.

	Hernando County		Florida		
Age/Gender	**#**	**%**	**#**	**%**	**Difference**
Male	82,534	47.8%	9,189,355	48.9%	-1.1%
Female	90,244	52.2%	9,611,955	51.1%	1.1%
<18	34,158	19.8%	4,002,091	21.3%	-1.5%
18+	138,620	80.2%	14,799,219	78.7%	1.5%
20-24	7,823	4.5%	1,228,758	6.5%	-2.0%
25-34	15,359	8.9%	2,289,545	12.2%	-3.3%
35-49	30,865	17.9%	3,832,456	20.4%	-2.5%
50-64	36,412	21.1%	3,677,959	19.6%	1.5%
65+	44,523	25.8%	3,259,602	17.3%	8.5%

As the regional population increases, the public use pressures on the WMA will likely increase. Recreational user groups can be expected to urge connections to trails on lands outside the WMA as well as better access to divable springs. CWMA is within 15 miles of several other public recreation areas that offer a variety of recreation opportunities:

Area	Hiking	Biking	Camping	Paddling	Fishing	Horseback Riding	Hunting	Wildlife Viewing
Annutteliga Hammock (SWFWMD)	✓	☒	✓	☒	☒	✓	☒	✓
Chassahowitzka National Wildlife Refuge (USFWS)	☒	☒	☒	✓	✓	☒	✓	✓
Chinsegut Wildlife and Environmental Area (WEA) (FWC)	✓	☒	☒	☒	☒	☒	☒	✓
Crews Lake Wilderness Park (Pasco Co)	✓	✓	✓	✓	✓	☒	☒	✓
Crystal River Archaeological SP (DEP)	☒	☒	☒	☒	✓	☒	☒	✓
Crystal River National Wildlife Refuge (USFWS)	☒	☒	☒	✓	☒	☒	☒	✓
Crystal River Preserve State Park (DEP)	✓	✓	☒	✓	✓	☒	☒	✓
Ellie Schiller Homosassa Springs Wildlife State Park (DEP)	✓	☒	☒	☒	☒	☒	☒	✓
Fort Cooper State Park (DEP)	✓	☒	✓	☒	☒	☒	☒	✓
Perry Oldenburg Mitigation Park WEA (FWC)	✓	☒	☒	☒	☒	☒	☒	✓
Weeki Wachee Springs State Park (DEP)	☒	☒	☒	✓	☒	☒	☒	✓
Werner-Boyce Salt Springs State Park (DEP)	✓	☒	☒	☒	✓	☒	☒	✓
Withlacoochee State Forest (FFS)	✓	✓	✓	✓	✓	✓	✓	✓
Withlacoochee State Trail (DEP)	✓	✓	☒	✓	☒	✓	☒	✓

The Florida Statewide Comprehensive Outdoor Recreation Plan (SCORP) collects data on participation levels in various outdoor recreation activities for different regions of Florida. The results for the Central West Region are summarized below:

Activity	Resident Participation (%)	Tourist Participation (%)
Paddling	30	10
Picnicking	40	37
Hiking	29	22
Unpaved Bicycle Trails	15	4
Wildlife Viewing	46	47
Nature Study	19	18
Equestrian Activities	6	6
Geocaching	3	3

The Central West Region is at approximately 30% of the statewide average level of service (miles of trail/1000 participants) for hiking. Hiking/walking trails are one of the top five desired facilities in Florida among residents. With the expected population growth for this region, and statewide, addition facilities will be needed to meet current and projected levels of service. Levels of service for the other listed activities are very close to the statewide mean.

Hernando County has developed a Bicycle/Pedestrian Advisory Committee (BPAC) under the Metropolitan Planning Organization (MPO) that will assist with proposing and reviewing alternative transportation modes in the Long Range Transportation Plan (LRTP). The LRTP also includes information about the major hiking trails in Hernando County such as the Croom, Richloam, Green Swamp, and Citrus Hiking Trails. There is potential for a wildlife corridor in the MPO plan from Chassahowitzka to Seville on US 19. The Hernando County Comprehensive Plan classifies CWMA as Conservation Land in the Current and Future Land Use components. US Highway 19 is slotted to be extended to a six-lane divided highway in the 2015-2035 plan. This highway is currently a four-lane divided highway. Impacts to sensitive environmental areas and wildlife corridors will be taken into consideration, and the county will conduct a detailed study of the modifications to land use and development.

Currently, there is one approved residential development, Glen Lakes, to the south and adjacent to CWMA off Highway 19. Developments have the potential to increase recreational demand and impact the area and its natural and recreation resources.

IV. Interpretation

In this plan, emphasis is placed on integrating recreation and interpretive planning. Using this approach, the type of recreational experience offered and the location of recreation amenities provided, is strongly influenced by the interpretive goals for the area. Recreation opportunities thus become a means to an end - reaching visitors with important themes and concepts about an area's natural resources, plant communities, wildlife and wildlife management.

Visitor Experience Goals

CWMA has the potential to provide visitors with opportunities to see and learn about a variety of natural communities while engaging in recreational activities focused on fish and wildlife resources. Visitor experience goals are those concepts and experiences we want visitors to take away from their time at CWMA. These goals guide both interpretive and recreation planning.

At CWMA, the FWC will provide opportunities for visitors to:

1. Become oriented to and participate in a range of recreational activities on CWMA and adjoining natural areas while:

- Becoming acquainted with wildlife and natural plant communities
- Understanding CWMA's natural, cultural and commercial history within the context of the state's prehistory and modern history
- Appreciating CWMA as an oasis providing a retreat from the pressures of urban life and an opportunity to connect with the natural world

2. Learn information and stories associated with major interpretive themes and other related information, through interpretive materials at welcome kiosks, trails and wildlife viewing sites.

3. Have an enjoyable recreational experience without impairing the natural and cultural values of the site. In terms of wildlife viewing, FWC's goal will be to facilitate positive, memorable experiences that keep wildlife disturbances to a minimum.

4. Understand the management goals and activities of the FWC on CWMA.

Interpretive Themes

Interpretive concepts are categorized into themes and subthemes. All interpretive

materials revolve around one or two primary themes, which allow visitors to understand and remember important messages. Primary themes also help set visitor experience goals and priorities and are considered in the design of amenities offered to nature-based recreationists. Subthemes expand upon and support the primary themes. These guide the development of all interpretive
products, which may include sign panels, printed materials, electronic media and educational programming. This detailed media prescription will be developed at a later date.

Central Theme: CWMA is managed for diverse habitats that support healthy wildlife populations and offer a good selection of recreational opportunities.

Subtheme 1. CWMA is a key piece of a 200-mile stretch of protected public land along Florida's west coast.

A. Chassahowitzka Swamp is the largest forested coastal wetland south of the Suwannee River.
B. Chassahowitzka's swamps, creeks, marshes, sandhills, pine flatwoods and scrub habitats protect the quality and quantity of water in sinkhole lakes, springs and in the underlying Floridan aquifer, a primary source of the region's drinking water.
C. Habitats at Chassahowitzka provide flood protection and storm buffering to nearby communities; shelter wildlife; and provide fresh water to the productive coastal salt marshes to the west.
D. Chassahowitzka is home to species such as gopher tortoises, gopher frogs, eastern indigo snakes, Sherman's fox squirrels, turkeys, deer, swallow-tailed kites, bald eagles, butterflies and a small, but significant, population of Florida black bears.

Subtheme 2: FWC places a high value on habitat and wildlife management and employs a variety of management and restoration tools to achieve specific goals.

A. Each habitat at Chassahowitzka receives a unique management prescription with science-based goals and objectives.
B. Both wetlands and uplands are managed and restored using tools such as prescribed fire, low-water crossings, timber clearing or thinning, control of invasive nonnatives and reforestation.
C. Restored and well-managed habitats benefit a wide range of species and improve the quality of recreation for all users.
D. High-quality sandhill and scrub habitats are restored and managed at Chassahowitzka.
E. Habitat restoration is a long-term solution that may appear destructive in the

short- term.

F. Restored habitat is better able to support wildlife populations and may increase species' resilience to environmental changes and stressors.

Subtheme 3: The WMA preserves evidence of the historical significance of the region, which included subsistence hunting and fishing by native peoples, logging and milling of cypress, red cedar and longleaf pine, and turpentine production.

A. In the early 1900s, most native cypress and red cedar trees were removed from the swamp by railroad. Today, the elevated tramways are used as roads and recreational trails.
B. Uplands that are undergoing restoration and reforestation today are the legacy of the pulpwood production industry that converted the longleaf pine forest to pine plantations.
C. The WMA was once the site of Centralia, a booming mill town that operated in the early 1900s.
D. The native longleaf pines supplied early settlers with resin used to produce tar, pitch, turpentine and rosin.

V. Recreation Assessment

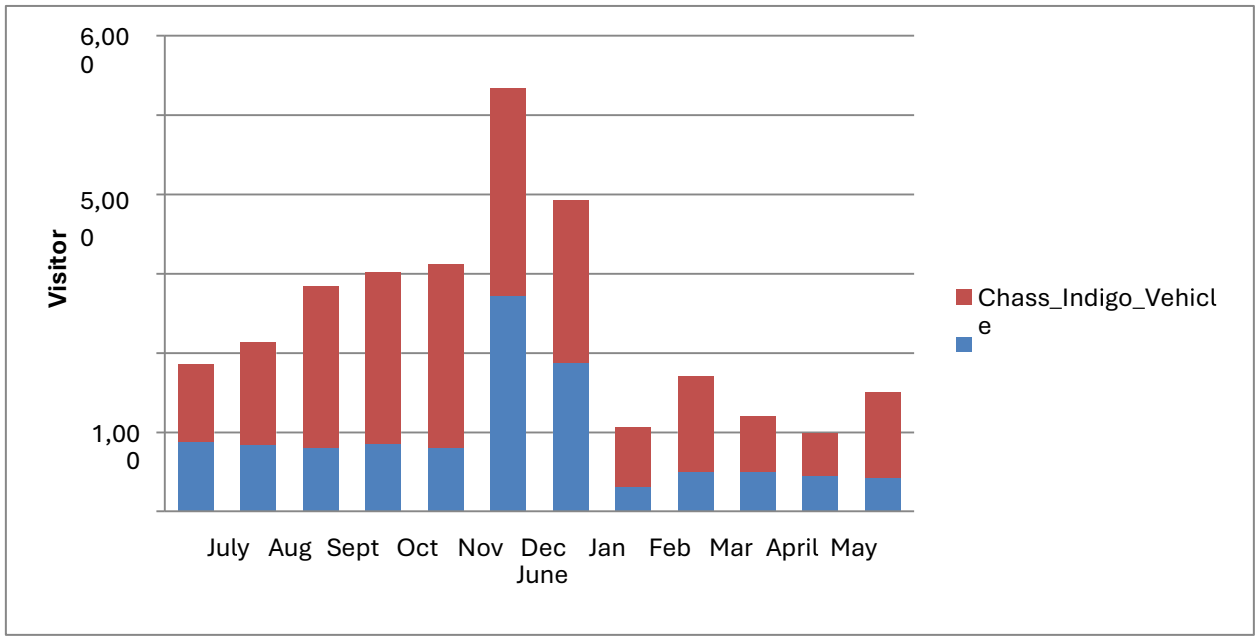
Existing Recreational Use and Facilities

The purpose of this section is to identify and describe the existing recreational uses and facilities on CWMA and note their status and condition (Figure 3). This informs recommendations for achieving visitor experience goals and meeting future recreation demands and needs.

CWMA offers opportunities for a variety of high quality, wildlife-focused recreation activities. Based on the approved uses and activities as stated in the 2014-2024 Management Plan (MP), the analysis of existing resources and uses, and the interpretive themes developed for the area, the following activities should be continued and enhanced as described in this section. Conditional activities are those that require additional permits or permission.

- Astronomy (Conditional)
- Bicycling
- Primitive Camping (Conditional)
- Ecotourism (Conditional)
- Environmental Education
- Fishing (Conditional)
- Geocaching (Conditional)
- Hiking
- Horseback riding
- Hunting (Conditional)
- Wildlife Observation

Visitation, as recorded by two separate vehicle counters installed and monitored by FWC, has averaged 71 visitors/day for July 2012 to June 2013. Seasonally, use peaks during deer hunting season from September to December with another, smaller peak in March and April for spring turkey hunting season.



Chass_Indigo_Vehicle is on Indigo Road west of the main entrance and just west of the road to the private hunt club. Chass_Gopher_Vehicle is at the main entrance just south of Indigo road on Gopher Road.

Visitor Contact Points and Roads/Vehicle Access - The main entrance for CWMA is on the west side of US HWY 19 just south of Homassassa Springs. The check station and two kiosks are located at this point. This entrance is the only visitor access and leads to two other use areas: the hiking trailhead with three picnic shelters, parking, a bear can, and a kiosk and the use area at Eagle Nest Sink with two picnic tables, a bear can, parking, and a dive/viewing platform with a boardwalk and two benches. Other than visitor contact kiosks there are four other interpretive signs with frames as well as an interpretive driving tour.

Vehicles are allowed on named roads. Tracked vehicles, airboats, and unlicensed/unregistered motorcycles are prohibited.

Most named roads are well-maintained limerock roads and can be traversed in two-wheel drive vehicles.

Wayfinding signage on interior roads is to FWC standards. There are approach

signs for CWMA on SR19.

Hunting - Currently, hunting opportunities include archery, muzzleloading gun, general gun, wild hog-dog, raccoon, spring turkey, youth spring turkey and migratory bird seasons. There are 145 days of hunting each year excluding migratory birds. Between September and May there is hunting 29 out of 39 weekends and 4 of those weekends are spring turkey season with shooting hours only until 1pm. There are 5 days of hunting in March and 7 days in April. The area is open to other users during hunt days. Quotas limit the number of hunters accessing the area during most hunting seasons to provide a high-quality hunting experience.

Boating/Paddling –There is no boating access on the WMA. There are numerous paddling opportunities around the WMA at such places as the Chassahowitzka National Wildlife Refuge where paddlers can launch at a ramp on the Chassahowitzka River three miles upriver at the end of State Road 480.

Fishing and Frogging - Fishing and frogging are allowed year round. There are a variety of freshwater fish in the small and remote water bodies on the WMA providing minimal opportunities to fish.

Trail Use – Hiking is allowed throughout CWMA. Horseback riding is allowed on designated (named) roads only. During periods open for hunting, and during a seven-day scouting period prior to each hunt, bicycles are allowed throughout the area. During non-hunting periods, bicycles are allowed on designated (named) roads only.

Trail infrastructure - There are 9.4 miles of trails available for public recreation on CWMA. All of these start at the Indigo Road trailhead. The hiking trails traverse mesic flatwoods, sandhill, and a dome swamp via a footbridge. Most of the trails are shady with some areas passing through open areas of early regeneration. The driving tour follows Indigo Road south to Rattlesnake Road and east to Gopher Road where it ends at the check station at the entrance to the WMA.

Wildlife Viewing and Nature Study - Wildlife viewing opportunities are available throughout CWMA, with some of the best, most accessible, opportunities located along the designated trails and driving tour. The sandhill and flatwoods provide viewing for a wide variety of birds including turkey, vireos, and woodpeckers and the more open, wetter areas provide viewing opportunities for eagles and wading birds. There is one structure platform at Eagle Nest Sink that is designed for scuba-diving use but may be used for wildlife viewing purposes.

Picnicking - There are currently three picnic shelters and one picnic table on the WMA at the Indigo Road trailhead, one picnic table at the check station, one picnic table on North Road and

two picnic tables at the Eagle Nest Sink use area.

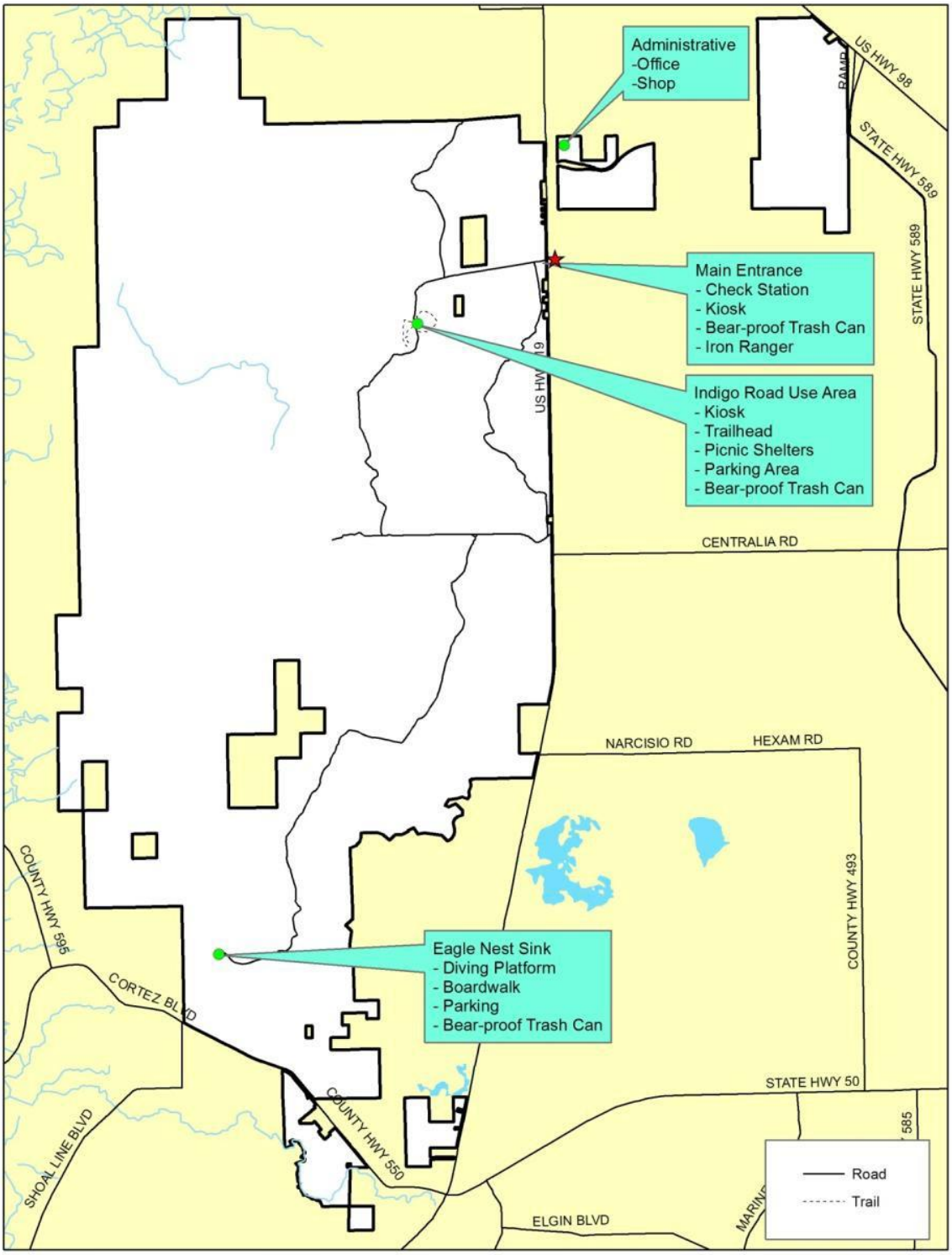

Administrative
-Office
-Shop
US HWY 98
STATE HWY 589
Main Entrance
- Check Station
- Kiosk
- Bear-proof Trash Can
- Iron Ranger
Indigo Road Use Area
- Kiosk
- Trailhead
- Picnic Shelters
- Parking Area
- Bear-proof Trash Can
CENTRALIA RD
NARCISIO RD
HEXAM RD
COUNTY HWY 493
COUNTY HWY 595
CORTEZ BLVD
Eagle Nest Sink
- Diving Platform
- Boardwalk
- Parking
- Bear-proof Trash Can
STATE HWY 50
COUNTY HWY 550
SHOAL LINE BLVD
ELGIN BLVD
Road
Trail

Figure 3: 1Chassahowitzka WMA Existing Facilities

Camping - Camping is not available at CWMA.

Geocaching - Geocaching is allowed on the area. There are currently no permitted geocaches on CWMA. Approval of new geocaches and disposition of existing geocaches is at the discretion of the site manager and coordinated by FWC's Office of Public Access and Wildlife Viewing Services.

Special Events/Tours – There are no regular tours or special events at CWMA.

Staff/Volunteers - A Fisheries and Wildlife Biological Scientist III, two Fisheries and Wildlife Biological Scientist II, two Wildlife Technicians, and one administrative assistant are assigned to CWMA. Volunteers are occasionally used to assist with wildlife surveys.

Recreation Zoning

Research of recreational use demonstrates that visitors come to recreate on public lands with many different expectations (NPS, 1997). Providing a variety of settings allows visitors to select the type of experience they desire, simplifies management and reduces conflicts between visitors who are seeking different types of experiences. The zones delineated by the planning team are provided in Figure 5. Each zone is described below in terms of the type of experience it offers, the natural resources related to the experience and the level of management required.

Primitive Zone

This zone offers an experience of solitude deep in a natural landscape with no evidence of human development. This zone can encompass sensitive natural resources. Access is difficult and the number of people should be limited. Only limited recreation and interpretation opportunities should be developed in this zone. A minimal level of management is necessary for resource protection and safety.

Semi-Primitive Zone

The semi-primitive zone provides a sense of being immersed in a natural landscape with opportunities for solitude. Observation structures, boardwalks, interpretative signs and unpaved trails are the types of recreational facilities that are appropriate in this zone. A moderate level of management is provided for resource protection and safety. In areas with vehicle access on roads, the semi-primitive motorized zone provides a sense of being in a natural landscape with minimal human modification and moderate opportunities for solitude. Interpretative signs, wayfinding signs, vehicle pull-offs, unimproved parking locations and unpaved roads are the types of recreational facilities that are appropriate in this zone. Roads are passable by two-wheel drive vehicle. A moderate level of management is

provided for resource protection and safety.

Developed Zone

Developed zones are areas with visitor facilities such as parking, picnicking and toilets. The visitor's experience in this zone is highly social. Trails may be paved or hardened for access by people with disabilities. Visitors and facilities are intensively managed in this zone for resource protection and safety purposes. Staff should monitor visitor behavior and attend to maintenance needs. The most intensive interpretation is provided in the developed zone. This is the most appropriate zone for building construction.

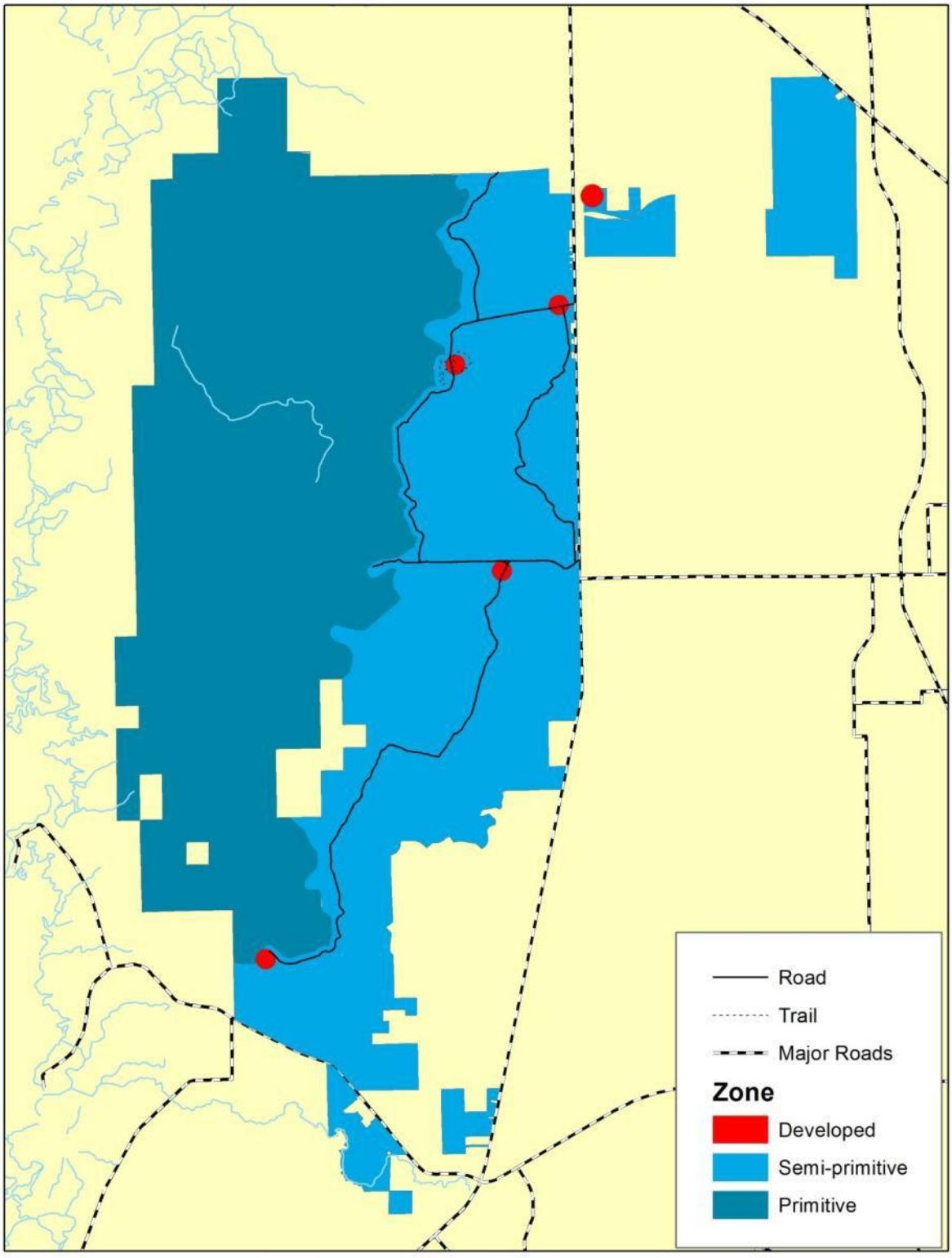

Road
Trail
Major Roads
Zone
Developed
Semi-primitive
Primitive

Figure 4: Chassahowitzka WMA Recreation 1

Carrying Capacity

In order to minimize disturbance of wildlife and other natural resources and to provide an enjoyable experience for visitors, FWC calculates a carrying capacity for its managed areas (Appendix 3). This carrying capacity takes into consideration natural community sensitivity, known locations of sensitive natural communities, known archaeological and historic sites, existing recreation facilities and wildlife disturbance distances with a turnover rate that varies with the activity or facility. This capacity is not a visitation goal but rather is a level at which the natural and recreation resources of the area can sustain use without damage. Current capacity for CWMA is 550 people per day (including hunting capacity).

Chassahowitzka WMA Recreation Use Potential

CWMA provides an opportunity for visitors to learn about and see examples of natural communities that are rapidly being converted to other uses on the west coast of Florida. The following sections of the plan provide for comprehensive interpretation of these communities, common and listed species of interest to visitors, and FWC's management. Recommended recreation enhancements are those that provide a range of enjoyable opportunities to view wildlife without negatively impacting resources.

