2022-2032 MANAGEMENT PLAN for the CHINSEGUT WILDLIFE and ENIRONMENTAL AREA

HERNANDO COUNTY, FLORIDA

Florida Fish and Wildlife
Conservation Commission
Division of Habitat and Species
Conservation
620 South Meridian Street
Tallahassee, Florida 32399-1600

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PENDING DEP APPROVAL LETTER

A Management Plan
for the
Chinsegut Wildlife and Environmental Area

Hernando County, Florida

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

MONTH 2022

Approved _____
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: Chinsegut Wildlife and Environmental Area (CWEA)
Location: Hernando County, Florida
Acreage Total: 853 acres
Acreage Breakdown:

Land Cover Classification	Acres	Percent of Total Area
Basin marsh	69.41	8.5%
Basin swamp	10.93	1.3%
Borrow area	0.97	0.1%
Bottomland forest	18.32	2.2%
Clearing/regeneration	6.44	0.8%
Developed	12.00	1.5%
Mesic flatwoods	7.49	0.9%
Mesic hammock	90.50	11.0%
Pasture – Improved	32.16	3.9%
Pasture – Semi-improved	1.85	0.2%
Restoration upland pine	109.17	13.3%
Road	44.57	5.4%
Sandhill	101.22	12.3%
Upland hardwood forest	13.16	1.6%
Upland pine	302.28	36.8%

*GIS-calculated acreage for land cover classification varies slightly from actual total acreage.
Lease/Management Agreement No.: 3774 (Appendix X)
Use: Single __ Multiple X
Management Agency: FWC
Management Responsibilities: LEAD, LESSEE (Wildlife and Environmental Area, resource protection, law enforcement)
Designated Land Use: Wildlife and Environmental Area
Sublease (s): None
Encumbrances List: Right-of-way easements with the Hernando County Board of County Commissioners for roads, utilities, etc.
Type Acquisition: Quitclaim deeds from Federal Government and Donations
Unique Features: Natural: Natural communities: Upland Pine, basin marsh, and sandhill
Archaeological/Historical: Six documented within the CWEA.
Management Needs: Habitat restoration and improvement; public access and recreational opportunities; hydrological preservation and restoration; invasive species maintenance and control; imperiled species habitat maintenance, enhancement, and restoration.
Acquisition Needs/Acreage: 2,020 acres FWC Additions and Inholdings list; 8,741 acres remaining in the Annutteliga Hammock Florida Forever Project (Figure 12).
Surplus Lands/Acreage: None
Public Involvement: Management Advisory Group consensus building meeting and Public Hearing (Appendix X)

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

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	
12	A description of past and existing uses, including any unauthorized uses of the property.	18-2.018 & 18-2.021	
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	
14	A description of the management responsibilities of each entity involved in the property's management and how such responsibilities will be coordinated.	18-2.018	
15	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	
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	

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
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)	
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	
19	Letter of compliance from the local government stating that the LMP is in compliance with the Local Government Comprehensive Plan.	BOT requirement	
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	
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	
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	
23	A statement regarding incompatible use in reference to Ch. 253.034(10).	253.034(10)	

*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	

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
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)	
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)	
27	Summary of comments and concerns expressed by the advisory group for parcels over 160 acres	18-2.021	
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)	
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	
30	Summary of comments and concerns expressed by the management review team, if required by Section 259.036, F.S.	18-2.021	
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	

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	
33	Insert FNAI based natural community maps when available.	ARC consensus	
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	
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	
36	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding beaches and dunes.	18-2.021	

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
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	
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	
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	
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	
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)	
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.	↓	
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.	↓	
42-C.	The associated measurable objectives to achieve the goals.	↓	
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.*	↓	
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.		
43	***Quantitative data description of the land regarding an inventory of forest and other natural resources and associated acreage. *See footnote.*	253.034(5)	
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).	↓	
44-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	↓	
44-C.	Measurable objectives (see requirement for #42-C).	↓	
44-D.	Related activities (see requirement for #42-D).	↓	
44-E.	Budgets (see requirement for #42-E).		
45	Imperiled species, habitat maintenance, enhancement, restoration or population restoration	259.032(10) & 253.034(5)	

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
45-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	
45-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	↓	
45-C.	Measurable objectives (see requirement for #42-C).	↓	
45-D.	Related activities (see requirement for #42-D).	↓	
45-E.	Budgets (see requirement for #42-E).		
46	***Quantitative data description of the land regarding an inventory of exotic and invasive plants and associated acreage. *See footnote.*	253.034(5)	
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	
48	Exotic and invasive species maintenance and control	259.032(10) & 253.034(5)	
48-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	
48-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	↓	
48-C.	Measurable objectives (see requirement for #42-C).	↓	
48-D.	Related activities (see requirement for #42-D).	↓	
48-E.	Budgets (see requirement for #42-E).		

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

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
53-E.	Budgets (see requirement for #42-E).		

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	
55	***Quantitative data description of the land regarding an inventory of significant land, cultural or historical features and associated acreage.	253.034(5)	
56	A description of actions the agency plans to take to locate and identify unknown resources such as surveys of unknown archeological and historical resources.	18-2.021	
57	Cultural and Historical Resources	259.032(10) & 253.034(5)	
57-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	
57-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	↓	
57-C.	Measurable objectives (see requirement for #42-C).	↓	
57-D.	Related activities (see requirement for #42-D).	↓	
57-E.	Budgets (see requirement for #42-E).		

**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)	
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).	↓	
59-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	↓	
59-C.	Measurable objectives (see requirement for #42-C).	↓	
59-D.	Related activities (see requirement for #42-D).	↓	
59-E.	Budgets (see requirement for #42-E).		
60	*** Quantitative data description of the land regarding an inventory of recreational facilities and associated acreage.	253.034(5)	

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
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).	↓	
61-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	↓	
61-C.	Measurable objectives (see requirement for #42-C).	↓	
61-D.	Related activities (see requirement for #42-D).	↓	
61-E.	Budgets (see requirement for #42-E).		

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

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

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Management Plan Acronym Key

ADA	Americans with Disabilities Act
ARC	Acquisition and Restoration Council
BEBR	Bureau of Economic and Business Research
CF	Conservation Florida
CWEA	Chinsegut Wildlife and Environmental Area
DACS	Department of Agriculture and Consumer Services
DEP	Department of Environmental Protection
DHR	Florida Department of Historical Resources
DRP	Division of Recreation and Parks
DSL	Division of State Lands
F.A.C.	Florida Administrative Code
FFS	Florida Forest Service
FISC	Florida Invasive Species Council
FLAM	Florida Landscape Assessment Model
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
GPS	Global Positioning System
IMPP	Internal Management Policies and Procedures
IPCC	Intergovernmental Panel on Climate Change
LAP	Landowner Assistance Program
LMR	Land Management Review
MAG	Management Advisory Group
MSL	Mean sea level
NRCS	National Resources Conservation Service
NSS	National Speleological Society
OBVM	Objective-Based Vegetation Management
PASO	Public Access Services Office
SWFWMD	Southwest Florida Water Management District
TNC	The Nature Conservancy
UF	University of Florida
USDA	United State Department of Agriculture
USDOE	United State Department of Education
USFWS	United States Fish and Wildlife Service
WCPR	Wildlife Conservation Prioritization and Recovery
WEA	Wildlife and Environmental Area

1 Introduction and General Information

Nestled within the ancient sandhills of the Brooksville Ridge physiographic province in Hernando County, the Chinsegut Wildlife and Environmental Area (CWEA) conserves one of the few remaining stands of intact old-growth longleaf pine forests in Florida; the CWEA's Big Pine tract may be the largest contiguous stand of old-growth virgin longleaf pine forests in Florida. Many of the longleaf pines (*Pinus palustris*) are estimated to be over 200 years old and at least one tree has been aged at 236 years of age. This ancient forest provides important habitat for a diverse suite of imperiled wildlife species such as the gopher tortoise (*Gopherus polyphemus*), Eastern indigo snake (*Drymarchon couperi*), and wood stork (*Mycteria americana*), along with a variety of imperiled plants and more common native plants and wildlife. Consequently, the area's old growth longleaf pine forests, wetlands, sandhills, and scattered hardwood hammocks are a fitting and important area for environmental education.

The CWEA consists of the 408-acre Conservation Center tract and the 445-acre Big Pine tract for a total of 853 acres. The CWEA is managed by the Florida Fish and Wildlife Conservation Commission (FWC) to conserve the important natural communities on site that provide habitat for a wide range of imperiled and more common wildlife species. While the CWEA provides a variety of outdoor fish- and wildlife-based educational and recreational opportunities, hunting and fishing are not permitted. The primary focus of the CWEA is environmental and natural resource education. Many educational programs and hikes are hosted throughout the year. The CWEA also has a historical significance that will continue to influence the wildlife management and environmental education programs. The CWEA is owned by the Board of Trustees of the Internal Improvement Fund (Board of Trustees) and the FWC. The FWC has lead management authority for all resources within the established boundary.

This Management Plan serves as the basic statement of policy and direction for the management of the CWEA and has been developed to guide each aspect of the CWEA's resource and operational management for the ten-year planning period. It provides information including the past usage, conservation acquisition history, and descriptions of the natural and cultural resources found on the CWEA. Furthermore, it identifies the FWC's management intent, goals, objectives, as well as identifying 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 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 DSL. Terms (Appendix) 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 CWEA is located in Southwest Florida in Hernando County and encompasses approximately 853 acres (Figures 1 and 2). The CWEA lies in Sections 1-3, Township 22 South, and Range 19 East, as well as within Sections 25 and 36 in Township 21 South, and Range 19 East (Figure 3). The CWEA is located approximately six miles north of Brooksville, approximately 50 miles north of Tampa, and approximately 60 miles west of Orlando on U.S. Highway 41, in Hernando County, Florida. The CWEA is bounded on the north by County Road (C.R.) 476, on the west by C.R. 481, on the south by U.S. Highway 41, and on the east by the Natural Resource Conservation Service (NRCS) Plant Materials Subtropical Research Station. The entrance to the Chinsegut Conservation Center is located on C.R. 476. The Big Pine tract of the CWEA is located approximately four miles north of Brooksville and about two miles southwest of the Chinsegut Conservation Center tract and is divided by Old Crystal River Road. Eighty acres of the Big Pine tract lie west of the road and 365 acres lie to the east between Old Crystal River Road and US Highway 41. Other municipalities near the CWEA include Istachatta, Nobleton, and Pineola. The CWEA is not located within a designated Area of Critical State Concern.

1.1.1 Proximity to other Public Conservation Lands

The CWEA is located in the vicinity of an extensive network of conservation lands, including lands managed by the Southwest Florida Water Management District (SWFWMD), the DEP, the Florida Forest Service (FFS), and the FWC. Several Florida Forever projects (Figure 4) 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 CWEA, including lands managed by public and private entities that conserve cultural and natural resources within this region of Florida.

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

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

Project Name	GIS Acres
Annutteliga Hammock	8,740.79
Battle of Wahoo Swamp	853.44
Southeastern Bat Maternity Caves	597.58
Withlacoochee River Corridor	3,286.12

Table 2. Conservation Lands within a 10-mile Vicinity

Federal Government	Managing Agency
Brooksville Plant Materials Center	USDA-NRCS
State of Florida	**Managing Agency**
Chassahowitzka Wildlife Management Area	FWC
Janet Butterfield Brooks Wildlife and Environmental Area	FWC
Perry Oldenburg Wildlife and Environmental Area	FWC
Withlacoochee State Forest	FDACS-FFS
Withlacoochee State Trail	DEP-DRP
Water Management District	**Managing Agency**
Annutteliga Hammock	SWFWMD
Flying Eagle Preserve	SWFWMD
Local Government	**Managing Agency**
Chinsegut Hill Conference Center	Hernando County
Fickett Hammock Preserve	Hernando County
Lake Townsen Preserve	Hernando County
Peck Sink Preserve	Hernando County
Private/Public Conservation Organization	**Managing Agency**
Ahhochee Hill Sanctuary	Florida Audubon Society
Cummer Family Land Trust Preserve	North Florida Land Trust

Acronym Key	Agency Name
DEP-DRP	Florida Department of Environmental Protection-Div. of Recreation and Parks
FDACS-FFS	Florida Department of Agricultural and Consumer Services-Florida Forest Service
FWC	Florida Fish and Wildlife Conservation Commission
SWFWMD	Southwest Florida Water Management District
USDA-NRCS	US Department of Agriculture-Natural Resources Conservation Service

