

A Management Plan for
Lafayette Forest
Wildlife and Environmental Area
2013 - 2023



Lafayette County, Florida

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

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**A Management Plan
for the
Lafayette Forest Wildlife and Environmental Area**

Lafayette County, Florida

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



April 2013

Eric Sutton, Division Director
Division of Habitat and Species Conservation



**FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION**

MARJORY STONEMAN DOUGLAS BUILDING
3900 COMMONWEALTH BOULEVARD
TALLAHASSEE, FLORIDA 32399-3000

RICK SCOTT
GOVERNOR
HERSCHEL T. VINYARD JR.
SECRETARY

November 4, 2013

Mr. David Alden
Florida Fish and Wildlife Conservation Commission
Division of Habitat and Species Conservation
Terrestrial Habitat Conservation and Restoration Section
620 South Meridian Street
Tallahassee, Florida, 32399-1600

Re: Lafayette Forest Wildlife and Environmental Area – Lease # 4608

Dear Mr. Alden:

The Division of State Lands, Office of Environmental Services, acting as agent for the Board of Trustees of the Internal Improvement Trust Fund, hereby approves the above referenced management plan. The next management plan update is due November 4, 2023.

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

Sincerely,

Signature on File

Marianne S. Gengenbach
Office of Environmental Services
Division of State Lands

LAND MANAGEMENT PLAN EXECUTIVE SUMMARY

Lead Agency: Florida Fish and Wildlife Conservation Commission (FWC)
 Common Name of Property: Lafayette Forest Wildlife and Environmental Area (LFWEA)
 Location: Lafayette County, Florida
 Acreage Total: 2,148 acres
 Acreage Breakdown:

FNAI Natural Community	Acres	Percent of Total Area
pine plantation	1,030.4	48%
dome swamp	346.2	16%
ruderal	312.7	15%
depression marsh	146.6	7%
floodplain swamp	133.9	6%
bottomland forest	53.5	3%
successional hardwood forest	53.0	2%
basin marsh	35.0	2%
wet flatwoods	16.1	1%
upland hardwood forest	6.2	0%
scrubby flatwoods	2.1	0%

*GIS-calculated acreage for natural communities varies slightly from actual total acreage.

Lease/Management Agreement No.: 4608 (Appendix 12.1)

Use: Single _____ Management Responsibilities:
 Multiple X Agency FWC Responsibilities
LEAD, SUBLESSEE (Wildlife and Environmental Area), resource protection, law enforcement)

Designated Land Use: Wildlife and Environmental Area

Sublease (s): None

Encumbrances: Two recorded access easements; unrecorded reciprocal easement agreement; unrecorded cemetery easement; rights to oil, gas, and associated hydrocarbons within the property held by International Paper Company

Type Acquisition: Fish and Wildlife Habitat Program

Unique Features: Natural: Natural communities
 Archaeological/Historical: None documented within LFWEA.

Management Needs: Habitat restoration and improvement; public access and recreational opportunities; hydrological preservation and restoration; exotic and invasive species maintenance and control; imperiled species habitat maintenance, enhancement, and restoration.

Acquisition Needs/Acreage: 11,080 acres remaining in the Lafayette Forest Florida Forever Project (Figure 14); zero acres on FWC Inholdings and Additions Acquisition List.

Surplus Lands/Acreage: None

Public Involvement: Management Advisory Group consensus building meeting and Public Hearing (Appendix 12.2)

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

ARC Approval Date _____ BTIITF Approval Date: _____

Comments: _____

Land Management Plan Compliance Checklist

Required for State-owned conservation lands over 160 acres

Section A: Acquisition Information Items

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
1	The common name of the property.	18-2.018 & 18-2.021	1
2	The land acquisition program, if any, under which the property was acquired.	18-2.018 & 18-2.021	4
3	Degree of title interest held by the Board, including reservations and encumbrances such as leases.	18-2.021	5
4	The legal description and acreage of the property.	18-2.018 & 18-2.021	96-110
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	2
6	An assessment as to whether the property, or any portion, should be declared surplus. <i>Provide information regarding assessment and analysis in the plan, and provide corresponding map.</i>	18-2.021	48-50
7	Identification of other parcels of land within or immediately adjacent to the property that should be purchased because they are essential to management of the property. <i>Please clearly indicate parcels on a map.</i>	18-2.021	66
8	Identification of adjacent land uses that conflict with the planned use of the property, if any.	18-2.021	11
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)	45-46
10	Proximity of property to other significant State, local or federal land or water resources.	18-2.021	5-11