Goals and Objectives

Careful design and placement of recreational facilities can provide desirable visitor experiences and minimize impacts to the natural and cultural resources of the area. Construction and improvements will not harm wildlife, fragile habitats or historic and cultural sites. All planning and implementation should be done in accordance with guidelines in Appendix 2. A conceptual site plan for proposed recreation facilities is provided in Figure 6.

Goal A. Orient visitors to the area and its recreation opportunities and interpret WMA resources

1. If feasible, relocate main entrance to Rattlesnake Road including development of a parking area, kiosk, check station and picnic shelter
2. In conjunction with the relocation of the main entrance, investigate alternatives to maintain the loop driving tour, including development of additional road segments.
3. Develop one new information sign and trailhead at the Annutteliga Hammock north entrance.
4. Design and develop an elevated walkway to Buford Spring.

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

Goal B. Enhance existing trail opportunities

1. Monitor trail use and demand to determine the need for expanded trail opportunities.

Goal C. Direct and manage recreational use to minimize negative resource impacts and maximize visitor satisfaction

1. Collect and evaluate information about visitor use and satisfaction:
    - Number of visitors to the area and patterns of visitation
    - User group conflicts
    - Origin and length of stay
    - Motivations for visiting and preferred experiences
    - What visitors already know about the area and primary interpretive themes.
    - Implement a monitoring strategy to assess resource impacts and institute corrective management actions if indicators begin to approach standards.
2. Revise the recreation guide.
3. Develop a trail map.
4. Install cave diving warning sign at Eagle Nest Sink and other appropriate locations.
5. Stock recreation and driving tour guides, regulation summaries and bird list in brochure boxes at the main entrance and walk-in entrance.
1. Maintain up-to-date information about the area on the FWC website.

Goal D. Coordinate with local, state and federal agencies and organizations when planning and implementing nature-based recreation opportunities and enhancements

1. Cross-promote CWMA with other regional public lands.

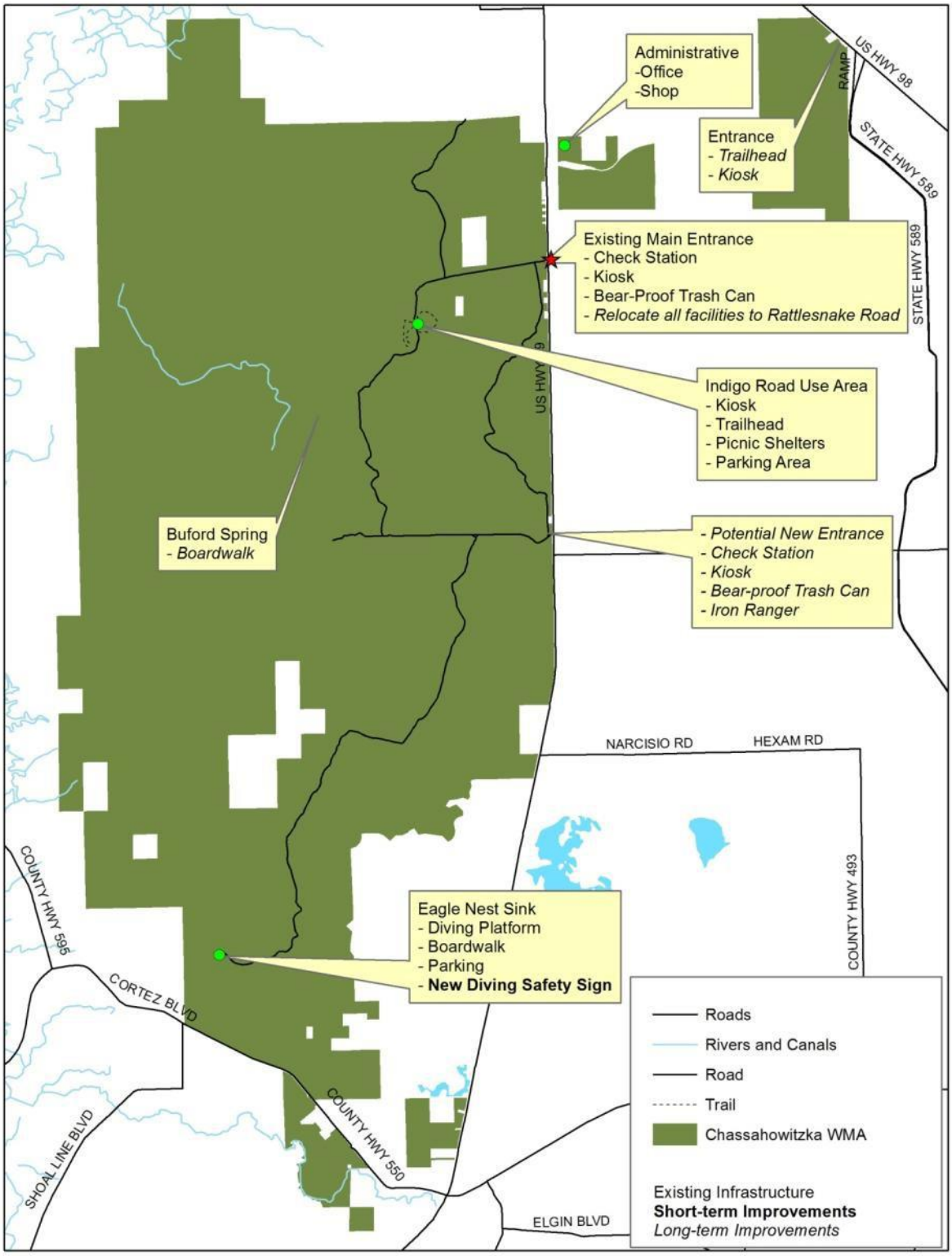

Administrative
-Office
-Shop
Entrance
- Trailhead
- Kiosk
RAMP
US HWY 98
STATE HWY 589
Existing Main Entrance
- Check Station
- Kiosk
- Bear-Proof Trash Can
- Relocate all facilities to Rattlesnake Road
STATE HWY 589
US HWY 9
Indigo Road Use Area
- Kiosk
- Trailhead
- Picnic Shelters
- Parking Area
Buford Spring
- Boardwalk
- Potential New Entrance
- Check Station
- Kiosk
- Bear-proof Trash Can
- Iron Ranger
NARCISIO RD
HEXAM RD
COUNTY HWY 493
COUNTY HWY 595
Eagle Nest Sink
- Diving Platform
- Boardwalk
- Parking
- New Diving Safety Sign
CORTEZ BLVD
COUNTY HWY 550
SHOAL LINE BLVD
ELGIN BLVD
Roads
Rivers and Canals
Road
Trail
Chassahowitzka WMA
Existing Infrastructure
Short-term Improvements
Long-term Improvements

Figure 5: 1Chassahowitzka WMA Proposed Recreation Facilities

Challenges and Strategies

There are several challenges facing the effective implementation and management of nature-based recreation opportunities on CWMA. Challenges and proposed strategies to address them are discussed in this section.

1. Challenge:

   CWMA is not a well-known recreation destination.

   Strategies:
   - Cross-promote CWMA with other regional conservation lands.
   - Provide rack cards or similar publication at sources in Brooksville, Spring Hill, and Crystal River.
   - Work with Hernando County tourism boards for promotion.
   - Investigate developing an online mapping application on the FWC website to provide location and recreation information for CWMA.

2. Challenge:

   As the population density around CWMA continues to increase, recreational use of the area will increase, potentially resulting in resource damage and wildlife disturbance.

   Strategies:

   - Periodically monitor all public use sites for environmental impacts and implement corrective actions when and where necessary.
   - Recreational use will be directed away from sensitive environments to the greatest degree possible.
   - Environmental protection information will be provided in all interpretive materials.

3. Challenge:

   As recreational use increases, conflicts among user groups may occur.

   Strategies:
   - Provide a range of recreational opportunities in a variety of settings to avoid user conflicts as much as possible.
   - Involve stakeholders and user groups during planning.

- Ensure that user groups understand how to contact local staff to resolve problems.
- Provide opportunities for different user groups to volunteer together to maintain public access amenities and conduct conservation stewardship activities.
- Display hunting information (dates, times and types) at all entrances to help all users make choices as to when to visit.

Summary of Proposed Infrastructure Enhancements

- Rattlesnake Road New Entrance
  - Relocate main entrance and facilities from Gopher Road entrance
  - Reroute Driving tour to accommodate new entrance and road structure
- Boardwalk to Buford Spring
- Entrance with trailhead and kiosk at Annutteliga Hammock

Work Plans

PAWV will work with local staff to prepare annual work plans and budgets to implement the RMP for CWMA. PAWV will be responsible for 1) developing cost estimates for recreation-related facilities; 2) coordinating design and permitting; and 3) obtaining construction bids and the work of contractors during the construction phase. This includes pre-construction meetings, site visits at construction milestones and final reviews. Generally, the area manager and staff monitor construction sites frequently during the construction process to make sure contractor is not doing damage to the surrounding area.

PAWV will design interpretive materials for the areas in consultation with management area staff. Generally, the cost of producing maps and interpretive products and maps comes from the PAWV budget.

Monitoring and Management of Recreation Facilities

PAWV will monitor recreation infrastructure on the WMA biannually including trail and structure photopoints. PAWV will also create an annual monitoring report at the end of each fiscal year. Any impacts encountered during each monitoring will be brought to the attention of PAWV and WMA staff to determine the best course of action for correction and prevention.

Measurable indicators for monitoring key aspects of the visitor experience and resources at CWMA are described in Appendix 4. Indicators should be monitored for each zone, and when necessary, management actions taken to ensure that visitor use and resource impacts remain within the established standards.

References

A Management Plan for Chassahowitzka Wildlife Management Area 2014 – 2024. Florida Fish and Wildlife Conservation Commission (2014).

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Appendices

Appendix 1: Work Plan for Recreation Enhancements

Based on the prioritization of the goals and objectives listed above, the following list of projects and tasks has been ordered in terms of short and long term completion timeframes.

Long Term Completion and Ongoing Tasks

- Main Entrance Relocation
    - Move check station, kiosk and interpretive materials, iron ranger, and bear can to Rattlesnake Road.
    - Potentially reroute driving tour
    - Relocate traffic counter

Appendix 2: Recreation and Wildlife Viewing Facilities Design Guidelines

- **Entrances**
  Should welcome visitors to the area, identify the Commission, describe the range of potential experiences on the area, and describe the wildlife viewing experiences by season, time of day or wildlife event.

- **Viewing structures**
  Structures should include wildlife identification or other interpretive information. The structure should be surrounded by and focused on wildlife and habitat, rather than being the focus itself. For towers, each level should focus visitor attention to a different habitat or feature.

- **Trails**
  Trails should be described at the trailhead with length or time required. If the focus is wildlife viewing, include best seasons. Interpretive panels or brochure stops should be well-spaced and focused by season.

General considerations in developing facilities:

- Locate viewing facilities on previously disturbed properties wherever possible.
- Preserve a sense of solitude and limit impact on natural resources by concentrating recreation uses in small "developed" zones and along existing road/trail corridors.
- Site facilities and design trails to minimize user conflicts.
- Avoid sensitive areas such as wetlands and route trails to avoid fragmenting habitat.
- Consider physical characteristics and the historical and natural character of the location.
- Adapt parking lots, buildings and other physical developments to existing topography.
- Retain on-site surface water run-off generated by development.
- Use porous pavements where surface hardening is required.
- Consider sewage disposal needs.
- Use native plants representative of the area for all landscaping.
- Design and build trails and observation structures to avoid disturbing wildlife and to minimize negative impacts such as erosion.
- Use elevated boardwalks in wet areas and swamps and walkovers to protect other sensitive areas.
- Incorporate wildlife viewing ethics into all interpretive materials.
- Incorporate interpretive themes into all brochures, trail guides and other materials produced to support recreation opportunities.

- Install interpretive signs and panels as appropriate at all recreation facilities.
- Route trails to interpret restoration and wildlife management activities.
- Ensure interpretation of highly desired species viewable on the area.

Universal Access

Nature-based recreation facilities and programs must be developed and implemented in compliance with the Americans with Disabilities Act. All facilities in developed zones should be universally accessible. Recreation facilities in semi-primitive or primitive zones should be planned to be accessible to the degree possible except where:

- compliance will cause harm to cultural, historic or religious sites or significant natural features or characteristics.
- compliance will substantially alter the nature of the setting or purpose of the facility (or a portion of the facility).
- compliance would require construction methods or materials prohibited by federal, state or local regulations or statutes, or compliance would not be feasible due to terrain or prevailing construction practices.

Appendix 3: Carrying Capacity Methodology

FWC Recreation Carrying Capacity

Carrying capacities for recreational users on FWC lands are developed using a methodology employing existing spatial data and models, recommended guidelines for spatial and temporal carrying capacity, recommended guidelines for minimizing wildlife disturbance by outdoor recreation, and site-specific characteristics. The intent of this methodology is to provide a realistic carrying capacity which is based on the best science and data available with a focus on minimizing wildlife and habitat disturbance and providing the type of recreation our visitors desire and FWC's managed areas can support. This methodology also provides a means of monitoring visitor impacts and allows for flexibility in responding to these impacts and adjusting the carrying capacity as necessary. The carrying capacities generated through this process are not a visitation goal but are a guideline included in the overall area Management Plan and used as a tool to help plan and develop recreation opportunities.

Sensitivity Analysis

An initial analysis of site sensitivity to recreation impacts is conducted using:

- Integrated Wildlife Habitat Ranking System model results for the site
- Natural community values based on threat rankings developed for the Florida Wildlife Legacy Initiative using the rankings for Roads, Incompatible Recreation Activities, and Conversion to Recreation Areas
- Natural community values based on the sensitivity guidelines published by the Florida Park Service
- Wetlands
- Slope
- Soils
- Known point locations of species-of-interest
- Known locations of sensitive resources
- Division of Historic Resources Master Site File sites
- Density of existing roads, trails and facilities
- Other datasets as available and appropriate

These data layers are converted to grids as necessary and normalized to a scale of 1-100. Then a weighted sum is calculated for all data resulting in a "Sensitivity Index" for the area with higher values being more sensitive to disturbance from recreation.

Recreation Zoning

Once the results of the Site Sensitivity model are obtained, a Recreation Zone Map is developed incorporating these results and any statutory or rule constraints for recreation activities. These Recreation Zone Maps will show the different types of recreation experiences appropriate for each zone of the area. This guides potential trail lengths, trail types, types of facilities and other parameters related to recreation infrastructure.

Carrying Capacity Development

For linear recreation facilities (i.e. trails), a physical carrying capacity is developed based on trail length using a 100-meter buffer on either side of the trails. This buffer distance is consistent with the estimated area of wildlife disturbance along the trail. In addition, an additional 100-meter buffer is used between potential trail users to provide an undisturbed 100-meter area between users. This results in an estimate of 1 user or group every 300 meters along the trail. This estimate is generated using GIS and is adjusted to minimize disturbance "hot spots" such as overlapping disturbance buffers. Point facilities (i.e. observation structures) have a single 100-meter radius buffer. The temporal component of carrying capacity is developed based on the Florida Park Service turnover estimate of two per day on primitive hiking trails or four per day on shorter, improved nature trails. In addition, existing and planned parking and other trailhead limitations are factored into the estimate. If the site already has a Recreation Master Plan (RMP) developed, these estimates will be based on existing and planned facilities as detailed in the RMP. If the area does not have an RMP these estimates are based on potential trail corridors and potential point facility sites derived from the Recreation Zoning and site visits by OPAWVS and area staff. Another product of this estimate is a "Wildlife Habitat Disturbance Index" based on the ratio of potentially impacted habitat to impact-free habitat expressed as a percentage of the area potentially impacted by recreation.

Camping Facility Carrying Capacities

- Primitive tent camping with no facilities or limited facilities (fire ring, picnic table): 4 people/site with a turnover of once per day.
- Standard camping site (fire ring, picnic table, improved or paved pad, toilet facilities): 8 people/site with a turnover of once per day.
- Generally group camping will be 30 people per 5 acres of camping area.

Picnic Areas

- 8 tables/acre and 4 people/table with a turnover twice a day.

Structures

- Structures dependent on trails for access will be included in the calculated trail capacity.
- Structures that can be accessed independently of trails will have a carrying capacity determined on a case-by-case basis based on the type and size of the structure.

Shoreline Fishing Areas

- Shoreline fishing areas will have a capacity of 1 angler per 25 linear feet.

Seasonal Hunting

- For those areas with seasonal hunting use carrying capacities range from one hunter per 75 acres to one hunter per 150 acres. The exact density chosen depends on a variety of factors with game management most paramount, but is also influenced by the layout of the area and the chosen hunting framework. Areas with dove fields will have a dove field capacity of one hunter to 1.75 acres of dove fields. This capacity is in addition to the calculated capacity for non-hunting recreation uses. Areas with quota permits will have the hunting capacity established as double the maximum number of permits for any one season to account for guest permits.

As needed, capacities for other uses not listed above will use the carrying capacity guidelines published by the Florida Park Service as a baseline.

Recreation Impact Monitoring

To provide a quantitative measure of recreation impacts, limits will be established as "No impact ranks greater than 1," as observed during each biannual monitoring conducted by OPAWVS field staff. If any ranking values are greater than 1, the site will be assessed to determine the source of the impact. If impacts are the result of recreation activities (as opposed to facility design or other sources), the carrying capacity will be revisited and corrective measures will be developed by OPAWVS and area staff.

Appendix 4: Management and Monitoring

Recreation Facility Monitoring Protocol

Florida Fish and Wildlife Conservation Commission
Office of Public Access and Wildlife Viewing Services

Introduction

In order to better plan and manage recreation opportunities on lands managed by the Florida Fish and Wildlife Conservation Commission (FWC), FWC's Office of Public Access and Wildlife Viewing Services (PAWV) has developed a monitoring program for recreation-related facilities and infrastructure. Using both qualitative and semi-quantitative methods this program will encompass trails, signs, wildlife viewing structures and other facilities. Data obtained through this program will help FWC better plan, construct and maintain facilities to provide the recreation experiences that are meaningful, enjoyable and safe.

Materials

- Digital camera
- Tripod
- Kaidan panoramic photo mount
- VRWorx, or other software for creating panoramic photos
- Monitoring forms
- Tape measure
- Compass
- GPS (loaded with waypoints for monitoring points)
- Hand tools for checking structure hardware

Monitoring Procedures

Frequency

Starting in FY 2013-2014, trails will be monitored annually in the fall and structures monitored annually in the spring. Prior to FY13-14 trails and structures were both monitored biannually.

Photopoints

Panoramic and single photopoints are used to track and document impacts such as trail degradation, corridor condition, structural integrity and vandalism. Single photopoints are taken at use areas to capture the overall condition. Additionally, each amenity and structure has a

photopoint associated with it. Panoramic photos are taken at use areas in a central location and at trailheads. Photopoints are predetermined (with the exception of trouble areas along trails), geographically referenced, and consistent. Data are compiled by analyzing panoramas and photopoints from each monitoring session and combining the findings with impact indices recorded for each site.

Photopoints should be recorded with GPS, which can also be used to navigate back to the photopoint location on future monitoring visits. A description of the location should be recorded to ensure maximum accuracy in relocating the photopoint.

Assemble the panoramic photo gear and set the tripod over the photopoint, making sure the panoramic head is level. Standard photopoint height is 60" to the center of the camera lens while mounted on the panoramic mount. This may be modified for some photopoints depending on surrounding vegetation or other considerations, but the new height should be recorded and used each time that photopoint is taken. The easiest way to set the height is to assemble the tripod, panoramic mount and camera on level ground, adjust the legs to their full length and adjust the center column to achieve the proper lens height. The center column can be marked with a permanent marker, tape, or scored with a small file or engraver and each mark should be labeled with the height and camera model. This will have to be done for each different camera that will be used for photopoints, although it is preferable that the same camera be used for all photopoints.

Cameras should be set to full wide zoom, landscape mode if available, with flash off. All photopoints begin with the detent closest to due north and continue in a clockwise direction. A log should be kept to record the photo numbers and their corresponding photopoint.

After downloading the images they should be processed into a flat panorama (a digital image composed of all of the photos for a particular photopoint). These panoramas along with the component images should be kept in a central location organized by WMA, photopoint number, and photopoint date. Parallel photopoints will not need to be processed but should be organized as above.

Trails

Trails are monitored with a panoramic photopoint centered at the trailhead, and one photopoint wherever problems areas exist: one photo taken facing forward on the trail and one facing the opposite direction on the trail.

Use areas

Use areas have 2 photopoints. One is a panoramic photo taken at the center of the use area that follows the procedure for trailhead photopoints. The other is a single photo taken from the perimeter of the area. The compass bearing of the photo should be recorded and used for all subsequent photos taken at that photopoint.

Structures

Structures have a single photopoint. This is a single photo, and the compass bearing of the photo should be recorded and used for all subsequent photos taken at that photopoint. If desired, a panoramic photo can be taken to represent the view from the structure (such as the top of a tower).

Physical Inspections

- Check for presence or absence (smaller amenities such as fire rings and benches)
- Check for proper location (smaller amenities such as fire rings and benches)
- Inspect for damage (signs and structures)
- Check hardware and tighten or replace if necessary (signs and structures)

Trails should be traversed in their entirety, either on foot for shorter trails or by vehicle for longer trails. Trouble spots (erosion, trail braiding, shortcuts, litter, excess vegetation encroachment, etc.) should be recorded by GPS and noted on the monitoring form.

Monitoring Forms and Record Keeping

Monitoring forms are completed in the field. This can be done electronically using the Recon field computer or manually. If done manually they should be transferred to an electronic version by filling out the form on the computer. Completed electronic forms are then placed in the appropriate location on the Project Management Site for that WMA along with any relevant GPS data (converted to shapefile), photographs, photopoints and other notes.

Any issues that need attention should be sent to the appropriate Recreation Planner via email. The Recreation Planner is responsible for ensuring that the issue is brought to the attention of the appropriate personnel, both internal and external to FWC, and tracking the issue through resolution.

Litter Impacts		
Rating	**Category**	**Description**
1	None	
2	Very Little	small isolated pieces of litter
3[2]	Some	frequent small pieces or isolated large pieces of litter
4	Extensive	small areas used for trash dumping or multiple areas of high litter
5	Very Extensive	large areas used for trash dumping

Structure or Amenity Damage		
Rating	**Category**	**Description**
1	None	none/ loose bolts on new structures.
2	Very Little	minor graffiti or scratches, dirty, light crazing or oxidation, crooked, minor cracks.
3[2]	Some	minor wood repair; extensive graffiti; cuts or gouges; bullet holes; major cracks, extensive crazing or fading.
4	Extensive	hazardous damage, rotten supports, severe rust, illegible signs, burnt
5	Very Extensive	structure is missing or rendered completely ruined/useless

Trail and Use Area Erosion		
Rating	**Category**	**Description**
1	Very little	mostly natural groundcover distribution or man-made materials (concrete, aggregate, mulch, etc.)
2	Some	localized patches of bare soil from use or runoff from structures or impervious surfaces; vehicle tracks noticeable; standing water; minor hog damage
3[2]	Moderate	large areas of bare soil created by use, ruts from vehicles, areas muddied by use, roots partially exposed, heavy hog damage
4	Extensive	channelization, washout, and/or undercutting banks; roots mostly exposed; deep ruts; trail widening

Trail Corridor Condition		
Rating	**Category**	**Description**
1	Within Standards	minimal vegetation encroachment
2[3]	Exceeds Standards	trail needs some mowing/lopping/chainsawing; minor tree fall
3	Unacceptable	trail is generally overgrown and difficult to find; tree fall that impedes passage

[2]Ratings of three and above exceed PAWV standards for structure and amenity damage or litter impacts and trail erosion.
[3]Ratings of two and above exceed PAWV standards for trail corridor condition.

WMA Visit Checklist

- ○ Trail maintenance needs
- ○ Sign maintenance needs
- ○ Structure maintenance needs
- ○ Day-use area condition/maintenance needs
- ○ Sufficient PAWV publications in field office
- ○ Brochure boxes adequately stocked and installed
- ○ Hunting calendar posted and up-to-date
- ○ Users encountered on area (number, activity, address for future surveys)
- ○ Geocaches inspected
- ○ Manager concerns
- ○ New ideas for area enhancement

11.18 Forest Management Plan

THE FORESTRY COMPANY

May 6, 2016

Mr. Steven Brinkley
Project Manager
Florida Fish and Wildlife Conservation Commission
17260 Necklace Warbler Ave.
Brooksville, FL 34614

RE: PINE TIMBER ASSESSMENT AND FOREST MANAGEMENT PLAN FOR THE CHASSAHOWITZKA WILDLIFE MANAGEMENT AREA (Order No. AE8EE9)

Dear Steve:

Attached please find the Timber Assessment/Pine Inventory Report and Forest Management Plan for the Chassahowitzka Wildlife Management Area. Also enclosed is a flash drive with the Timber Assessment/Pine Inventory Report and Forest Management Plan and digital shape files.

The invoice for the Pine Timber Assessment and Forest Management Plan for the Chassahowitzka Wildlife Management Area is also enclosed.

With Best Regards,

John Bogue

Michele Curtis

www.TheForestryCompay.com
Perry Office: 502 W. Green St. • Perry, FL 32347 • Office 850–584–8887 • Fax 850–223–3494

THE FORESTRY COMPANY

FOREST MANAGEMENT PLAN FOR THE CHASSAHOWITZKA WILDLIFE MANAGEMENT AREA (Order No. AE8EE9E)

Prepared for:

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

Prepared by:
John Bogue, Forest Inventory Manager
and
Michele Curtis, Forester

THE FORESTRY COMPANY
502 West Green St.
Perry, FL 32347

Date of the Report: May 6, 2016

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FOREST MANAGEMENT PLAN FOR THE CHASSAHOWITZKA WILDLIFE MANAGEMENT AREA



Executive Summary

Purpose

The Florida Fish and Wildlife Conservation Commission (FFWCC) contracted with The Forestry Company to conduct a timber inventory of the timber in pine blocks in the Chassahowitzka Wildlife Management Area, to create stand polygon shape files for the stands, and to develop a long-term forest management plan. The Management Plan, if implemented, should result in naturally regenerating upland pine communities, within a basal area range of 20-60 ft^2/acre, dominated by an overstory of longleaf pine (Pinus palustris) and favoring an old growth age distribution. The short-term objective is to develop a plan to thin any stands to maximize timber revenues to the extent possible from existing trees while meeting the long-term objective.

Property Description and Location

The Florida Fish and Wildlife Conservation Commission property being addressed in this report is the Chassahowitzka Wildlife Management Area located south of the Citrus/Hernando County border, approximately 10 miles north of State Road 50, 3.6 miles south of US 98 and west of US 19 about 12 miles northwest of Brooksville, Florida.