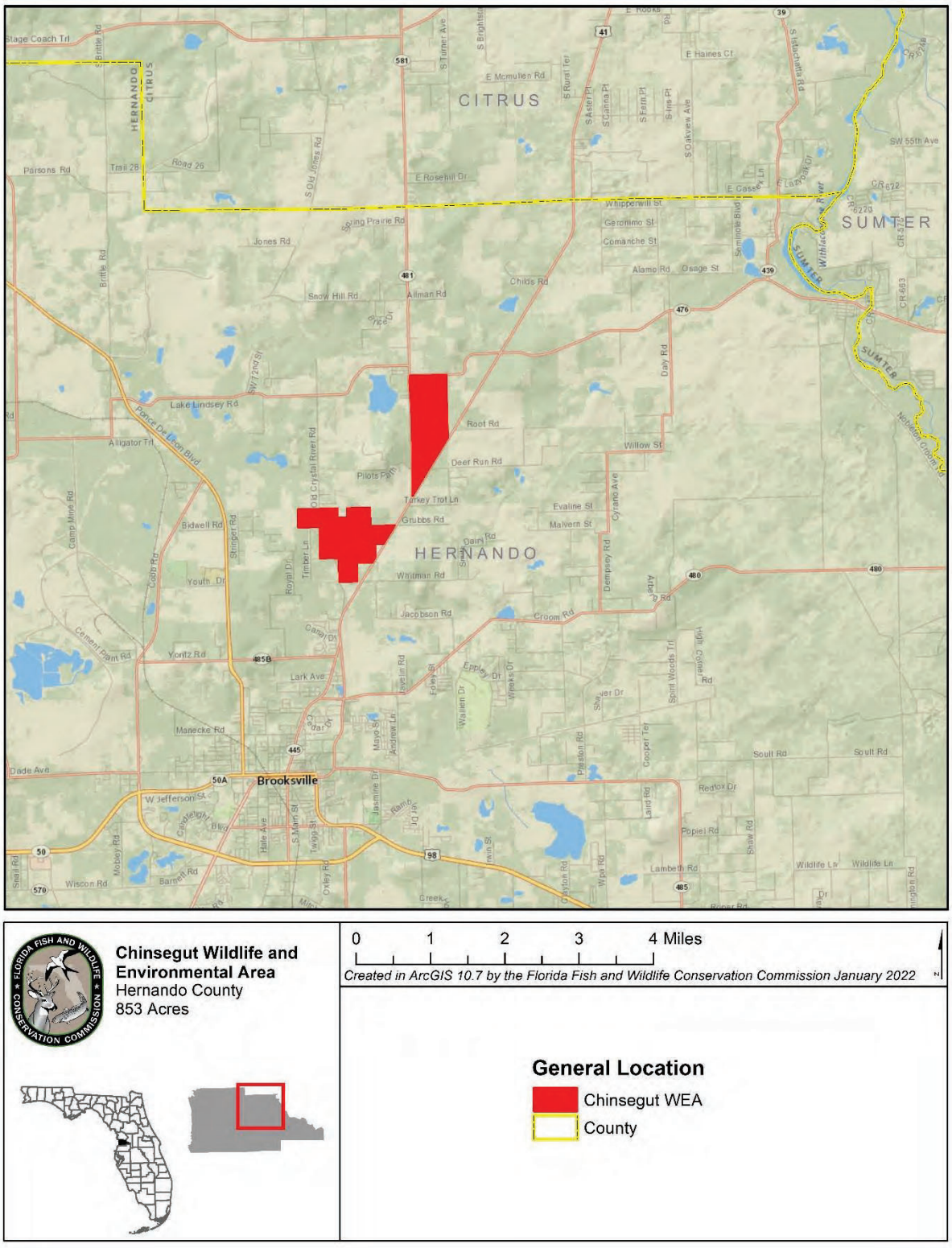

Figure 1. General Location of the CWEA

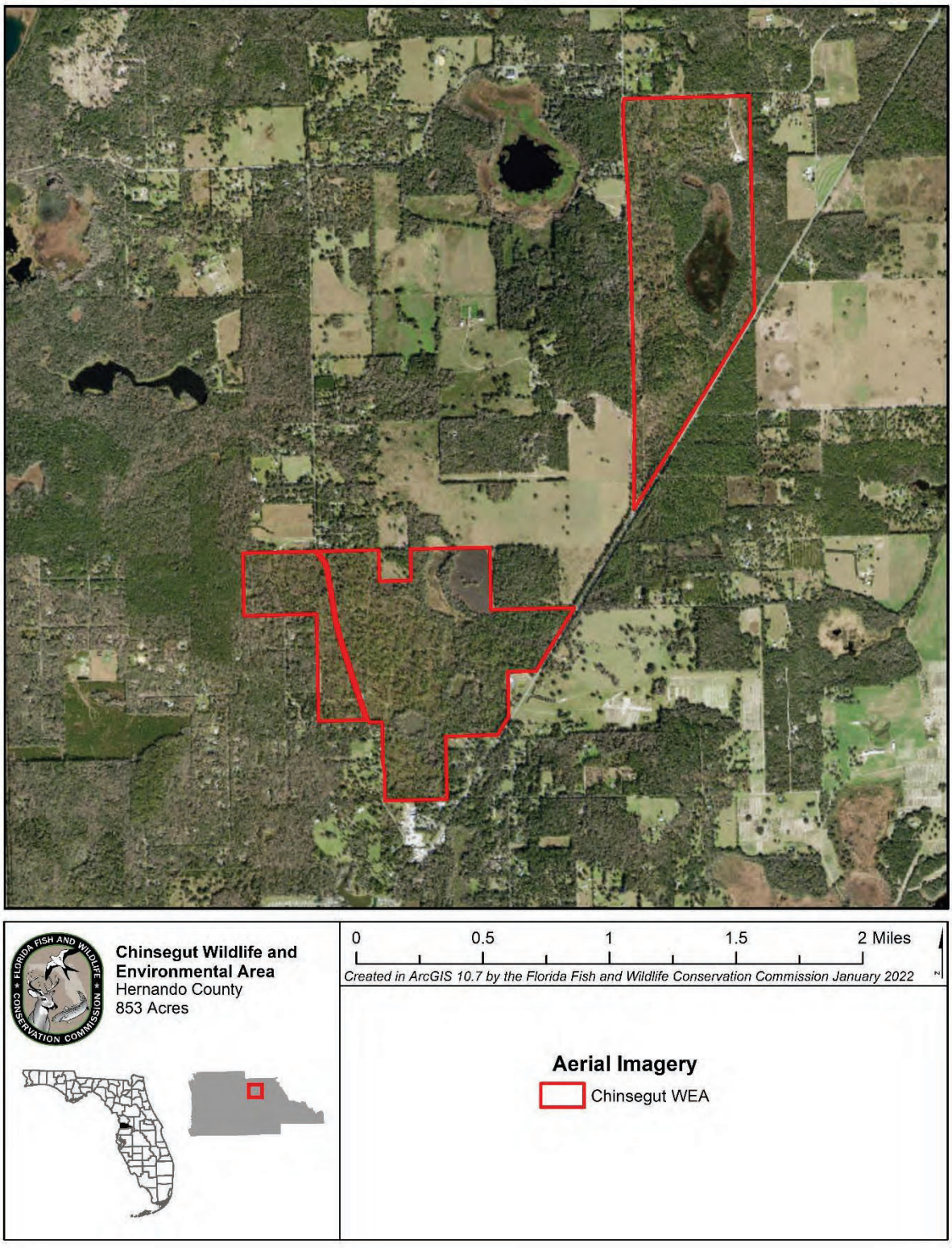

Figure 2. Aerial Imagery for the CWEA

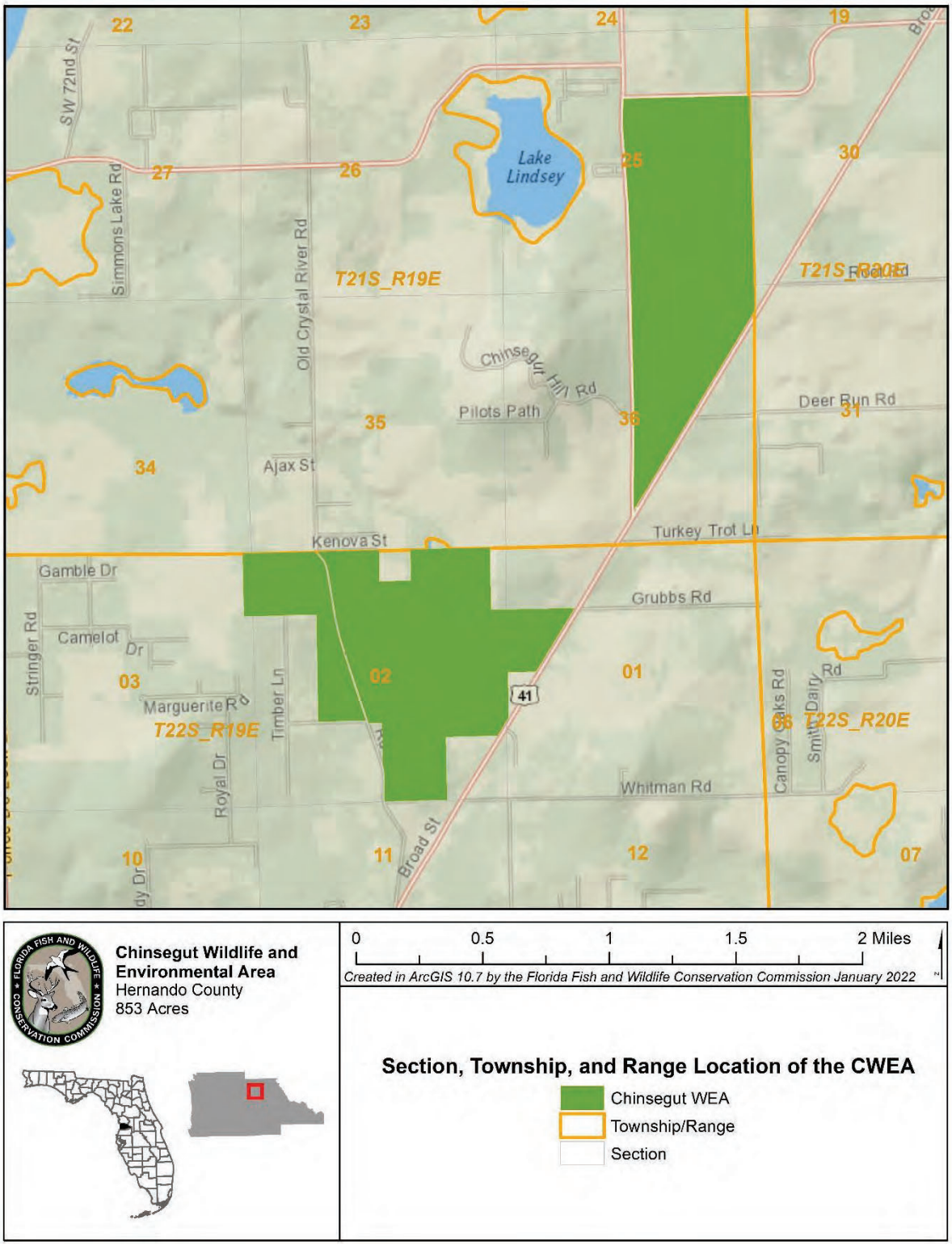

Figure 3. Township, Range, and Section for the CWEA

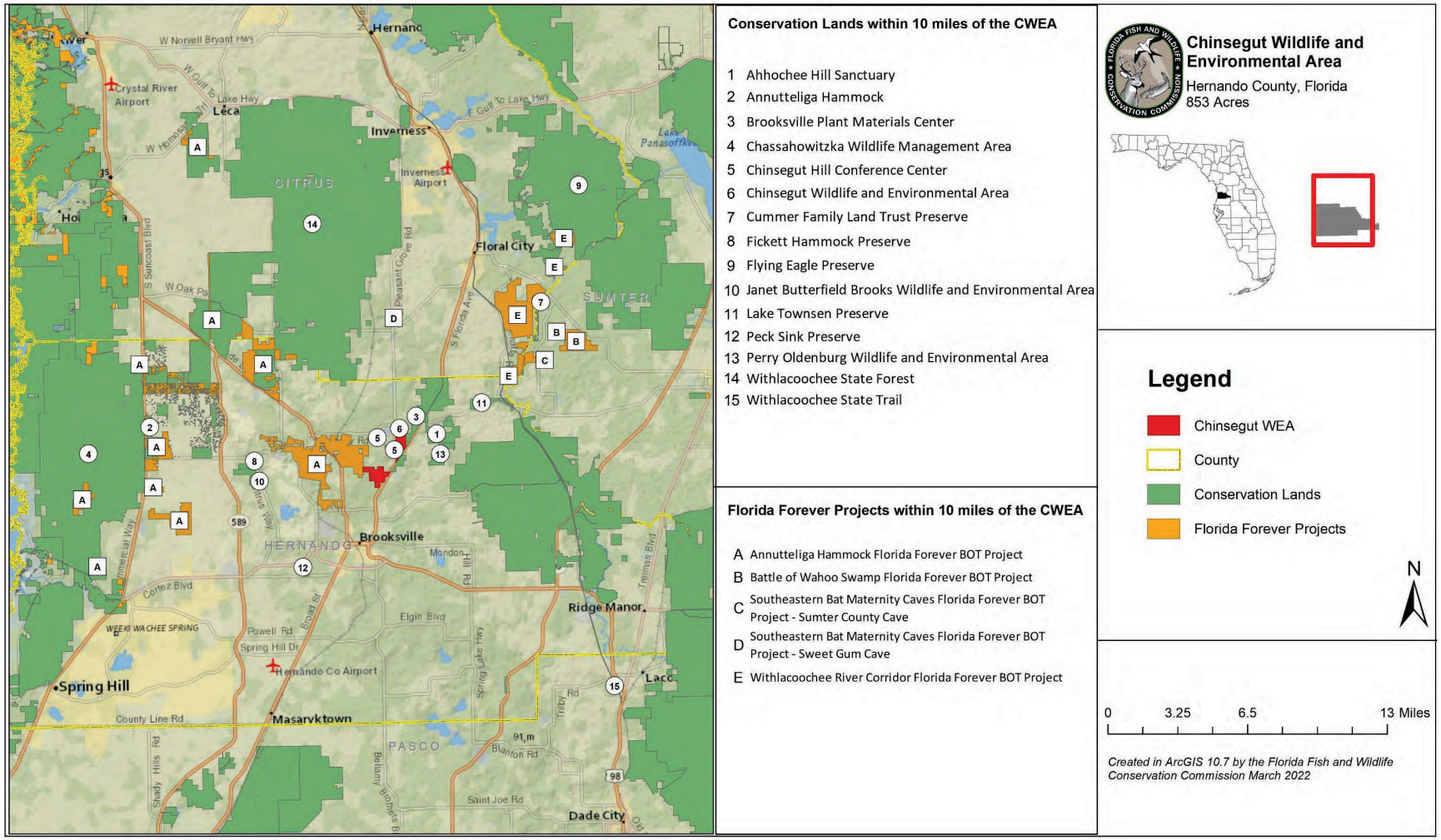

Figure 4. Conservation Lands and Florida Forever Projects within a Vicinity of the CWEA

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1.2 Acquisition

1.2.1 Acquisition History

The CWEA has its origins in lands conveyed by the Federal government to the State of Florida. The USDA acquired the 2,082-acre Chinsegut Estate from Colonel Raymond Robins in 1932 under the Migratory Bird Conservation Act. Colonel Robins designated specific portions of this "Chinsegut Hill Sanctuary" to be a migratory bird and wildlife refuge, forest reserve, and an agricultural experiment station.

On January 20, 1967, the Florida Game and Fresh Water Fish Commission (now FWC) approved a revocable permit with the USDA relative to 408 acres of the land, designating the area as a nature preserve. In June 1973, ownership of the 408 acres was transferred by quitclaim deed from the USDA to the FWC for wildlife management and conservation education. This area became known as the Conservation Center tract of the CWEA.

The original 420 acres of the Big Pine tract of the CWEA originated from the same 2,082 acres of the Robins' estate that was made surplus by the Federal government. In 1973, the United States Department of Health, Education, and Welfare (now the Department of Education) deeded 420 acres, designated as a "virgin longleaf pine" Forest Preserve, to the University of Florida (UF) School of Forest Resources and Conservation. The main provision of this quitclaim deed was for the property to "be utilized continuously for educational purposes" for thirty years. After fourteen years, the UF was unable to utilize the Big Pine tract according to the original agreement, and on May 11, 1989, the United States Department of Education (USDOE) transferred the quitclaim deed to the Board of Trustees, for use in conjunction with the Chinsegut Conservation Center and in cooperation with the Hernando County School Board. Subsequently, the Big Pine tract was leased to the FWC in 1990.

In 2009, The Nature Conservancy (TNC) donated two parcels to the Board of Trustees adjacent to the Big Pine tract totaling approximately 25 acres. One parcel, approximately six acres in size, is located adjacent to the western boundary of the original Big Pine tract. The other parcel, approximately 19 acres in size, is located immediately east of the original Big Pine tract on the west side of U.S. Highway 41. This tract was subsequently leased to the FWC in November 2009.

1.2.2 Purpose for Acquisition of the Property

The lands that form the CWEA were conveyed by the USDA to the FWC and from the USDOE to the Board of Trustees for the purpose of ensuring that these unique natural lands and resources are preserved in perpetuity to provide environmental education. In conserving these unique natural habitats and their associated wildlife and plants, the FWC developed the Chinsegut Conservation Center, which offers a wide assortment of environmental education opportunities both at the Conservation Center and on the Big Pine tract of the CWEA. These environmental education programs also aid in fulfilling Florida's Environmental Education Act,

passed by the Florida Legislature in 1989. This Act emphasizes the role state agencies play in creating an effective environmental education program for Florida. According to the 1987 Comprehensive Plan for Environmental Education, the FWC is one of several state agencies that has responsibility for "managing and providing information about the environment." The 1989 Act identified the need to develop programs for public schools, community colleges, and state universities; the need to provide appropriate in-service training for teachers; and the importance of integrating environmental education into the entire curriculum. The CWEA is a valuable tool and model that helps the FWC fulfill its responsibilities as facilitators of environmental education in Florida.

The unique ecological and historical qualities and the overall accessibility to the general public make this area extremely valuable for developing and expanding environmental education programs in this region. In particular, the CWEA provides a site that is well suited for the FWC to develop unique and innovative environmental education programs focusing on wildlife habitat management.

Therefore, in keeping with the covenants of the original deeds of conveyance and the guidance of Florida's Environmental Education Act, the FWC continues to manage the CWEA in accordance with the area's original purposes of acquisition: to preserve its unique natural resources, to provide environmental education programs and opportunities, to encourage ecological diversity, to provide managed habitat for both locally important and imperiled wildlife, and to provide the public with fish- and wildlife-oriented outdoor recreational opportunities.

1.3 Title Interest and Management Authority

As State-owned lands, title to the CWEA is vested in the Board of Trustees and the FWC. In 1990, the DSL, as staff to the Board of Trustees, entered into a 50-year lease agreement (Lease Agreement Number 3774) granting the FWC management authority for the CWEA. The FWC holds title via a 1973 quitclaim deed from the USDA to the 408-acre Conservation Center tract. The Board of Trustees holds title via a 1989 quitclaim deed from the U.S. Department of Education for 420 acres of the Big Pine tract and 25 acres via a 2009 warranty deed from TNC, bringing the Big Pine tract to its current size of 445 acres (Figure 5). Further management authority derives from Article IV, Section 9 of the Florida Constitution as well as the guidance and directives of Chapters 253, 259, 327, 370, 373, 375, 378, 379, 403, 487, 597, and 870 of the F.S. These constitutional provisions and laws provide the FWC the authority to protect, conserve, and manage the State's fish and wildlife resources.

The Board of Trustees' Lease Agreement Number 3774 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."

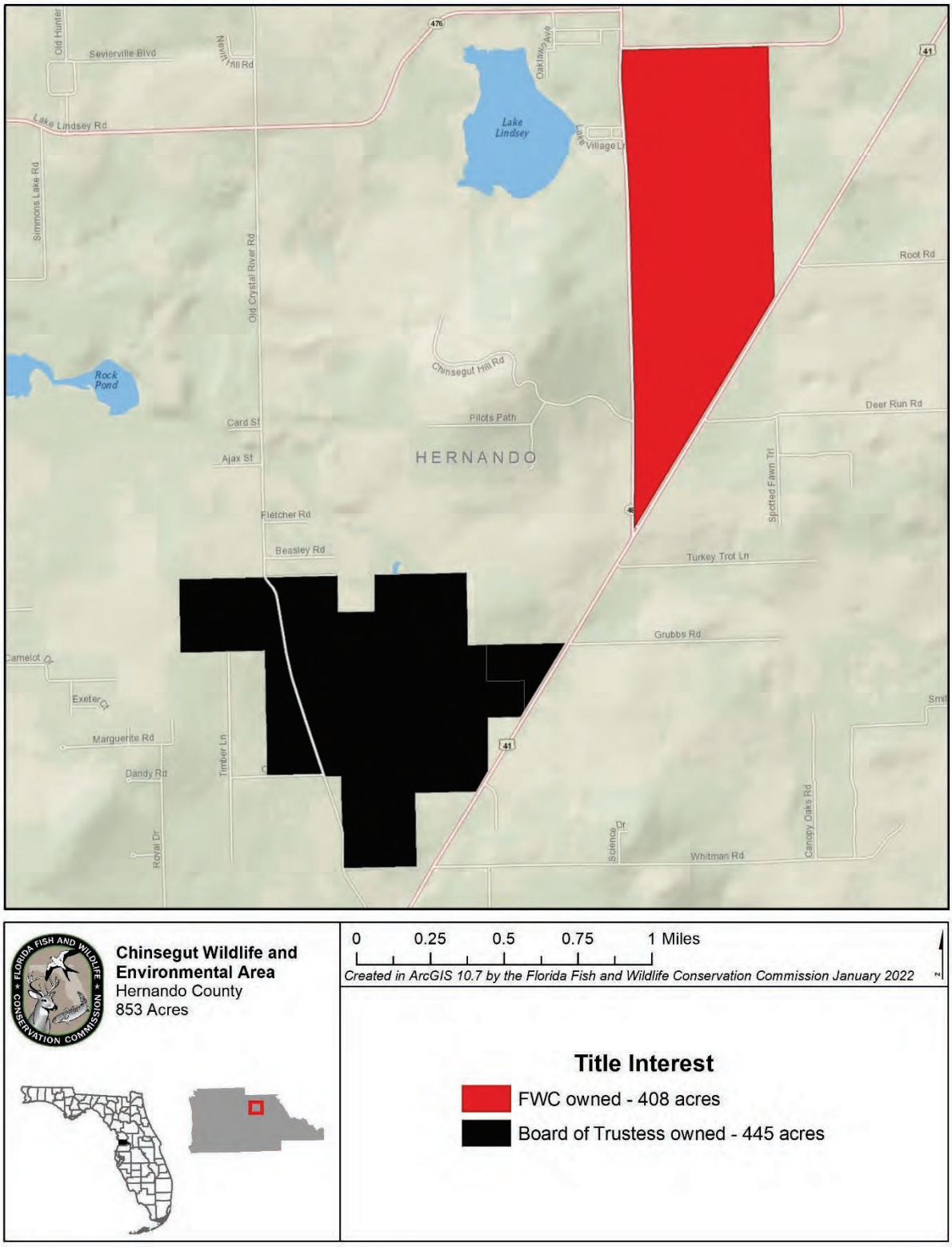

Figure 5. Title Interest for the CWEA

1.3.1 Encumbrances

Encumbrances on the Conservation Center tract include provisions of the quitclaim deed, which maintains that the area be “continuously used only as and for the conservation of wildlife.” In the event this tract is no longer used for this purpose, the title shall revert to the federal ownership. Furthermore, the title shall revert to the United States of America if the property is needed for national defense purposes.

The Big Pine tract is encumbered by a right-of-way easement in favor of the Hernando County Board of County Commissioners for a public road west of Crystal River Road within and along the south boundary of the tract. The 30-year environmental education requirement of the deed for the Big Pine tract from the USDOE expired in 2003.

Both tracts are encumbered by rights-of-way easements in favor of the Hernando County Board of County Commissioners, for public roads, highways, utilities, railroads, pipelines and/or covenants, restrictions, reservations, conditions, and other agreements in place before execution of both quitclaim deeds.