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	46
12	A description of past and existing uses, including any unauthorized uses of the property.	18-2.018 & 18-2.021	44-45
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	46-47
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	5
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	62
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	91

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)	46-47
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	46
19	Letter of compliance from the local government stating that the LMP is in compliance with the Local Government Comprehensive Plan.	BOT requirement	495
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	47
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	47-47
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	62, 257-267
23	A statement regarding incompatible use in reference to Ch. 253.034(10).	253.034(10)	47-47

*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	11-12
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)	128-144

26	LMPs and LMP updates for parcels over 160 acres shall be developed with input from an advisory group who must conduct at least one public hearing within the county in which the parcel or project is located. <i>Include the advisory group members and their affiliations, as well as the date and location of the advisory group meeting.</i>	259.032(10)	112-116
27	Summary of comments and concerns expressed by the advisory group for parcels over 160 acres	18-2.021	112-116
28	During plan development, at least one public hearing shall be held in each affected county. Notice of such public hearing shall be posted on the parcel or project designated for management, advertised in a paper of general circulation, and announced at a scheduled meeting of the local governing body before the actual public hearing. <i>Include a copy of each County's advertisements and announcements (meeting minutes will suffice to indicate an announcement) in the management plan.</i>	253.034(5) & 259.032(10)	118, 120, 122, 124-126
29	The manager shall consider the findings and recommendations of the land management review team in finalizing the required 10-year update of its management plan. <i>Include manager's replies to the team's findings and recommendations.</i>	259.036	N/A (LMR Findings/ Recommendations not available)
30	Summary of comments and concerns expressed by the management review team, if required by Section 259.036, F.S.	18-2.021	N/A (LMR Findings/ Recommendations not available)
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	N/A (LMR Findings/ Recommendations not available)

Section D: Natural Resources

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
32	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding soil types. <i>Use brief descriptions and include USDA maps when available.</i>	18-2.021	12-15, 146-151
33	Insert FNAI based natural community maps when available.	ARC consensus	16-17
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	13-43
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	43-44
36	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding beaches and dunes.	18-2.021	43

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	43
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	34-42
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	35-42
40	The identification or resources on the property that are listed in the Natural Areas Inventory. <i>Include letter from FNAI or consultant where appropriate.</i>	18-2.021	18-34
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)	50-69
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.	↓	87-88
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.		69-71
42-C.	The associated measurable objectives to achieve the goals.		69-71
42-D.	The related activities that are to be performed to meet the land management objectives and their associated measures. <i>Include fire management plans - they can be in plan body or an appendix.</i>		69-71, 248
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.		88-90
43	***Quantitative data description of the land regarding an inventory of forest and other natural resources and associated acreage. <i>See footnote.</i>	253.034(5)	257-267
44	Sustainable Forest Management, including implementation of prescribed fire management		
44-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		87-88
44-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).	18-2.021, 253.034(5) & 259.032(10) ↓	73
44-C.	Measurable objectives (see requirement for #42-C).		73
44-D.	Related activities (see requirement for #42-D).		73, 257-267
44-E.	Budgets (see requirement for #42-E).		88-90
45	Imperiled species, habitat maintenance, enhancement, restoration or population restoration	259.032(10) & 253.034(5)	

45-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	87-88
45-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		71
45-C.	Measurable objectives (see requirement for #42-C).		71
45-D.	Related activities (see requirement for #42-D).		71
45-E.	Budgets (see requirement for #42-E).		88-90
46	***Quantitative data description of the land regarding an inventory of exotic and invasive plants and associated acreage. <i>See footnote.</i>		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	488-491
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).	↓	87-88
48-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		71
48-C.	Measurable objectives (see requirement for #42-C).		71
48-D.	Related activities (see requirement for #42-D).		71
48-E.	Budgets (see requirement for #42-E).		88-90

Section E: Water Resources

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
49	A statement as to whether the property is within and/or adjacent to an aquatic preserve or a designated area of critical state concern or an area under study for such designation. <i>If yes, provide a list of the appropriate managing agencies that have been notified of the proposed plan.</i>	18-2.018 & 18-2.021	1, 43
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	43
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	43
52	***Quantitative description of the land regarding an inventory of hydrological features and associated acreage. <i>See footnote.</i>	253.034(5)	293-484
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).	↓	87-88

53-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		72
53-C.	Measurable objectives (see requirement for #42-C).		72
53-D.	Related activities (see requirement for #42-D).		72
53-E.	Budgets (see requirement for #42-E).		88-90