Forest Inventory

The Comprehensive Forest Inventory Report is a stand-alone report containing the detailed timber information for the Chassahowitzka Wildlife Management Area. Shape files also contain this information and will be provided to FFWCC electronically. The timber inventory information was one piece of data considered in developing the forest management recommendations.

Forest Management Plan Development

Prior to commencing field work, longleaf pine restoration research articles were reviewed, and numerous experts in the field of Longleaf Pine Restoration were contacted to discuss research findings and to discuss successes and failures of actual restoration efforts. Studies reviewed and experts consulted were from the University of Florida, the Longleaf Alliance, The Nature Conservancy, Florida Natural Areas Inventory, Longleaf Partnership Council, Regional Working Group for America's Longleaf, Tall Timbers Research Inc., Florida Forest Service, USDA Forest Service, and Auburn University. Forest inventory data, field observations, information from literature, training workshops and personal contacts were the basis for developing the forest management recommendations that follow.

Pine Timber Characteristics

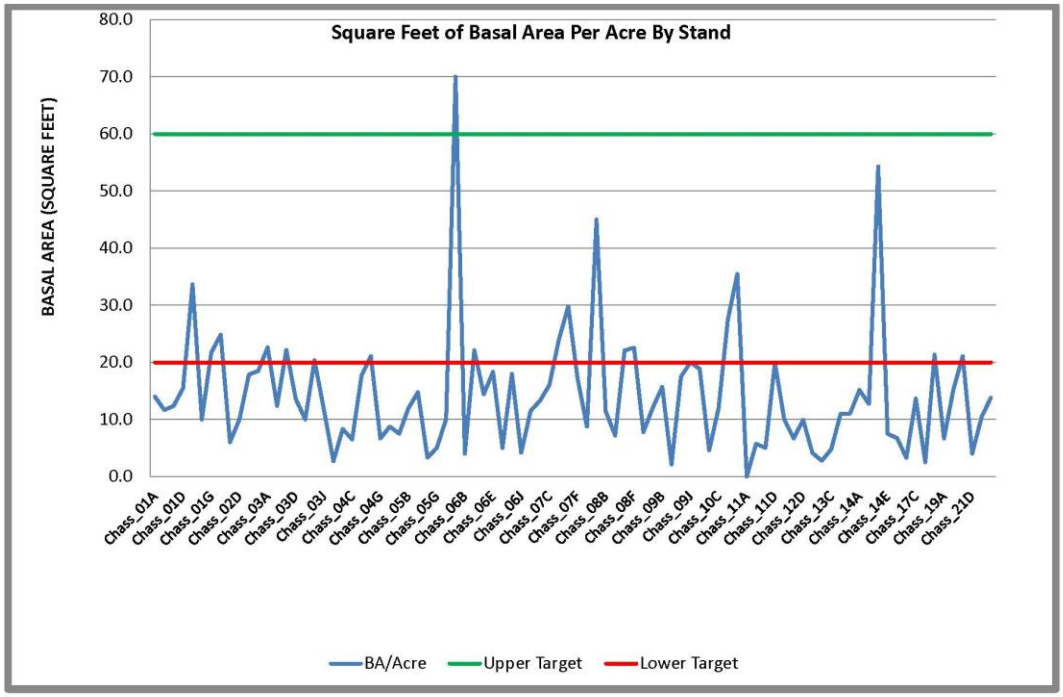
The timber inventoried is primarily longleaf pine (Pinus palustris) with some slash pine (Pinus elliottii) and sand pine (Pinus clausa); with significant amounts of hardwood in-growth. Most stands have low stocking of trees due to natural conditions and hot burns over time that has killed the trees and seedlings in the forest. Limited natural regeneration exists where there were openings in the understory and favorable conditions to support seed catch, germination and continued growth of the trees.

Table 1 indicates the percent of each pine species present across the site. Natural longleaf pine is the dominant pine tree species, followed by slash pine and sand pine.

Table 1. Pine Species Across the Chassahowitzka WMA

Misc Pine	Natural Longleaf	Natural Slash	Planted Longleaf	Planted Slash	Sand Pine
0.1%	58.9%	24.8%	0.1%	8.6%	7.5%

There are a number of measurement parameters that are used to measure and evaluate the characteristics of a forest such as diameter at breast height at 4.5' above the ground (dbh), total tree height, number of trees per acre, tons of merchantable wood fiber per acre, and basal area per acre (BA), as examples. Basal area is a key measurement in this situation as the FFWCC staff has defined the desired future forest in terms of desired basal area per acre. Simply put, basal area is the total cross sectional area of all of the trees on one acre of land, measured at 4.5' above the ground (dbh). FFWCC wants the future forests to contain 20 to 40 square feet of basal area per acre once the forest is mature. The following chart and table 2 shows the basal area of each pine stand (burn unit) measured on the Chassahowitzka WMA. Currently less than 15% of the pine stands are stocked at the minimum targeted basal area per acre.


Square Feet of Basal Area Per Acre By Stand
BASAL AREA (SQUARE FEET)
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Chass_01A
Chass_01D
Chass_01G
Chass_02D
Chass_03A
Chass_03D
Chass_03J
Chass_04C
Chass_04G
Chass_05B
Chass_05G
Chass_06B
Chass_06E
Chass_06J
Chass_07C
Chass_07F
Chass_08B
Chass_08F
Chass_09B
Chass_09J
Chass_10C
Chass_11A
Chass_11D
Chass_12D
Chass_13C
Chass_14A
Chass_14E
Chass_17C
Chass_19A
Chass_21D
BA/Acre
Upper Target
Lower Target

3

Table 2. BASAL AREA BY SPECIES AND BURN UNIT/STAND

Burn Unit/Stand	Misc Pine	Natural Longleaf	Natural Slash	Planted Longleaf	Planted Slash	Sand Pine	Grand Total
Chass_01A		14.0					14.0
Chass_01B		11.7					11.7
Chass_01C		12.4					12.4
Chass_01D		0.0	15.5				15.5
Chass_01E		30.6				3.1	33.6
Chass_01F		8.0	2.0				10.0
Chass_01G		17.0	2.0			2.7	21.7
Chass_02A		24.8					24.8
Chass_02C		6.0					6.0
Chass_02D		6.7	3.3				10.0
Chass_02E		7.5	0.4			10.0	17.9
Chass_02J		18.5					18.5
Chass_03A		22.6					22.6
Chass_03B		12.4				0.0	12.4
Chass_03C						22.2	22.2
Chass_03D		0.3	12.9			0.3	13.6
Chass_03E		10.0					10.0
Chass_03F		19.5	0.0			0.8	20.4
Chass_03J		11.7					11.7
Chass_04A		2.5	0.2				2.7
Chass_04B		8.3					8.3
Chass_04C		4.2	2.3				6.5
Chass_04D			16.7			1.0	17.7
Chass_04E		19.2				1.8	21.1
Chass_04G		5.6				1.1	6.7
Chass_04J		8.8					8.8
Chass_05A		2.5	5.0				7.5
Chass_05B		8.0	4.0				12.0
Chass_05D			12.6			2.1	14.7
Chass_05F		3.3				0.0	3.3

Table 3. BASAL AREA BY SPECIES AND BURN UNIT

Burn Unit/Stand	Misc Pine	Natural Longleaf	Natural Slash	Planted Longleaf	Planted Slash	Sand Pine	Grand Total
Chass_05G		2.5	0.6			1.9	5.0
Chass_05J		10.0					10.0
Chass_06A					70.0		70.0
Chass_06B		4.0					4.0
Chass_06C		20.9	1.2				22.1
Chass_06D		14.4					14.4
Chass_06E		16.7	1.7				18.3
Chass_06F		5.0					5.0
Chass_06G		4.0	14.0				18.0
Chass_06J		4.2					4.2
Chass_07A		10.1			1.4		11.5
Chass_07B		1.1	12.2			0.0	13.3
Chass_07C		16.0				0.0	16.0
Chass_07D		23.2	0.5			0.2	23.9
Chass_07E		14.5	12.0			3.3	29.8
Chass_07F		14.0	1.3			1.9	17.2
Chass_07G		4.7				4.0	8.7
Chass_08A		45.0					45.0
Chass_08B		6.4	5.0			0.0	11.4
Chass_08C		6.1		1.1			7.2
Chass_08D		21.3	0.2			0.6	22.1
Chass_08F		15.1	5.0			2.5	22.6
Chass_08J			5.9			1.9	7.8
Chass_09A		4.9	2.1		5.0		12.1
Chass_09B		10.0	4.3			1.4	15.7
Chass_09D		0.7	1.4				2.1
Chass_09E		15.0	2.5				17.5
Chass_09J		15.0	5.0				20.0
Chass_10A		4.1	10.6		4.1		18.9
Chass_10B			4.6				4.6

Table 4. BASAL AREA BY SPECIES AND BURN UNIT

Burn Unit/Stand	Misc Pine	Natural Longleaf	Natural Slash	Planted Longleaf	Planted Slash	Sand Pine	Grand Total
Chass_10C		12.0					12.0
Chass_10E		11.3	16.3			0.0	27.5
Chass_10G		18.0	14.0			3.5	35.5
Chass_11A			0.0				0.0
Chass_11B		5.7					5.7
Chass_11C			5.0				5.0
Chass_11D		16.7				3.3	20.0
Chass_12A		10.0	0.0				10.0
Chass_12B		6.4				0.3	6.7
Chass_12D		6.7				3.3	9.9
Chass_12J			2.5			1.6	4.1
Chass_13A		2.8					2.8
Chass_13C		1.9	2.9				4.8
Chass_13D		9.0				2.0	11.0
Chass_13J			1.7		8.6	0.7	11.0
Chass_14A		9.0	6.1				15.1
Chass_14C		0.9	11.8				12.7
Chass_14D	0.7	4.3	49.3				54.3
Chass_14E		1.7	4.2			1.7	7.5
Chass_15C		1.9	4.8				6.7
Chass_16C	1.0	1.0	1.3				3.3
Chass_17C			7.0		6.7		13.7
Chass_17D			2.5				2.5
Chass_18D			4.3			17.1	21.4
Chass_19A		3.3	3.3				6.7
Chass_19C			0.3		15.0		15.3
Chass_20D		10.0	11.1				21.1
Chass_21D		4.0					4.0
Chass_22A		10.0	0.4				10.4
Chass_23A		9.6	4.2				13.8
Grand Total	1.7	761.0	320.3	1.1	110.8	96.3	1291.2

Historical photos show changes in the stands over time. For example, Burn Unit 06 B is depicted in the following two aerial photos. The 1998 photo shows the Burn Unit 06B as being moderately stocked with trees and the 2015 photo shows very few trees. The 2016 cruise indicates 9 trees per acre of pines totaling 4sq. ft. of BA per acre.



1998 Photo



2015 Photo

The number of trees per acre is another measure of forest conditions and helps one determine if tree planting will be necessary to establish the future forest meeting the BA targets of 20-60 sq. ft. of BA/acre, or if natural regeneration from the seedfall from existing trees will suffice. Seed production from longleaf pines is highly variable from year-to-year and site-to-site. Because seeds are dispersed by wind, the majority of seeds fall within 66' of the base of the parent tree[1]. If there are not many trees on the site, there is an insufficient seed source for natural regeneration.

[1] Managing Longleaf Pine Habitat, A North Florida Landowner's Guide. Ober, Printiss & Friedel

The following tables show the average number of pine trees per acre present for each burn unit.

Table 5. TREES PER ACRE BY BURN UNIT/STAND

	Misc Pine	Natural Longleaf	Natural Slash	Planted Slash	Sand Pine	Grand Total
Chass_01A		18.4				18.4
Chass_01B		25.6				25.6
Chass_01C		25.5				25.5
Chass_01D			24.1			24.1
Chass_01E		44.6			7.1	51.7
Chass_01F		6.1	5.7			11.9
Chass_01G		37.5	1.9		2.6	42.0
Chass_02A		67.5				67.5
Chass_02C		17.2				17.2
Chass_02D		13.7	1.7			15.3
Chass_02E		11.7			21.9	33.6
Chass_02J		31.6				31.6
Chass_03A		53.7				53.7
Chass_03B		26.6				26.6
Chass_03C					19.0	19.0
Chass_03D		0.2	33.5		0.3	34.0
Chass_03E		16.3				16.3
Chass_03F		27.9				27.9
Chass_03J		19.1				19.1
Chass_04A		4.2				4.2
Chass_04B		17.1				17.1
Chass_04C		4.9	2.5			7.4
Chass_04D			57.0			57.0
Chass_04E		47.1			5.8	52.9
Chass_04G		6.1			2.5	8.6
Chass_04J		12.5				12.5
Chass_05A		2.3	19.7			22.1
Chass_05B		10.6	6.3			16.9
Chass_05D			31.9		3.2	35.1
Chass_05F		4.6				4.6

Table 6. TREES PER ACRE BY BURN UNIT/STAND

	Misc Pine	Natural Longleaf	Natural Slash	Planted Slash	Sand Pine	Grand Total
Chass_05G		2.6	0.3			2.9
Chass_05J		23.0				23.0
Chass_06A				54.5		54.5
Chass_06B		8.9				8.9
Chass_06C		43.5				43.5
Chass_06D		22.9				22.9
Chass_06E		20.3	1.2			21.5
Chass_06F		3.2				3.2
Chass_06G		3.1	18.2			21.3
Chass_06J		3.8				3.8
Chass_07A		8.2		7.3		15.5
Chass_07B		1.4	10.1			11.5
Chass_07C		29.6				29.6
Chass_07D		63.4	1.1		0.3	64.7
Chass_07E		26.3	18.4		5.1	49.8
Chass_07F		19.7	3.7		4.9	28.3
Chass_07G		4.0			7.3	11.3
Chass_08A		69.2				69.2
Chass_08B		6.3	4.5			10.9
Chass_08C		9.3				9.3
Chass_08D		42.5	0.2		1.2	44.0
Chass_08F		17.4	13.1		0.9	31.4
Chass_08J			8.3		5.9	14.2
Chass_09A		5.1	2.2	7.4		14.7
Chass_09B		11.7	15.9		0.8	28.4
Chass_09D		0.4	5.3			5.6
Chass_09E		23.0	2.0			25.1
Chass_09J		30.7	4.3			35.0

Table 7. TREES PER ACRE BY BURN UNIT/STAND

	Misc Pine	Natural Longleaf	Natural Slash	Planted Slash	Sand Pine	Grand Total
Chass_10A		4.8	6.6	5.1		16.4
Chass_10B			2.4			2.4
Chass_10C		44.0				44.0
Chass_10E		12.4	25.1			37.5
Chass_10G		23.8	19.1		5.0	47.9
Chass_11B		9.7				9.7
Chass_11C			2.3			2.3
Chass_11D		40.3			5.1	45.4
Chass_12A		6.5				6.5
Chass_12B		11.1			1.0	12.0
Chass_12D		12.6				12.6
Chass_12J			7.2			7.2
Chass_13A		3.1				3.1
Chass_13C		2.0	4.2			6.2
Chass_13D		9.1			11.1	20.1
Chass_13J			3.4	9.9	0.2	13.6
Chass_14A		10.6	6.1			16.8
Chass_14C		6.7	37.3			44.0
Chass_14D	0.7	4.8	73.5			79.0
Chass_14E		0.9	4.1		6.2	11.3
Chass_15C		8.4	10.6			19.1
Chass_16C	0.7	0.9	1.1			2.7
Chass_17C			5.0	7.2		12.2
Chass_17D			3.8			3.8
Chass_18D			10.4		25.3	35.6
Chass_19A		17.0	1.9			18.9
Chass_19C				14.0		14.0
Chass_20D		11.8	10.4			22.2
Chass_21D		3.6				3.6
Chass_22A		5.9				5.9
Chass_23A		26.5	6.1			32.6

The following tables indicate the number of seedlings per acre by species per Burn Unit. These are the very young tree seedlings that are less than 1" in diameter.

Table 8. NUMBER OF SEEDLINGS PER ACRE

	Natural Longleaf	Natural Slash	Planted Slash	Sand Pine
Chass_01B	31			
Chass_01C	6			
Chass_01D	35	194		
Chass_01E	5			
Chass_02J	14			
Chass_03B	19			3
Chass_03C				300
Chass_03D		3		
Chass_03F		14		
Chass_04A	8			
Chass_04B	33			
Chass_04E				6
Chass_05A		175		
Chass_05B	10			
Chass_05F	11			22
Chass_06A			400	
Chass_06J	8			
Chass_07A	14			
Chass_07B				11
Chass_07C				20
Chass_07D	21	4		7
Chass_07E		5		10
Chass_07F	53			47
Chass_07G	18			71
Chass_08A	14			
Chass_08B				7
Chass_08D	14			18
Chass_08J				118
Chass_09A			7	
Chass_09J	75			
Chass_10A	18	29		
Chass_10B		20		
Chass_10E				38
Chass_11A		100		

Table 9. NUMBER OF SEEDLINGS PER ACRE

	Natural Longleaf	Natural Slash	Planted Slash	Sand Pine
Chass_11B	3			
Chass_11C		30		
Chass_11D				100
Chass_12A		133		
Chass_12J				350
Chass_13C		24		
Chass_13D				20
Chass_14A		4		
Chass_16C		20		
Chass_17C		11		
Chass_18D				211
Chass_19C		150		
Chass_20D		600		
Chass_23A		67		

Seedlings are the 'babies' of the forest where saplings are the 'toddlers' of the forest and saplings range in diameter from 1" to 4.5" dbh. Both seedlings and saplings are fragile and of all of the pine species present in the Chassahowitzka WMA, longleaf pines are the most fire tolerant while young. **Longleaf is fire resistant, except in the first year and when ½' to 3 feet tall[2].** Slash and sand pine are not fire resistant as seedlings or saplings. The following tables indicate the number of saplings per acre identified in the timber cruise. While there may be slash pine and sand pine saplings and seedlings present, most will not survive due to the aggressive burning program employed at the WMA. The longleaf seedlings and saplings may not survive either if they are burned in the first year or when they are ½' to 3' tall.

Most stands/burn units had variability in the forest conditions and ground conditions. There were many stands where palmetto and/or scrub oaks and larger oaks dominate the landscape preventing longleaf pine trees or wildlife forage from growing.

The following tables indicate the number of saplings per acre cruised, organized by burn unit and species.

[2] Silvics of Forest Trees of the United States. Agriculture Handbook No. 271, USDA 1965

Table 10. SAPLINGS PER ACRE BY BURN UNIT/STAND

	Natural Longleaf	Natural Slash	Planted Longleaf	Sand Pine
Chass_01B	8			
Chass_01D	6	18		
Chass_01E	26			5
Chass_01G				20
Chass_02A	64			
Chass_02C	25			
Chass_02E		8		33
Chass_02J	5			
Chass_03A	37			
Chass_03B	16			
Chass_03C				400
Chass_03D		22		
Chass_03F				38
Chass_04A		8		
Chass_04B	33			
Chass_04C	8			
Chass_04D				22
Chass_04E	17			33
Chass_05G				44
Chass_06C		55		
Chass_06D	9			
Chass_07A	14			

Table 11. SAPLINGS PER ACRE BY BURN UNIT/STAND

	Natural Longleaf	Natural Slash	Planted Longleaf	Sand Pine
Chass_07D	30			
Chass_07E		60		155
Chass_07F				7
Chass_07G				94
Chass_08C	45		27	
Chass_08D	12			2
Chass_08F	17			17
Chass_08J				6
Chass_09A	7			
Chass_10A		6		
Chass_10B		30		
Chass_10G				10
Chass_11B	3			
Chass_11C		55		
Chass_12B	3			
Chass_12D				67
Chass_12J				150
Chass_13A	9			
Chass_13C		5		
Chass_13D	20			
Chass_14A	8	129		
Chass_14D		7		
Chass_14E		17		
Chass_15C		13		
Chass_16C		20		
Chass_17C		28		
Chass_18D		11		244
Chass_19C		50		
Chass_20D		50		
Chass_22A		20		
Chass_23A	33	67		

Merchantable timber are trees that can be harvested and sold to wood using markets now. There must be at least one load of merchantable wood per acre (~25-30 tons/acre) to be able to feasibly harvest and sell the timber. The following tables indicate the number of tons of merchantable wood per acre cruised, organized by burn unit and species.

Table 12. MERCHANTABLE TONS PER ACRE

	Misc Pine	Natural Longleaf	Natural Slash	Planted Slash	Sand Pine	Grand Total
Chass_01A		18				18
Chass_01B		26				26
Chass_01C		25				25
Chass_01D			24			24
Chass_01E		45			7	52
Chass_01F		6	6			12
Chass_01G		37	2		3	42
Chass_02A		67				67
Chass_02C		17				17
Chass_02D		14	2			15
Chass_02E		12			22	34
Chass_02J		32				32
Chass_03A		54				54
Chass_03B		27				27
Chass_03C					19	19
Chass_03D		0	34		0	34
Chass_03E		16				16
Chass_03F		28				28
Chass_03J		19				19
Chass_04A		4				4
Chass_04B		17				17
Chass_04C		5	2			7
Chass_04D			57			57
Chass_04E		47			6	53
Chass_04G		6			3	9
Chass_04J		12				12
Chass_05A		2	20			22
Chass_05B		11	6			17
Chass_05D			32		3	35
Chass_05F		5				5
Chass_05G		3	0			3
Chass_05J		23				23
Chass_06A				55		55
Chass_06B		9				9
Chass_06C		43				43

Table 13. MERCHANTABLE TONS PER ACRE

	Misc Pine	Natural Longleaf	Natural Slash	Planted Slash	Sand Pine	Grand Total
Chass_06D		23				23
Chass_06E		20	1			22
Chass_06F		3				3
Chass_06G		3	18			21
Chass_06J		4				4
Chass_07A		8		7		15
Chass_07B		1	10			12
Chass_07C		30				30
Chass_07D		63	1		0	65
Chass_07E		26	18		5	50
Chass_07F		20	4		5	28
Chass_07G		4			7	11
Chass_08A		69				69
Chass_08B		6	5			11
Chass_08C		9				9
Chass_08D		43	0		1	44
Chass_08F		17	13		1	31
Chass_08J			8		6	14
Chass_09A		5	2	7		15
Chass_09B		12	16		1	28
Chass_09D		0	5			6
Chass_09E		23	2			25
Chass_09J		31	4			35
Chass_10A		5	7	5		16
Chass_10B			2			2
Chass_10C		44				44
Chass_10E		12	25			38
Chass_10G		24	19		5	48
Chass_11B		10				10
Chass_11C			2			2
Chass_11D		40			5	45
Chass_12A		7				7
Chass_12B		11			1	12

Table 14. MERCHANTABLE TONS PER ACRE

	Misc Pine	Natural Longleaf	Natural Slash	Planted Slash	Sand Pine	Grand Total
Chass_12D		13				13
Chass_12J			7			7
Chass_13A		3				3
Chass_13C		2	4			6
Chass_13D		9			11	20
Chass_13J			3	10	0	14
Chass_14A		11	6			17
Chass_14C		7	37			44
Chass_14D	1	5	74			79
Chass_14E		1	4		6	11
Chass_15C		8	11			19
Chass_16C	1	1	1			3
Chass_17C			5	7		12
Chass_17D			4			4
Chass_18D			10		25	36
Chass_19A		17	2			19
Chass_19C				14		14
Chass_20D		12	10			22
Chass_21D		4				4
Chass_22A		6				6
Chass_23A		27	6			33
					AVERAGE	24

Timber Stand Stocking:

The timber cruise indicated that most stands had current basal areas that fell below the minimum targeted basal area (20 Sq. Ft. /acre) as specified in the FFWCC Objectives defined in the 'Scope of Work" document. The stands range from zero to 54.3 square feet of basal area/acre, with the majority of the stands running below twenty square feet of basal area. Due to the already low stocking in most of the stands, cooler prescribed burns are recommended going forward so that the natural regeneration and the remaining mature timber is not killed by the fire and that the new planted seedlings will have a better chance of surviving. This will promote the Age Distribution desired.

Most of the stands/burn blocks do not have enough merchantable wood to be logged now. Since approximately 25-30 tons of wood/acre are needed to operationally log, the stands/burn units would need to have at least 70 tons of timber per acre before thinning so

there would be enough residual trees to support natural regeneration in the future. There was an average of 24 tons/acre of merchantable timber across all stands/burn blocks.

Following are photos of some of the stands/burn blocks.

PHOTOS OF CHASSAHOWITZKA WILDLIFE MANAGEMENT AREA FORESTS



Palmetto, Oaks and Grasses



Oaks and Grasses



Scatted Pines With Thick Palmettos



Scattered Pines With Grasses And Palmetto



Scattered Mature Pines and Young Regeneration in Right Foreground



Tall Oaks



Burn Kills Many Mature Pines And 'Knocks Back' Palmettos



Natural Seed Source Reduced Due To Hot Fire



Ready For Planting Longleaf



Past Hot Fire Thinned the Forest As Shown By The Burned Dead Snags Standing In The Background



Young Natural Pines And Palmetto



Moderately Stocked Forest



Plenty of Sunlight and Soil Exposed



Palmettos Bouncing Back, Seed Source Reduced Due To Burned Mature Trees



Young Regeneration Under Seed Trees



Open Forest Ready for Planting After The Next Control Burn

FOREST MANAGEMENT PLAN

Desired Future Conditions:
The staff at the Florida Fish and Wildlife Conservation Commission wants the future forests on the Chassahowitzka Wildlife Management Area to be naturally regenerating upland pine communities, within a basal area range of 20-60 ft^2/acre, dominated by an overstory of longleaf pine (Pinus palustris) and favoring an old growth age distribution.

The short-term objective of the Forest Management Recommendations is to develop a plan for the next 20 years to thin or clear cut existing stands, plant longleaf pine where appropriate, promote natural regeneration of other historical pine species, and create more natural forest conditions. Sand Pine will be eliminated. Mature stands will be created, and an open over story canopy will enable diverse ground cover, such that prescribed fire can be used to promote more historical conditions. The ultimate objective is to restore the historical forest species mixes as follows.

Mesic Flatwoods were historically a mixture of slash pine and longleaf pine, with a typical understory of gallberry, palmetto, dwarf live oak, and wiregrass. The targeted basal area for Mesic Flatwoods per FFWCC after thinnings is 20-60 square feet per acre for diameter at breast height (dbh) of a mixture of slash and longleaf pine (where longleaf would have naturally occurred).

Scrubby Flatwoods were historically a low density of longleaf pine, slash pine, sand live oak, scrub oaks, myrtle oak, Chapman's oak, over saw palmetto and wiregrass. The targeted basal area for Scrubby Flatwoods after thinning is 20-60 square feet per acre for diameter at breast height (dbh) of a mixture of slash and longleaf pine.

Sandhills were historically characterized by longleaf pine, turkey oak, bluejack oak, sand live oak, sand post oak, and wiregrass. Smilax is the most common woody vine that occurs in the sandhills. The targeted basal area for Sandhills after thinnings is 20-60 square feet per acre for diameter at breast height (dbh) of longleaf pine, while allowing sufficient needle cast or other fuels to carry a prescribed fire through the stand.