1.4 Public Involvement

The FWC conducted a Management Advisory Group (MAG) meeting remotely via Microsoft Teams on February 16th, 2022 to obtain input from both public and private stakeholders regarding management of the CWEA. 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 listing of participants, is included as Appendix XXX. Further, a public hearing, as required by Chapter 259.032(10), F.S., was held in Brooksville on March 30th, 2022, to solicit input and comments from the general public regarding this Management Plan. A Management Prospectus was made available to the public 30 days prior to the hearing. The report of that hearing is also contained in Appendix X. A website is also maintained for receipt of public input at https://myfwc.com/conservation/management-plans/develop-mps/. Further testimony and input are received at a public hearing held by ARC. Input received from all public involvement efforts has been considered in the development of this Management Plan.

1.5 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 MAG meeting which engages stakeholders from various user groups at this 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 expertise and other agency experts, in developing this Management Plan, 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] This 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 this Management Plan will be presented to the DSL and ARC for review and consideration.

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. Additionally, there are a total of ten physiographic divisions within Florida. The CWEA is primarily located in the Brooksville Ridge division, as well as a region that contains Suwannee Limestone formations. These formations are characterized by micro-fossiliferous and crystalline limestone and elevations that range from 100 to 200 feet above mean sea level (MSL).[2] Specifically, on the CWEA the elevations vary from about 75 to 100 feet in the western part and from about 50 to 100 feet above MSL in the eastern part. The highest point within the Big Pine tract is 159 feet above MSL in the northwest corner and the land descends to 90 feet above MSL in the western portion and 70 feet above MSL in the eastern portion of this tract. Topography is similar within the Conservation Center tract, where the highest point is 116 feet above MSL at the northern border, and the elevation descends to 66 feet above MSL within

May's Prairie. May's Prairie, Burn's Prairie, and the two willow swamps are wet areas with elevations between 66 and 67 feet above MSL. Additional low points of elevation include at least one sinkhole on each tract, and several borrow pits located on the western edge of the Chinsegut Conservation Center.

2.1.2 Soils

The NRCS data were used to identify the CWEA soil series and soil depth to water table (Figures 6 and 7). The map units described in the soil survey of the CWEA are distributed as shown in Figure 6. Analyses of depth to water table for map units occurring within the CWEA 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 XX 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 CWEA are also provided in Appendix XX. Specific soils found on the CWEA, are primarily fine sands, comprised of 31% Arredondo fine sand, 18% Blichton loamy fine sand, and 10% Sparr fine sand. Various other soils that each make up less than 10% of the area include Flemington fine sandy loam; Kanapaha-Kanapaha, wet, fine sand; Kendrick fine sand; Nobleton fine sand; and several others. The CWEA is comprised of about 5% water.

2.1.3 Climate

The CWEA is characterized by long, warm, summers and mild winters. The average daily winter temperature over the last ten years has been 64 degrees Fahrenheit (F), with an average minimum temperature of approximately 62 degrees F. The average daily summer temperature is 81 degrees F with an average maximum temperature of approximately 82 degrees F. Over the last ten years the CWEA also has seen an average annual rainfall of 55 inches with the majority occurring in the summer season, with January-March being the driest months.

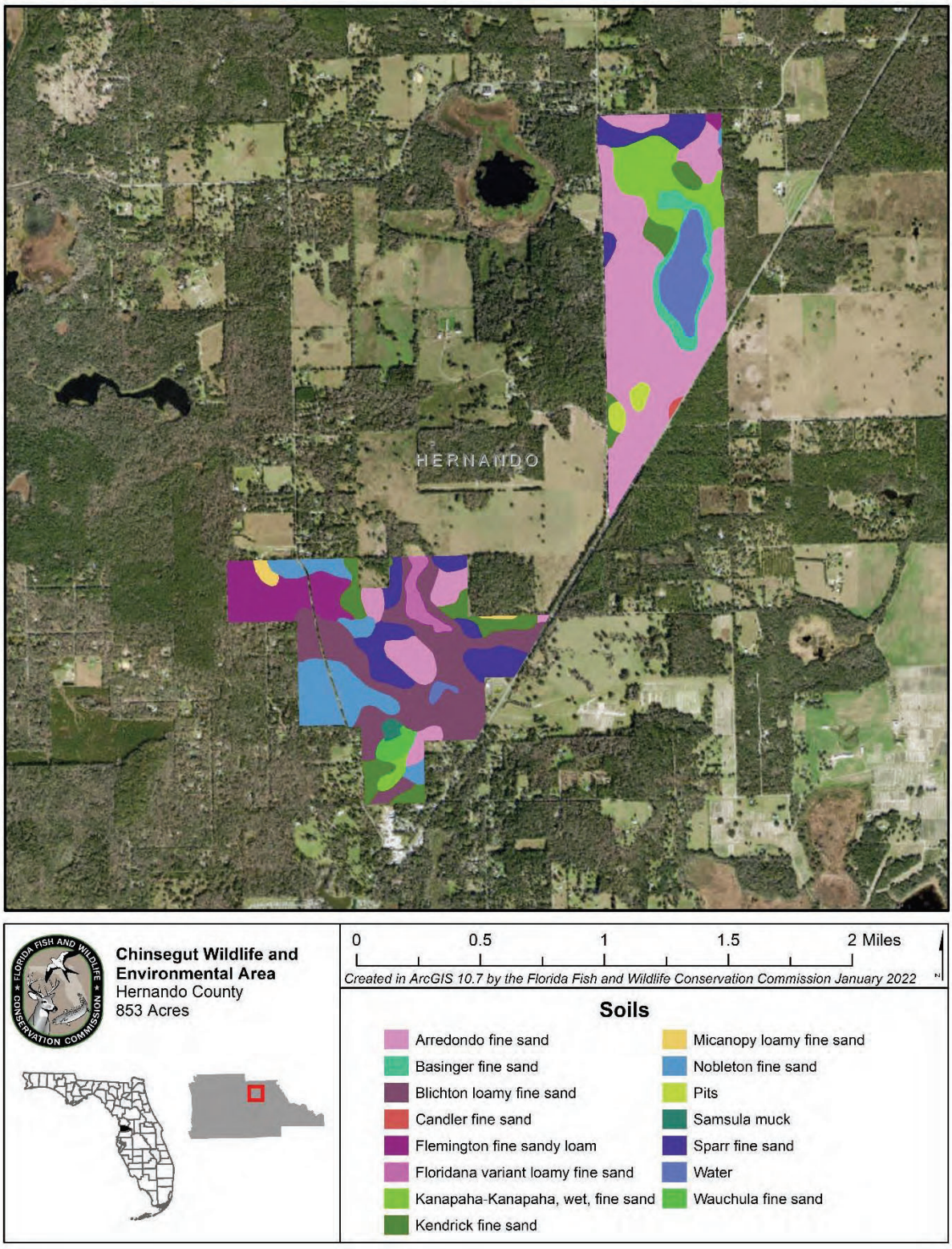

Figure 6. Soil Types on the CWEA

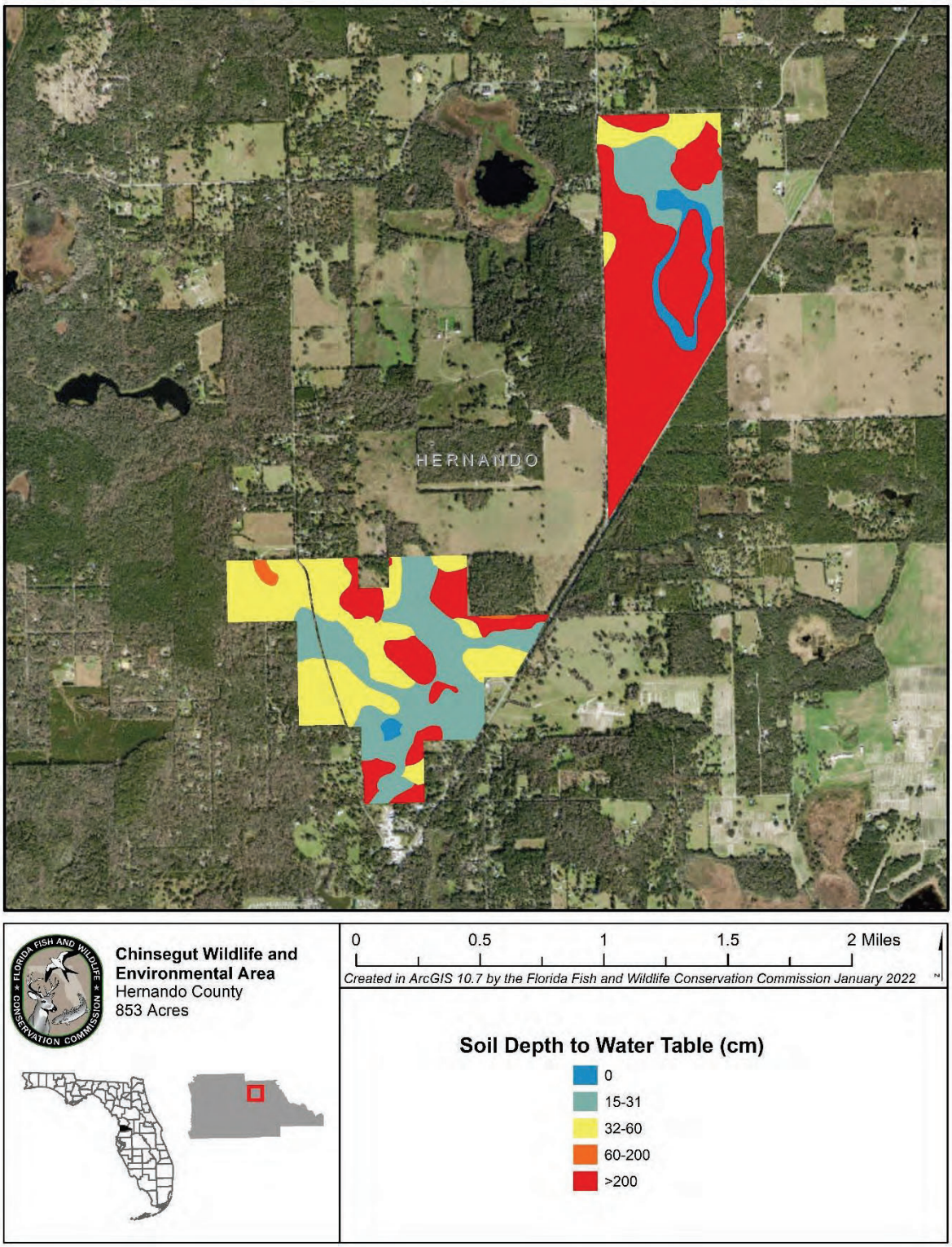

Figure 7. Soil Depth to Water Table (cm)

2.2 Vegetation

The FWC manages the lands in the WMA system using a proactive natural community-focused approach. As applied by the FWC, natural resource management starts by classifying lands into distinct natural communities. The FWC then conducts management activities to maintain or enhance each community's 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 and altered communities of the CWEA and documented 15 natural and altered community types existing on the CWEA (Table 3, and Figures 8 and 9).

Additionally, plant species found on the CWEA have been documented and recorded by either FWC staff or contractors (Appendix XX). Currently, 11 imperiled plant species (Table 4) and 48 non-native and invasive plant species have been documented as occurring on the area (Table 5) (Sections 2.2.2 and 2.2.3).

Table 3. Natural and Altered Community Types on the CWEA

Community Type	GIS Acres	Percentage
Basin marsh	69.41	8.5%
Basin swamp	10.93	1.3%
Borrow area	0.97	0.1%
Bottomland forest	18.32	2.2%
Clearing/regeneration	6.44	0.8%
Developed	12.00	1.5%
Mesic flatwoods	7.49	0.9%
Mesic hammock	90.50	11.0%
Pasture – Improved	32.16	3.9%
Pasture – Semi-improved	1.85	0.2%
Restoration upland pine	109.17	13.3%
Road	44.57	5.4%
Sandhill	101.22	12.3%
Upland hardwood forest	13.16	1.6%
Upland pine	302.28	36.8%

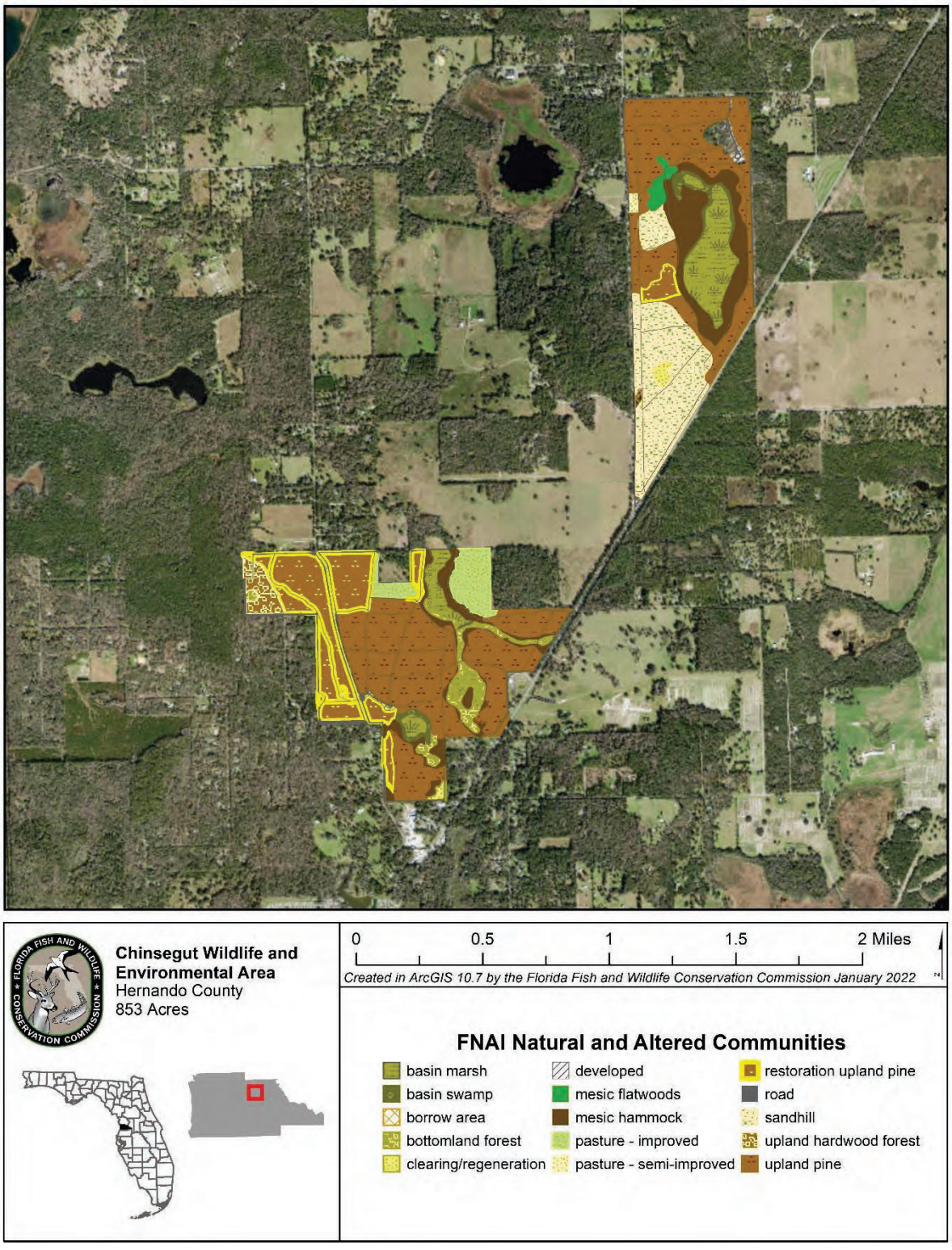

Figure 8. FNAI Natural and Altered Community Types on the CWEA

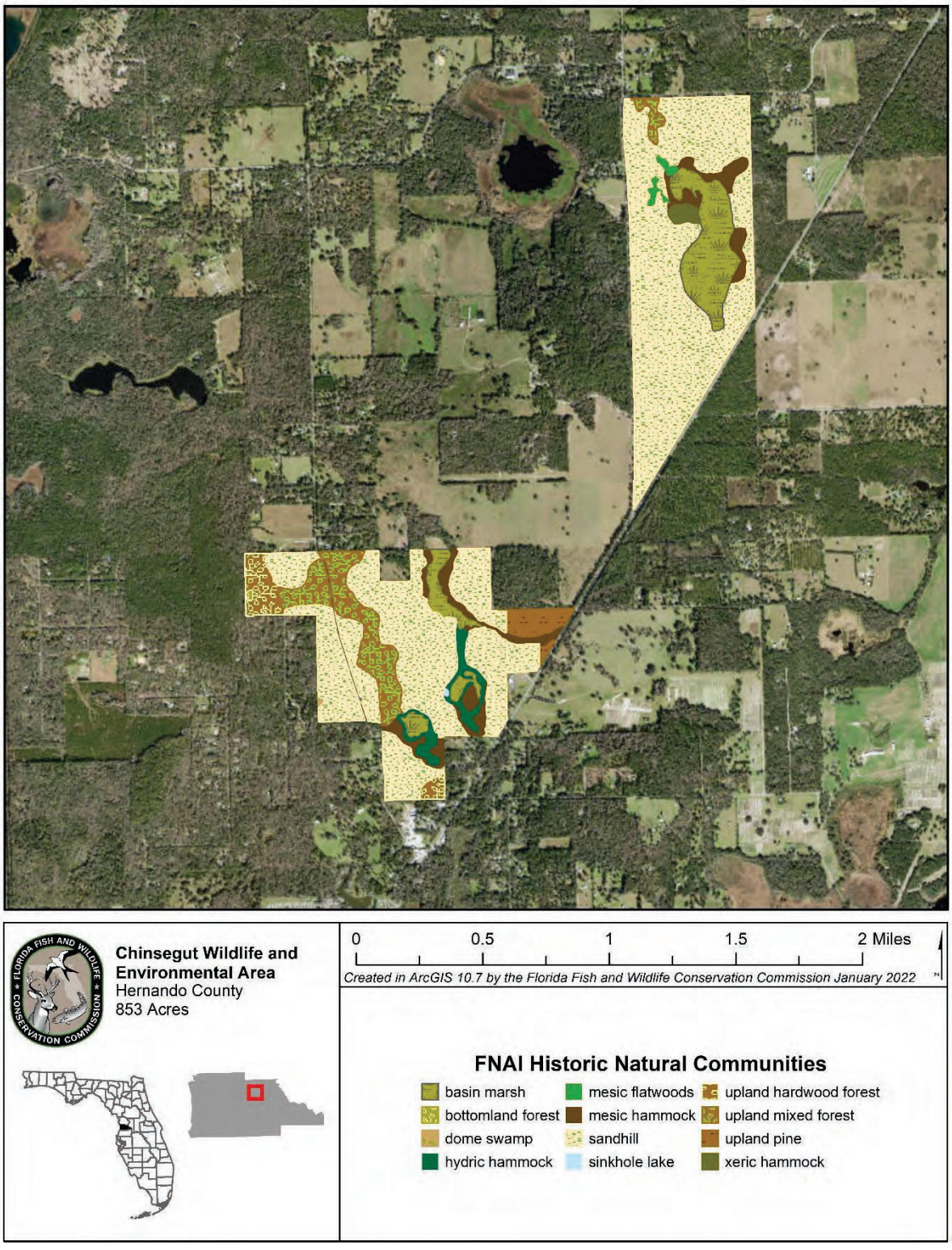

Figure 9. FNAI Historic Natural Community Types on the CWEA

2.2.1 FNAI Natural Community Descriptions

The primary natural communities found within the CWEA are upland pine, sandhill, and mesic hammock. The FNAI natural and altered community descriptions for the CWEA are as follows:

Basin Marsh (~69.4 acres)

Basin marsh is an herb or shrub dominated community usually situated in large, irregularly shaped basins. Structure and species composition of the basin marsh community is highly variable depending on water depth and fire frequency. At the Conservation Center tract, the basin marsh (called May's Prairie) has open water in the center and emergent vegetation around the edges. Parts of the north end have been overgrown by bald cypress (*Taxodium distichum*) planted during the 1930s. The dominant plant species on the edges of the marsh are maidencane (*Panicum hemitomon*), and buttonbush (*Cephalanthus occidentalis*), and the open center has water lily (*Nymphaea odorata*). The shoreline has the woody plants wax myrtle (*Myrica cerifera*) and dahoon holly (*Ilex cassine*). At the Big Pine tract, the three basin marshes (the largest and northernmost called Burn's Prairie, the others unnamed) are covered by a thicket of Carolina willow (*Salix caroliniana*) and buttonbush that has resulted from long-term lack of fire. The non-native pest plant Chinese tallow (*Sapium sebiferum*) is frequently abundant along the perimeter of these marshes. The Chinsegut bellflower (*Campanula robinsiae*) has been observed on the north end of Burn's Prairie. The portion of the marsh on the CWEA may be too overgrown with taller vegetation such as Chinese tallow and torpedo grass (*Panicum repens*) to support the species.