Section F: Historical, Archeological and Cultural Resources

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
54	**Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding archeological and historical resources. <i>Include maps of all cultural resources except Native American sites, unless such sites are major points of interest that are open to public visitation.</i>	18-2.018, 18-2.021 & per DHR's request	62
55	***Quantitative data description of the land regarding an inventory of significant land, cultural or historical features and associated acreage.	253.034(5)	62
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	62
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).	↓	87-88
57-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		73
57-C.	Measurable objectives (see requirement for #42-C).		73
57-D.	Related activities (see requirement for #42-D).		73
57-E.	Budgets (see requirement for #42-E).		88-90

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

Section G: Facilities (Infrastructure, Access, Recreation)

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
58	***Quantitative data description of the land regarding an inventory of infrastructure and associated acreage. <i>See footnote.</i>	253.034(5)	58-59
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).	↓	87-88
59-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		73-74
59-C.	Measurable objectives (see requirement for #42-C).		73-74
59-D.	Related activities (see requirement for #42-D).		73-74
59-E.	Budgets (see requirement for #42-E).		88-90

60	*** Quantitative data description of the land regarding an inventory of recreational facilities and associated acreage.	253.034(5)	58-61
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).	↓	87-88
61-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		72
61-C.	Measurable objectives (see requirement for #42-C).		72
61-D.	Related activities (see requirement for #42-D).		72
61-E.	Budgets (see requirement for #42-E).		88-90

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	ii-viii
63	Place the Executive Summary at the front of the LMP. Include a physical description of the land.	ARC and 253.034(5)	i
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	N/A (Not an update of an existing plan)
65	Key management activities necessary to achieve the desired outcomes regarding other appropriate resource management.	259.032(10)	50-76
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)	88-90
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)	88-90
68	A statement of gross income generated, net income and expenses.	18-2.018	486

*** = 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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1 Introduction and General Information

Located within a landscape of pinelands, basin swamp, marshes and hardwood forest, other public conservation lands and Florida Forever project lands, the Lafayette Forest Wildlife and Environmental Area (LFWEA) provides habitat for a wide diversity of wildlife species including the gopher tortoise (*Gopherus polyphemus*) and also provides an array of fish and wildlife based public outdoor recreational opportunities, all within close proximity to the Suwannee River. Wetland and mesic forests within this larger landscape also provide potential habitat for species such as the eastern indigo snake (*Drymarchon corias couperi*) and far roaming species such as the Florida black bear (*Ursus americanus floridanus*) and American swallow-tailed kite (*Elanoides forficatus*). With the connection between Mallory Swamp and potentially, the Suwannee River, the LFWEA aids in conserving a corridor for wildlife movement that will become increasingly important over time.



The following management plan is submitted for review to the Acquisition and Restoration Council (ARC) on behalf of the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees) of the State of Florida through the Florida Department of Environmental Protection’s (DEP) Division of State Lands (DSL), in compliance with paragraph seven of Lease No. 4608 (Appendix 12.1) and pursuant to Chapters 253 and 259, Florida Statutes (FS), and Chapters 18-2 and 18-4, Florida Administrative Code (FAC). Format and content were drafted in accordance with ARC requirements for management plans and the model plan outline provided by the staff of DSL.

1.1 Location

The LFWEA, encompassing approximately 2,148 acres, is located in north Florida in southeastern Lafayette County (Figure 1). The LFWEA lies in all or parts of Sections 22, 23, 24, 25, 26, 35, and 36 in Township 7 South, Range 13 East (Figure 2). The LFWEA is located approximately 8 miles south of Branford, 16 miles northeast of Cross City, and 17 miles southeast of Mayo. Other municipalities near the LFWEA include Lake City (30 miles northeast) in Columbia County; Live Oak (30 miles north) in Suwannee County; and Gainesville (40 miles southeast) in Alachua County. The LFWEA is not located within any Aquatic Preserve or a designated Area of Critical State Concern.