Forest Management Recommendations:
Since a major objective of this work is to restore longleaf pine to stands, sites that are conducive to planting longleaf pine immediately were addressed first in the recommendations.

The management recommendations were grouped in five-year blocks of time or **Action Years**, specifically **1**(2017-2021), **2**(2022-2026), **3**(2027-2031), **and 4**(2032-2036). The stands are designed to be operational in size, while meeting the overall objectives to restore more natural forest communities over time. Operational (in this context) means conditions favorable to conducting a commercially viable timber sale and reforestation treatments, (e.g. herbicide or tree planting).

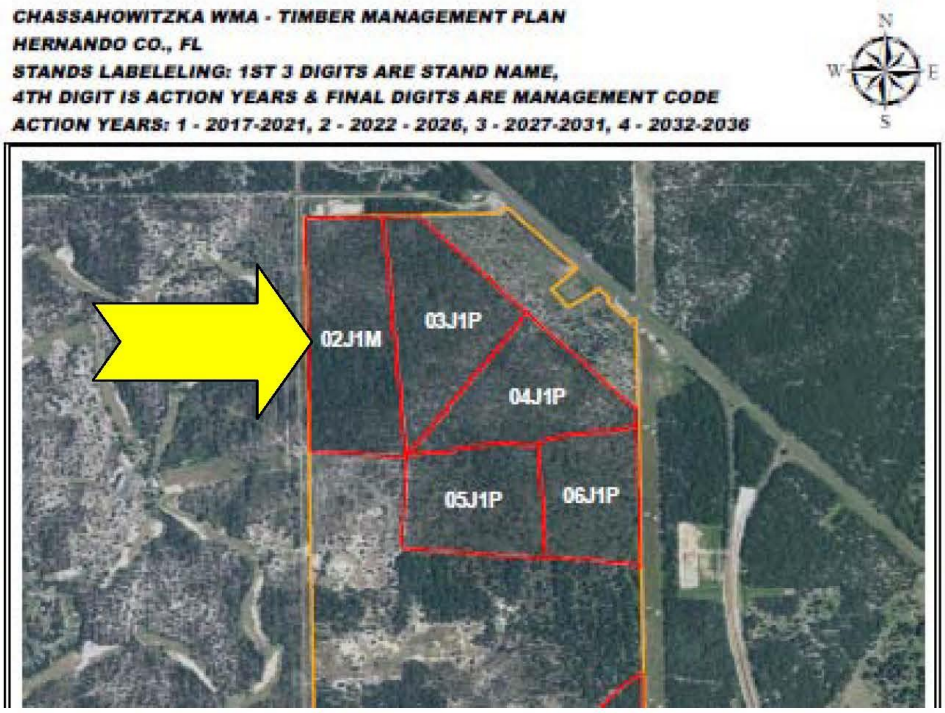
The forest management **Treatment Codes (CHBP, SCHBP, HBP, M, P, FR & T)** recommended in this report are tailored to the condition of the forest when inventoried in 2016. The detailed Treatment Descriptions are described in Table 15 on the next Page.

TREATMENT RECOMMENDATIONS FOR RESTORING LONGLEAF PINE FORESTS IN THE CHASSAHOWITZKA WMA		
Short Description	**Descriptive Map Treatment Code**	**Detailed Description**
Prescription for site with few or no longleaf pines and 6'+ tall brush and/or dense oaks	**CHBP**	Chop, grind or mow all acres in the burn block avoiding large oaks, longleaf or slash pines, and young pine regeneration. All sand pine should be removed in this process. Allow the area to re-sprout for at least 3 months, then spray with a medium to hot mix of herbicide chemicals appropriate for the targeted species of underbrush and hardwoods (August or September). Wait at least 60 days so the herbicide can be effective, then control burn the site. Plant 400 - 500 containerized longleaf seedlings per acre between November 1 and March 1. Avoid control burning the new seedlings for the first year and when the trees are 1/2' to 3' high as seedlings in those phases are susceptible to being killed by fire. Utilize mechanical means to reduce understory if control burning is not possible due smoke sensitivity or other issues.
Prescription for site with lightly stocked stands of longleaf pines and 6'+ tall brush and/or oaks	**SCHBP**	Chop, grind or mow strips approximately 40' wide on approximately 50% of the acres in the burn block avoiding large oaks, longleaf or slash pines, and young pine regeneration. All sand pine should be removed in this process. Allow the area to re-sprout for at least 3 months, then spray with a medium to hot mix of herbicide chemicals on the chopped/mowed strip appropriate for the targeted species of underbrush and hardwoods (August or September). Wait at least 60 days so the herbicide can be effective, then control burn the site. Plant 300-400 containerized longleaf seedlings per acre between November 1 and March 1. Avoid control burning the new seedlings for the first year and when the trees are 1/2' to 3' high as seedlings in those phases are susceptible to being killed by fire. Utilize mechanical means to reduce understory if control burning is not possible due smoke sensitivity or other issues.
Prescription for site with lightly stocked stands of longleaf pines and <6' tall brush and/or oaks	**HBP**	If the understory is less than 6' high, the area can be sprayed with a medium to hot mix of herbicide chemicals appropriate for the targeted species of underbrush and hardwoods (August or September). Wait for at least 60 days so the herbicide can be effective, then control burn the site. Plant 400 - 500 containerized longleaf seedlings per acre between November 1 and March 1. Avoid control burning the new seedlings for the first year and when the trees are 1/2' to 3' high as seedlings in those phases are susceptible to being killed by fire. Utilize mechanical means to reduce understory if control burning is not possible due smoke sensitivity or other issues.
Prescription for maintain current forest conditions	**M**	Maintain natural regeneration forest conditions by mowing or control burning with a properly timed fire that is cool enough to protect the young pine regeneration as well as the mature trees in the forest. Longleaf pine cones take two years to mature and drop seed, therefore when mature longleaf trees begin to grow male and female strobili begin planning to control burn the stand under the longleaf the next year. The second year the cones grow from 1" long in February to 6 -8" long in May or June. Plan to burn in early September to expose the mineral soil. The Seedfall usually occurs September - December.
Prescription for sites with exposed mineral soil and very limited shade	**P**	Sites that are generally free of dense hardwood and scrub can be reforested with very little cultural treatment. Plant containerized longleaf seedlings in openings that receive full sun when mineral soil is exposed through fire. 400-500 containerized longleaf seedlings per acre are recommended for sites that do not contain trees and 300-400 containerized seedlings per acre are recommended for sites that do contain some trees. Avoid control burning the new seedlings for the first year and when the trees are 1/2' to 3' high as seedlings in those phases are susceptible to being killed by fire. Utilize mechanical means to reduce understory if control burning is not possible due smoke sensitivity or other issues.
Prescription for fuel reduction before burning high fire hazard sites	**FR**	Sites that contain heavy understory, have not been burned in a long time, or are adjacent to areas where the risk of escape fire is problematic should be mechanically treated prior to burning. The site may be partially mowed, chopped, ground (i.e. gyro-trac) etc. to reduce the amount of vegetative fuel prior to burning. The burning should be done in the cooler/dormant season to reduce the risk of catastrophic loss of trees in the forest as well as reducing the risk of the control burn escaping.
Prescription for thinning the timber	**T**	Once the forest contains at least 90 square feet of basal area per acre, the site can be thinned by logging. All sand pine should be removed in this process. Any less than 90 square feet of basal area will not yield enough wood to make it operationally feasible to thin the timber. 50% of the trees may be removed and they should be distributed across the site.

Each polygon within the shape files will include a Treatment Recommendation that corresponds to one of the Treatments described in detail above and an associated Action Year Code. An Example is included on the next page.

The management recommendations were grouped in four 5-year blocks of time or **Action Years**, specifically **1**(2017-2021), **2**(2022-2026), **3**(2027-2031), **and 4**(2032-2036).
The forest management **Treatment Codes (CHBP, SCHBP, HBP, M, P, FR & T)** recommended in this report are tailored to the condition of the forest when inventoried in 2016.

Each Burn Unit/Stand will have a code that identifies the BURN UNIT, the ACTION YEAR and the TREATMENT CODE recommendation. Some of the burn units have been further sub-divided if the burn unit needed different treatment within the block. For Example, the yellow arrow points to the code in the 02J Burn Unit. The 02J stands for the **Burn Unit Number**, the 1 stands for **Action Years 2017-2021**, and the M stands for the Treatment of **Maintain Current Forest Conditions.**



TREATMENT RECOMMENDATIONS

The forest management Treatments recommended in this report are tailored to the conditions of the forest when inventoried in 2016. Photos will be included with each recommendation so the reader can better visualize the situation and need for the treatment.

CHBP : Prescription for site with few or no longleaf pines and 6'+ tall brush and/or dense oaks - These sites contain thick under brush and oaks taller than 6' in height. They have choked out most pines and longleaf seedlings cannot live under these circumstances. The hardwoods and underbrush must be removed to establish longleaf pines on the site. The site should be Chopped, ground or mowed avoiding large oaks, longleaf or slash pines, and young pine regeneration that may exist. Allow the treated area to re-sprout for at least 3 months, and then spray with a medium to hot mix of herbicide chemicals appropriate for the targeted species of underbrush and hardwoods (August or September). Wait at least 60 days so the herbicide can be effective, then control burn the site. Plant 400 - 500 containerized longleaf seedlings per acre between November 1 and March 1. **Avoid control burning the new longleaf seedlings for the first year and when the trees are 1/2' to 3' high as seedlings in those phases are susceptible to being killed by fire.**[3] Utilize mechanical means to reduce understory if control burning is not possible due smoke sensitivity or other issues. **The code CHBP stands for chop-herbicide-burn-plant.**

The following photos are examples of the type sites that should be treated in this manner.



[3] Silvics of Forest Trees of the United States. Agriculture Handbook No. 271, USDA 1965





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SCHBP : Prescription for site with lightly stocked stands of longleaf pines and 6'+ tall brush and/or oaks - These sites contain lightly stocked stands of longleaf pines with thick under brush and/or oaks taller than 6' in height. Longleaf seedlings cannot live under these circumstances. Some of the hardwoods and underbrush must be removed to establish more longleaf pines on the site. Chop, grind or mow strips approximately 40' wide on approximately 50% of the acres in the burn block avoiding large oaks, longleaf or slash pines, and young pine regeneration. Allow the area to re-sprout for at least 3 months, and then spray with a medium to hot mix of herbicide chemicals on the chopped/mowed strip appropriate for the targeted species of underbrush and hardwoods (August or September).

One pass with a tractor spraying herbicide will spray a 40' wide strip. That is the reason for recommending a 40' wide chopped path.

Wait at least 60 days so the herbicide can be effective, then control burn the site. Plant 300-400 containerized longleaf seedlings per acre between November 1 and March 1. **Avoid control burning the new seedlings for the first year and when the trees are 1/2' to 3' high as seedlings in those phases are susceptible to being killed by fire.** [4] Utilize mechanical means to reduce understory if control burning is not possible due smoke sensitivity or other issues.

The code SCHBP stands for strip chop-herbicide-burn-plant.

The following photos are examples of the type sites that should be treated in this manner.



[4] Silvics of Forest Trees of the United States. Agriculture Handbook No. 271, USDA 1965





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HBP : Prescription for site with few or no longleaf pines and <6' tall brush and/or dense and/or oaks - If the understory is less than 6' high, the area can be sprayed with a medium to hot mix of herbicide chemicals appropriate for the targeted species of underbrush and hardwoods (August or September). Wait for at least 60 days so the herbicide can be effective, then control burn the site. Plant 400 - 500 containerized longleaf seedlings per acre between November 1 and March 1. **Avoid control burning the new seedlings for the first year and when the trees are 1/2' to 3' high as seedlings in those phases are susceptible to being killed by fire.**[5] Utilize mechanical means to reduce understory if control burning is not possible due smoke sensitivity or other issues.

The code HBP stands for herbicide-burn-plant.

The following photos are examples of the type sites that should be treated in this manner.



[5]Silvics of Forest Trees of the United States. Agriculture Handbook No. 271, USDA 1965





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M: Prescription for Maintain Current Forest Conditions - Maintain natural regeneration forest conditions by mowing or control burning with a properly timed fire that is cool enough to protect the young pine regeneration as well as the mature trees in the forest. Longleaf pine cones take two years to mature and drop seed, therefore when mature longleaf trees begin to grow male and female strobili, begin planning to control burn the stand under the longleaf the next year.



Longleaf Pine Strobili

The second year the cones grow from 1" long in February to 6"-8" long in May or June. Burn in early September to expose the mineral soil. The Seedfall usually occurs September through December. **Avoid control burning the new seedlings for the first year after they sprout and when the trees are 1/2' to 3' high as seedlings in those phases are susceptible to being killed by fire.**[8]

The code M stands for Maintain Current Forest Conditions.

The following photos are examples of the type sites that should be treated in this manner.

[8]Silvics of Forest Trees of the United States. Agriculture Handbook No. 271, USDA 1965





P: Prescription For Sites With Exposed Mineral Soil And Very Limited Shade - Sites that are generally free of dense hardwood and scrub can be reforested with very little cultural treatment. Plant containerized longleaf seedlings in openings that receive full sun when mineral soil is exposed through fire. 400-500 containerized longleaf seedlings per acre are recommended for sites that do not contain trees and 300-400 containerized seedlings per acre are recommended for sites that do contain some trees. **Avoid control burning the new seedlings for the first year after they sprout and when the trees are 1/2' to 3' high as seedlings in those phases are susceptible to being killed by fire.**[7] Utilize mechanical means to reduce understory if control burning is not possible due smoke sensitivity or other issues.

The code P stands for Plant in openings after burning.

The following photos are examples of the type sites that should be treated in this manner.



[7]Silvics of Forest Trees of the United States. Agriculture Handbook No. 271, USDA 1965





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FR: Prescription For Fuel Reduction Before Burning High Fire Hazard Sites - Sites that contain heavy understory, have not been burned in a long time, or are adjacent to areas where the risk of escape fire is problematic should be mechanically treated prior to burning. The site may be partially mowed, chopped, ground (i.e. gyro-trac) etc. to reduce the amount of vegetative fuel prior to burning. The burning should be done in the cooler/dormant season to reduce the risk of catastrophic loss of trees in the forest as well as reducing the risk of the control burn escaping.

The code FR stands for Fuel Reduction.

The following photos are examples of the type sites that should be treated in this manner.







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T: Prescription for thinning the timber - Once the forest contains at least 90 square feet of basal area per acre, the site can be thinned by logging. Any fewer square feet of basal area will not yield enough wood to make it operationally feasible to thin the timber and still have a viable, naturally regenerating forest left. Fifty percent of the trees may be removed and should be distributed across the site.

The Forestry Company ran several growth and yield model scenarios to develop the harvest prescription above using Site Index information gathered in the field and the Sims09 Growth and Yield Modeling software to project future growth.

Dominant and Co-dominant trees were measured in the field for total height and tree age. An increment borer was used to extract cores of wood from the tree to count the rings of the tree to determine its age. That data was graphed on Longleaf Site Index Curves[8] to determine the Site Index to use in the Sims Growth and Yield Modeling. Based on this data The Forestry Company used a Site Index of 55 in its modeling.



Measuring Total Tree Height

[8] Schumacher and Coile 1960



Coring a Tree to Determine Its Age

SITE INDEX CURVES FOR LONGLEAF PINE

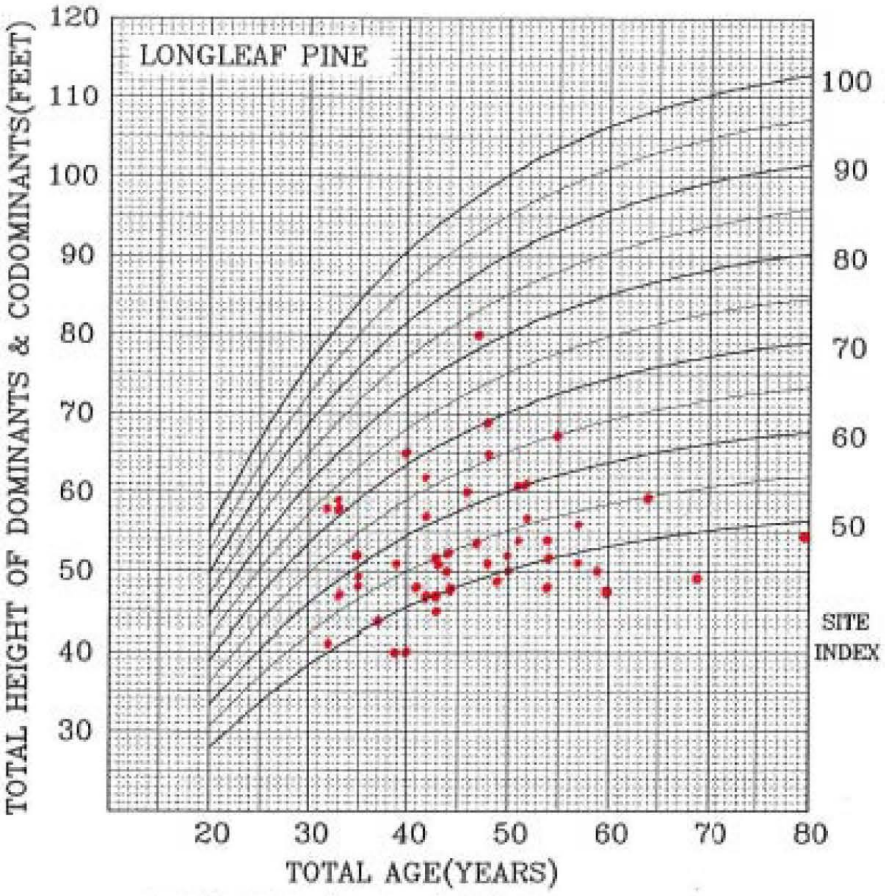


Figure 93.—Longleaf pine (Schumacher and Coile 1960)
Atlantic Coastal Plain
368 plots having 8 dominant and codominant trees on each plot
Total height and total age, anamorphic, logarithm equation
Convert d.b.h. age to total age by adding years according to site index (BH = 0.0):

SI:	50	60	65-95	96+
Years:	8	6	5	4

	b_1	b_2	b_3	b_4	b_5	R^2	SE	Maximum difference
H	1.1672	1.0010	-0.0459	1.3460	0.0204	0.99	1.15	3.2
SI	0.7948	1.0171	-0.0470	-2.1964	-0.0864	0.99	1.15	4.2

Growth and Yield Modeling

The Forestry Company ran growth and yield models for longleaf containerized seedling plantings of 300 trees per acre, 400 trees per acre and 500 trees per acre. We assumed a 70% survival rate in the first year. The model predicts natural mortality for the historical data measured over time. The writer believes the mortality would be higher in the WMA due to the aggressive burning program and visible signs of fire mortality observed in the field. This cannot be changed in the model. We used a Site Index of 55 based on the field measurements. We input the raw data and the computer model predicts the trees per acre, tons of wood and basal area expected over time. The Sims Model Results are shown on the following pages.

Please refer to the Sims Model on the next page relating to this explanation. You will see that the model predicts that when 400 longleaf containerized seedlings are planted per acre, at age 20 there is expected to be approximately 179 trees per acre, 89.5 ft^2 of Basal Area and 59.1 tons of wood per acre. This is just enough wood to bring a logging crew in to thin. The logging crew would remove 50% of the volume and the remaining forest will be in the mid range of FFWCC's basal area target. If burns remove more of the trees than predicted by the model at age 20, the FFWCC should allow the forest to grow longer (growing more basal area) before thinning.

The following table shows the number of trees/acre required at various diameters (dbh) to provide the target basal areas. This table can be used to determine when to thin if the actual field conditions vary significantly from the model predictions due to additional mortality.

The Forestry Company recommends planting 400 longleaf trees per acre. Given normal mortality, the stand should have enough wood to be thinned in 20 years, resulting in a forest within the range of basal area desired by FFWCC.

HYPOTHETICAL STAND CHARACTERISTICS

ON ONE ACRE (43,560 SQ FT.)

Number of trees needed to reach a given BA if all trees were the same dbh

BASAL AREA/ACRE	6" dbh TREES	8" dbh TREES	10" dbh TREES	13" dbh TREES
20	102	57	37	22
30	153	86	55	33
40	204	115	73	43
50	255	143	92	54
60	306	172	110	65
70	357	201	128	76
80	407	229	147	87
90	458	258	165	98
100	509	286	183	108

Predicted Tree Growth When 400 Longleaf Pine Trees Are Planted Per Acre at Chassahowitzka WMA

4/29/2016

Stand Identification

Client Name	FWC Chassahowitzka WMA	State	Florida
Purchase Unit	Chassahowitzka WMA	County	Hernando
Tract Name	Hommosassa Tract	Cover Type	Pine Stand
Compartment	Hypothetical Future Stand	Stand Origin	Planted
Stand Name	400 trees per acre	Phys. Region	Lower CP
Acres	10	Estab. Date	1/1/2016
Soil Group	Unknown	Species : Model	Longleaf Pine:6007
Forest Type	PinePlt_premerch	Site Index	55

Regime ID: Chassahowitzka 400

70% survival when planted in forest — Yield Unit: OB Green Tons

Year	Age	Thinning tatus	Dom Ht (feet)	Trees/ Acre	BA/ Acre	QMD (inches)	Total Yield	Topwooc Yield	Prod1 Yield	Prod2 Yield	Prod3 Yield
2016	0		0.0	280.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	1		0.0	196.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	2		0.0	193.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2019	3		0.0	190.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2020	4		0.0	187.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2021	5		12.7	184.5	8.2	2.9	0.0	0.0	0.0	0.0	0.0
2022	6		15.6	184.4	12.2	3.5	0.0	0.0	0.0	0.0	0.0
2023	7		18.5	184.2	16.8	4.1	1.6	0.0	1.6	0.0	0.0
2024	8		21.3	184.0	22.0	4.7	4.9	0.0	4.9	0.0	0.0
2025	9		24.0	183.8	27.7	5.3	8.7	0.0	8.7	0.0	0.0
2026	10		26.7	183.5	33.7	5.8	12.5	0.0	12.5	0.0	0.0
2027	11		29.2	183.2	39.9	6.3	16.4	0.0	16.4	0.0	0.0
2028	12		31.7	182.9	46.1	6.8	20.6	0.0	20.6	0.0	0.0
2029	13		34.0	182.5	52.3	7.2	25.1	0.1	24.7	0.2	0.0
2030	14		36.3	182.1	58.3	7.7	29.7	1.0	26.8	1.9	0.0
2031	15		38.4	181.7	64.2	8.0	34.6	3.0	25.3	6.3	0.0
2032	16		40.5	181.2	69.8	8.4	39.5	5.3	21.9	12.3	0.0
2033	17		42.4	180.7	75.1	8.7	44.4	7.3	18.7	18.5	0.0
2034	18		44.3	180.2	80.2	9.0	49.4	8.6	16.5	24.3	0.0
2035	19		46.1	179.6	85.0	9.3	54.3	9.4	15.3	29.5	0.0
2036	20		47.8	179.0	89.5	9.6	59.1	9.9	14.9	34.3	0.0
2037	21		49.4	178.4	93.7	9.8	63.9	10.2	14.9	38.5	0.2
2038	22		50.9	177.7	97.7	10.0	68.5	10.6	15.1	41.8	1.0
2039	23		52.3	177.0	101.3	10.2	72.9	11.1	15.3	43.7	2.8
2040	24		53.7	176.2	104.8	10.4	77.2	11.9	15.4	44.0	5.9
2041	25		55.0	175.4	108.0	10.6	81.4	12.9	15.4	42.9	10.2
2042	26		56.2	174.6	111.0	10.8	85.4	14.0	15.3	40.9	15.2
2043	27		57.4	173.8	113.8	11.0	89.2	15.2	15.1	38.3	20.6
2044	28		58.5	172.9	116.4	11.1	92.8	16.2	14.9	35.4	26.2
2045	29		59.5	172.1	118.8	11.2	96.3	17.2	14.8	32.5	31.8
2046	30		60.5	171.1	121.0	11.4	99.7	18.1	14.6	29.7	37.2
2047	31		61.5	170.2	123.1	11.5	102.8	18.9	14.5	27.1	42.4
2048	32		62.3	169.3	125.1	11.6	105.8	19.5	14.4	24.6	47.3
2049	33		63.2	168.3	126.9	11.8	108.7	20.1	14.3	22.4	51.9
2050	34		64.0	167.3	128.6	11.9	111.4	20.5	14.2	20.4	56.2
2051	35		64.7	166.3	130.1	12.0	113.9	20.9	14.2	18.5	60.3

Predicted Tree Growth When 300 Longleaf Pine Trees Are
4/29/2016

Stand Identification

Client Name	FWC Chassahowitzka WMA	State	Florida
Purchase Unit	Chassahowitzka WMA	County	Hernando
Tract Name	Hommosassa Tract	Cover Type	Pine Stand
Compartment	Hypothetical Future Stand	Stand Origin	Planted
Stand Name	300 tpa	Phys. Region	Lower CP
Acres	10	Estab. Date	1/1/2016
Soil Group	Unknown	Species : Model	Longleaf Pine:6007
Forest Type	PinePlt_premerch	Site Index	55