Other plants commonly found in basin marsh at the CWEA include soft pipewort (*Eriocaulon compressum*), southern umbrellasedge (*Fuirena scirpoidea*), looseflower waterwillow (*Justicia ovata*), smartweed (*Polygonum hydropiperoides*), pickerelweed (*Pontederia cordata*), beaksedge (*Rhynchospora* spp.), bull tongue arrowhead (*Sagittaria lancifolia*), water spangles (*Salvinia minima*), and chain fern (*Woodwardia virginica*).

Basin Swamp (~10.9 acres)

Basin swamp is a forested wetland community with hardwood and/or coniferous trees, occurring in large depressions with extended hydroperiods. At the Conservation Center tract, basin swamp occurs around the margin of the basin marsh. This swamp was created in the 1930s when bald cypress was planted along the shoreline of May's Prairie. The closed canopy is formed by mature bald cypress, and the subcanopy consists of occasional dahoon holly, swamp bay (*Persea palustris*), and red maple (*Acer rubrum*). The very open shrub strata have wax myrtle. Patches of chain fern and maidencane make up the sparse herb layer.

Small areas of basin swamp also occur around the basin marshes on the Big Pine tract. Additional species here are sweetgum (*Liquidambar styraciflua*) and swamp tupelo (*Nyssa biflora*).

Bottomland Forest (~18.3 acres)

Bottomland forest is a wetland community with a canopy of hardwoods. At the Big Pine tract, bottomland forest occurs along drainages from the basin marshes. Canopy species include

swamp laurel oak (*Quercus laurifolia*), live oak (*Quercus virginiana*), sweetgum, and red maple. The subcanopy and tall shrub strata are mainly young canopy species plus cabbage palm (*Sabal palmetto*). Buttonbush is common as a short shrub. The ground layer is patchy and is mainly savannah panicum (*Phanopyrum gymnocarpon*) and swamp smartweed. The bottomland forest south of the middle basin marsh has an extensive area of the non-native pest plant Mexican petunia (*Ruellia tweediana*). Chinese tallow is present throughout all of the bottomland forests as scattered saplings and occasional mature trees.

Mesic Flatwoods (~7.5 acres)

Mesic flatwoods is an upland forest community with an open pine canopy and understory composed of varying mixtures of shrubs and grasses. On the Conservation Center tract, this community covers a small area near the northern end of May's Prairie. Some sections near May's Prairie appear to be approaching mesic hammock due to fire suppression. The open canopy of longleaf pine shades an almost solid short shrub layer of saw palmetto, gallberry (*Ilex glabra*), beautyberry (*Callicarpa americana*), rusty staggerbush (*Lyonia ferruginea*), shiny blueberry (*Vaccinium myrsinites*), and wax myrtle (*Myrica cerifera*). The herbaceous groundcover is sparse from long-term fire suppression. Dominant species are bracken fern (*Pteridium aquilinum*), bluestem (*Andropogon* sp.), and low panicgrass (*Dichanthelium* sp.). The non-native pest plant camphor (*Cinnamomum camphora*) is common, rising above the abundant saw palmetto.

Mesic Hammock (~90.5 acres)

Mesic hammock is an upland forest community of evergreen broadleaved trees occurring in naturally fire-protected areas. At the CWEA, this community occurs at the edges of the basin marsh and bottomland forest. The canopy is dominated by live oak, sweetgum, and sand laurel oak. The understory is often nearly solid saw palmetto. The sparse ground layer may have occasional clumps of grasses such as panicum (*Panicum commutatum* and *P. dichotomum*). An unusually diverse mesic hammock is at the northeastern corner of May's Prairie in the Conservation Center tract. This hammock is along a shallow swale draining down to the basin marsh. The vegetation includes hydric species such as parsley hawthorn (*Crataegus marshallii*), narrow blue-eyed grass (*Sisyrinchium angustifolium*), and Walter's viburnum (*Viburnum obovatum*).

Restoration Upland Pine (~109.2 acres)

Restoration upland pine is an area in which natural upland pine communities are being restored. Formerly an altered landcover type, staff is performing active restoration to return the community to its historic state. Examples of restoration activities include pine thinning, groundcover restoration, hydrological restoration, and removal of non-native and invasive plant species and other undesirable vegetation. In historically pyrogenic natural communities, restoration activities are accompanied by the application of prescribed fire.

Sandhill (~101.2 acres)
Sandhill is an upland forest of scattered pines on deep, well drained sands. Sandhill covers a considerable amount of the acreage at the Conservation Center tract. The old growth longleaf pines are the most outstanding feature of the CWEA. Ongoing restoration activities are reducing the amount of hardwood tree cover.

The best example of sandhill occurs at the southern end of the Conservation Center tract. The canopy consists of old growth longleaf pine over sand live oak, turkey oak (*Quercus laevis*), blue-jack oak (*Quercus incana*), and sand-post oak (*Quercus margaretta*). The open shrub strata include sparkleberry (*Vaccinium arboreum*), deerberry (*Vaccinium stamineum*), and gopher apple (*Licania michauxii*). Herbaceous species include locally abundant wiregrass (*Aristida stricta*), snakeroot (*Ageratina jucunda*), bluestem grass (*Andropogon gyrans*), stinging nettle (*Cnidoscolus stimulosus*), wild buckwheat (*Eriogonum tomentosum*), milkpea (*Galactia regularis*), blue lupine (*Lupinus diffusus*), grass-leaf aster (*Pityopsis graminifolia*), bracken fern, lopsided Indian grass (*Sorghastrum secundum*), blue curls (*Trichostema dichotomum*), and beargrass (*Yucca filamentosa*).

Upland Hardwood Forest (~13.2 acres)
Upland hardwood forest is found on rich soils with a diverse mixture of deciduous hardwood species in the canopy and subcanopy. Small remnant areas of upland hardwood forest occur at several locations on the Big Pine tract. The best example is at the northern end, west of Old Crystal River Road. Pines are conspicuously absent from the community. The canopy has very large pignut hickory (*Carya glabra*), live oak, southern magnolia (*Magnolia grandiflora*), swamp chestnut oak (*Quercus michauxii*), Florida sugar maple (*Acer saccharum* ssp. *floridanum*), sweetgum, and laurel oak. The subcanopy is composed of young canopy species plus cabbage palm, American holly (*Ilex opaca*), blue beech (*Carpinus caroliniana*), ironwood (*Ostrya virginiana*), and winged elm (*Ulmus alata*). The very open shrub strata have yaupon (*Ilex vomitoria*), cabbage palm, and scattered small clumps of wild coffee (*Psychotria nervosa*). Longleaf woodoats (*Chasmanthium sessilifolium*), woodsgrass (*Oplismenus hirtellus*), partridgeberry (*Mitchella repens*), and tall nutrush (*Scleria triglomerata*) are common in the herb layer. The non-native pest plant skunk vine (*Paederia foetida*) is common but not vigorous due to canopy shading; it is usually found on the ground and climbing weakly into the shrubs.

Upland Pine (~302.3 acres)
Upland pine occurs on moderately well drained soils that typically have a clay component. This community at the CWEA is characterized by a relatively open canopy of old growth longleaf pine. The sparse subcanopy contains laurel oak and water oak (*Quercus nigra*), both of which will invade upland pine forests that have not burned regularly. The shrub layer contains dogwood (*Cornus florida*), shiny blueberry, gallberry, wax myrtle, winged sumac (*Rhus copallinum*), persimmon (*Diospyros virginiana*), and saw palmetto. The herbaceous layer is variable in coverage and includes wiregrass, elephant's foot (*Elephantopus elatus*), sweet goldenrod (*Solidago odora*), panic grasses (*Panicum* spp., *Dichanthelium* spp.), bracken fern, broomsedge (*Andropogon virginicus*), false wild petunia (*Dyschoriste oblongifolia*), milk-pea (*Galactia volubilis*), and silk-leaved golden aster (*Pityopsis graminifolia*).

Altered Community Descriptions

Borrow Area (~1 acre)
Dry or wet depression resulting from past or present mining operation, such as phosphate pits and upland borrow pits (sand pits, clay pits, etc.).

Clearing/Regeneration (~6.4 acres)
Clearing/regeneration areas are dove fields, wildlife food plots, old home sites, or recent or historic clearings that have significantly altered the groundcover and/or overstory of the original natural community.

Developed (~12 acres)
Developed areas can include check stations, ORV use areas, parking lots, buildings, maintained lawns (as part of recreational, business, or residential areas), botanical or ornamental gardens, campgrounds, recreational, industrial, and residential areas.

Pasture- Improved (~32.2 acres)
Pasture - improved is not a natural community, but a type of disturbance where most of the natural vegetation has been removed to improve cattle grazing conditions. The term is applied to areas with well established, bahiagrass (*Paspalum notatum*) monocultures that are maintained by cattle grazing and/or mowing and only have a few persistent native species like pawpaw (*Asimina reticulata*). Weedy species such as dog fennel (*Eupatorium capillifolium*), blackberry (*Rubus cuneifolius*), and flat-topped goldenrod (*Euthamia caroliniana*) may cover a portion of the bahiagrass.

Pasture-Semi Improved (~1.9 acre)
Pasture - semi-improved is not a natural community but a type of disturbance where much of the natural vegetation has been removed to improve cattle grazing conditions. In this report, the term is applied to areas with established bahiagrass that are overgrown to a high percentage by woody species such as live oak, wax myrtle, and pines. As a result, the remaining bahiagrass is not as vigorous as in areas without woody cover. Pockets of native vegetation often occur as patches of longleaf pine and saw palmetto.

The pasture areas often show affinity to their respective historic natural community. Species typical of mesic flatwoods, scrubby flatwoods, mesic hammock, and sandhill are present in greater abundance in semi-improved pasture than in improved pasture. Potential for restoration is higher in semi-improved pasture through the use of appropriate management strategies such as fire.

Road (~44.6 acres)
Roads are areas that are paved or unpaved and intended for vehicular traffic.

2.2.2 Imperiled Plants

For the purposes of this Management Plan, the term “imperiled species” as it relates to plants refers to plant species that the Department of Agriculture and Consumer Services (DACS) or

the United States Fish and Wildlife Service (USFWS) designated as endangered or threatened. This designation is commonly known as “listed species”, and all names and status determinations were derived from Florida’s Regulated Plant Index Rule (5B-40.0055 F.A.C.) that is maintained by DACS.

A imperiled plant survey occurred in 2013/2014 on the CWEA and identified nine imperiled plant species, of which four are State endangered, five are State threatened, and two are Federally endangered or threatened (Table 4). The protections afforded plants that occur on conservation lands, in conjunction with management actions including invasive plant removal and prescribed fire, will continue to maintain and enhance habitat for these and other imperiled plants. As such, these species should persist under planned management on the CWEA.

In addition to the imperiled plants, two plants State listed as commercially exploited are known to occur on the CWEA (Table 4). The FWC will continue to monitor the known occurrences of these species and report any illegal collection to the appropriate authorities.

Table 4. Imperiled Plant Species Known to Occur at the CWEA

Scientific Name	Common Name	Status
Agrimonia incisa	Harvest lice	ST
Campanula robinsiae	Chinsegut bellflower	FE, SE
Epidendrum conopseum	Green-fly orchid	CE
Justicia cooleyi	Cooley’s justicia	FE, SE
Matelea floridana	Florida spiny-pod	SE
Matelea gonocarpos	Angle pod	ST
Matelea pubiflora	Sandhill spiny-pod	SE
Pycnanthemum floridanum	Florida mountain-mint	ST
Rhapidophyllum hystrix	Needle palm	CE
Zephyranthes atamasca	Rainlily	ST
Zephyranthes treatiae	Treat’s zephyr-lily	ST

Acronym	Definition
CE	Commercially Exploited
FE	Federally Endangered
SE	State Endangered
ST	State Threatened

It is possible other imperiled species occur on the CWEA, and, if encountered, staff will document these occurrences. Florida’s imperiled species are adapted to natural communities and should continue to benefit from the FWC's ongoing and planned management to maintain and enhance natural community structure and function. Under the FWC’s management, these species have a higher probability of persistence than in the absence of this management.

However, while habitat management provides overall benefits to a host of species reliant upon these natural communities, imperiled species sometimes require specific attention.

Angle Pod (*Matelea 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 forests, basin swamps, baygalls, blackwater streams, bottomland forests, hydric hammocks, maritime hammocks, mesic hammocks, shell mounds, upland hardwood forests, 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 year), it is sensitive to fire, surviving in fire shadows. FWC staff work to vary the seasonality and severity of prescribed burns and allow prescribed fires from adjacent fire-maintained communities to naturally burn into and naturally extinguish in its' preferred communities. Since *Matelea* species are difficult to distinguish without flowers or fruits, flowering or fruiting is the best time for conducting surveys or verifying species identity. Angle Pod flowers from June to August, and fruiting occurs from August to October. Staff may be able to distinguish this species from other *Matelea* species by its yellow or greenish-brown petals without a network of veins, and its lance shaped fruits that are smooth. Altered fire regimes, fire suppression, and hydrologic disturbances negatively affect this species; therefore, avoidance is made when constructing fire breaks in ecotones, restore ecotones by removing existing roads and fire breaks, and maintain and restore the natural hydrology.

Chinsegut bellflower (*Campanula robinsiae*) - Chinsegut bellflower (also known as the Brooksville bellflower), endemic to Florida, is a sprawling annual herb that prefers wet areas in mesic hammocks, hydric hammocks, and wet prairies. Some of its preferred communities require frequent fires to control hardwoods. The best time to conduct surveys for verifying species identity is during flowering, which peaks during March-April.

Cooley's justicia (*Justicia cooleyi*) - Cooley's justicia, endemic to Florida only occurring in four counties, is an erect pubescent perennial herb that prefers moist to seasonally wet, lightly shaded areas over limestone in mesic hardwood hammocks and hardwood-pine forests. This species does not require fire, but staff should allow fire to naturally enter and extinguish within its habitats when feasible. Soil and hydrologic disturbances negatively affect this species; therefore, maintain and restore the natural hydrology and avoid mechanical disturbances in this species' habitats. Flowering, which occurs from August to December (may sporadically flower through May), is the best time for conducting surveys or verifying species identity.

Florida Mountain-Mint (*Pycnanthemum floridanum*) - Florida mountain-mint is a shrub-like perennial herb that prefers open to partially shaded areas in sandhills, upland mixed woodlands, upland pines, mesic hammocks, and the ecotone between upland hardwood forests and pinelands. This species also occurs in mesic and wet flatwoods, and along roadside ditches. It is unclear if Florida mountain-mint requires fire for its survival. However, most of this species' preferred habitats require fire, so apply prescribed fire that ensures species diversity, creates mosaic habitats, and allow prescribed fire from adjacent communities to burn into and

extinguish naturally in ecotones when feasible. Hydrological disturbances and fire suppression negatively affect this species' preferred habitats; therefore, staff work to maintain and restore the natural hydrology where practicable, and prescribed fire should occur with a frequency that will create or maintain open areas, limit the shrub layer, and encourage diverse herbaceous cover. Flowering, which occurs from July to August, is the best time for conducting surveys or verifying species identity.

Florida Spiny Pod (*Matelea floridana*) - Florida spiny 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 to grow and flower in moist well-drained soils, sunny or semi-shaded areas in mesic hammocks, upland mixed woodlands, and upland pine communities. However, Florida spiny pod is also able to grow and flower in full shade. Florida spiny pod requires a fire regime that includes frequent (1-3 year) fire to maintain and promote the open grassy habitats that it favors, with most fire occurring during the growing season. Since *Matelea* species are difficult to distinguish without flowers or fruits, flowering or fruiting is the best time for conducting surveys or verifying species identity. Florida spiny pod flowers from May-July, and fruiting occurs from August to October. Staff may be able to distinguish this species from other *Matelea* species by its black, cup-shaped, appendaged corona and maroon petals, and its lance shaped fruits that are covered in fleshy spines. Altered fire regimes, fire suppression, and hydrologic disturbances negatively affect this species; therefore, avoidance is made in constructing fire breaks in ecotones, restore ecotones by removing existing roads and fire breaks, and maintain and restore the natural hydrology.