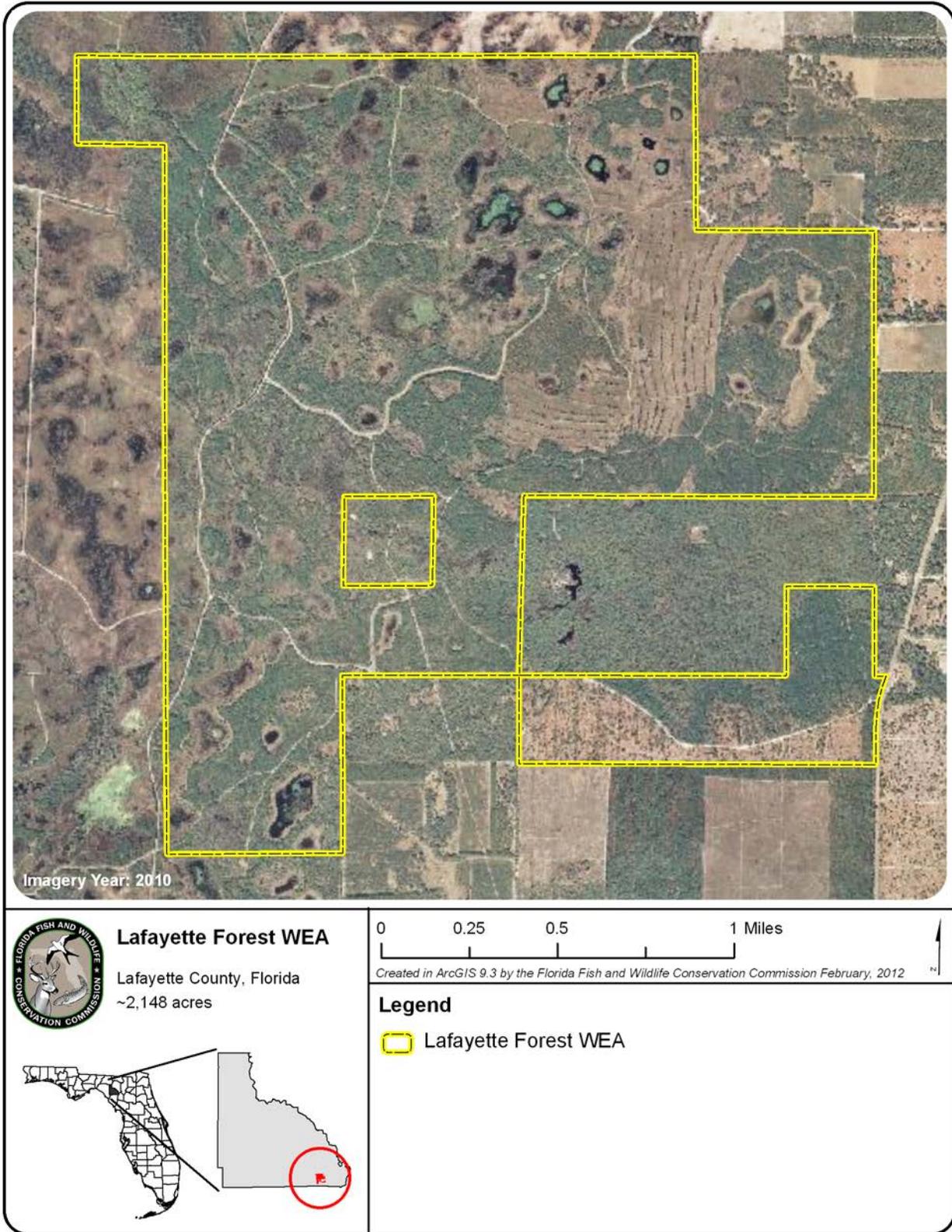


Figure 1: Aerial Imagery 2010

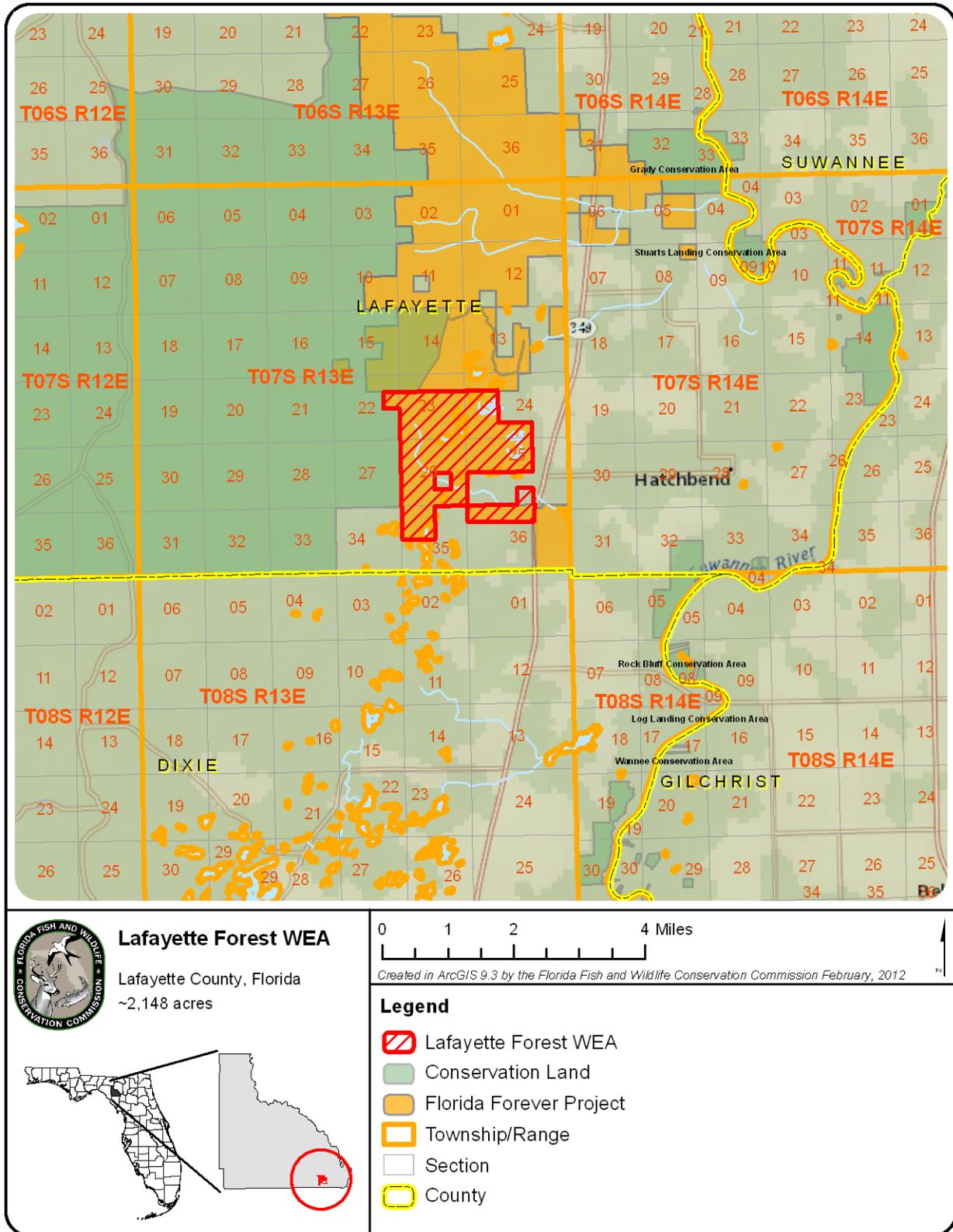


Figure 2: Section, Township, and Range Location

The LFWEA is bordered on the north primarily by privately owned pasture land and cattle operations interspersed with abundant forested wetlands and smaller areas of depression marsh. To the west of the LFWEA lies an extensive mosaic of forested uplands, wetlands, and marshes within the Mallory Swamp Restoration Area managed by the Suwannee River Water Management District (SRWMD). To the northeast of the LFWEA lies privately owned land, with the Mallory Swamp Restoration Area to the northwest. The eastern boundary of the LFWEA borders rural areas of predominantly pasture and pine plantation, with sparse residential and commercial uses. The LFWEA is bordered on the southwest primarily by pinelands mixed with isolated wetlands and ponds. A large agricultural row crop operation with multiple center pivot irrigation systems lies along the southeastern portion of the property.



1.2 Acquisition

The acquisition of the LFWEA as a Gopher Tortoise Mitigation Park was approved by the FWC in April, 2008. The FWC acquired the tract in cooperation with The Trust for Public Land, and closed on the property in August, 2008, concurrent with the DEP/DSL accepting title via delegation on behalf of the Board of Trustees. The FWC implemented the Mitigation Park Program in 1988 to provide land use regulatory programs with an alternative to on-site wildlife mitigation under Chapter 372.074, FS which establishes the Fish and Wildlife Habitat Program for the purpose of acquiring, assisting other agencies or local governments in acquiring, or managing lands important to the conservation of fish and wildlife. Under this authority, the FWC, or its designee, is responsible for managing these lands for the primary purpose of maintaining and enhancing their habitat value for fish and wildlife and compatible fish and wildlife based public outdoor recreation.