Regime ID: Chassahowitzka 300

70% survival when planted in forest — Yield Unit: OB Green Tons

Year	Age	Thinning tatus	Dom Ht (feet)	Trees/ Acre	BA/ Acre	QMD (inches)	Total Yield	Topwooc Yield	Prod1 Yield	Prod2 Yield	Prod3 Yield
2016	0		0.0	210.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	1		0.0	147.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	2		0.0	144.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2019	3		0.0	142.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2020	4		0.0	140.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2021	5		12.7	138.4	7.0	3.0	0.0	0.0	0.0	0.0	0.0
2022	6		15.6	138.3	10.4	3.7	0.0	0.0	0.0	0.0	0.0
2023	7		18.5	138.3	14.6	4.4	2.2	0.0	2.2	0.0	0.0
2024	8		21.3	138.2	19.4	5.1	5.2	0.0	5.2	0.0	0.0
2025	9		24.0	138.1	24.5	5.7	8.2	0.0	8.2	0.0	0.0
2026	10		26.7	138.0	30.1	6.3	11.3	0.0	11.3	0.0	0.0
2027	11		29.2	137.9	35.7	6.9	14.7	0.0	14.7	0.0	0.0
2028	12		31.7	137.8	41.7	7.4	18.6	0.1	18.5	0.1	0.0
2029	13		34.0	137.7	47.2	7.9	22.5	1.1	19.5	2.0	0.0
2030	14		36.3	137.5	53.0	8.4	26.9	4.0	15.4	7.5	0.0
2031	15		38.4	137.4	58.3	8.8	31.2	6.5	11.2	13.6	0.0
2032	16		40.5	137.2	63.7	9.2	35.9	7.7	9.3	18.9	0.0
2033	17		42.4	137.0	68.7	9.6	40.4	8.2	9.0	23.3	0.0
2034	18		44.3	136.8	73.3	9.9	44.9	8.3	9.4	27.2	0.0
2035	19		46.1	136.6	78.1	10.2	49.6	8.3	10.1	31.2	0.0
2036	20		47.8	136.4	82.3	10.5	54.1	8.5	10.8	34.0	0.8
2037	21		49.4	136.1	86.1	10.8	58.4	9.4	11.1	33.9	3.9
2038	22		50.9	135.9	90.0	11.0	62.7	11.1	10.9	30.6	10.1
2039	23		52.3	135.6	93.6	11.2	66.9	13.1	10.6	25.6	17.7
2040	24		53.7	135.3	96.8	11.5	70.9	14.9	10.2	20.6	25.3
2041	25		55.0	135.0	99.8	11.6	74.8	16.4	9.9	16.3	32.2
2042	26		56.2	134.7	102.7	11.8	78.5	17.4	9.8	12.9	38.5
2043	27		57.4	134.4	105.4	12.0	82.1	18.2	9.7	10.3	43.9
2044	28		58.5	134.1	107.9	12.1	85.6	18.7	9.8	8.3	48.8
2045	29		59.5	133.7	110.2	12.3	88.9	19.1	9.9	6.8	53.1
2046	30		60.5	133.4	112.4	12.4	92.0	19.4	10.0	5.6	57.0
2047	31		61.5	133.0	114.4	12.6	95.0	19.6	10.2	4.7	60.5
2048	32		62.3	132.6	116.3	12.7	97.8	19.7	10.4	4.0	63.8
2049	33		63.2	132.3	118.0	12.8	100.5	19.7	10.6	3.4	66.8
2050	34		64.0	131.9	119.8	12.9	103.2	19.8	10.7	3.0	69.7
2051	35		64.7	131.5	121.3	13.0	105.6	19.8	10.9	2.6	72.3

Predicted Tree Growth When 500 Longleaf Pine Trees Are Planted Per Acre at Chassahowitzka WMA

4/29/2016

Stand Identification

Client Name	FWC Chassahowitzka WMA	State	Florida
Purchase Unit	Chassahowitzka WMA	County	Hernando
Tract Name	Hommosassa Tract	Cover Type	Pine Stand
Compartment	Hypothetical Future Stand	Stand Origin	Planted
Stand Name	500 tpa	Phys. Region	Lower CP
Acres	10	Estab. Date	1/1/2016
Soil Group	Unknown	Species : Model	Longleaf Pine:6007
Forest Type	PinePlt_premerch	Site Index	55

Regime ID: Chassahowitzka 500

70% survival when planted in forest — Yield Unit: OB Green Tons

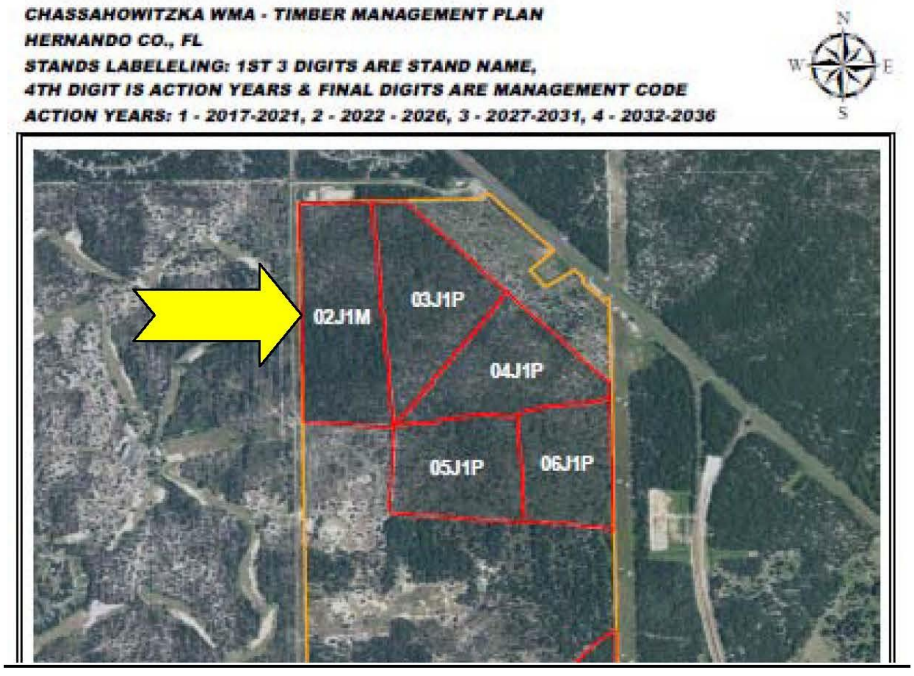
Year	Age	Thinning tatus	Dom Ht (feet)	Trees/ Acre	BA/ Acre	QMD (inches)	Total Yield	Topwooc Yield	Prod1 Yield	Prod2 Yield	Prod3 Yield
2016	0		0.0	350.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	1		0.0	245.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	2		0.0	241.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2019	3		0.0	237.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2020	4		0.0	234.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2021	5		12.7	230.6	9.4	2.7	0.0	0.0	0.0	0.0	0.0
2022	6		15.6	230.4	13.6	3.3	0.0	0.0	0.0	0.0	0.0
2023	7		18.5	230.1	18.6	3.8	1.0	0.0	1.0	0.0	0.0
2024	8		21.3	229.7	24.1	4.4	4.2	0.0	4.2	0.0	0.0
2025	9		24.0	229.3	30.1	4.9	8.5	0.0	8.5	0.0	0.0
2026	10		26.7	228.8	36.5	5.4	13.0	0.0	13.0	0.0	0.0
2027	11		29.2	228.3	42.9	5.9	17.4	0.0	17.4	0.0	0.0
2028	12		31.7	227.6	49.4	6.3	22.0	0.0	22.0	0.0	0.0
2029	13		34.0	227.0	55.8	6.7	26.7	0.0	26.7	0.0	0.0
2030	14		36.3	226.2	62.1	7.1	31.7	0.2	31.0	0.5	0.0
2031	15		38.4	225.4	68.1	7.4	36.7	1.0	33.5	2.2	0.0
2032	16		40.5	224.5	73.9	7.8	41.9	2.5	33.6	5.9	0.0
2033	17		42.4	223.6	79.4	8.1	47.1	4.3	31.8	11.0	0.0
2034	18		44.3	222.6	84.5	8.3	52.3	6.1	29.3	16.8	0.0
2035	19		46.1	221.5	89.5	8.6	57.4	7.7	27.0	22.8	0.0
2036	20		47.8	220.4	94.1	8.8	62.4	8.9	25.0	28.5	0.0
2037	21		49.4	219.2	98.4	9.1	67.4	9.8	23.6	33.9	0.0
2038	22		50.9	218.0	102.4	9.3	72.1	10.4	22.7	39.0	0.0
2039	23		52.3	216.7	106.2	9.5	76.8	11.0	22.0	43.1	0.6
2040	24		53.7	215.3	109.7	9.7	81.3	11.6	21.6	46.6	1.5
2041	25		55.0	213.9	113.0	9.8	85.6	12.2	21.3	49.2	3.0
2042	26		56.2	212.5	116.0	10.0	89.7	12.8	21.0	50.7	5.1
2043	27		57.4	211.0	118.9	10.2	93.7	13.5	20.8	51.4	8.0
2044	28		58.5	209.5	121.5	10.3	97.4	14.3	20.5	51.2	11.4
2045	29		59.5	207.9	124.0	10.5	101.0	15.1	20.3	50.4	15.3
2046	30		60.5	206.3	126.3	10.6	104.5	15.9	20.0	49.1	19.4
2047	31		61.5	204.6	128.4	10.7	107.7	16.7	19.7	47.5	23.8
2048	32		62.3	202.9	130.3	10.9	110.8	17.4	19.5	45.6	28.3
2049	33		63.2	201.2	132.2	11.0	113.8	18.1	19.2	43.5	33.0
2050	34		64.0	199.5	133.9	11.1	116.6	18.8	18.9	41.3	37.5
2051	35		64.7	197.8	135.5	11.2	119.2	19.4	18.7	39.0	42.0

FORECAST MANAGEMENT PLAN MAPS

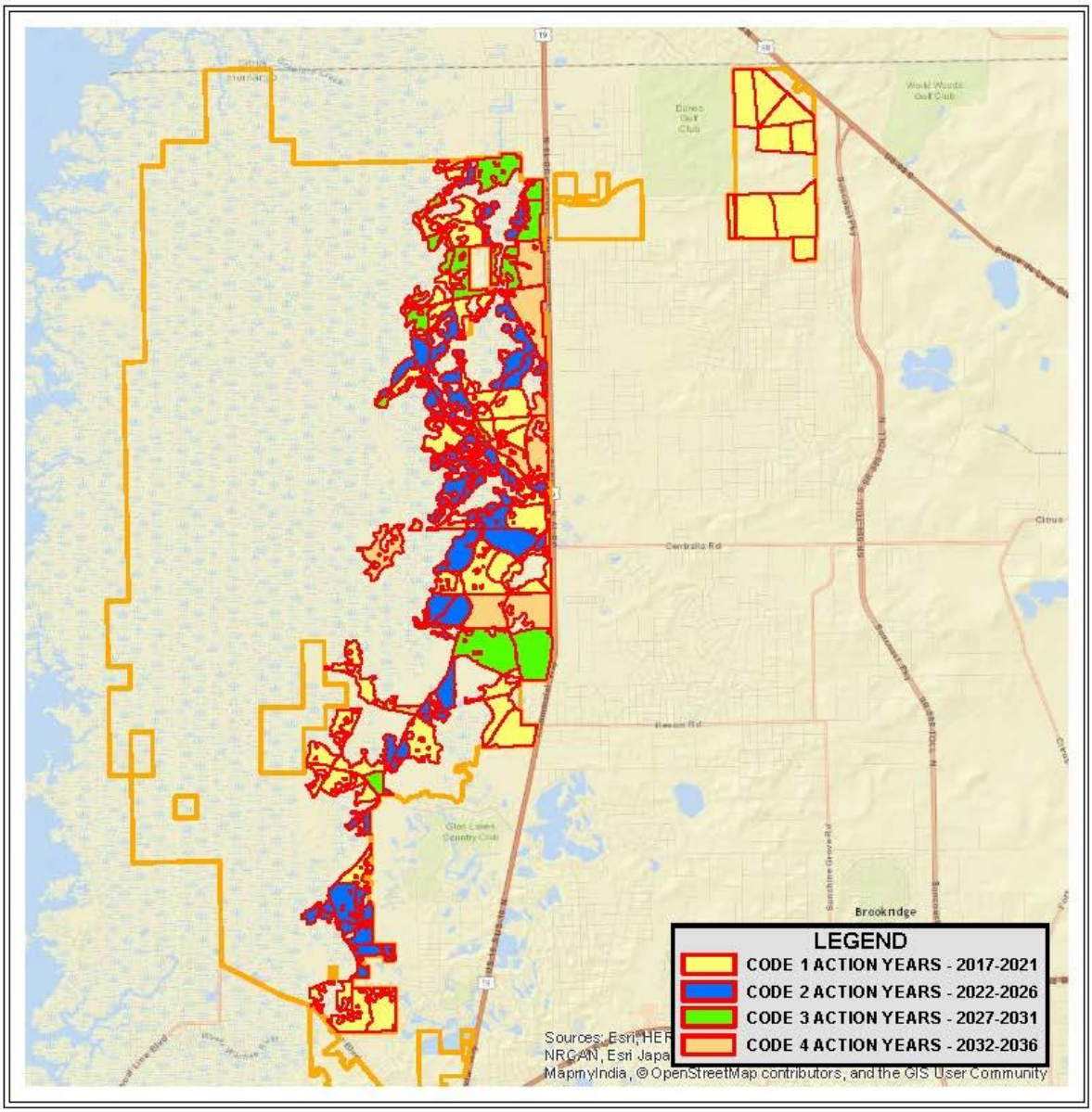
Forest Management Plans - The following pages are the maps depicting the Forest Management Plan Recommendations. There is one map color coded of the entire WMA for Action Years to allow a snapshot view of where the work activities will occur. The other two sets of maps show burn units and prescriptions – one set showing the aerial photo and one set color coded by action year.

The management recommendations were grouped in five-year blocks of time or **Action Years**, specifically **1**(2017-2021), **2**(2022-2026), **3**(2027-2031), **and 4**(2032-2036).
The forest management **Treatment Codes (CHBP, SCHBP, HBP, M, P, FR & T)** recommended in this report are tailored to the condition of the forest when inventoried in 2016.

Each Burn Unit/Stand will have a code that identifies the BURN UNIT, the ACTION YEAR and the TREATMENT CODE recommendation. For Example, the yellow arrow points to the code in the 02J Burn Unit. The 02J stands for the **Burn Unit Number**, the 1 stands for **Action Years 2017-2021**, and the M stands for the Treatment of **Maintain Current Forest Conditions.**



CHASSAHOWITZKA WMA - TIMBER MANAGEMENT PLAN
HERNANDO CO., FL
STANDS LABELELING: 1ST 3 DIGITS ARE STAND NAME,
4TH DIGIT IS ACTION YEARS & FINAL DIGITS ARE MANAGEMENT CODE
ACTION YEARS: 1 - 2017-2021, 2 - 2022 - 2026, 3 - 2027-2031, 4 - 2032-2036



2 1 0 2 4 Miles

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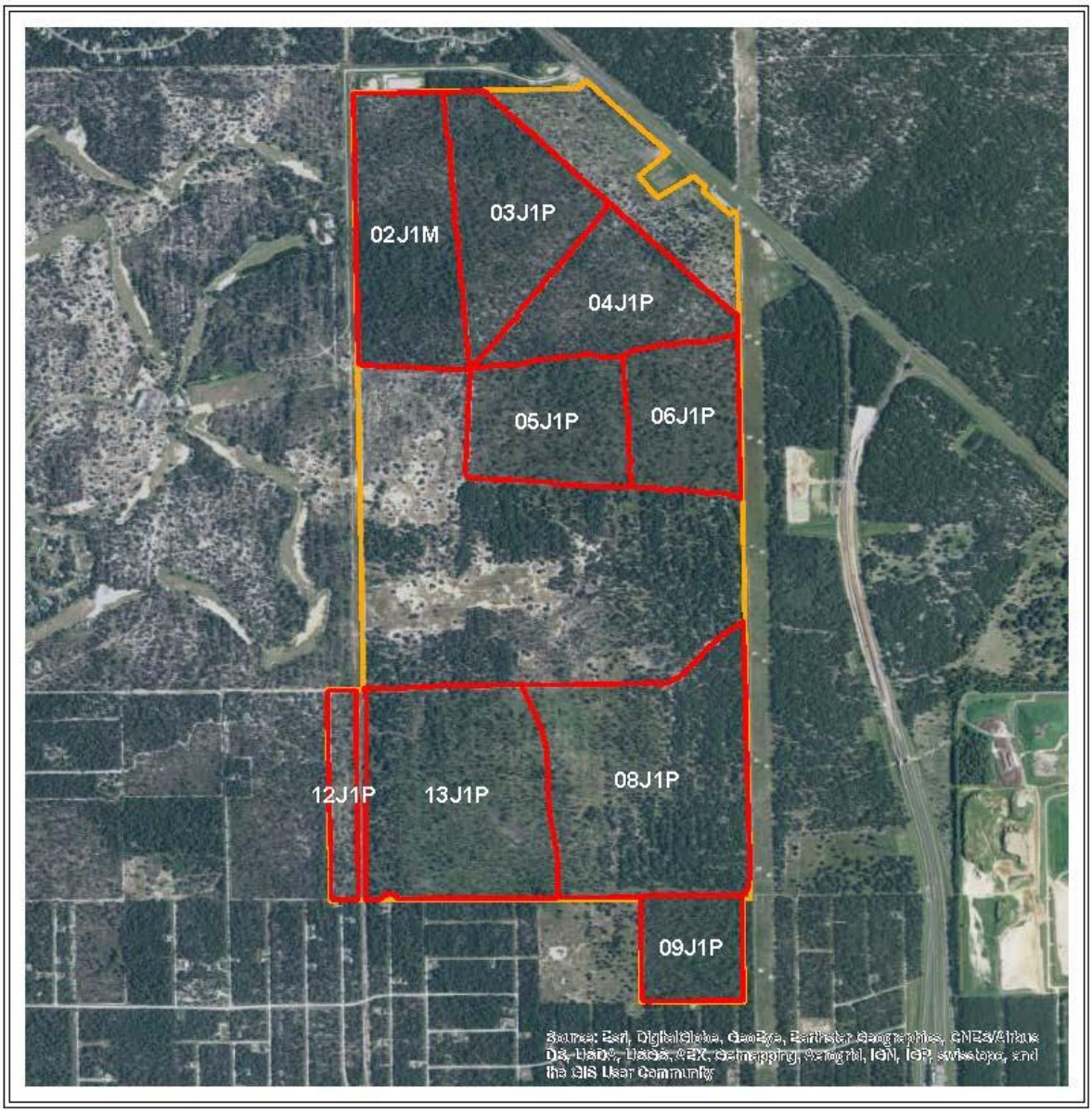
PROJECTION: NAD_1983_HARN_Florida_GDL_Albers, Meters

NOTE: ACREAGE WAS DETERMINED ON THIS MAP THROUGH THE USE OF GLOBAL POSITIONING SYSTEMS (GPS) AND/OR GEOGRAPHIC INFORMATION SYSTEMS (GIS). THIS MAP IS NOT A SURVEY. THEREFORE, ACREAGE ON THIS MAP AND ANY SUBSEQUENT REPORT SHOULD BE VIEWED AS AN APPROXIMATION. FURTHERMORE, THE USE OF ANY OF THESE ACREAGES IN NEGOTIATIONS, SALES, OR CONTRACTUAL AGREEMENTS IS ENTIRELY AT THE RISK OF THE BUYER AND SELLER. REPRODUCTION OF OR EDITING OF THIS MAP IS FORBIDDEN WITHOUT EXPRESS WRITTEN PERMISSION OF THE FORESTRY COMPANY.

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9/28/2016

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ACTION YEARS: 1 - 2017-2021, 2 - 2022 - 2026, 3 - 2027-2031, 4 - 2032-2036



1,320 660 0 1,320 2,640
Feet

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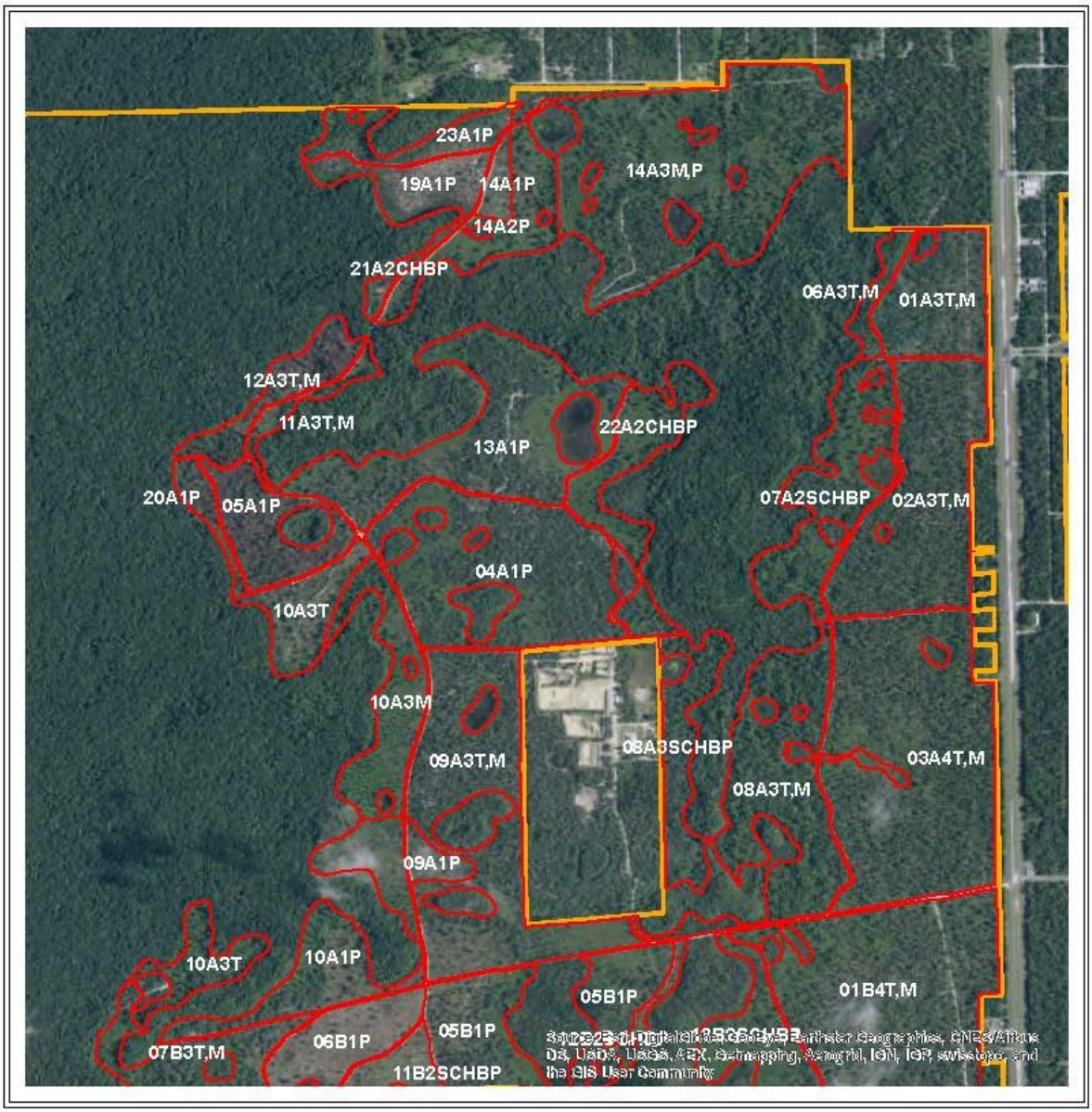
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Feet

1:15,840

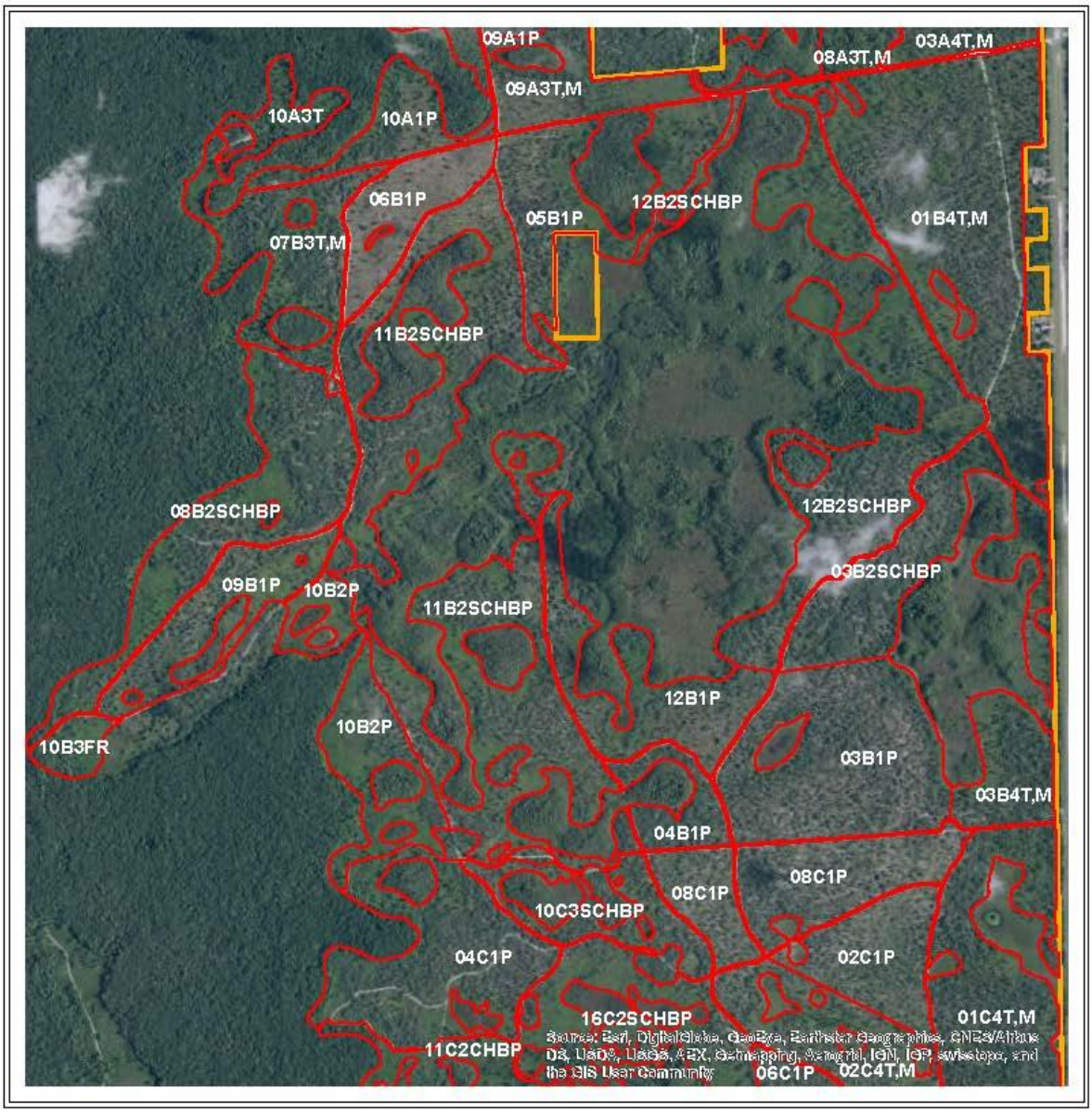
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4TH DIGIT IS ACTION YEARS & FINAL DIGITS ARE MANAGEMENT CODE
ACTION YEARS: 1 - 2017-2021, 2 - 2022 - 2026, 3 - 2027-2031, 4 - 2032-2036