Green-fly Orchid (*Epidendrum conopseum*) – Green-fly orchid is an epiphytic orchid that grows on many different trees, and prefers moist to wet areas in basin swamps, bottomland forests, depression marshes, maritime hammocks, sinkholes, and upland hardwood forests. It may occur in dome swamps, floodplain swamps, hydric hammocks, and mesic hammocks. This species does not require fire, but staff work to allow fire to naturally enter and extinguish within its habitats when feasible. Illegal collecting and hydrological disturbances negatively affect thisspecies; therefore, staff work to protect areas with known occurrences, and staff work to 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.

Harvest-lice (*Agrimonia incisa*) - Harvest-lice is an herbaceous perennial with hairy leaves and stems that is often considered a sandhill species. However, this species also occurs in open areas in scrub, upland pine, and upland mixed woodlands. Harvest-lice requires growing season fire that reduces the encroachment of woody species and creates open areas allowing sunlight to reach the ground. It responds positively to fire by demonstrating a more vigorous growth the season after a fire, and it tends to decrease as the amount of time post-fire increases. Altered fire regimes and fire suppression negatively affect this species; therefore, application of prescribed fire should vary by season, frequency, and fire intensity to ensure species diversity. Allowing fire from adjacent, more frequently burned communities, to enter and extinguish

naturally in scrub and ecotones will provide benefits to this species. Scrub management programs should strive to mimic natural processes that create the openings this species prefers. While this species' tall, dry stems and withered leaves are visible all year, the best time for conducting surveys or verifying species identity is during flowering, which occurs primarily from late July to November.

Needle Palm (*Rhapidophyllum hystrix*) – Needle palm is a small shrubby palm that prefers basin swamps, bottomland forests, floodplain swamps, hydric hammocks, mesic hammocks, sinkholes, slope forests, and upland hardwood forests. 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, staff work to protect known occurrences and make sure not to negatively influence areas with known occurrences. Surveys or species identification may occur throughout the year for this species.

Rainlily (*Zephyranthes atamasca*) - Rainlily is a perennial herb that prefers the closed canopied bottomland forests, hydric hammocks, mesic hammocks, upland hardwood forests, and upland mixed forests. This species does not require fire; however, it vigorously flowers following fires. Hydrological disturbances, illegal collecting, and fire suppression in flatwoods negatively affect this species; therefore, staff work to maintain and restore the natural hydrology where practicable, protect areas with known occurrences, and apply prescribed fire conducted within flatwoods with a frequency that will create or maintain open areas, limit the shrub layer, and encourage diverse herbaceous cover. Flowering, which occurs from January-May, is the best time for conducting surveys or verifying species identity.

Sandhill Spiny Pod (*Matelea pubiflora*) - Sandhill spiny 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 to grow and flower in xeric well-drained soils in sunny or semi-shaded areas in sandhill and scrub communities. Sandhill spiny pod requires a fire regime that includes frequent fire that reduces the encroachment of woody species and creates open areas that allow 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 openings this species prefers. Sandhill spiny pod is identifiable all year by its unique trailing habit, and the best time for conducting flower surveys is from April to June and fruiting surveys is from August to October.

Treat's Zephyr-lily (*Zephyranthes treatiae*) - Treat's zephyr-lily is a perennial herb that prefers open-canopied mesic and wet flatwoods. However, this species may occur in bottomland forests, hydric hammocks, mesic hammocks, upland hardwood forests, upland mixed forests, and wet prairies. This species does not require fire. However, it vigorously flowers following fires. Hydrological disturbances, illegal collecting, and fire suppression in flatwoods negatively affect this species; therefore, staff work to maintain and restore the natural hydrology where practicable, protect areas with known occurrences, and prescribed fire conducted within

flatwoods should occur with a frequency that will create or maintain open areas, limit the shrub layer, and encourage diverse herbaceous cover. Flowering, which occurs from January to April, usually following a rain, is the best time for conducting surveys or verifying species identity.

2.2.1 Invasive and Non-native Plants

FWC biologists and contractors have documented 48 non-native and invasive plant species (Table 5) on the CWEA. Species that are considered invasive are species that (a) are nonnative 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. Invasive and Non-native Plant Species Observed on the CWEA

Scientific Name	Common Name	FISC Category
Abrus precatorius	Rosary pea; blackeyed susan	I
Albizia julibrissin	Mimosa	I
Alternanthera philoxeroides	Alligator weed	II
Ardisia crenata	Coral ardisia, scratchthroat	I
Broussonetia papyrifera	Paper mulberry	II
Butia capitata	Pindo palm	-
Cinnamomum camphora	Camphor tree	I
Citrus x aurantium	Sour orange	-
Colocasia esculenta	Wild taro	I
Cortaderia selloana	Pampasgrass	-
Crotalaria lanceolata	Lanceleaf rattlebox	-
Crotalaria spectabilis	Showy rattlebox	-
Dactyloctenium aegyptium	Durban crowfootgrass	II
Dioscorea alata	Winged yam	I
Dioscorea bulbifera	Air-potato	I
Drymaria cordata	West Indian chickweed	-
Dysphania ambrosioides	Mexican tea	-
Echinochloa crus-galli	Barnyardgrass	-
Eichhornia crassipes	Water hyacinth	I
Eremochloa ophiuroides	Centipede grass	-
Heteropogon melanocarpus	Sweet tanglehead	-
Imperata cylindrica	Cogongrass	I
Indigofera hirsuta	Hairy indigo	-
Ipomoea quamoclit	Cypressvine	-
Lantana strigocamara	Lantana, shrub verbena	I
Ligustrum sinense	Chinese privet, hedge privet	I
Lygodium japonicum	Japanese climbing fern	I

Lygodium microphyllum	Old world climbing fern	I
Melia azedarach	Chinaberry	II
Melinis repens	Natal grass	I
Nephrolepis cordifolia	Sword fern	I
Oplismenus hirtellus	Woodsgrass	-
Paederia foetida	Skunk vine	I
Panicum repens	Torpedo grass	I
Paspalum notatum	Bahiagrass	-
Phyllanthus urinaria	Chamber bitter	-
Richardia brasiliensis	Tropical Mexican clover	-
Richardia scabra	Rough Mexican clover	-
Ruellia brittoniana	Mexican petunia	I
Ruellia simplex	Britton's wild petunia	I
Salvinia minima	Water spangles	I
Solanum viarum	Tropical soda apple	I
Sorghum halepense	Johnsongrass	-
Sporobolus indicus	Smutgrass	-
Triadica sebifera	Chinese tallow, Popcorn tree	I
Urena lobata	Caesarweed	I
Wisteria sinensis	Chinese wisteria	II
Xanthosoma sagittifolium	Arrowleaf elephant's ear	II

2.3 Fish and Wildlife Resources

As described above, the CWEA has a variety of natural communities and habitat types that support a wide array of imperiled and more common wildlife species. Active wildlife management practices make the CWEA an excellent place to view wildlife. The CWEA's upland pine, sandhill, mesic hammock, and other natural communities provide critical habitat for resident and migratory wildlife. The FWC maintains an inventory of fauna occurring on the CWEA listed in Appendix XX, 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 designated as Endangered, Threatened, or a Species of Special Concern by the FWC, or that are designated as Endangered or Threatened by the USFWS. This designation is also commonly known as "listed species." Table 6 outlines all imperiled fish and wildlife that have been observed on the CWEA.

Table 6. Imperiled Species Observed on the CWEA

Common Name	Scientific Name	Status

American alligator	*Alligator mississippiensis*	FT(S/A)
Eastern indigo snake	*Drymarchon corais couperi*	FT
Florida sandhill crane	*Grus canadensis pratensis*	ST
Gopher tortoise	*Gopherus polyphemus*	ST
Little blue heron	*Egretta caerulea*	ST
Southeastern American kestrel	*Falco sparverius paulus*	ST
Wood stork	*Mycteria americana*	FT

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

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

2.3.2 Invasive and Non-Native Wildlife Species

In addition to the species listed in Appendix XX, four invasive and non-native wildlife species have been documented on the CWEA (Table 7). The FWC will continue to document any occurrences of invasive and non-native species found on the CWEA. 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. Invasive and Non-native Species Observed on the CWEA

Common Name	Scientific Name
Cuban tree frog	*Osteopilus septentrionalis*
Greenhouse frog	*Eleutherodactylus planirostris*
House mouse	*Mus musculus*
Wild hog	*Sus scrofa*

2.3.3 FNAI Element Occurrences

A diversity of wildlife species is found on the CWEA. The FNAI element occurrence records include eight occurrences of wildlife species in the vicinity of the CWEA. The FWC uses the FNAI Element Occurrences database to assist in identifying and recording resources on FWC managed areas. This database also aided staff in the development of the species tables found in Appendix X. As defined by FNAI, an “element” is any exemplary or rare component of the natural environment, such as a species, natural community, bird colony, spring, sinkhole, cave, or other ecological feature. An element occurrence is an area of land and/or water in which a species or natural community is, or was, present. FNAI assigns a rank to each “element” occurrence. This ranking system was developed by NatureServe and the Natural Heritage Program Network which assigns a global rank (element’s worldwide status) or state rank (status of element in Florida). The FNAI ranking system and definitions are located on the following website: https://www.fnai.org/PDFs/Rank_and_Status_Explanation.pdf. Appendix XX 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 CWEA are designated as Class III, and classified for fish consumption; recreation, as well as propagation and maintenance of a healthy, well-balanced population of fish and wildlife. Additionally, it is the policy of the DEP to afford the highest protection to Outstanding Florida Waters (OFW) and Outstanding National Resource Waters (Chapter 62-302.700 F.A.C.). Portions of the CWEA, including May’s Prairie and Burn’s Prairie are designated as OFW and part of the Chassahowitzka National Wildlife Refuge OFW located in Hernando County (Figure 10). 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 CWEA is not located within and/or adjacent to an aquatic preserve. Two watersheds are present throughout Hernando County: Springs Coast and Withlacoochee. The CWEA is encompassed within the Withlacoochee watershed.

As mentioned previously, the wetlands of the CWEA are Class III waters according to the DEP. Periodic dry spells are characteristic of depression marsh and wet prairie communities, but past and current hydrological conditions (consumptive and weather related) in this region of Florida appear to be altering these wetlands. An October 1966 report indicates that the water surface of May's Prairie once covered 43 acres and spread two miles long and 1/4-mile-wide during the wet season. Although water levels averaged from 4-5 feet deep in 1966, an August 1980 report describes water depths of 1-3 feet. Aerial photographs and historical evidence suggest a similar trend occurring in the marshes of the Big Pine tract.

A dike was built approximately 50 years ago in an effort to block the natural drainage of water from May's Prairie into a sinkhole at the northwestern edge of the wetland. The dike may still

hold water during the rainy season. However, water levels drop below the level of the dike during the dry season, causing the dike to be ineffective against water seepage through soils that have rapid permeability.

There are two aquifer systems in Hernando County in the vicinity of the CWEA: the Surficial Aquifer System and the Floridan Aquifer System. The Surficial Aquifer System is the uppermost aquifer system in Hernando County found where sands overlie the limestones and dolomites of the Floridan Aquifer. The thickness of the Surficial Aquifer is highly variable due to large variations in the thickness of the sands. The Surficial Aquifer may overlie the Floridan Aquifer, or they may be separated by clays or other relatively impermeable units.

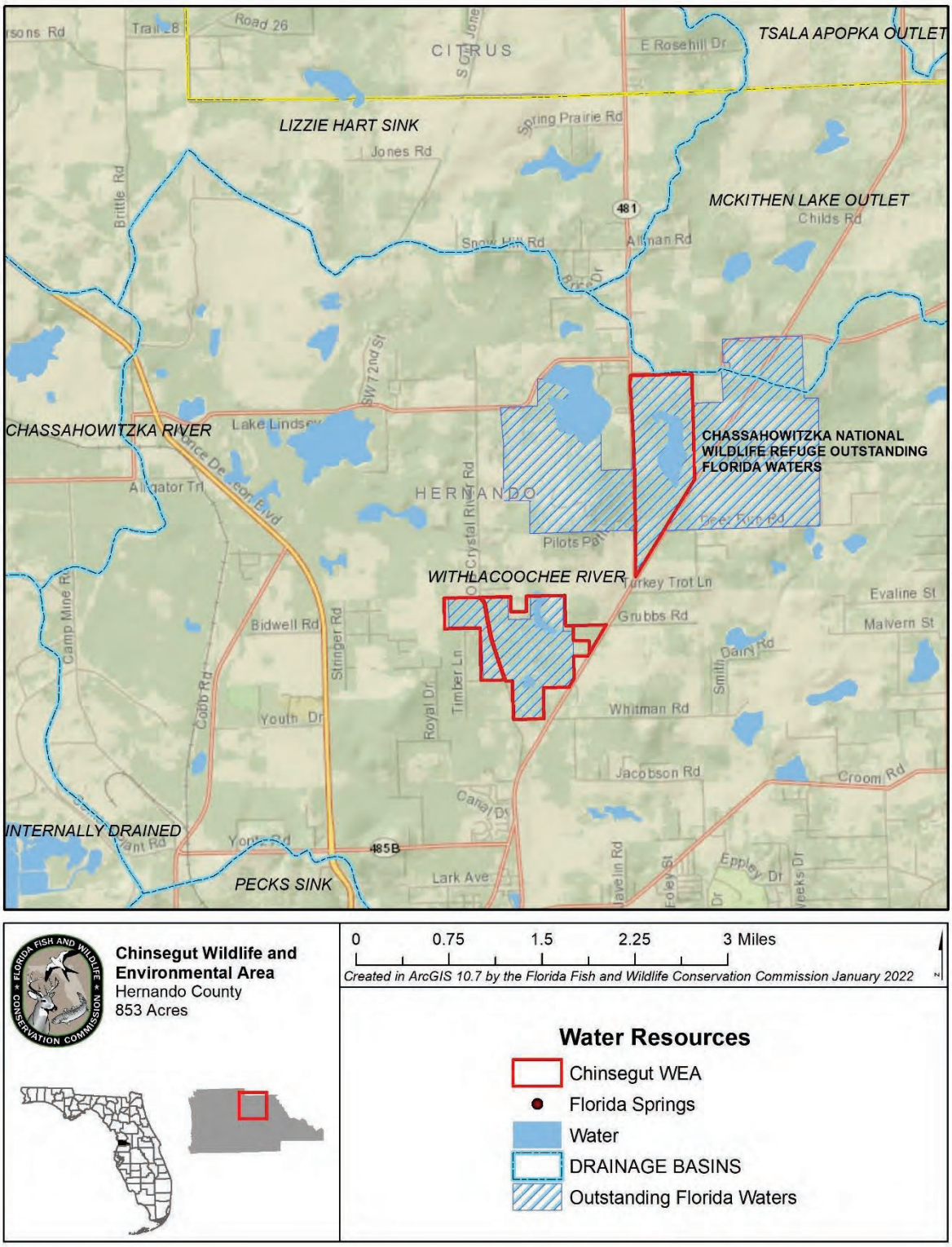

Figure 10. Water Resources on the CWEA

2.5 Forest Resources

Timber resources include some areas in need of thinning for habitat improvement. The 2017 Timber Management Plan described a total of 554 acres of pine stands inventoried. Thinning of the forest over-story, hydrological restoration, and reintroduction of prescribed burning are the most important factors in re-establishment of natural communities and the enhancement of wildlife habitats in these areas. Upland pine forest planted with off-site pines will be reforested with longleaf pine or other on-site species as appropriate. Degraded or disturbed bottomland hardwood sites will be encouraged to reforest naturally with native wetland oaks, hardwoods, and other appropriate native plant species.

2.6 Beaches and Dunes

The CWEA does not contain any beaches or dunes.

2.7 Mineral Resources

The major mineral resources of Hernando County which have been, or potentially could be, economically important are limestone and sand. Limestone, sand, and gravel are mined for use in construction and various other industrial purposes. The CWEA does not contain any mineral resources that could be mined.

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 two previous cultural resource surveys have been conducted on the CWEA. Additionally, three archaeological sites and three historic bridges have been recorded on the CWEA (Table 8). The FWC will consult with the DHR to determine the necessary actions for resource inventory and preservation. All identification, assessment, and preservation strategies will be developed in consultation with the DHR.

Table 8. Cultural Resources on the CWEA

FMSF No.	Resource Category	Resource Title	Acres	National Register of Historic Places Eligibility
HE00317	Archaeological Site	Big Pine Tract	40.7	N/A
HE00318	Archaeological Site	Bishop Homestead	2.2	N/A
HE00532	Archaeological Site	N/A	<1	N/A
HE00549	Historic Bridge	John Korycki Bridge	<1	N/A
HE00548	Historic Bridge	Meredith Footbridge	<1	N/A
HE00550	Historic Bridge	Old SR 5 Bridge	<1	N/A

2.9 Scenic Resources

The CWEA contains a diverse variety of natural communities. Among the scenic resources at the CWEA is the rolling upland pine topography of the 430-acre Big Pine tract. This tract is one of the largest contiguous tracts of old-growth longleaf pine in Florida. The CWEA contains a diverse variety of natural communities. May's prairie, another scenic resource, is a unique area that changes from wet to dry seasonally, and is laden with a variety of grasses, sedges, and wildflowers. This creates a mix of ecotypes that foster plant diversity. The diverse convergence of habitats allows for a unique mixture of plant species that is rare in the state.

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. The decimation of these cultures began shortly after the arrival of Europeans, either by the introduction of disease—to which the Native Americans had no resistance—or through outright conflict. In modern day Florida, the Seminole Tribe of Florida and the Miccosukee Tribe of Indians of Florida are federally recognized tribes, the Muscogee Nation of Florida is state recognized, and the Muscogee, along with several other tribes, have active petitions for federal recognition.

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, and Central Florida in particular, 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.

The CWEA was once part of 6,000 acres of land originally conveyed from the United States government to Colonel Pearson of South Carolina in 1842. The land was sold to Colonel F. H. Ederington in 1852. In the late 1800s, the CWEA was home to the Bishop family. A chimney

and one cistern, remnants of their homestead, remain on the area today. In the early 1900s, turpentine was extracted from the pine trees, some of which still bear the scars.