1.3 Management Authority

The FWC is the designated lead managing agency for the LFWEA under the authority granted by Lease Number 4608 from the Board of Trustees' agent, DSL. Further management authority derives from Article IV, Section 9 of the Florida Constitution as well as the guidance and directives of Chapters 253, 259, 327, 370, 372, 373, 375, 378, 403, 487, 870, and 597 of the Florida Statutes. These constitutional provisions and laws provide FWC the authority to protect, conserve, and manage the State's fish and wildlife resources.

1.4 Management Directives

The Board of Trustees' Lease Agreement Number 4608 with the FWC directs the FWC to “manage the leased premises only for the conservation and protection of natural and historical resources and resource-based, public outdoor recreation which is compatible with the conservation and protection of these public lands, as set forth in subsection 253.023(11), FS...” The lease agreement further directs FWC to “implement applicable Best Management Practices for all activities under this lease in compliance with paragraph 18-2.018(2)(h), FAC, which have been selected, developed, or approved by lessor, lessee, or other land managing agencies for the protection and enhancement of the leased premises.”

1.5 Title Interest and Encumbrances

As State-owned lands, title to the LFWEA is vested in the Board of Trustees (Figure 3). On January 16, 2009, DSL, as staff to the Board of Trustees, entered into Lease Agreement Number 4608, a 50 year lease agreement, granting FWC management authority for the LFWEA. International Paper Company holds the rights to the oil, gas, and associated hydrocarbons in, on and under the property, together with full rights of ingress and egress and use of the surface to the extent reasonably necessary for the purpose of exploring, drilling, developing, producing, storing, removing, treating and transporting said minerals. Other encumbrances to the title of the LFWEA include two recorded access easements. There is also an unrecorded reciprocal access easement and an unrecorded cemetery easement providing access to and buffer area around a small grave site. None of these easements, either recorded or unrecorded, appear to pose any impediment to management of the property.

1.6 Proximity to Other Public Properties

The LFWEA is in the vicinity of a large number of publicly owned conservation areas and several conservation areas under private ownership (Figure 4, Table 1). The conservation lands within a 20-mile radius of the LFWEA include lands managed by public and private entities that conserve cultural and natural resources within this region of north Florida. The configurations, locations, and proximities among habitats within and among these managed areas are important to the conservation of many endemic and rare species of plants and wildlife.