1,320 660 0 1,320 2,640 Feet

1:16,660

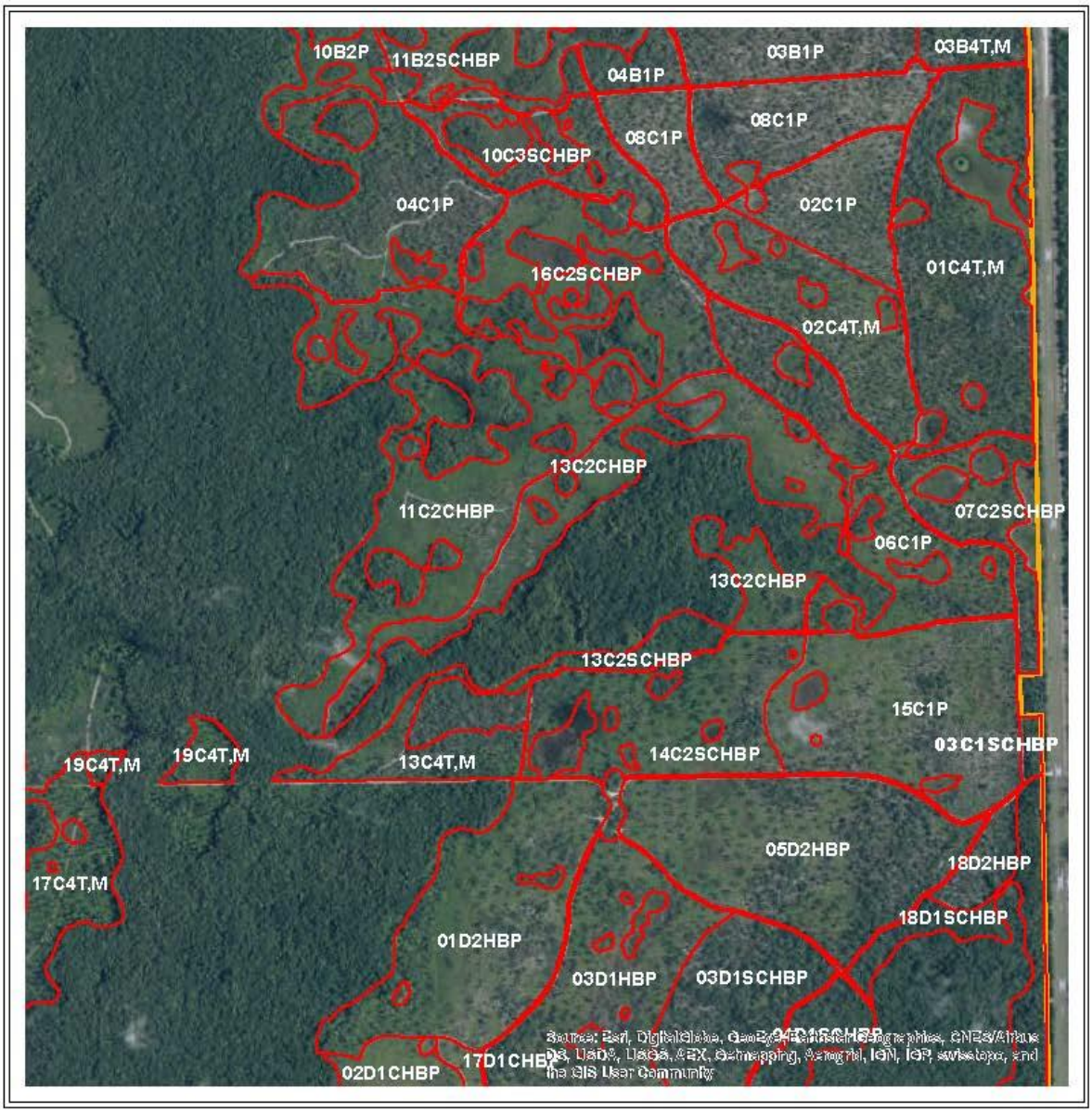
PROJECTION: NAD_1983_HARN_Florida_GDL_Albers, Meters

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1,320 660 0 1,320 2,640
Feet

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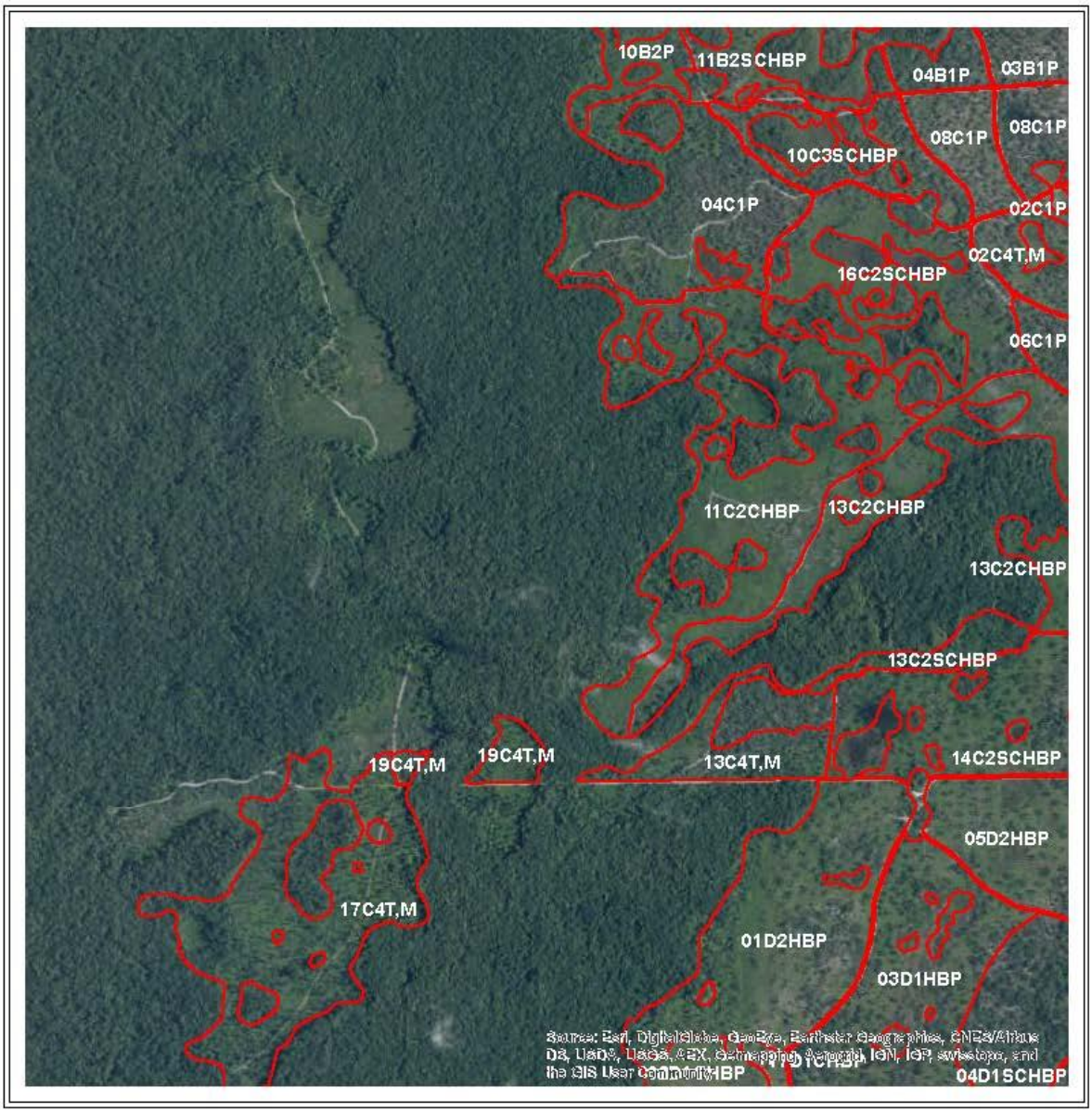
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08/28/2016

CHASSAHOWITZKA WMA - TIMBER MANAGEMENT PLAN
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Feet

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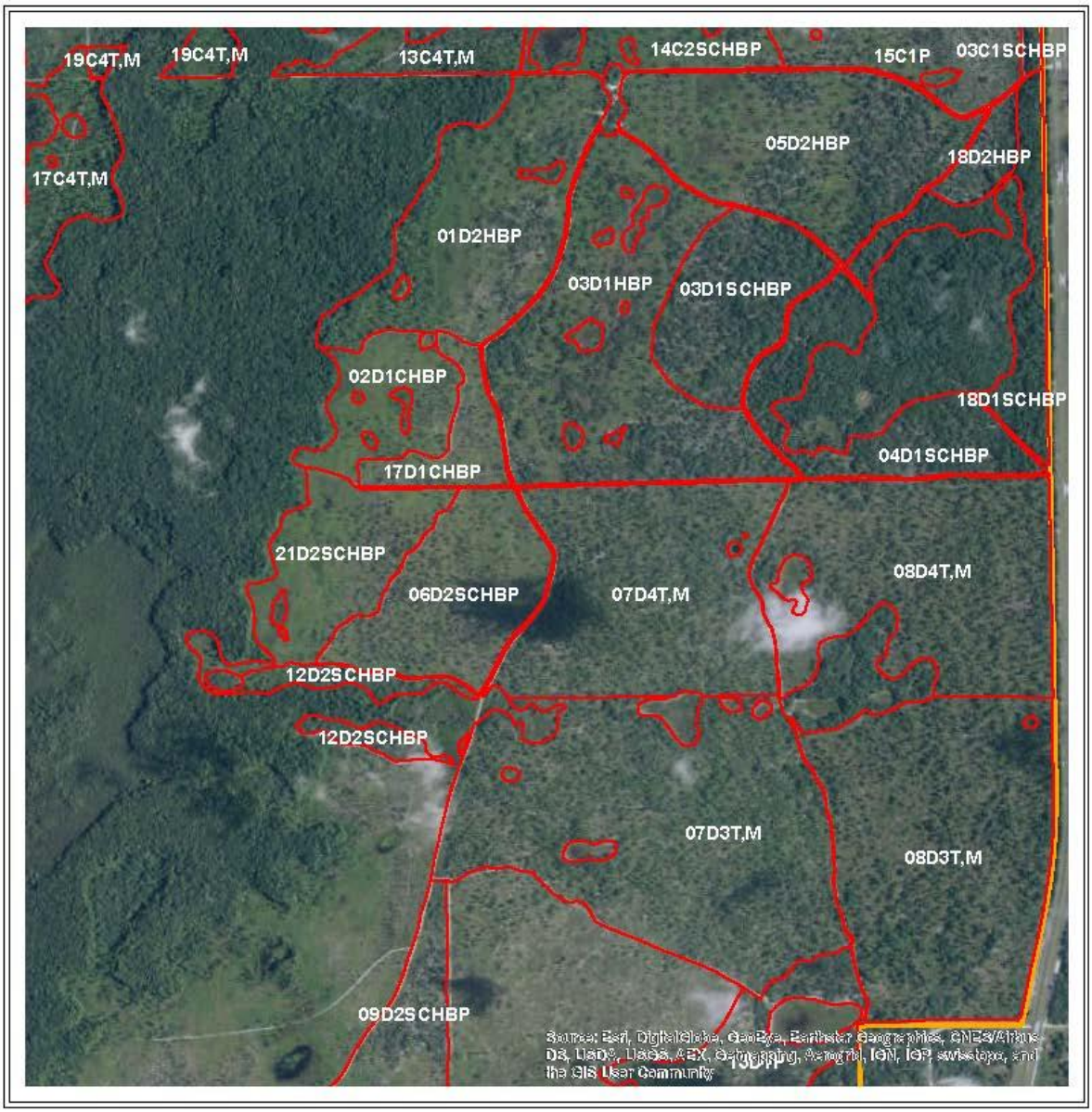
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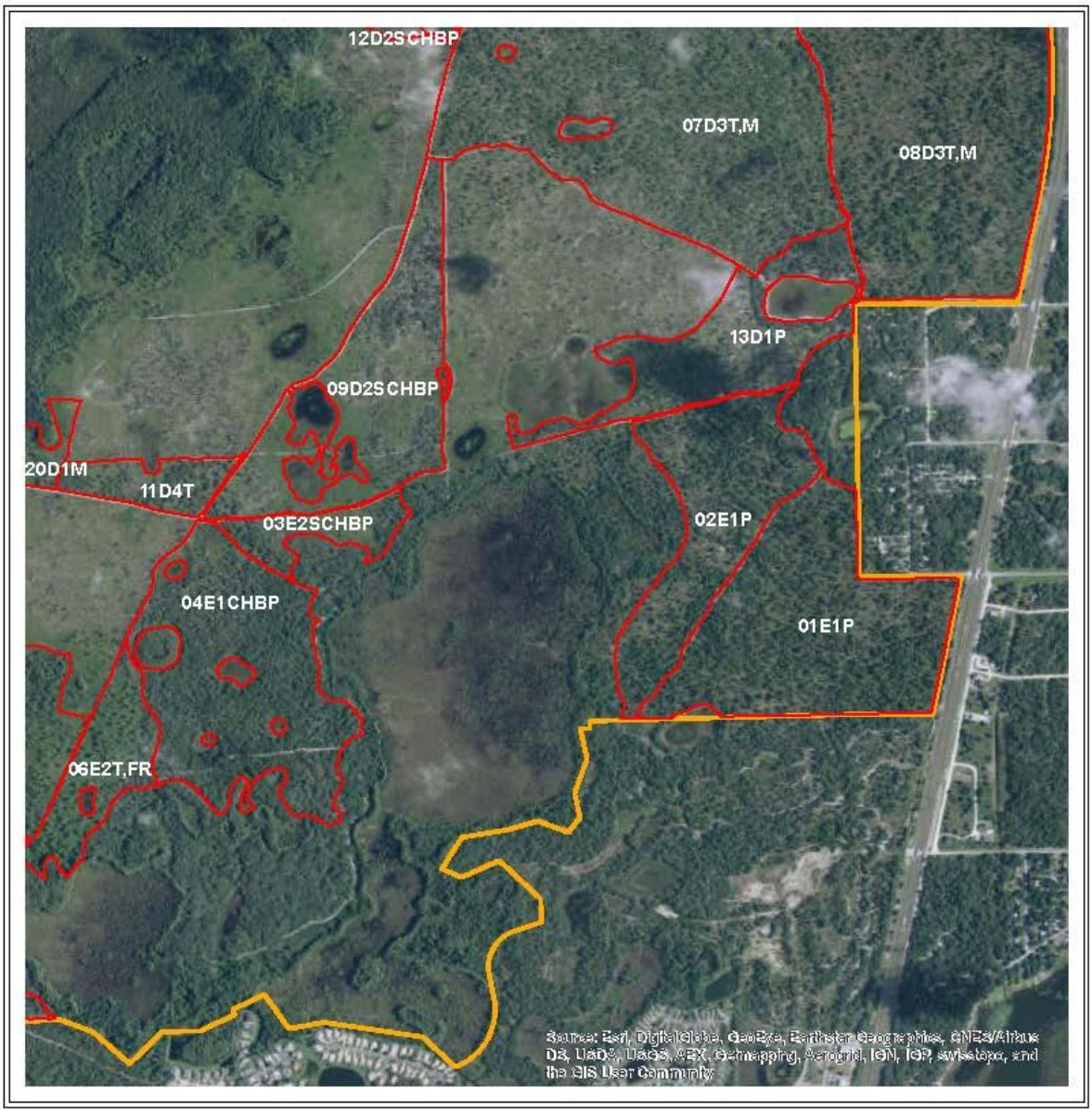
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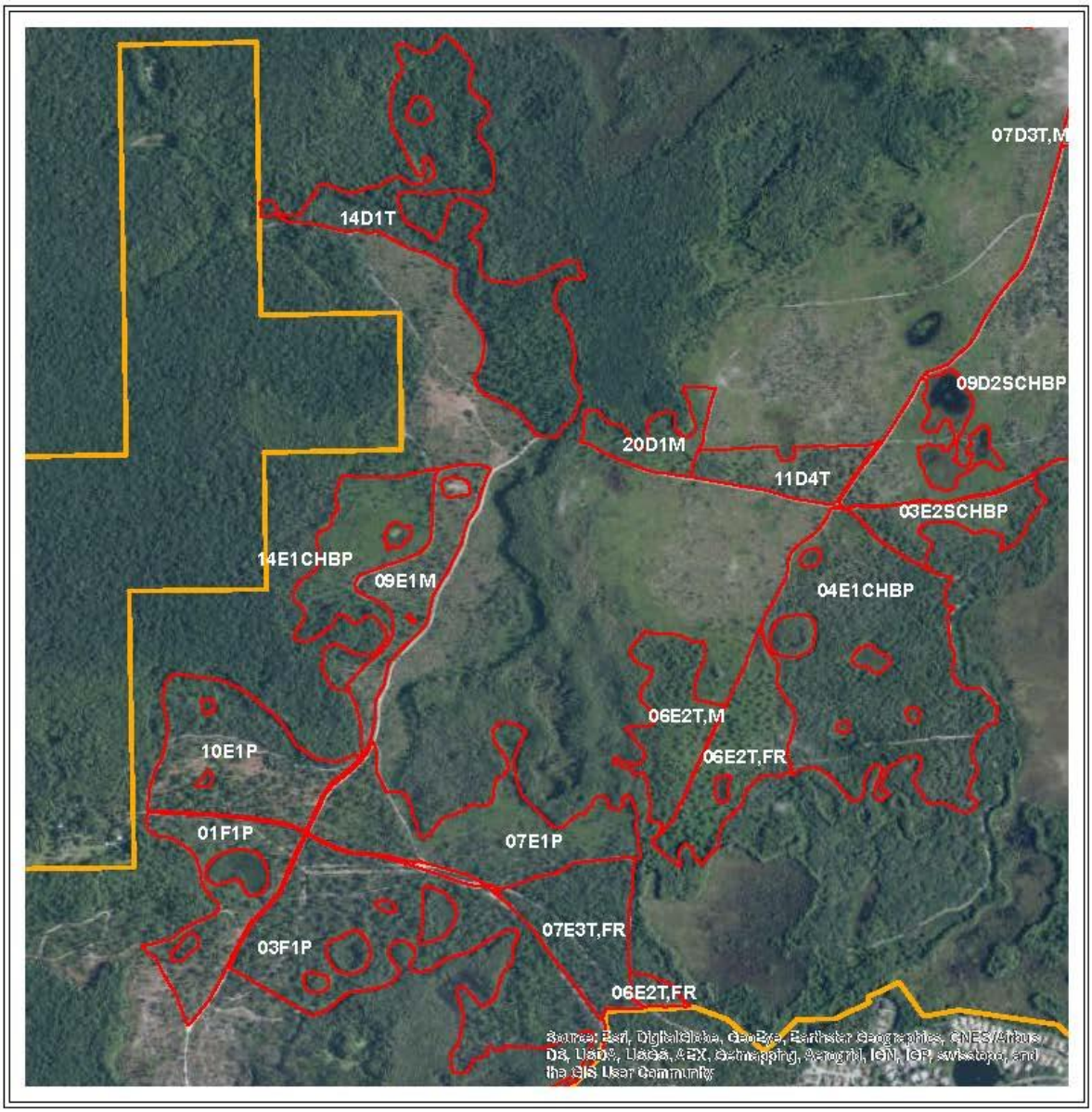
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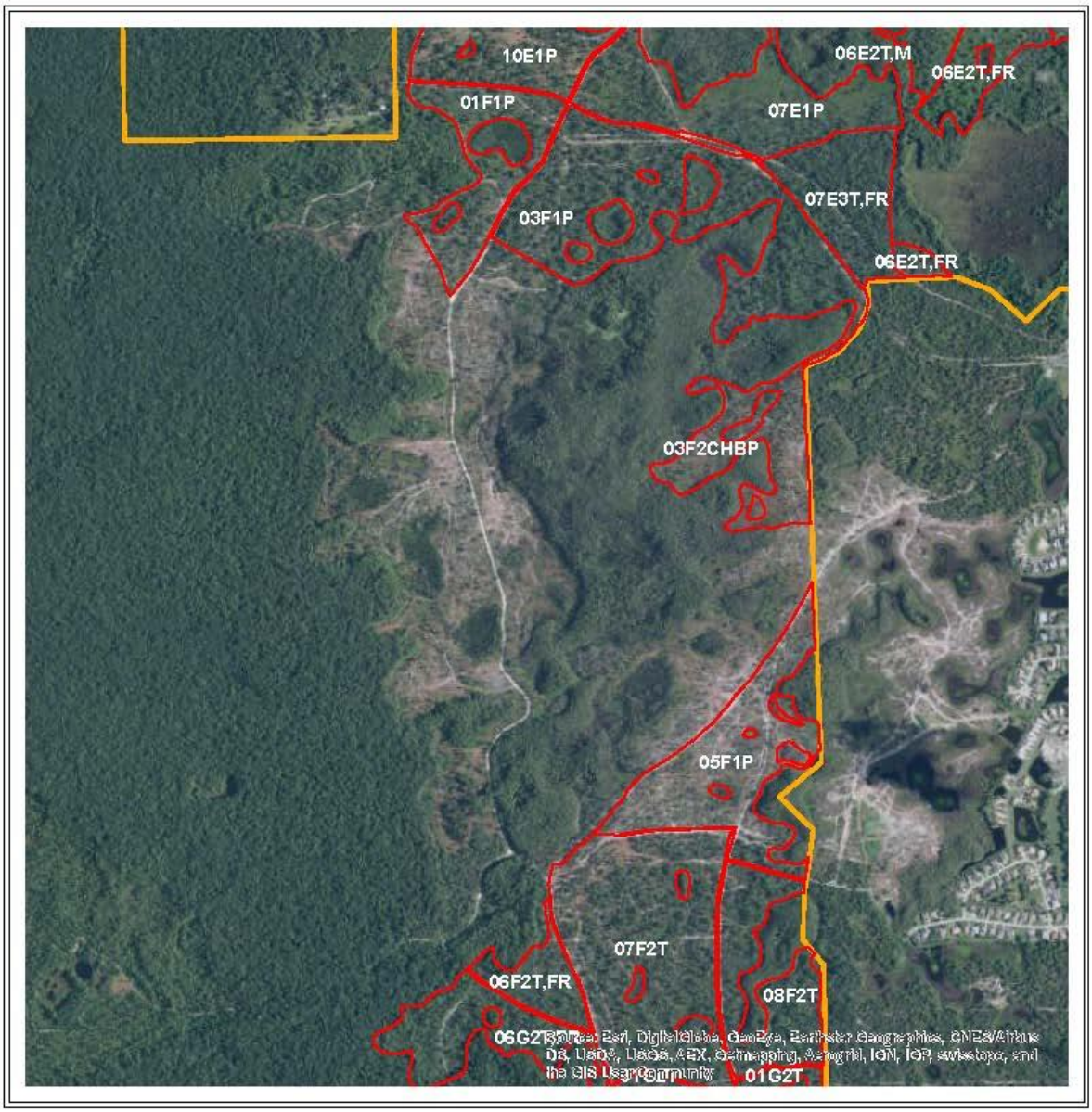
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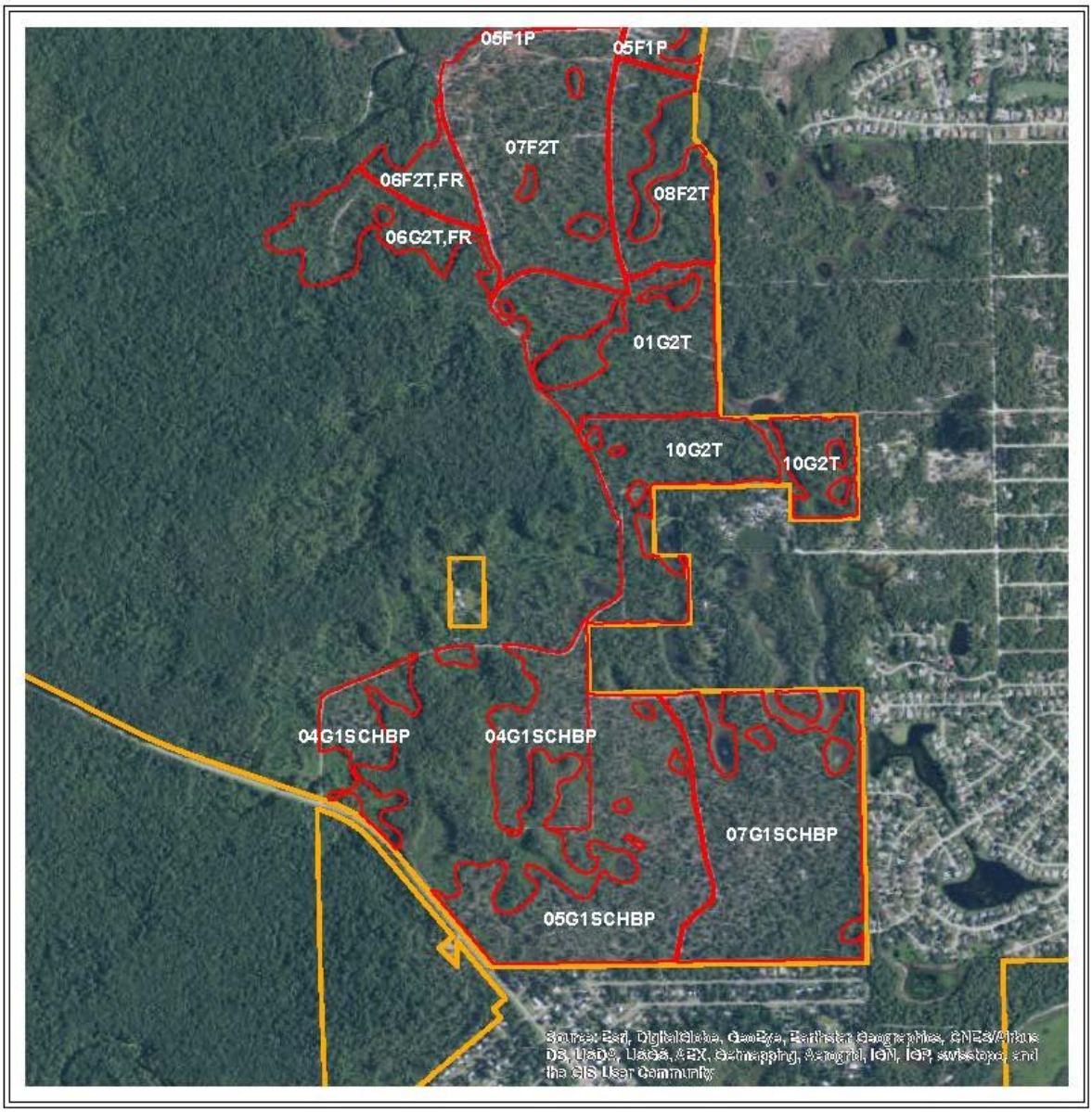
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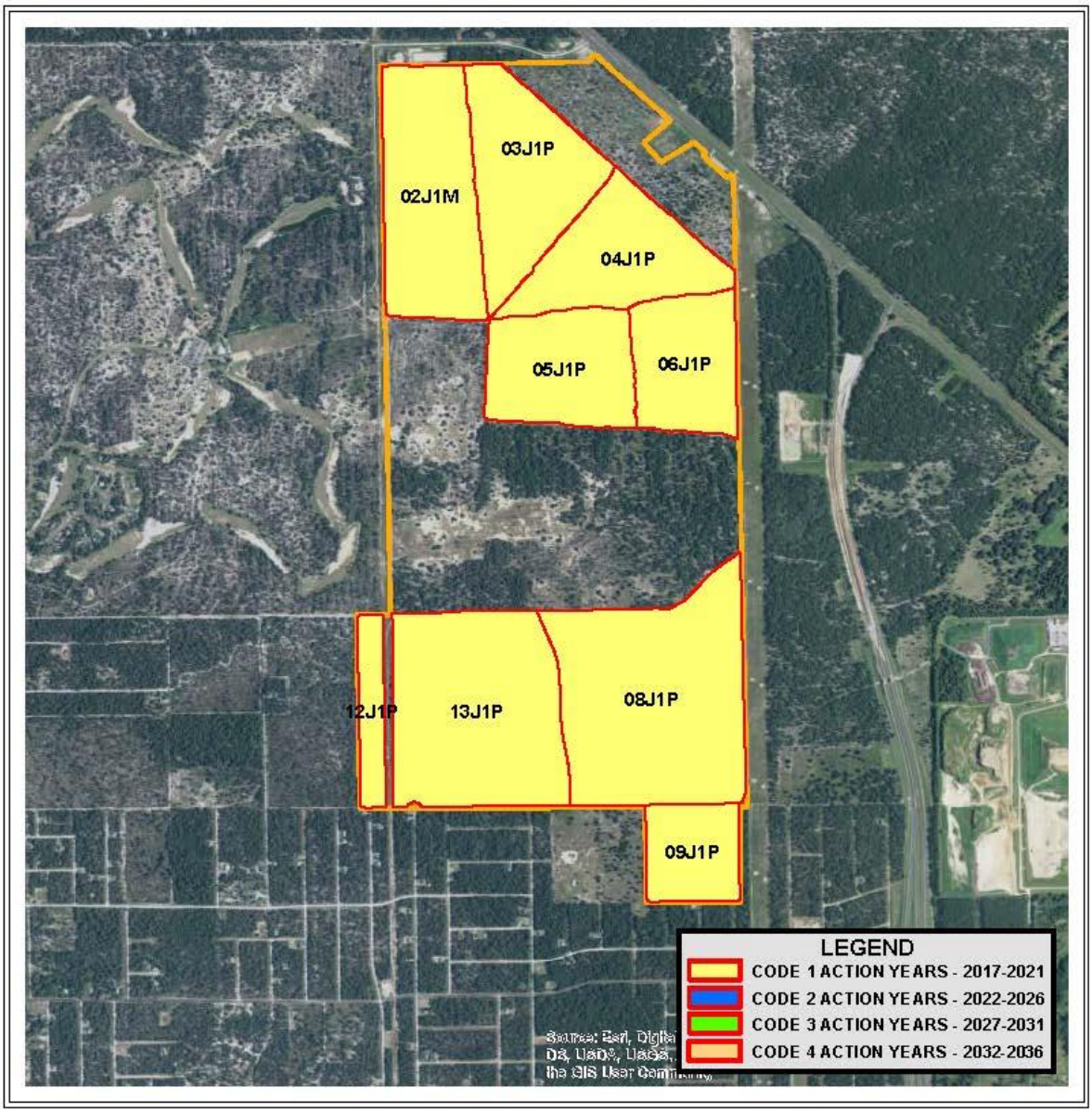
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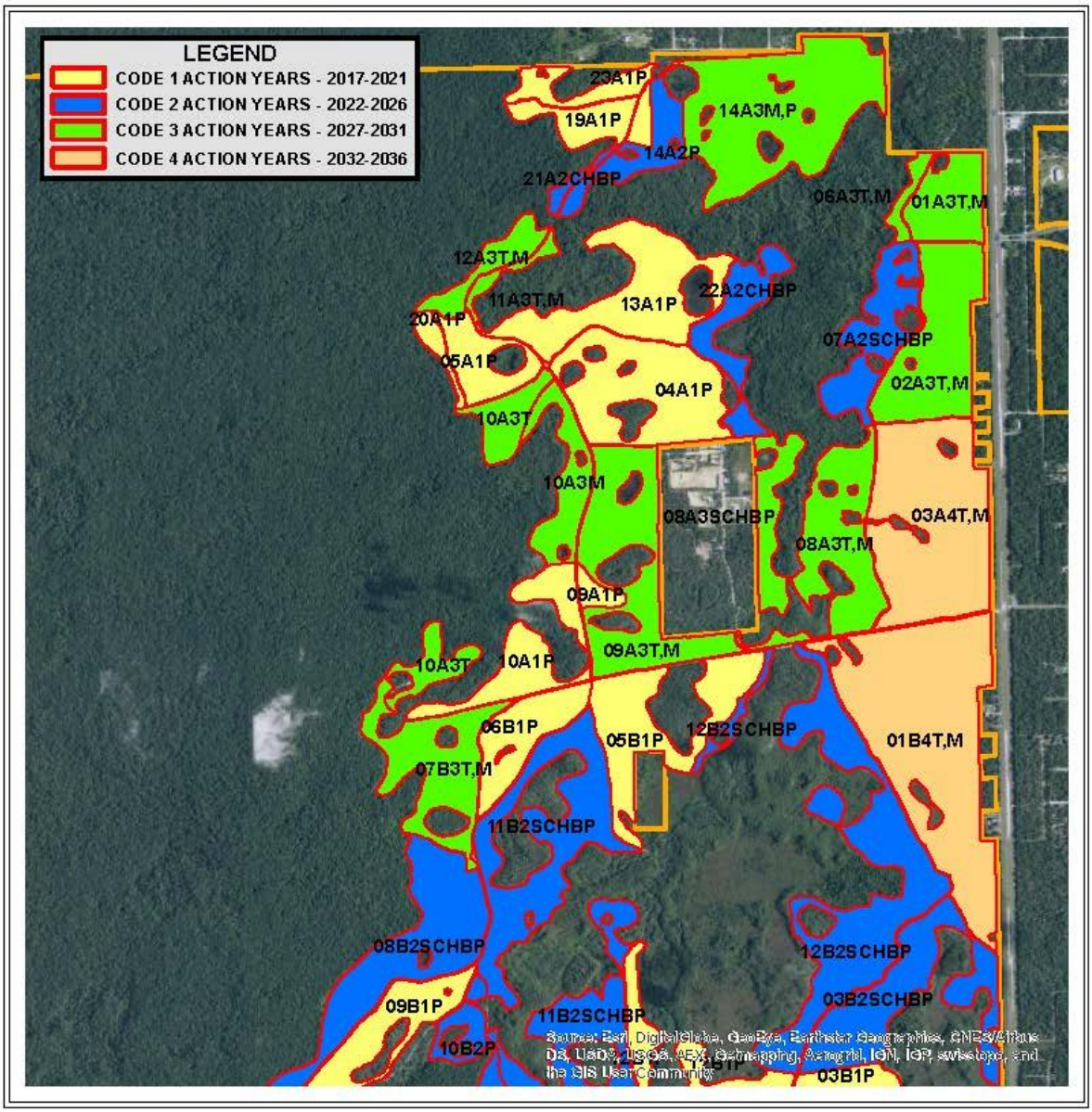
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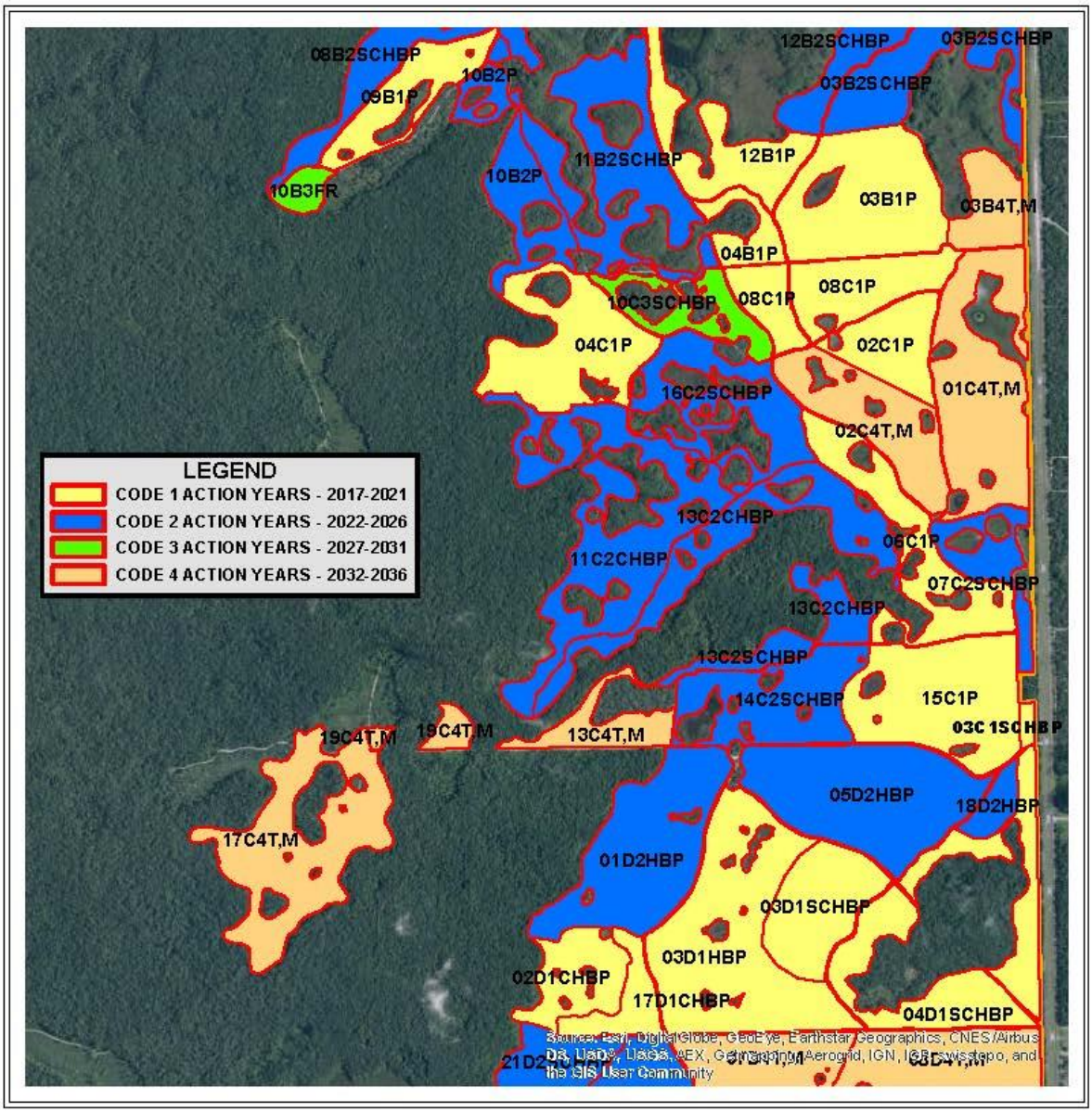
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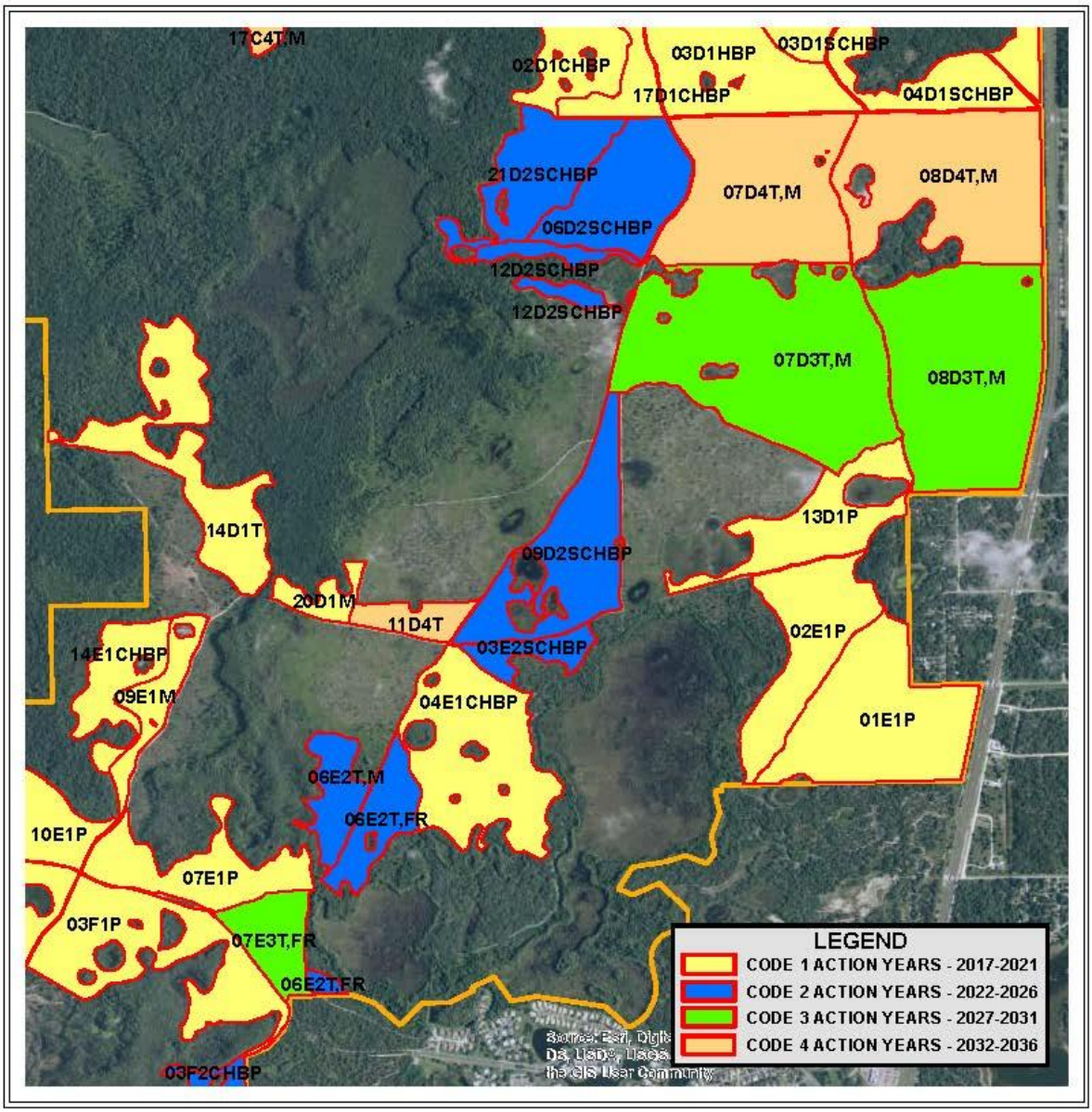