In 1904, 2,082 acres, including the current Conservation Center tract, were purchased by Colonel Raymond Robins, whose colorful career included gold mining and advising five presidents. His wife Margaret was a tireless worker for women's suffrage. Robins named the land and its residence Chinsegut. An Alaskan Inuit word, Chinsegut means "spirit of lost things." Robins expanded the translation to "the place where things of true value that have been lost may be found again."

In 1932, Robins deeded his estate to the USDA under the Migratory Bird Conservation Act. It was Robins' wish that Chinsegut be preserved for the "inspiration and education of the next generation." In 1967, the USDA allowed the FWC to operate 408 acres as a nature preserve and for outdoor education. This area was acquired by the FWC in 1973.

In 1973, the Big Pine tract was designated as "virgin longleaf pine" and deeded from the USDA to the UF in a quitclaim deed. In 1989, the Big Pine tract was transferred from the UF to the FWC to use in conjunction with the Conservation Center.

3.2 Current Use of the Property

Currently, the CWEA is managed for the conservation and protection of fish and wildlife habitat and fish and wildlife based public outdoor recreation. A wide range of operational and resource management actions are conducted on the CWEA 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 CWEA is being managed as a multiple-use conservation land. Multiple-use management strategies incorporate uses related to wildlife, fisheries, forest management, and natural resource based public outdoor recreation. Current and anticipated resource uses of the property are diverse. Wildlife-based public outdoor educational and recreational opportunities are provided that are compatible with the original purposes for acquisition of the CWEA. The area also offers excellent opportunities for bird watching, especially for wading birds. The diversity of vegetation not only harbors a variety of bird species but also provides good opportunities for mammalian wildlife viewing. Other uses include hiking, photography, and nature study. 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

While the CWEA provides a variety of outdoor fish and wildlife based educational and recreational opportunities, hunting is not permitted due to deed restrictions. However, opportunities for hunting are available on nearby public conservation lands such as Chassahowitzka Wildlife Management Area and Half Moon Wildlife Management Area.

3.1.2 Fishing

Fishing is not an approved activity in accordance with deed restrictions. However, there are several fishing opportunities available on other near-by conservation lands.

3.1.3 Trails and Roads

Currently, there are approximately 9.87 miles of trails, with 6.8 miles of the trails being marked. There are also 20.5 miles of roads on the CWEA. Approximately half a mile of roads is available for public vehicular access, however the remainder of the roads on the area are used by FWC staff for maintenance purposes only. Hiking is available on all roads and trails within the CWEA. However, biking and equestrian uses are prohibited on the CWEA.

3.1.4 Camping

Currently, camping is not permitted on the CWEA due to the limited size of the area, lack of appropriate sites that would not interfere with other uses, and proximity to several privately operated campgrounds that provide camping opportunities. However, camping opportunities are available on nearby public lands.

3.1.5 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/ .

3.1.6 Chinsegut Conservation Center

The Chinsegut Conservation Center located on the CWEA provides a variety of environmental and natural resource education opportunities. The Conservation Center hosts several events annually and provides other structured programs throughout the year. For more information on the conservation center or to schedule a group program visit the following link: https://myfwc.com/education/programs/chinsegut/.

3.3 Adjacent Land Uses and Zoning

The CWEA is located in Hernando County, about six miles north of the City of Brooksville. The land within the CWEA is currently zoned as conservation lands; the parcels comprising the CWEA are accordingly listed in the Hernando County Comprehensive Land Use Plan as Conservation. This designation by Hernando County primarily allows for natural resource conservation and recreational uses.

The area directly surrounding the CWEA is currently zoned for Agriculture, Agricultural Residential, Conservation, and, to a lesser extent, Residential development. The majority of the land in the vicinity of the CWEA is either Agricultural or Conservation land. The Agricultural Residential designation is primarily located around the Big Pine tract. This designation allows for rural development, agriculture, silviculture, and natural resource conservation/preservation. Residential uses are allowed with a maximum density of one dwelling unit per ten acres. The area south and southeast of the CWEA is characterized by rural residential lots approximately 2.5 acres in size or larger. The Chinsegut Conservation Center tract is surrounded almost completely by Conservation and Agricultural land, with the exception of two adjacent tracts of residential development totaling less than 25 acres.

The Hernando County Comprehensive Land Use Plan and Future Land Use Map indicate that the CWEA and its immediately surrounding lands will continue to be designated as Rural, Conservation, or Educational lands. However, more intensive development has occurred on much of the privately owned lands in the greater vicinity of the CWEA and is expected to continue according to the Future Land Use Map of Hernando County. This includes residential communities, golf courses, resorts, and commercial facilities such as supermarkets, stores, gas stations, and shopping centers. The corresponding zoning designations are varied and include residential, agricultural, commercial, and industrial.

The 2020 U.S. Census estimates that there are 192,186 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 218,200 people living in Hernando County. The BEBR population projections for the counties surrounding Hernando County for the year 2030 are as follows: Citrus – 163,600; Pasco – 626,800; and Sumter – 170,800.

3.4 Visitation and Economic Benefits

Visitation and public use of the area for fish and wildlife based public outdoor recreational opportunities is the primary source of economic benefits from the CWEA and contribute to the overall economy for this region of Florida. In Fiscal Year 2020-2021, an estimated 41,772 people visited the CWEA. As a result of this visitation and use of the area, the FWC economic analysis estimates indicate that the CWEA generated an estimated annual economic impact of $8,161,831* for the State and the Southwest Florida region. This estimated annual economic impact has aided in the support or creation of an estimated 83 jobs*.

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

**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 to 2010 based on hunting and fishing license trends and inflation. The results were combined and weighted based on the numbers of hunters, anglers and wildlife viewers statewide. The results assume participants' expenditures and the results impacts are consistent throughout the state. Users applying these results to local situations should be aware that differences might exist between these statewide averages and the site in question and make adjustments if needed.*

3.5 Single- or Multiple-use Management

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

3.5.1 Analysis of Multiple-use Potential

The following actions or activities have been considered under the multiple-use concept as possible uses to be allowed on the CWEA. Uses classified as "Approved" are considered to be in accordance with the purposes for acquisition, as well as with the Conceptual State Lands Management Plan, and with the FWC agency mission, goals, and objectives as expressed in the Agency Strategic Plan (Appendix X). 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 CWEA are made in accordance with the requirements of Section 253.034(10) F.S., and other applicable Florida constitution, statute, rule, and policy requirements, as well as other provisions governing applications for proposed incompatible uses or linear facilities on state-owned conservation lands. Upon approval and implementation of this management plan, any proposed future uses that have been classified herein as Rejected, or other proposed future uses that are determined to be incompatible with the purposes of acquisition or other management authorizations and guidance, will be forwarded for review and approval consideration to the DEP-DSL, ARC, and the Board of Trustees prior to any incompatible use or linear facility being authorized on the CWEA.

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 CWEA by the FWC has determined that all portions of the area are being managed and operated for the original purposes of acquisition and remain integral to the continued conservation of important fish and wildlife resources and continue to provide good

fish and wildlife resource based public outdoor recreational opportunities. Therefore, no portion of the CWEA 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 nonrenewable cultural resources. In general, the FWC management intent for the CWEA is to restore and maintain natural communities in a condition that sustains ecological processes and conserves biological diversity, especially fish and wildlife resources. In conjunction with this primary emphasis, it is FWC's intent to provide quality fish and wildlife resource based public outdoor recreational opportunities on the CWEA. The FWC will utilize the best available data, guidelines, natural resource management practices, and recreational management practices to achieve these outcomes in accordance with the original purposes for acquisition. Furthermore, as noted earlier, the management activities described in this section are in compliance with those of the Conceptual State Lands Management Plan.

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." Because the CWEA is smaller than 1,000 acres, a land management review has not been conducted on the area.

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 this Management Plan, for which effective monitoring is an integral component. The FWC will monitor conservation actions, species, habitats, and major threats to the conservation of the natural and cultural resources of the CWEA.

4.2.1 Monitoring

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

Monitoring is the systematic, repeated measurement of environmental characteristics to detect changes, and particularly trends, in those characteristics. Monitoring provides essential feedback, the data needed to understand the costs, benefits, and effectiveness of planned conservation actions and the management projects undertaken to address them.[2]

For natural communities, monitoring protocols are established through FWC's Objective-Based Vegetation Management (OBVM, Section 4.3.1) program, which monitors how specific vegetative attributes are responding to FWC management. For locally important fish and wildlife species, monitoring protocols are established through the FWC's Wildlife Conservation Prioritization and Recovery (WCPR, Section 4.4.1) program. FWC staff may monitor additional fish and wildlife species when deemed appropriate. Invasive plant and animal species (Section 4.5) are also monitored as needed and appropriate. Recreational uses are monitored through the FWC's Public Access Services Office (PASO) program, and work in conjunction with the establishment and adjustment of public access carrying capacities (Section 4.6.3). Cultural resources (Section 4.9) are monitored with guidance from the DHR.

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 CWEA has a very high mean wildlife value of 8.9 (Figures 11).

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 CWEA Management Plan serves as the guiding framework to implement this adaptive management process. It serves as the underpinning for the integration of management programs (OBVM, WCPR, PASO, Recreation Master Plans, etc.) underway to accomplish needed conservation actions that are planned to manage the natural resources of the CWEA 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.

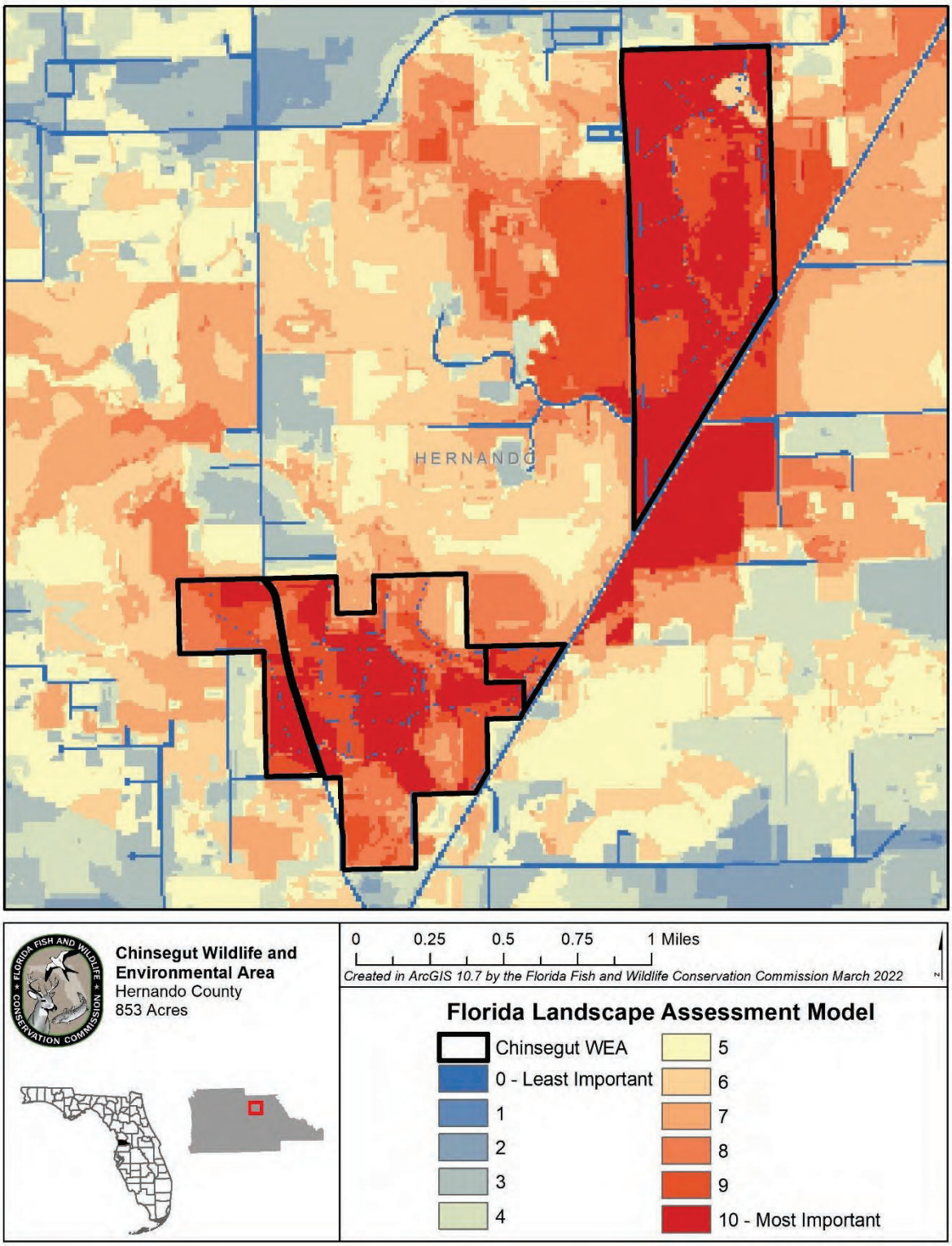

Figure 11. Florida Landscape Assessment Model

4.3 Habitat Restoration and Improvement

On the CWEA, the FWC will focus on managing for native habitat diversity, emphasizing maintenance of natural communities, and restoration of disturbed areas. The CWEA has functioning natural communities including upland pine, sandhill, and mesic hammock that the FWC will continue to manage and protect. The conservation of old growth forest remains an important management consideration when found on an area. On any disturbed upland sites, the FWC intends to continue natural community restoration as appropriate. Restoration may be achieved on disturbed areas by the re-introduction of fire, restoring historic hydrological conditions, and/or the use of mechanical or chemical forest management techniques as appropriate.

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 Natural Community Classification. 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 and historic natural communities on the CWEA. New acquisitions that may occur on the area will also be mapped for current natural and altered communities during this planning period as needed.

After natural communities have been mapped, FWC land managers will identify those natural communities that will influence and guide management decisions, known as the actively managed natural communities. Through OBVM monitoring, the FWC collects data on specific vegetation attributes that provide insight about 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, at the natural community level, and not the management unit level.

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 ground cover. 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 (https://www.fnai.org/species-communities/reference-communities).

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

Timber management practices, including harvesting, site preparation for planting, drainage, and fire exclusion have altered the plant species composition of the area likely resulting in a loss of fuel and complicating the return to the desired "natural" fire management regime. Site-specific combinations of prescribed fire, mechanical and chemical vegetation control, reforestation, and restoration of natural water regimes are likely actions that will be needed 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 CWEA in accordance with natural community management objectives. As fire moves across a landscape, some areas carry fire better than others. Areas with higher fine fuel loads typically burn more evenly and with greater intensity. Areas with lower fuel loads or wetland areas typically will not carry fire as evenly, and usually burn at a lower intensity. Employing a burning program with different fire frequencies, intensities, and seasonality (dormant season vs. growing season) of prescribed burns creates habitat diversity and a mosaic of vegetation patterns. This mosaic landscape will

have characteristics of both frequently and infrequently burned areas, benefitting 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 ground cover, especially wiregrass. Therefore, FWC will work to limit its use to situations where burning can only be accomplished by a 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 returns of two to three years, preferably during the spring and early summer months when appropriate.

In addition to the general prescribed fire management guidelines described above, an area-specific Prescribed Burn Plan has been developed and implemented for the CWEA. This plan includes, but not limited to, delineation of burn management units, descriptions of prescribed fire methodology, safety, and smoke management guidelines. As further outlined in the area's Prescribed Burn Plan, the FWC plans to continue to conduct prescribed burning on the area's fire adapted communities, with a goal to bring 100% of the area being maintained within the recommended fire return intervals during this planning period. Currently, approximately 67 acres are outside of the recommended fire return intervals due to fuel load and control line challenges. Challenges that continue to impact the implementation of prescribed fire on the area are described further in Section 6. The continuing benefits of prescribed fire on the area's wildlife habitats, along with other ongoing habitat restoration activities that are being implemented on CWEA, 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 CWEA 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 fire, most on a repeated basis as established within the Prescribed Burn Plan. This has aided in the improvement and restoration of native ground cover and wildlife habitat throughout the CWEA. Below is a list of the primary habitat restoration and improvement activities that have occurred on the CWEA since 2014.

- Prescribed Burn Plan updated in 2022
- 2,342 acres of the area's fire adapted communities have been treated with prescribed fire, most areas on a repeated basis.
- Approximately 94% of the fire-adapted communities are maintained within the recommended fire return intervals.
- 1,032 acres have been mechanically treated including shredding and mowing.
- Mature oaks, sand pines, and other native nuisance species were cut to set back the successional stage of the natural community within upland pine, restoration upland pine, sandhill, and basin marsh communities.
- Wiregrass was planted by volunteers across 12 acres at the Big Pine tract in October of 2015.
- In January of 2018, FWC staff planted 100 acres at the Conservation Center tract with longleaf pine seedlings, and 108 acres were planted at Big Pine in January of 2019.
- In January of 2019, FWC staff seeded 25 acres at the Conservation Center tract with native vegetation.
- Staff are also actively working to convert and restore the portion of the CWEA classified as restoration upland pine at the Big Pine tract into upland pine, as well as working to restore areas of improved pasture. FWC staff work to accomplish this through prescribed fire, use of herbicides, and shredding.

Continuing habitat management activities on the CWEA 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, below. Further specific habitat management and improvement objectives planned for the CWEA are described in Section 5 below.

4.4 Fish and Wildlife Management, Enhancement, and Population Restoration

Across the CWEA, the size and diversity of natural communities create a mosaic that supports a wide variety of fish and wildlife species, including imperiled, game, and non-game species. The FWC uses the term "locally important species" to encompass imperiled species, as well as a select group of common species, that occur on the area and can help guide management activities. By managing the area's natural communities for locally important species, the area

will benefit a host of other species that use these natural communities. To support this goal, the FWC emphasizes conservation, protection, and management of natural communities in order to protect and enhance populations of fish and wildlife found on the CWEA. Natural communities vital to locally important species on the CWEA include sandhill, mesic hammock, upland pine, and other less represented natural communities. Restoration and improvement of any altered communities, in order to expand habitat on the CWEA, is also emphasized.

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

For locally important species population monitoring, the FWC takes a tiered approach. Using taxa inventory monitoring and opportunistic observations, staff identify which species occur on the CWEA 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 X provide further information on FWC's comprehensive species management strategy for all locally important wildlife and their respective habitats.