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



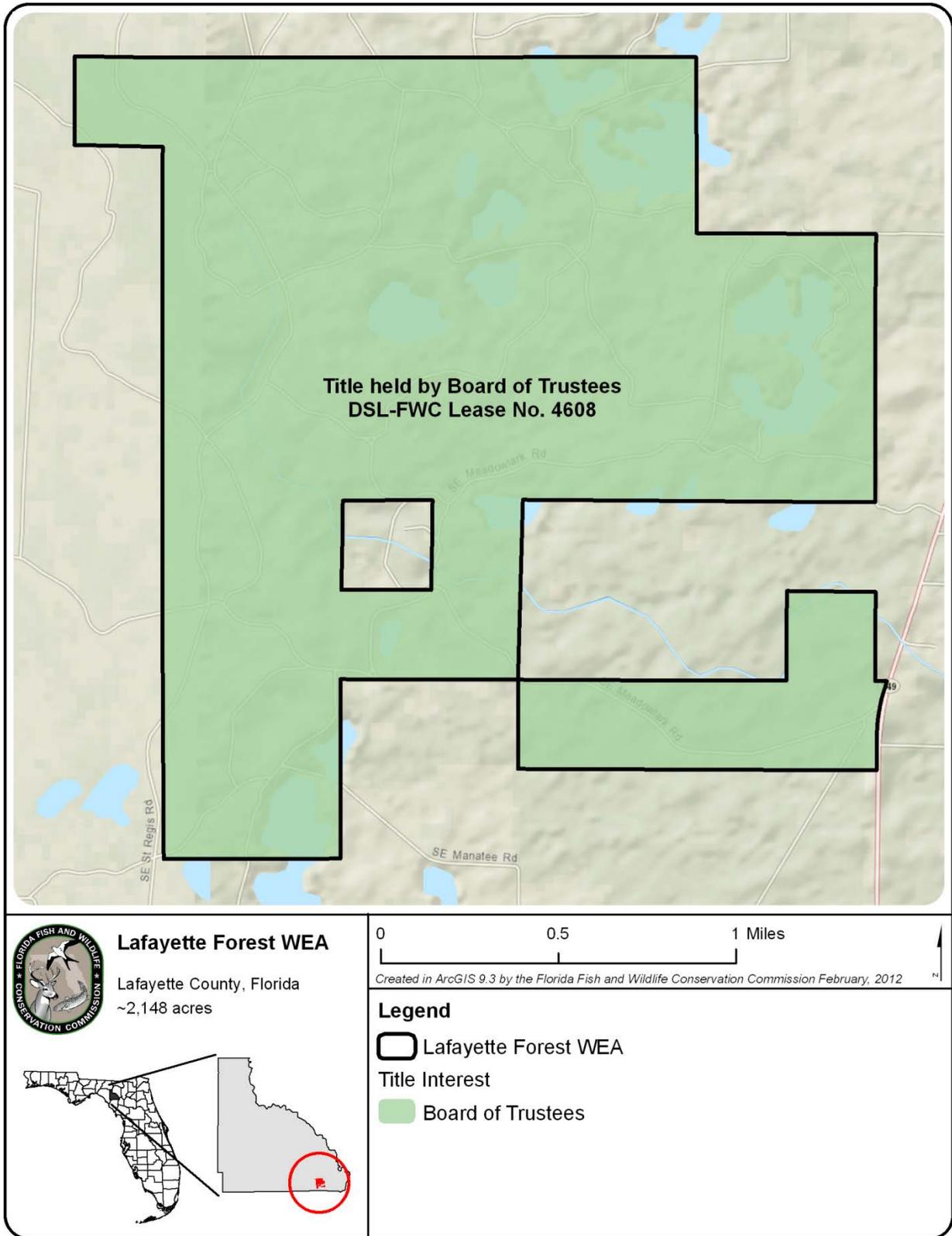


Figure 3: Title Interest

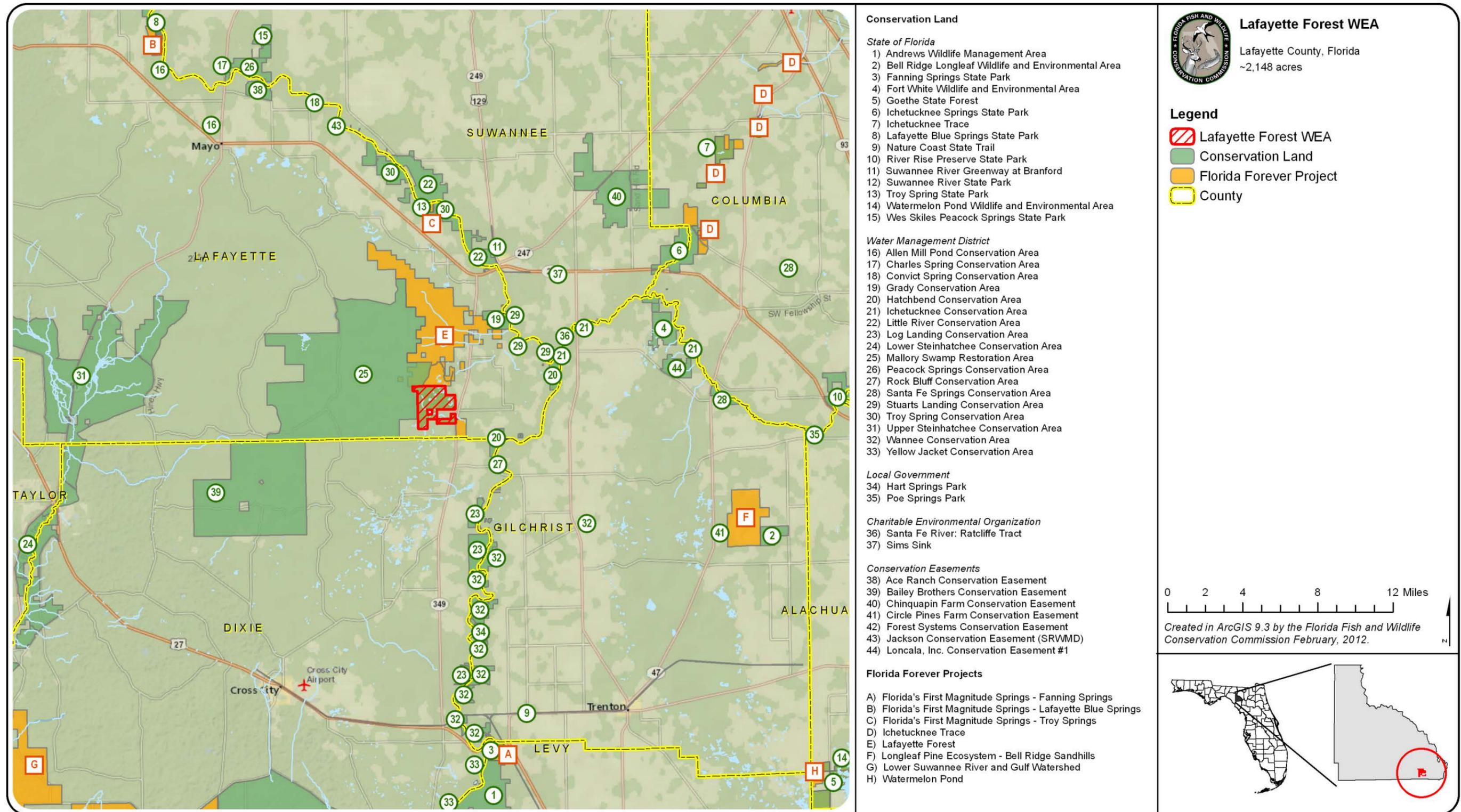


Figure 4: Conservation Land and Florida Forever Projects

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Table 1: Conservation Lands in Proximity to the LFWEA

State of Florida	Managing Agency
Andrews Wildlife Management Area	FWC
Bell Ridge Longleaf Wildlife and Environmental Area	FWC
Fanning Springs State Park	DEP
Fort White Wildlife and Environmental Area	FWC
Goethe State Forest	DACS
Ichetucknee Springs State Park	DEP
Ichetucknee Trace	DEP
Lafayette Blue Springs State Park	DEP
Nature Coast State Trail	DEP
River Rise Preserve State Park	DEP
Suwannee River Greenway at Branford	Suwannee County*
Suwannee River State Park	DEP
Troy Spring State Park	DEP
Watermelon Pond Wildlife and Environmental Area	FWC
Wes Skiles Peacock Springs State Park	DEP
Water Management District	Managing Agency
Allen Mill Pond Conservation Area	SRWMD
Charles Spring Conservation Area	SRWMD
Convict Spring Conservation Area	SRWMD
Grady Conservation Area	SRWMD
Hatchbend Conservation Area	SRWMD
Ichetucknee Conservation Area	SRWMD
Little River Conservation Area	SRWMD
Log Landing Conservation Area	SRWMD
Lower Steinhatchee Conservation Area	SRWMD
Mallory Swamp Restoration Area	SRWMD
Peacock Springs Conservation Area	SRWMD
Rock Bluff Conservation Area	SRWMD
Santa Fe Springs Conservation Area	SRWMD
Stuarts Landing Conservation Area	SRWMD
Troy Spring Conservation Area	SRWMD