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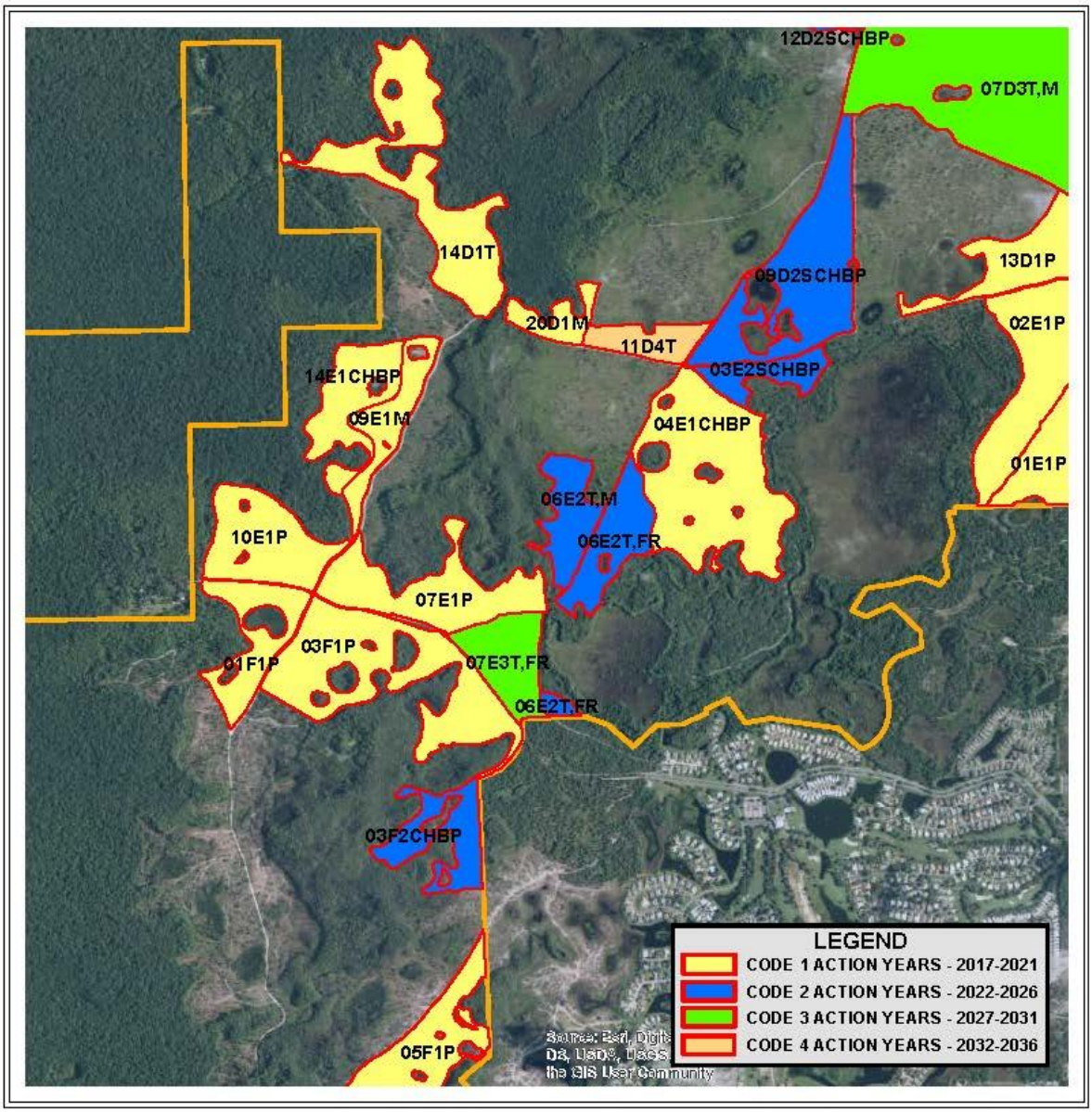
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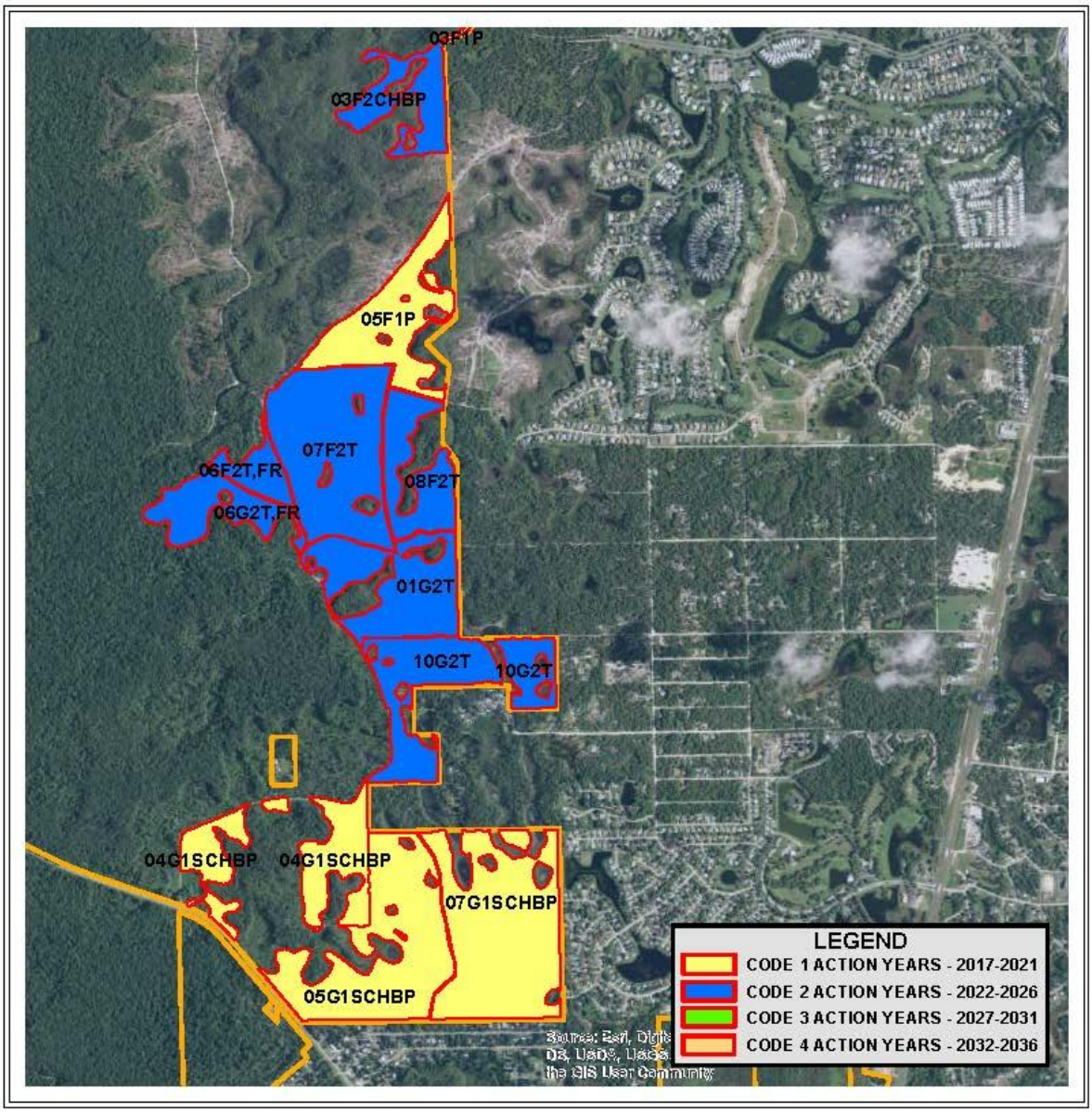
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Management Plan Tables:

The following tables present the data sorted in different ways for ease of use. One table will be by Burn Unit and one table grouped by Action Years.

TREATMENT AND ACTION YEARS BY BURN UNIT/STAND

SORTED BY ACTION YEARS

Burn Unit/Stand	Total BA/Unit	Action Years	YR CODE	Treatment
Chass_01E	33.6	2017-2021	1	P
Chass_01F	10.0	2017-2021	1	P
Chass_02C	6.0	2017-2021	1	P
Chass_02D	10.0	2017-2021	1	CHBP
Chass_02E	17.9	2017-2021	1	P
Chass_02J	18.5	2017-2021	1	M
Chass_03A		2017-2021	1	P
Chass_03C	22.2	2017-2021	1	SCHBP
Chass_03D		2017-2021	1	HBP
Chass_03G	13.6	2017-2021	1	SCHBP
Chass_03F	20.4	2017-2021	1	P
Chass_03J	11.7	2017-2021	1	P
Chass_04A	2.7	2017-2021	1	P
Chass_04B	8.3	2017-2021	1	P
Chass_04C	6.5	2017-2021	1	P
Chass_04D	17.7	2017-2021	1	SCHBP
Chass_04F	21.1	2017-2021	1	CHBP
Chass_04G	6.7	2017-2021	1	SCHBP
Chass_04J	8.8	2017-2021	1	P
Chass_05A	7.5	2017-2021	1	P
Chass_05B	12.0	2017-2021	1	P
Chass_05F	3.3	2017-2021	1	P
Chass_05G	5.0	2017-2021	1	SCHBP
Chass_05J	10.0	2017-2021	1	P
Chass_06B	4.0	2017-2021	1	P
Chass_06C	22.1	2017-2021	1	P
Chass_06J	4.2	2017-2021	1	P
Chass_07E	29.8	2017-2021	1	P
Chass_07G	8.7	2017-2021	1	SCHBP
Chass_08C	7.2	2017-2021	1	P
Chass_08J	7.8	2017-2021	1	P
Chass_09A	12.1	2017-2021	1	P
Chass_09H	15.7	2017-2021	1	P
Chass_09E	17.5	2017-2021	1	M
Chass_09J	20.0	2017-2021	1	P
Chass_10A		2017-2021	1	P
Chass_10E	27.5	2017-2021	1	P
Chass_12B		2017-2021	1	P
Chass_12J	4.1	2017-2021	1	P
Chass_13D	11.0	2017-2021	1	P
Chass_13J	11.0	2017-2021	1	P
Chass_14D	54.3	2017-2021	1	T
Chass_14F	7.5	2017-2021	1	CHBP
Chass_15C	6.7	2017-2021	1	P
Chass_17D	2.5	2017-2021	1	CHBP
Chass_19A	6.7	2017-2021	1	P
Chass_20D	21.1	2017-2021	1	M
Chass_23A	13.8	2017-2021	1	P
Chass_01D	15.5	2022-2026	2	HBP
Chass_01G	21.7	2022-2026	2	T
Chass_03B	12.4	2022-2026	2	SCHBP
Chass_03E	10.0	2022-2026	2	SCHBP
Chass_03I		2022-2026	2	CHBP
Chass_05D	14.7	2022-2026	2	HBP
Chass_06D	14.4	2022-2026	2	SCHBP
Chass_06E	18.3	2022-2026	2	FR, T
Chass_06F	18.3	2022-2026	2	M_2 T
Chass_06F	5.0	2022-2026	2	FR, T
Chass_06G	18.0	2022-2026	2	FR, T
Chass_07A	11.5	2022-2026	2	SCHBP
Chass_07C	16.0	2022-2026	2	SCHBP
Chass_07I	17.2	2022-2026	2	T
Chass_08B	11.4	2022-2026	2	SCHBP
Chass_08F	22.6	2022-2026	2	T
Chass_09D	2.1	2022-2026	2	SCHBP
Chass_10B		2022-2026	2	P
Chass_10B	4.6	2022-2026	2	SCHBP
Chass_10G	35.5	2022-2026	2	T
Chass_11B	5.7	2022-2026	2	SCHBP
Chass_11C	5.0	2022-2026	2	SCHBP
Chass_12B	6.7	2022-2026	2	SCHBP
Chass_12D	9.9	2022-2026	2	SCHBP
Chass_13C	4.8	2022-2026	2	SCHBP
Chass_14A		2022-2026	2	P
Chass_14C	12.7	2022-2026	2	SCHBP
Chass_16C	3.3	2022-2026	2	SCHBP
Chass_18D	21.4	2022-2026	2	HBP
Chass_21D	4.0	2022-2026	2	SCHBP
Chass_22A	10.4	2022-2026	2	CHBP
Chass_01A	14.0	2027-2031	3	M, T
Chass_02A	24.8	2027-2031	3	M, T
Chass_06A	70.0	2027-2031	3	M_2 T
Chass_07B	13.3	2027-2031	3	T, M
Chass_07D		2027-2031	3	M_2 T
Chass_07E		2027-2031	3	FR, T
Chass_08A		2027-2031	3	M_2 T
Chass_08A	45.0	2027-2031	3	SCHBP
Chass_08D		2027-2031	3	M_2 T
Chass_09A		2027-2031	3	M_2 T
Chass_10A		2027-2031	3	M
Chass_10A	18.9	2027-2031	3	T
Chass_10B		2027-2031	3	FR
Chass_10C	12.0	2027-2031	3	SCHBP
Chass_11A	0.0	2027-2031	3	M_2 T
Chass_12A	10.0	2027-2031	3	M_2 T
Chass_13A	2.8	2027-2031	3	M
Chass_14A	15.1	2027-2031	3	M, P
Chass_01B	11.7	2032-2036	4	M_2 T
Chass_01C	12.4	2032-2036	4	M_2 T
Chass_02C		2032-2036	4	M_2 T
Chass_03A	22.6	2032-2036	4	M_2 T
Chass_03B		2032-2036	4	M_2 T
Chass_07D	23.9	2032-2036	4	M_2 T
Chass_08D	22.1	2032-2036	4	M_2 T
Chass_11D	20.0	2032-2036	4	T
Chass_13C		2032-2036	4	M_2 T
Chass_17C	13.7	2032-2036	4	M_2 T
Chass_19C	15.3	2032-2036	4	M_2 T