4.4.1 Locally Important Species: Wildlife Conservation Prioritization and Recovery

The FWC has identified the need to: 1) demonstrate optimal wildlife habitat conservation on FWC-managed lands; 2) develop science-based performance measures to evaluate management; 3) recover imperiled species; and 4) prevent future imperilment of declining wildlife species. To help meet these needs, the FWC uses a comprehensive resource management approach to maintain FWC-managed areas. Restoring the form and function of Florida's natural communities is the foundation of this management philosophy. The FWC uses 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 locally important wildlife species' needs and opportunities, prioritize what the FWC does for locally important species, prescribe management actions to aid in species recovery, prescribe monitoring to allow evaluation of the species' response to management, and ensure the information is shared with others. To determine specific management and monitoring actions needed for each species, the FWC considers the species'

status on the area; the current condition of the area's natural communities; the amount and spatial arrangement of the species' potential habitat on the area and adjacent lands; the species' response to management; and any local overriding factors (e.g., status of species in the region, local declines, or extirpations). Staff then combine these assessments with area-specific management considerations to develop a Wildlife Management Strategy for the area (Appendix X). 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 locally important wildlife species on the CWEA. In the long-term, by implementing the WCPR Strategies on FWC-managed lands and continuing to assess wildlife species' needs, the FWC will continue to play an integral role in aiding the recovery of locally important species and preventing the future imperilment of declining wildlife species.

4.4.2 Nuisance Animal Species

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

4.4.3 Fish and Wildlife Management Activities and Accomplishments

During the previous planning period, the FWC conducted monitoring activities for several locally important species on the CWEA. 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. Below 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 CWEA.

- Ongoing opportunistic observations
- Eastern indigo snakes and Gopher tortoises have been regularly documented and monitored on the area.
- Regular avian point count surveys
- Southeastern American kestrel nest box surveys
- Bachman's sparrow calls were monitored opportunistically.
- A Florida mouse (*Podomys floridanus*) survey was completed in April of 2015 and one Florida mouse was detected.
- Since 2014, FWC staff have observed an established bald eagle (*Haliaeetus leucocephalus*) nest, Florida sandhill crane nesting, Southeastern myotis (*Myotis austroriparius*) utilizing the bat houses, as well as documented gopher frogs (*Lithobates capito*) and Florida mice on the area.

4.5 Invasive and 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 CWEA, 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 this Management Plan.

4.5.1 Invasive Plant Species

The FWC will continue efforts to control the establishment and spread of Florida Invasive Species Council (FISC) Category I or II plants on the CWEA 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, coral ardisia, Caesarweed, cogongrass, and Guinea grass. 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 treating any new occurrences as they are identified through continued monitoring activities. Natural disasters such as tropical cyclones, flooding, wildfire, and drought can both negatively and positively impact maintenance rotation of an area and affected acreage should be re-surveyed following any of these events to reassess the maintenance state of the area.

The degree of maintenance effort for invasive plant occurrences often varies substantially by species, level of disturbance, environmental conditions, 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 take 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 CWEA. 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 CWEA by requiring all personnel, both contracted and the FWC, to follow the FWC Decontamination Protocol. The CWEA 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 CWEA 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 for assistance and guidance on aquatic plant control.

4.5.2 Invasive and 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. This task 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., as 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 or 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 invasive fish and wildlife identification and removal, the FWC encourages the public to utilize the FWC's Exotic 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 the 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 and invasive fish and wildlife on the CWEA, 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 invasive fish and wildlife species. Executive order 17-11 authorizes the lethal take of non-native reptiles on 25 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 non-native species.

An invasive animal species of concern throughout the state and on the CWEA 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 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 Invasive and Non-native Activities and Accomplishments

Invasive plant species known to occur on the CWEA are outlined in 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 CWEA. Below 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 CWEA for the next 10 years are further detailed in Sections 5-6.

- 585 acres have been placed into maintenance rotation.
- Approximately 70% of the CWEA is considered as having achieved maintenance rotation.
- An estimated 30% of the CWEA remains to be surveyed, monitored, and treated as appropriate, as guided by the FWC's Invasive Plant Management Section.

4.6 Public Access and Recreational Opportunities

To facilitate wildlife viewing recreational opportunities on the area, the FWC has continued to establish and maintain the Chinsegut Conservation Center, hiking trails, kiosk, trail brochure, two trail guides, several conservation education programs, and a website. The FWC also offers additional opportunities to enhance public access and recreation through statewide programs, including inclusion as a gateway site for the Great Florida Birding Trail. 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 CWEA, the FWC offers a variety of environmental education programs throughout the state. Chinsegut Conservation Center staff provide education programs or tours for the CWEA, such as wildlife education and ethical angling and hunting. However, the FWC identifies a need for increasing conservation centers in order to reach other areas of the state.

In addition to FWC Conservation Centers, the FWC has 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 can be 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, recreational, and educational opportunities on the area are detailed in Section 5 below. Ongoing public access and recreational opportunity management challenges are addressed in Section 6 below. In addition, the FWC will continue to implement activities in accordance with the CWEA Recreation Master Plan.

4.6.1 Americans with Disabilities Act

When public facilities are developed on areas managed by FWC, every effort is made to comply with the Americans with Disabilities Act (Public Law 101-336). As new facilities are developed, the universal access requirements of this law are followed in all cases except where the law allows reasonable exceptions. Recreation facilities in semi-primitive or primitive zones will be planned to be universally accessible to the degree possible except as allowed by the ADA[7] where:

1. Compliance will cause harm to historical resources, or significant natural features and their characteristics.

2. Compliance will substantially alter the nature of the setting and therefore the purpose of the facility.

3. Compliance would not be feasible due to terrain or prevailing construction practices.

4. Compliance would require construction methods or materials prohibited by federal or state statutes, or local regulations.

4.6.2 Recreation Master Plan

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

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 viewing, and fish and wildlife resource based public outdoor recreation opportunities. Based on an analysis of the overall approved uses and supported public access user opportunities, and the anticipated proportional visitation levels of the various user groups, the FWC has determined that the CWEA can currently support 374 visitors per day. It is important to note that public access carrying capacities are not developed to serve as a goal for expanding the public use of a particular area to match the established carrying capacity. Rather, they are developed to establish maximum thresholds for public use of the respective area in order to protect the natural and cultural resources on the CWEA and to ensure that visitors will have a high-quality visitor experience. The public access carrying capacity will be periodically reevaluated, and additional capacity may be contemplated as part of the Recreation Master Plan development and implementation process.

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 CWEA, including:

- In 2018, the Florida National Scenic Trail was routed through the CWEA.
- In 2021, FWC staff developed a Chinsegut Conservation Center Strategic Plan.
- The FWC installed a Great Florida Birding Trail kiosk outside of the Conservation Center.
- FWC staff installed paved walkways in the bird and butterfly garden behind the Conservation Center to improve ADA access.

4.7 Hydrological Preservation and Restoration

The FWC completed a Hydrological Assessment for the CWEA in 2015. Currently, on the CWEA, May's Prairie and Burn's Prairie make up the majority of hydrological resources. Staff will continue to work to implement restoration recommendations from the hydrological assessment for these areas as feasible and appropriate. 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, bridges, and low water crossings, as well as installing any new culverts or low water crossings, as appropriate.

The FWC may coordinate with the DEP and the SWFWMD on appropriate water regulation schedules for the CWEA if deemed applicable and will continue to encourage water regulation schedules that promote the protection of hydrological resources and enhance wildlife. Currently, staff continue to communicate and collaborate as needed with the SWFWMD and the DEP on any ground or surface water quality or quantity monitoring. The FWC will cooperate with the DEP and the SWFWMD to develop and implement any surface water quality and quantity monitoring protocols for the CWEA. In this capacity, the FWC will primarily rely on the expertise of the SWFWMD and the DEP to facilitate these monitoring activities as needed. If necessary, the FWC may independently conduct or contract for water resource monitoring on the CWEA, as guided by the DEP and the SWFWMD.

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 CWEA, including:

- Two culverts were installed at the inflow and outflow points to Burn's Prairie on the Big Pine tract in 2019.
- A 600 ft gulley was backfilled and regraded, and a low water crossing was installed to prevent further erosion on the Big Pine tract in 2019.
- In 2020 concrete abutments and a manmade berm were removed to improve the flow of water to a natural wetland on the Big Pine tract.
- In 2020 a concrete box culvert was removed on the Big Pine tract to improve the natural flow of water
- In 2020 FWC staff installed a floating trash barrier floating trash barrier at the inflow point to Burn's Prairie to prevent off-site trash from entering the property.

- In 2021, FWC staff hired contractors to regrade an eroded section of firebreak along the western property boundary at the Conservation Center tract.
- In 2021 FWC staff hired contractors to install two culverts along the inflow point leading to May's Prairie on the Conservation Center tract.
- In 2021, FWC staff also hired contractors to repair sections of eroded firebreak along the eastern and northern property boundary on the Conservation Center tract.

4.8 Forest Resource Management

A Timber Management Plan for the timber resources of the CWEA was completed by The Forestry Company in 2017 (Appendix XX). The management of timber resources will be considered in the context of the Timber Management Plan and the overall land management goals and activities.

Pursuant to OBVM management goals, the FWC will continue to manage timber resources for wildlife benefits and natural community restoration. Management activities including the use of timber thinning and harvesting may be utilized. The primary management technique for encouraging reforestation is 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 may be protected to benefit cavity-nesting species as needed and 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 CWEA, including:

- 266 acres were planted with longleaf pine seedlings per the recommendations in the Timber Management Plan.

4.9 Cultural Resources

A review of the FMSF indicates that six cultural resources have been recorded on the CWEA (Section 2.8). Additionally, two previously conducted cultural resource surveys have been conducted within 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 CWEA. In addition, the FWC will ensure area management staff has 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*, (Appendix X) 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 CWEA, the FWC will prepare and submit all necessary documentation to the FMSF.

4.9.1 Cultural Resource Management Activities and Accomplishments

During the previous planning period no significant management activities or changes to the existing cultural resources on the area have occurred.

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 resource based public outdoor recreation. For these reasons, planned capital facilities and infrastructure will focus on improving access, recreational potential, hydrology, or other resource and operational management objectives.

Current capital facilities and infrastructure on the CWEA include:

- 20.5 miles of roads
- 9.87 miles of trails, with 6.8 of the trails being marked
- Well House (Big Pine)
- Big Pine Parking
- Shop/Office Area
- Main Parking and Nature Center Complex
- Picnic Area/Parking at US 41/Snow Memorial Hwy
- Main Entrance Area (maintained area around the entrance sign)
- Overflow parking and bat house area
- May's Prairie Viewing Blind
- Big Pine Trailhead
- May's Prairie Boardwalk
- May's Prairie Outdoor Classroom

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

4.10.1 Capital Facilities and Infrastructure Activities and Accomplishments

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

- A practice archery range facility was completed in 2015
- A boundary survey of the Big Pine tract was completed in January of 2016.
- In 2017, A modular office was installed on the Conservation Center tract to provide office space for WHM staff.
- Due to damage, a water tower near the Big Pine well house was removed in 2021.

- FWC staff replaced and improved the wooden extension leading to the viewing blind and made it ADA accessible.
- FWC staff resurfaced the main parking area with certified lime rock to improve access for 2WD vehicles.
- Installed six new angled-V walk-in entrances.
- Installed five new picnic tables.
- Installed three bear-resistant trash cans.
- Installed six wooden, trailside benches.
- Installed two new secondary entrance signs.

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 Florida. 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 FWC's Landscape Conservation Strategic Initiative

The FWC and its partners have a legacy of excellent conservation work, much of which has been done at a landscape scale. To ensure Florida's natural resources are conserved for future generations, the FWC has launched the Landscape Conservation Strategic Initiative (LCSI) to serve as a catalyst for implementing further forward-looking and strategic conservation measures. In September 2021, the FWC adopted an official Landscape Conservation policy for the agency, defining a holistic conservation approach with supportive guidelines. The primary goal of the LCSI is to achieve conservation outcomes that are large-scale, long-lasting, and cost-effective, and to establish durable partnerships with government agencies, conservation organizations, private landowners, academic institutions, stakeholders, and other partners. This includes proactive, long-range planning that is multi-purpose and encompasses multiple stakeholders and jurisdictions. Additionally, using a variety of tools, FWC staff will prioritize

actions that are within identified target conservation areas. These goals will be achieved through the development and monitoring of clear, specific, and measurable indicators and targets that allow FWC staff to track conservation actions and assess landscape conservation outcomes.

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 12).

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 not limited to, FLAM (Section 4.2.2), Critical Lands and Water Identification project (CLIP), the Florida Ecological Greenways Network (FEGN), 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 the Natural Resources Conservation Service 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 award landowners who manage their wildlife habitat responsibly. At the time of the plan development, no specific land stewardship

workshops had been conducted for landowners adjacent to the CWEA. 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 CWEA and surrounding areas include the SWFWMD, USDA, FMAU, FFS, USFWS, Hernando County, DEP, Conservation Florida, and other organizations and potential grant program opportunities. The FWC will continue to commit staff time and other resources to regularly providing information to partners regarding landscape conservation science, opportunities, and progress. At the CWEA, FWC staff work with partners, such as the FFS, on management activities including prescribed fire, control of invasive pests and pathogens, and timber harvesting activities.

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 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 2,020 acres, have been identified for recommended acquisition under the auspices of the FWC's Additions and Inholdings Acquisition program for the CWEA (Figure 12). 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 full-fee acquisition of the lands on the FWC Additions and Inholdings Acquisition List for the CWEA to optimize the conservation of fish and wildlife, public access and use, and overall resource and operational management of the area. However, as mentioned previously, the FWC may also pursue less-than-fee acquisition with adjacent landowners. Though it should be noted that landowner preference is often the key element in determining whether to pursue a full fee or less-than-fee acquisition.

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

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 change to purchase the

land in the future. The state offers several alternative possibilities to obtaining the rights and/or ownership to land for conservation purposes, which furthers conversation-based goals and objectives for Florida's future.

4.11.5 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, however no significant acquisition or landscape conservation activities have taken place.

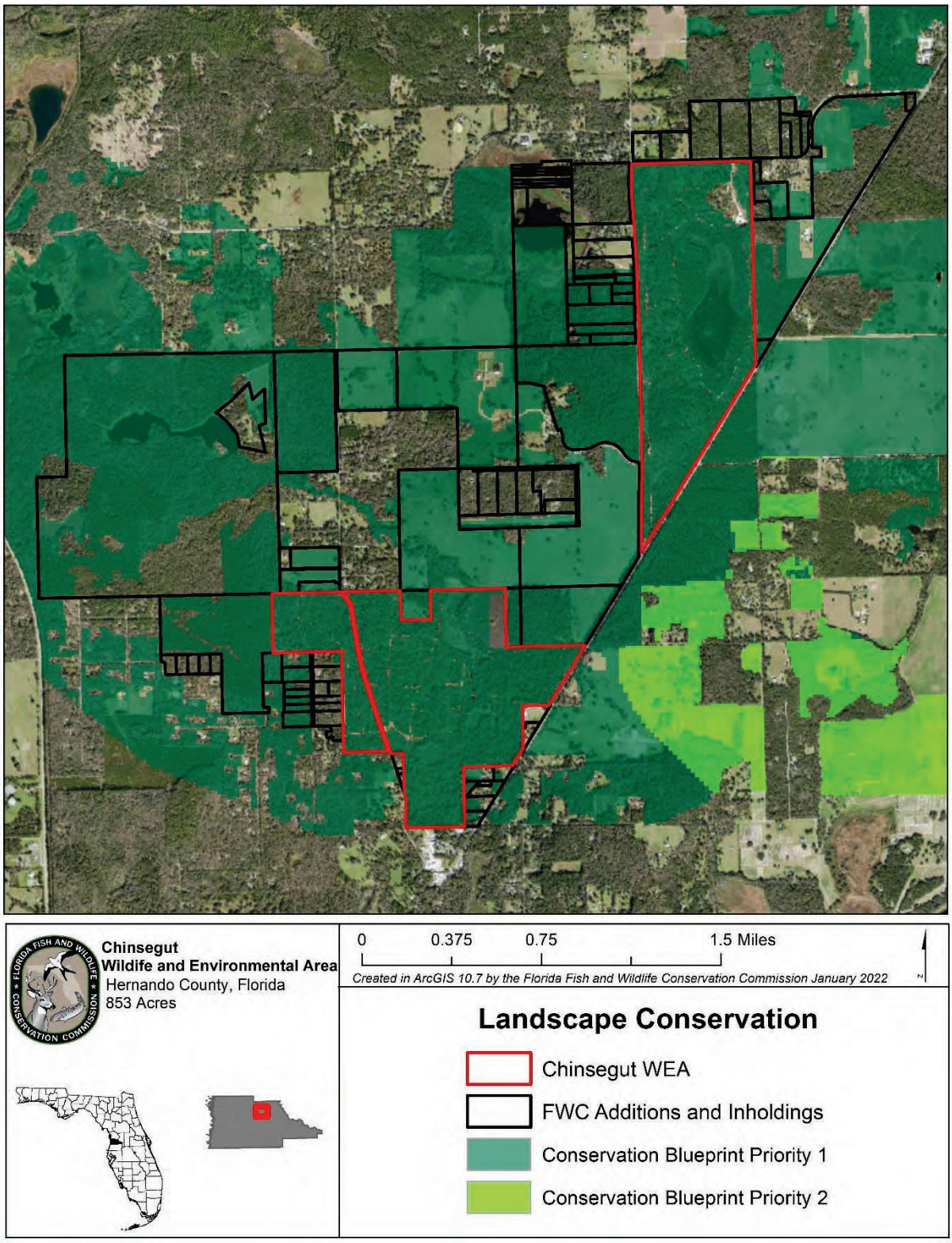

Figure 12. Landscape Conservation for the CWEA

4.12 Research Opportunities

The FWC intends to cooperate with researchers, universities, and others as feasible and appropriate. For the CWEA, 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 CWEA 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 CWEA 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) 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 the DEP for the monitoring and management of both ground and surface water resources and the overall management of the CWEA.

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

4.13.3 Apiaries

Currently, there are no apiaries operating on the CWEA. However, use of apiaries is conditionally approved for the CWEA, and is deemed to be consistent with purposes for acquisition, is in compliance with the Conceptual State Lands Management Plan, and is consistent with the FWC agency mission, goals, and objectives as expressed in the agency Strategic Plan and priorities document (Appendix). Location, management, and administration of apiaries on the CWEA will be guided by the FWC Apiary Policy (Appendix 12.5).

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

4.14 Climate Change

Florida's unique ecology and topography make impacts from climate change particularly acute and likely to affect multiple economic, agricultural, environmental, and health sectors across the state. The impact of climate change on wildlife and habitat is already occurring, from eroding shorelines and coral bleaching to increases in forest fires, severe weather events, and saltwater intrusion into inland freshwater wetlands.