**Note – the yellow hi-lighting represents burn units that had multiple treatments within the same unit

TREATMENT AND ACTION YEARS BY BURN UNIT/STAND

SORTED BY BURN UNIT/STAND

Burn Unit/Stand	Total BA/Unit	Action Years	YR CODE	Treatment
Chass_01A	14.0	2027-2031	3	M, T
Chass_01B	11.7	2032-2036	4	M, T
Chass_01C	12.4	2032-2036	4	M, T
Chass_01D	15.5	2022-2026	2	HBP
Chass_01E	33.6	2017-2021	1	P
Chass_01F	10.0	2017-2021	1	P
Chass_01G	21.7	2022-2026	2	T
Chass_02A	24.8	2027-2031	3	M, T
Chass_02C	6.0	2017-2021	1	P
Chass_02C		2032-2036	4	M, T
Chass_02D	10.0	2017-2021	1	CHBP
Chass_02E	17.9	2017-2021	1	P
Chass_02J	18.5	2017-2021	1	M
Chass_03A	22.6	2032-2036	4	M, T
Chass_03B		2017-2021	1	P
Chass_03B	12.4	2022-2026	2	SCHBP
Chass_03B		2032-2036	4	M, T
Chass_03C	22.2	2017-2021	1	SCHBP
Chass_03D		2017-2021	1	HBP
Chass_03D	13.6	2017-2021	1	SCHBP
Chass_03E	10.0	2022-2026	2	SCHBP
Chass_03F	20.4	2017-2021	1	P
Chass_03F		2022-2026	2	CHBP
Chass_03J	11.7	2017-2021	1	P
Chass_04A	2.7	2017-2021	1	P
Chass_04B	8.3	2017-2021	1	P
Chass_04C	6.5	2017-2021	1	P
Chass_04D	17.7	2017-2021	1	SCHBP
Chass_04E	21.1	2017-2021	1	CHBP
Chass_04G	6.7	2017-2021	1	SCHBP
Chass_04J	8.8	2017-2021	1	P
Chass_05A	7.5	2017-2021	1	P
Chass_05B	12.0	2017-2021	1	P
Chass_05D	14.7	2022-2026	2	HBP
Chass_05F	3.3	2017-2021	1	P
Chass_05G	5.0	2017-2021	1	SCHBP
Chass_05J	10.0	2017-2021	1	P
Chass_06A	70.0	2027-2031	3	M, T
Chass_06B	4.0	2017-2021	1	P
Chass_06C	22.1	2017-2021	1	P
Chass_06D	14.4	2022-2026	2	SCHBP
Chass_06E	18.3	2022-2026	2	FR, T
Chass_06E	18.3	2022-2026	2	M, T
Chass_06F	5.0	2022-2026	2	FR, T
Chass_06G	18.0	2022-2026	2	FR, T
Chass_06J	4.2	2017-2021	1	P
Chass_07A	11.5	2022-2026	2	SCHBP
Chass_07B	13.3	2027-2031	3	T, M
Chass_07C	16.0	2022-2026	2	SCHBP
Chass_07D		2027-2031	3	M, T
Chass_07D	23.9	2032-2036	4	M, T
Chass_07E	29.8	2017-2021	1	P
Chass_07F		2027-2031	3	FR, T
Chass_07F	17.2	2022-2026	2	T
Chass_07G	8.7	2017-2021	1	SCHBP
Chass_08A		2027-2031	3	M, T
Chass_08A	45.0	2027-2031	3	SCHBP
Chass_08B	11.4	2022-2026	2	SCHBP
Chass_08C	7.2	2017-2021	1	P
Chass_08D		2027-2031	3	M, T
Chass_08D	22.1	2032-2036	4	M, T
Chass_08F	22.6	2022-2026	2	T
Chass_08J	7.8	2017-2021	1	P
Chass_09A	12.1	2017-2021	1	P
Chass_09A		2027-2031	3	M, T
Chass_09B	15.7	2017-2021	1	P
Chass_09D	2.1	2022-2026	2	SCHBP
Chass_09E	17.5	2017-2021	1	M
Chass_09J	20.0	2017-2021	1	P
Chass_10A		2017-2021	1	P
Chass_10A		2027-2031	3	M
Chass_10A	18.9	2027-2031	3	T
Chass_10B		2022-2026	2	P
Chass_10B	4.6	2022-2026	2	SCHBP
Chass_10B		2027-2031	3	FR
Chass_10C	12.0	2027-2031	3	SCHBP
Chass_10E	27.5	2017-2021	1	P
Chass_10G	35.5	2022-2026	2	T
Chass_11A	0.0	2027-2031	3	M, T
Chass_11B	5.7	2022-2026	2	SCHBP
Chass_11C	5.0	2022-2026	2	SCHBP
Chass_11D	20.0	2032-2036	4	T
Chass_12A	10.0	2027-2031	3	M, T
Chass_12B		2017-2021	1	P
Chass_12B	6.7	2022-2026	2	SCHBP
Chass_12D	9.9	2022-2026	2	SCHBP
Chass_12J	4.1	2017-2021	1	P
Chass_13A	2.8	2027-2031	3	M
Chass_13C	4.8	2022-2026	2	SCHBP
Chass_13C		2032-2036	4	M, T
Chass_13D	11.0	2017-2021	1	P
Chass_13J	11.0	2017-2021	1	P
Chass_14A		2022-2026	2	P
Chass_14A	15.1	2027-2031	3	M, P
Chass_14C	12.7	2022-2026	2	SCHBP
Chass_14D	54.3	2017-2021	1	T
Chass_14F	7.5	2017-2021	1	CHBP
Chass_15C	6.7	2017-2021	1	P
Chass_16C	3.3	2022-2026	2	SCHBP
Chass_17C	13.7	2032-2036	4	M, T
Chass_17D	2.5	2017-2021	1	CHBP
Chass_18D	21.4	2022-2026	2	HBP
Chass_19A	6.7	2017-2021	1	P
Chass_19C	15.3	2032-2036	4	M, T
Chass_20D	21.1	2017-2021	1	M
Chass_21D	4.0	2022-2026	2	SCHBP
Chass_22A	10.4	2022-2026	2	CHBP
Chass_23A	13.8	2017-2021	1	P

**Note – the yellow hi-lighting represents burn units that had multiple treatments within the same unit

Management of Prescribed Fire in Longleaf Pine Forest Restoration

It is well understood that fire has a historical role in forests in Florida. The *Atlas of Florida's Natural Heritage – Biodiversity, Landscapes, Stewardship and Opportunities* Published by Florida Natural Areas Inventory (FNAI) states, "Before modern land uses fragmented natural ecosystems, fires frequently swept across Florida's landscape, keeping natural pine lands, marshes and prairies open and understory vegetation low and continually regenerating. Fire intensity was low, unlike the very damaging high intensity wildfires that sometime occur today."

A key statement from the FNAI clip is "fire intensity was low". Historically lightning fires struck and they burned day and night. The humidity typically rises at night and greatly slows fire so it can burn with low intensity, even in the growing season. Public safety issues now typically do not allow burning at night thus we lose the low intensity fire opportunity that was once available for our use as land managers. This requires one to consider many factors when deciding when to burn each individual burn unit versus just implementing a standard growing season burn regime to kill oaks or stimulate wire grass seed production. It's now important to evaluate each burn unit and decide what the burning objective is and tailor the burn to suit those purposes. The following photos from the WMA are inserted with the intent of discussing burn objectives in light of longleaf pine restoration as well as FFWCC's historical objectives.



The above burn was effective in knocking back palmettos and small hardwoods. What you will note is that the mature seed producing pines were killed or severely scorched weakening them. This eliminates the seed source for natural regenerating forests and thus requires more expensive planting of containerized longleaf seedlings to restore a longleaf forest ecosystem. This same type situation was repeated over and over in the WMA. Each burn kills more of the mature trees, eliminating the longleaf forest and eliminating the seed source for the longleaf pine. It is in essence a "palmetto release" as the palmettos no longer have trees to compete for nutrients and water and the palmettos multiply. This was evident in that there was a "sea of palmetto" and no living trees where once a forest existed. The photos from the WMA on the following pages depict that.

The biology of longleaf pine cone production and natural regeneration dictates a change in timing for burns intended to prepare the ground for the natural regenerating seed bed. Longleaf pine cones take two years to mature and drop seed, therefore when mature longleaf trees begin to grow male and female strobili, begin planning to control burn the stand under the longleaf the next year.



Longleaf Pine Strobili

The second year the cones grow from 1" long in February to 6"-8" long in May or June. Burn in early September to expose the mineral soil. The Seedfall usually occurs September through December. **Avoid control burning the new seedlings for the first year after they sprout and when the trees are 1/2' to 3' high as seedlings in those phases are susceptible to being killed by fire.**[9]

If a fire like the one below is hot enough to kill mature trees, longleaf seedlings will not survive either. Cooler fires are a must to support a healthy longleaf forest restoration.



The Natural Seed Source For The Forest Is Being Eliminated By Fire

[9]Silvics of Forest Trees of the United States. Agriculture Handbook No. 271, USDA 1965



Many Of These Trees Will Die From Fire Scorch, Eliminating The Forest And The Natural Seed Source



The Natural Pine Forest Has Been Killed By Fire And the Oaks Will Proliferate



There Was A Forest In The Background As Can Been Seen By All Of The Burned Tree Snags. Now Palmettos Are The Predominant Plant.



Hardwoods Have Taken Over This Forest Since The Pines Have Been Killed By Fire



There Are Still Some Pines / Seed Producing Trees, Although Many Burned Snags Indicate A Healthier Forest Existed In The Past Before It Was Killed By Fire



The Lone Pine In The Sea Of Palmetto Has Now Been Killed By Fire

The key going forward is to customize each fire plan for each burn unit depending on the needs at the time. For example, if a burn block has some wire grass and FFWCC wants to support a good quality wire grass seed crop with the highest viability seed, burn in May or June[10], taking pre-burn treatment measures like mowing or chopping if there is a part of the block with heavy underbrush that would kill the pines if burned. Another example; If FFWCC notices a burn block that has longleaf pine strobili growing, set in motion the preparations to burn the block the next year in September so the soil will be exposed and ready to accept the seed that will be released September through December. These preparations may include chopping, mowing and/or spraying herbicide under the existing forest to reduce the fuel load before burning the next year. Forest and wildlife management objectives can be mutually beneficial; they do not have to be mutually exclusive. It does take more thoughtful and extensive planning and implementation, however.

There are numerous articles and research papers describing longleaf pine restoration and native grass restoration practices that have proven effective. Several resources that are recent and easy to use are the *Field and Restoration Guide to Common Native Warm-Season Grasses of the Longleaf Pine Ecosystem (M.J. Kaeser and L.K. Kirkman), Managing Longleaf Pine Habitat- A North Florida Landowner's Guide (Holly Ober, David Prentiss, Sarah Friedl) and Opportunities for Uneven-Aged Management in Second Growth Longleaf Pine Stands in Florida (Jennifer L. Gagnon and Eric J. Jokela).*

[10] Field and Restoration Guide to Common Native Warm-Season Grasses of the Longleaf Pine Ecosystem. M.J. Kaeser and L.K. Kirkman

11.19 Management Procedures Guidelines - Management of Archaeological and Historical Resources

Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties
(revised June 2021)

These procedures apply to state agencies, local governments, and non-profits that manage state-owned properties.

A. Historic Property Definition

Historic properties include archaeological sites and historic structures as well as other types of resources. Chapter 267, Florida Statutes states: " '*Historic property' or 'historic resource' means any prehistoric district, site, building, object, or other real or personal property of historical, architectural, or archaeological value, and folklife resources. These properties or resources may include, but are not limited to, monuments, memorials, Indian habitations, ceremonial sites, abandoned settlements, sunken or abandoned ships, engineering works, treasure trove, artifacts, or other objects with intrinsic historical or archaeological value, or any part thereof, relating to the history, government, and culture of the state."*

B. Agency Responsibilities

Per Chapter 267, *F.S.* and state policy related to historic properties, state agencies of the executive branch must provide the Division of Historical Resources (Division) the opportunity to comment on any undertakings with the potential to affect historic properties that are listed, or eligible for listing, in the National Register of Historic Places, whether these undertakings directly involve the state agency, i.e., land management responsibilities, or the state agency has indirect jurisdiction, i.e. permitting authority, grants, etc. No state funds should be expended on the undertaking until the Division has the opportunity to review and comment on the undertaking. (267.061(2)(a))

State agencies must consult with the Division when, as a result of state action or assistance, a historic property will be demolished or substantially altered in a way that will adversely affect the property. State agencies must take timely steps to consider feasible and prudent alternatives to the adverse effect. If no feasible or prudent alternatives exist, the state agency must take timely steps to avoid or mitigate the adverse effect. (267.061(2)(b))

State agencies must consult with Division to establish a program to locate, inventory and evaluate all historic properties under ownership or controlled by the agency. (267.061(2)(c))

State agencies are responsible for preserving historic properties under their control. State agencies are directed to use historic properties available to the agency when that use is consistent

with the historic property and the agency's mission. State agencies are also directed to pursue preservation of historic properties to support their continued use. (267.061(2)(d))

C. Statutory Authority

The full text of Chapter 267, F.S. and additional information related to the treatment of historic properties is available at:

https://dos.myFlorida.com/historical/preservation/compliance-and-review/regulations-guidelines/

D. Management Implementation

Although the Division sits on the Acquisition and Restoration Council and approves land management plans, these plans are conceptual and do not include detailed project information. Specific information for individual projects must be submitted to the Division for review and comment.

Managers of state lands must coordinate any land clearing or ground disturbing activities with the Division to allow for review and comment on the proposed project. The Division's recommendations may include, but are not limited to: approval of the project as submitted, recommendation for a cultural resource assessment survey by a qualified professional archaeologist, and modifications to the proposed project to avoid or mitigate potential adverse effects.

Projects such as additions or alterations to historic structures as well as new construction must also be submitted to the Division for review. Projects involving structures fifty years of age or older must be submitted to the Division for a significance determination**.** In rare cases, structures under fifty years of age may be deemed historically significant.

Adverse effects to historic properties must be avoided when possible, and if avoidance is not possible, additional consultation with the Division is necessary to develop a mitigation plan. Furthermore, managers of state property should make preparations for locating and evaluating historic properties, both archaeological sites and historic structures.

E. Archaeological Resource Management (ARM) Training

The ARM Training Course introduces state land managers to the nature of archaeological resources, Florida archaeology, and the role of the Division in managing state-owned archaeological resources. Participants gain a better understanding of the requirements of state and federal laws with regard to protecting and managing archaeological sites on state managed lands. Participants also receive a certificate recognizing their ability to conduct limited monitoring activities in accordance with the Division's Review Procedure, thereby reducing the time and money spent to comply with state regulations. Additional information regarding the ARM Training Course is available at:

https://dos.myFlorida.com/historical/archaeology/education/arm-training-courses/

F. Matrix for Ground Disturbance on State Lands

The matrix is a tool designed to help streamline the Division's Review Procedure. The matrix allows state land managers to make decisions about balancing ground disturbance and stewardship of historic resources. The matrix establishes types of undertakings that are either minor or major disturbances and then guides the land manager to consult the Division, conduct ARM-trained project monitoring, or proceed with the project. Additional information regarding the matrix is available at:

https://dos.myFlorida.com/historical/archaeology/education/dhr-matrix-for-ground-disturbance-on-state-lands/

G. Human Remains Treatment

Chapter 872, *Florida Statutes* makes it illegal to willfully and knowingly disturb human remains. In the event human remains are discovered, cease all activity in the area that may disturb the remains. Leave the bones and nearby items in place. Immediately notify law enforcement or the local district medical examiner of the discovery and follow the provisions of Chapter 872, FS. Additional information regarding the treatment of human remains and cemeteries is available at:

https://dos.myFlorida.com/historical/archaeology/human-remains/
https://dos.myFlorida.com/historical/archaeology/human-remains/abandoned-cemeteries/what-are-the-applicable-laws-and-regulations/

H. Division of Historical Resources Review Procedure

Projects on state owned or controlled properties may submit projects to the Division for review using the streamlined State Lands Consultation Form. The form provides instructions to submit projects for review and outlines the necessary information for the Division to complete the review process. The State Lands Consultation Form and additional information about the Division's review process is available at:

https://dos.myFlorida.com/historical/preservation/compliance-and-review/state-lands-review/

* * *

Questions relating to the treatment of archaeological and historic resources on state lands should be directed to:

Compliance and Review Section
Bureau of Historic Preservation
Division of Historical Resources

R. A. Gray Building
500 South Bronough Street
Tallahassee, FL 32399-0250

StateLandsCompliance@dos.myFlorida.com

Phone: (850) 245-6333
Toll Free: (800) 847-7278
Fax: (850) 245-6435

11.20 Land Management Uniform Accounting Council Categories

Land Management Uniform Cost Accounting Council and FWC Activity Code Groupings

Resource Management

Invasive and Nuisance Species Control

210 Invasive and nuisance species control
211 Invasive and nuisance plant control (mechanical)
212 Invasive and nuisance plant control (chemical)

Prescribed Burning

205 Prescribed burning
206 Prescribed burning C growing season (April 1 to September 30)
207 Prescribed burning C dormant season (October 1 to March 31)
208 Firebreaks

Cultural Resource Management

201 Cultural resource management

Timber Management

202 Timber management

Hydrological Management

194 Lake restoration
215 Hydrology management
216 Dams, dikes, levees
217 Canals
218 Water level management

Other

185 GIS
200 RESOURCE MANAGEMENT
203 Tree and shrub planting
213 Wildlife management
214 Listed Species management
219 Upland restoration
221 Animal surveys
228 Inland aerial surveys
235 Vegetation and plant surveys
250 MONITORING AND ASSESSMENTS
252 Biomedical monitoring
253 Ecological monitoring
256 Habitat monitoring analysis
263 Nest box monitoring
264 Population demographics
275 Permits and authorizations
276 Commission rule development and review
281 Technical assistance
282 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

Capital Improvements

New Facility Construction

910 New facility construction C buildings/structures
912 New construction C roads/bridges
913 New construction C trails
914 New construction C fences

Facility Maintenance

920 Facility and equipment maintenance (FEM) C buildings/structures
921 FEM C utilities
922 FEM C custodial functions
925 FEM C boating access
926 FEM C roads/bridges
927 FEM C trails
928 FEM C fences

Visitor Services/Recreation

Information/Education Programs

145 Technical bulletin

Operations

311 Boundary signs
312 Informational signs
320 Outreach and education C attending or developing educational or informational materials or events for the public
341 Public use administration (hunting)
342 Public use administration (non-hunting)
350 Customer service support C disseminating written or verbal information or assistance to the public
700 STUDIES
740 EVALUATIONS AND ASSESSMENTS

11.21 Operational Plan Fiscal Year 2022-2023

Activity	Description	Man Days	Salary	Fuel Cost	Other	Total
100	Administration	90.31	$19,626.07	$2,034.12	$24,418.44	$46,078.63
103	Meetings	149.69	$32,230.33	$1,626.45	$5,353.68	$39,210.46
104	Budget/purchasing/accounting	12.59	$2,948.00	$590.90	$5,139.13	$8,678.03
140	Report writing/editing/manuscript preparation	52.56	$12,539.68	$550.33	$0.00	$13,090.01
150	Personnel management	29.16	$8,987.85	$305.27	$0.00	$9,293.12
200	Resource Management	0	$0.00	$8,113.74	$14,243.29	$22,357.03
201	Cultural resource management	2.31	$510.55	$24.21	$31,163.00	$31,697.76
204	Resource planning	56.41	$21,800.15	$590.57	$0.00	$22,390.72
206	Prescribed burning - growing season	30.47	$6,772.66	$319.01	$6,380.53	$13,472.20
207	Prescribed burning - dormant season	28.47	$7,645.94	$298.07	$867.96	$8,811.97

208	Firebreaks	7.34	$1,476.82	$830.73	$1,095.58	$3,403.13
212	Invasive plant control (chemical)	44.78	$8,844.21	$468.86	$38,773.26	$48,086.33
221	Animal surveys	32.28	$6,458.59	$423.71	$28,228.47	$35,110.77
235	Vegetation and plant surveys	0	$0.00	$5.24	$116.72	$121.96
250	Monitoring and assessments	55.97	$10,958.55	$585.99	$0.00	$11,544.54
252	Biomedical monitoring	0.25	$46.23	$2.62	$0.00	$48.85
289	Native vegetation management (mechanical)	65.06	$14,410.33	$1,853.84	$115,723.96	$131,988.13
320	Outreach and education	2.88	$588.48	$55.62	$296.97	$941.07
340	Public use administration	2.69	$908.89	$47.77	$275.90	$1,232.56
341	Public use administration (hunting)	35.63	$7,173.06	$4,999.42	$25,834.82	$38,007.30
342	Public use administration (non-hunting)	59.69	$14,528.23	$624.93	$2,191.05	$17,344.21
910	New facility construction -- buildings/structures	0.31	$144.51	$3.27	$0.00	$147.78
920	FEM -- buildings/structures	50.22	$11,205.29	$535.93	$54,450.77	$66,191.99
921	FEM -- utilities	0	$0.00	$0.00	$181.93	$181.93
923	FEM -- vehicles/equipment	147.44	$35,053.48	$2,750.65	$45,786.56	$83,590.69
926	FEM -- roads/bridges	89	$22,695.28	$1,187.04	$89,936.46	$113,818.78
928	FEM -- fences	29.5	$6,495.67	$308.87	$1,416.28	$8,220.82
	Total:	1075.01	$254,048.85	$29,137.16	$491,874.76	$775,060.77

11.22 Arthropod Control Plan

Florida Department of Agriculture and Consumer Services
Division of Agricultural Environmental Services

ARTHROPOD MANAGEMENT PLAN - PUBLIC LANDS

Section 388.4111, F.S.
Telephone: (850) 617-7995

Nicole 'Nikki' Fried
COMMISSIONER

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: Chassahowitzka Wildlife Management Area

Is Control Work Necessary: ❑ Yes ☒ No

Location: Hernando County

Land Management Agency: Florida Fish and Wildlife Conservation Commission

Are Arthropod Surveillance Activities Necessary? ❑ Yes ☒ No
If "Yes", please explain:

Which Surveillance Techniques Are Proposed?

Please Check All That Apply: N/A

❑ Landing Rate Counts	❑ Light Traps	❑ Sentinel Chickens
❑ Citizen Complaints	❑ Larval Dips	❑ Other

If "Other", please explain: N/A

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Arthropod Species for Which Control is Proposed: N/A

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:) N/A

❑ Bti

❑ Bs

❑ Methoprene

❑ Non-Petroleum Surface Film

❑ Other, please specify:

Please specify the following for each larvacide: N/ A

Chemical or Common name: N/A

❑ Ground ❑ Aerial

Rate of application:

Method of application:

Proposed Adult Mosquito Control:

Aerial adulticiding ❑Yes ☒No

Ground adulticiding ❑ Yes ☒No

Please specify the following for each adulticide: N / A

Chemical or common name:

Rate of application:

Method of application:

Proposed Modifications for Public Health Emergency Control: In the event of a declared public health emergency, control may be performed by the arthropod control agency, as part of a larger treatment plan to safeguard public health. Land managers of the area will be notified prior to treatment.

Proposed Notification Procedure for Control Activities:

Manager of the area will be notified by e-mail when treatment of the area will occur. The notice should include a map of the area being treated, the material to be used and the general time of day the treatment will occur.

Records:

Are records being kept in accordance with Chapter 388, F.S.:

☒ Yes ❑No

Records Location: Hernando County Mosquito Control, 15400 Wiscon Rd., Brooksville FL 34601

How long are records maintained:

3 years

Vegetation Modification:

What trimming or altering of vegetation to conduct surveillance or treatment is proposed?

None

Proposed Land Modifications:

Is any land modification, i.e., rotary ditching, proposed:

None

Include proposed operational schedules for water fluctuations:

None

List any periodic restrictions, as applicable, for example peak fish spawning times.

None

Proposed Modification of Aquatic Vegetation:

None

Land Manager Comments:

Arthropod Control Agency Comments:

In the event of a public health emergency or a Mosquito Borne Illness Advisory by the State Health Department all appropriate and necessary treatments will be performed.

James C Conner III Digitally signed by James C Conner III Date: 2021.05.07 14:34:22 -04'00'

Signature of Lands Manager or Representative Date

Sandra L. Fisher-Brannon 5/6/21

Signature of Mosquito Control Director / Manager Date

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11.23 Hernando County Letter of Compliance with Local Government Comprehensive Plan

DEPARTMENT OF PLANNING AND ZONING
PLANNING DIVISION
20 NORTH MAIN STREET ◆ ROOM 262 ◆ BROOKSVILLE, FLORIDA 34601
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April 20, 2021 (via email)

Dylan (Imlah) Haase, AICP
Senior Conservation Planner
Florida Fish and Wildlife Conservation Commission
620 S. Meridian Street
Tallahassee, Florida 32399
Phone: 850.487.9102
Dylan.Haase@MyFWC.com

RE: Chassahowitzka Wildlife Management Area (CWMA) Management Plan

Dear Mr. Haase:

Hernando County has reviewed the Chassahowitzka Wildlife Management Area (CWMA) Management Plan and find the Plan to be consistent with the Hernando County 2040 Plan (comprehensive plan).

Thank you for the opportunity to review the CWMA. Please feel free to contact me, or my staff with any questions.

Sincerely;

Ronald F. Pianta
Digitally signed by Ronald F. Pianta
Date: 2021.04.20 17:04:15 -04'00'

Ronald F. Pianta, AICP
Planning and Zoning Director

Cc: Mike Singer, Conservation lands Specialist
Dawn Velsor, Environmental Planner