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

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

Potential impacts that may be occurring as a result of climate change include: change in the timing of biological processes, such as flowering, breeding, hibernation, and migration; [10, 11, 12] more frequent invasions and outbreaks of invasive species;[13] and loss of habitat in coastal areas due to sea level rise.[14] Some species are projected to adjust to these conditions through ecological or evolutionary adaptation, whereas others are projected to exhibit range shifts as their distributions track changing climatic conditions. However, the highly developed Florida coastline and significant projected urban growth in the state in coming decades is likely to make it difficult or impossible for many species and habitats to shift their ranges in response to a changing climate. Those species that are unable to respond to changing climatic conditions are projected to go extinct. Some estimates suggest that as many as 20% - 30% of the species currently assessed by the IPCC are at risk of extinction within this century if global mean temperatures exceed increases of 2.7 – 4.5° F.[15] A number of ecosystems are projected to be affected at temperature increases well below these levels.

At this time, the 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.

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.

To address the potential impacts of climate change on the CWEA, Goals and Objectives have been developed as a component of this Management Plan (Section 5.11). Depending on the recommendations of the adaptive management strategies described above, additional specific goals and objectives to mitigate potential climate change impacts may be developed for the CWEA Management Plan 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.

5 Resource Management Goals and Objectives

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

5.1 Habitat Restoration and Improvement

Goal: Improve extant habitat and restore disturbed areas.

Short-term (UP TO TWO YEARS)

1. Utilize OBVM monitoring to evaluate the actively managed natural communities and adjust management activities as needed.
2. Contract for recertification of natural and altered community mapping.

Long-term (UP TO 10 YEARS)

1. Utilize OBVM monitoring to evaluate actively managed communities and adjust management efforts to meet desired future conditions.
2. Contract for recertification of natural and altered community mapping.
3. Continue to implement prescribed burn plan.
4. Continue to conduct habitat/natural community improvement using management techniques such as shredding, mowing, discing, native vegetation planting, and prescribed fire.
5. Conduct habitat restoration through timber thinning activities, as guided by the Timber Management Plan.

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

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

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

Short-term

1. Replace three bat boxes on the Conservation Center tract of the CWEA.

Long-term

1. Continue to monitor locally important wildlife species, as identified in the WCPR strategy.
2. Continue to collect and record opportunistic wildlife species occurrence data.

5.4 Invasive and Non-native Species Maintenance and Control

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

Long-term

1. Monitor the CWEA for the level of infestation of FISC Category I and Category II invasive plant species and treat as needed and appropriate.
2. Continue to monitor presence of non-native wildlife and implement control measures as needed and appropriate.

5.5 Public Access and Recreational Opportunities

Goal: Provide public access and recreational opportunities.

Short-term

1. Develop a Recreation Assessment for the CWEA.
2. Evaluate the need for a Recreation Guide for the CWEA.

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 374 visitors per day.
3. Continue to provide website, social media, trail guides, self-guided tour, and public programs for interpretation and education.
4. If a Recreation Guide is deemed appropriate for the area, develop guide, and make available to the public.
5. Continue to maintain 9.87 miles of trails, including 6.8 miles of marked trails.
6. Monitor trails annually for visitor impacts.
7. Cooperate with Hernando County, stakeholders, regional landowners, and other agencies to investigate regional recreational opportunities including linking hiking and trail systems between adjacent public areas.
8. Consider the demographics of the area in designing and delivering conservation education programs and recreational opportunities, to provide a welcoming and inclusive experience for the community.
9. Assess and improve ADA accessibility for recreation and conservation education programming as needed.

10. Work with the FWC Great Florida Birding and Wildlife Trail program to maintain the CWEA as a gateway site.
11. Continue to partner with the U.S. Forest Service and the Florida Trail Association to maintain a segment of the Florida National Scenic Trail on the CWEA.
12. Continue to provide interpretation of the cultural resources on the CWEA.
13. Continue to provide conservation education and wildlife viewing opportunities for existing partners and identify partnerships that could provide for additional conservation educational programs and outreach.
14. Continue to implement the Conservation Center Strategic Plan.
15. Continue to utilize volunteers and partners in delivery of conservation education programs.
16. Evaluate the potential for expanding youth education in partnership with the Florida Youth Conservation Center Network (FYCCN).

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 maintain and enhance natural hydrological functions, install, maintain, or replace low-water crossings, bridges, and culverts as appropriate.
2. Continue to implement the hydrological restoration plan.
3. If necessary, continue to cooperate with the SWFWMD and the 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 CWEA Timber 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 CWEA.
2. Coordinate with the FFS or private consultant to obtain an updated Timber 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. Coordinate with the DHR or private consultant to schedule and conduct a historical reconnaissance survey as appropriate.
2. Cooperate with the DHR in designing site plans for development of infrastructure.
3. Continue to follow the DHR's Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties for the management of cultural and historic resources.
4. Continue to annually monitor, protect, preserve, and report any changes as necessary on six recorded sites on the CWEA.
5. Ensure any newly identified sites are reported to the DHR for inclusion in the FMSF.
6. Coordinate with the DHR to ensure that staff have received updated Archaeological Resource Management training.

5.9 Capital Facilities and Infrastructure

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

Long-term

1. Monitor trails and infrastructure annually for visitor impacts.
2. Continue to maintain 11 facilities.
3. Continue to maintain ~20 miles of roads.
4. Continue to maintain ~10 miles of fences.
5. Explore the feasibility, in coordination with the DHR, for replacing a wooden bridge across the inflow point to Burn's Prairie with a concrete culvert to improve heavy equipment access for prescribed fire.
6. If determined feasible, construct a new pole barn behind the maintenance shop on the Conservation Center tract of the CWEA with 8 bays and access to electricity.
7. If determined feasible, enclose the existing covered porch at the Conservation Center.
8. If determined feasible, replace the existing pole barn in the main parking area at the Conservation Center tract of the CWEA with an ADA accessible outdoor pavilion.
9. If determined feasible, expand existing restroom facilities at the Conservation Center and make them ADA accessible.
10. If determined feasible, construct new ADA accessible restroom facilities at the Conservation Center.

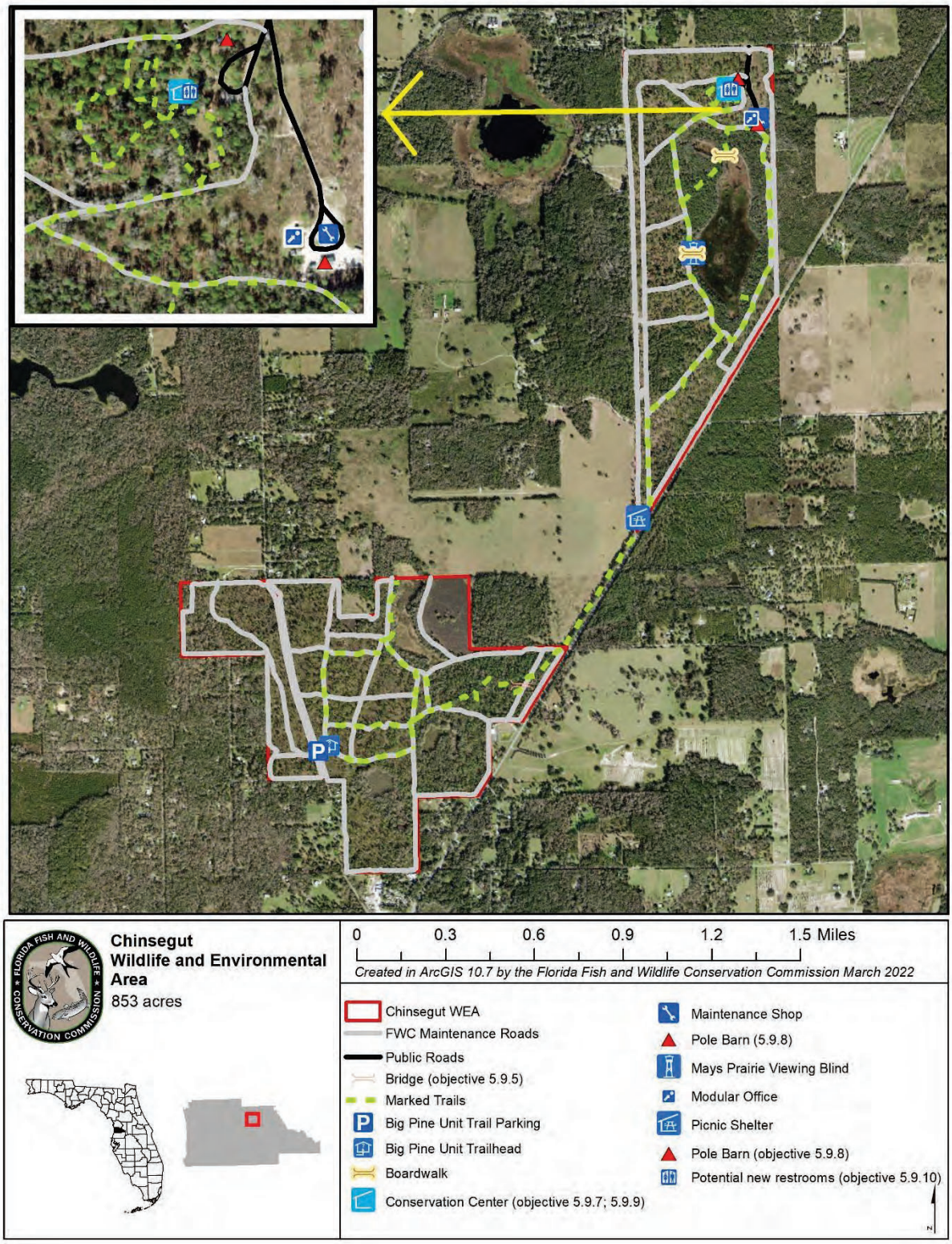

Figure 13. Project Locations for the CWEA

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 for the CWEA as appropriate and necessary.
2. Continue to contact and inform adjoining private landowners about the FWC Landowners Assistance Program, and coordinate with public entities to pursue conservation stewardship partnerships.
3. Continue to evaluate and identify 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 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 CWEA are no longer needed for conservation purposes, and therefore many be designated as surplus lands.

5.11 Climate Change 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 CWEA.

Long-term

1. Coordinate with the FWC-Fish and Wildlife Research Institute Climate Change Adaptation Initiative to identify potential impacts of projected climate change on fish and wildlife resources and operational management of the CWEA.
2. As appropriate, update the CWEA Prescribed Fire Plan, WCPR Strategy, and Recreation Master Plan 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 CWEA to current cooperative managers and continue collaborative management and research efforts.

Long-term

1. Continue to cooperate with researchers and universities and assess the need for research and environmental education partnership opportunities as appropriate.
2. Coordinate and cooperate with the 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 CWEA.
3. Continue to cooperate with the FFS and the DEP on prescribed fire activities.

6 Resource Management Challenges and Strategies

The following section identifies and describes further management needs and challenges associated with the CWEA 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: Currently, the FWC aims to meet FWC law enforcement and management staff standards and needs.

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: Insufficient area exists within the CWEA for long-term conservation of far-ranging species that have been documented to exist on the CWEA.

Strategy: Explore conservation stewardship and acquisition opportunities to secure habitat necessary for far-ranging species.

Strategy: Explore acquisition and partnership opportunities for lands within the Florida Wildlife Corridor.

Challenge 3: Currently unauthorized access, illegal dumping, vandalism, poaching, and unauthorized off-road vehicles (ORV) are an increasing challenge on the area.

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

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 contracting herbicide treatments.

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

Challenge 5: Invasive plants from adjacent private lands are spreading to the CWEA.

Strategy: Coordinate with FWC's LAP to work with adjacent landowners to control and manage invasive plants on adjacent properties.

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

Strategy: Continue to cooperate with adjacent landowners including Florida A&M University (FAMU), U.S. Department of Agriculture, and Chinsegut Hill on treatment of invasive species, particularly along boundary lines, as well as the Florida Department of Transportation (FDOT) for invasive species control along adjacent right-of-ways.

Challenge 6: 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 CWEA 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.

Challenge 7: The CWEA's proximity to major roadways and residential areas presents significant smoke management challenges during prescribed burning.

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

Strategy: Coordinate with FDOT to notify them of the prescribed burn schedule and arrange for the variable message boards to be used to alert motorists along the potentially impacted roadways.

Strategy: Coordinate with Homeowner Associations and the County to disseminate the prescribed burn schedule and warnings for those living and driving in the area.

Challenge 8: Currently awareness is low regarding prescribed burns occurring on the CWEA and the potential for smoke impacts for neighboring residents.

Strategy: Work with partners such as Hernando County, the FFS, 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.

Strategy: Explore additional educational opportunities regarding habitat management activities on the area.

Challenge 9: Current conditions make it difficult to safely apply prescribed fire at Burn's Prairie.

Strategy: Work with FAMU to establish a formal agreement to facilitate FWC's management of Burn's Prairie.

Strategy: Explore the feasibility of conducting a timber thinning operation in the uplands surrounding Burn's Prairie.

Challenge 10: Existing landscape features such as borrow pits and some hydrological features increase the difficulty of performing regular management activities.

Strategy: Work with FWC's PASO to find practical solutions to landscape challenges.

Challenge 11: Current facilities at the Conservation Center building are not fully ADA accessible or adequate to support youth conservation education programming needs.

Strategy: Continue to cooperate with the FYCCN and the Wildlife Foundation of Florida to deliver youth programming and assess youth programming opportunities.

Strategy: Continue to work with FWC's PASO to update facilities on the area to improve ADA accessibility.

Challenge 12: Adequate staff housing and available residences continue to be a challenge for the CWEA.

Strategy: Explore possible opportunities in nearby areas for affordable and adequate housing for staff.

Strategy: Continue to explore possible adjacent land acquisitions with existing housing structures.

Challenge 13: Management changes at the Chinsegut Hill can present communication and coordination challenges for the CWEA.

Strategy: Continue to communicate with Hernando County on the management of Chinsegut Hill.

Challenge 14: Pests and pathogens continue to occur on timber stands within the CWEA.

Strategy: Continue communication and coordination with the FFS on outbreaks and control of pests and pathogens found on the area.

Strategy: Continue to monitor presence of pests and pathogens and health of native vegetation.

7 Cost Estimates and Funding Sources

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

The cost estimate below, although exceeding what the FWC typically receives through the appropriations process, is estimated to be what is necessary for optimal management and is consistent with the current and planned resource management and operation of the CWEA. 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 2020-2021 operational plan showing detailed cost estimates by activity and categories of expenditures, may be found in Appendix X.

CWEA Management Plan Cost Estimate	*Maximum expected one-year expenditure*
Resource Management	Expenditure
Invasive Species Control	$52,441
Prescribed Burning	$56,260
Cultural Resource Management	$5,515
Timber Management	$2,955
Hydrological Management	$69,671
Vegetation Monitoring/Management	$66,102
Wildlife Monitoring/Management	$11,037
Subtotal	**$263,981**
Administration	
General administration	**$17,385**
Support	
Land Management Planning	$34,463
Management Reviews	$0
Training/Staff Development	$16,694
Vehicle Purchase	$0
Vehicle Operation and Maintenance	$18,958
Other (Technical Reports, Data Management, etc.)	$3,020
Internal Program Review	$1,608
Technology and Data Management	$15,328
Subtotal	**$307,008**
Capital Improvements	
New Facility Construction	$0
Facility Maintenance	$67,830
Subtotal	**$67,830**
Visitor Services/Recreation	
Info./Education/Operations	**$165,697**
Law Enforcement	
Resource protection	**$5,212**
Total	**$827,113**

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

CWEA Management Plan Cost Estimate	*Ten-year projection*		
Resource Management	Expenditure	Priority	Priority schedule:
Invasive Species Control	$460,752	(1)	**(1) Immediate (annual)**
Prescribed Burning	$494,304	(1)	*(2) Intermediate (3-4 years)*
Cultural Resource Management	$48,452	(1)	(3) Other (5+ years)
Timber Management	$25,963	(1)	
Hydrological Management	$612,139	(1)	
Vegetation Monitoring/Management	$580,783	(1)	
Wildlife Monitoring/Management	$96,973	(1)	
Subtotal	**$2,319,367**		
Administration			
General administration	**$152,745**	(1)	
Support			
Land Management Planning	$302,793	(1)	
Management Reviews	$0	(3)	
Training/Staff Development	$146,673	(1)	
Vehicle Purchase	$763,414	(2)	
Vehicle Operation and Maintenance	$166,566	(1)	
Other (Technical Reports, Data Management, etc.)	$26,537	(1)	
Internal Program Review	$14,128	(1)	
Technology and Data Management	$134,670	(1)	
Subtotal	**$1,554,781**		
Capital Improvements			
New Facility Construction	$1,878,217	(2)	
Facility Maintenance	$595,961	(1)	
Subtotal	**$2,474,178**		
Visitor Services/Recreation			
Info./Education/Operations	**$1,455,836**	(1)	
Law Enforcement			
Resource protection	**$45,790**	(1)	
Total	**$8,002,696**	*	

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

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

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

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

Uses planned for the CWEA 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 X). 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 CWEA in compliance with Chapter 388.4111 F.S. (Appendix X). This plan was developed in cooperation with the local Hernando County arthropod control agency. This plan is also in conformance with the Local Government Comprehensive Plan as approved and adopted for Hernando County, Florida, (Appendix X).

10 Endnotes

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11 Appendices

11.1 Lease Agreement

11.2 Easements and/or Other Agreements

11.3 Public Hearing Notice, Advertisements, and Press Release

11.3.1 Public Hearing Notice

11.3.2 Internal FWC Press Release

11.3.3 Newspaper

11.3.4 Florida Administrative Register Ad

11.4 Public Input

11.4.1 Management Advisory Group Meeting Results

11.4.2 Public Hearing Report

11.5 Soil Series Descriptions

11.6 Management Plan Terms

11.7 FNAI Element Occurrence Data Usage Letter

11.8 FWC Agency Strategic Plan

11.9 FWC Apiary Policy

11.10 Prescribed Burn Plan

11.11 Wildlife Conservation and Prioritization and Recovery Program Strategy (WCPR)

11.12 Recreation Master Plan

11.13 Timber Assessment

11.14 Management Procedures Guidelines - Management of Archaeological and Historical Resources

11.15 Land Management Uniform Accounting Council Categories

11.16 Operation Plan Fiscal Year XXXX - XXXX

11.17 Arthropod Control Plan

11.18 NAME County Letter of Compliance with Local Government Comprehensive Plan