Upper Steinhatchee Conservation Area	SRWMD
Wannee Conservation Area	SRWMD
Yellow Jacket Conservation Area	SRWMD
County	Managing Agency
Hart Springs Park	Gilchrist County
Poe Springs Park	Alachua County

Table 1: Conservation Lands in Proximity to the LFWEA

Private Conservation Organization	Managing Agency
Santa Fe River: Ratcliffe Tract	TNC
Sims Sink	TNC

Conservation Easement	Monitoring Agency
Ace Ranch Conservation Easement	SRWMD
Bailey Brothers Conservation Easement	SRWMD
Chinquapin Farm Conservation Easement	SRWMD
Circle Pines Farm Conservation Easement	DACS
Forest Systems Conservation Easement	SRWMD
Jackson Conservation Easement	SRWMD
Loncala, Inc. Conservation Easement #1	SRWMD

* The Board of Trustees holds title to the Suwannee River Greenway at Branford, but the area is managed by Suwannee County

Acronym Key	Agency Name
DACS	Florida Department of Agriculture and Consumer Services
DEP	Florida Department of Environmental Protection
FWC	Florida Fish and Wildlife Conservation Commission
SRWMD	Suwannee River Water Management District
TNC	The Nature Conservancy

Mallory Swamp, managed by the SRWMD, is located adjacent to and immediately west of the LFWEA and encompasses over 30,000 acres. Nearby and southeast of the LFWEA lie the Hatchbend Conservation Area and the Rock Bluff Conservation Area, both managed by the SRWMD. Nearby and northeast of the LFWEA lie the Grady Conservation Area and Stuart’s Landing Conservation Area, also both managed by the SRWMD. Other areas managed by the FWC in the vicinity of the LFWEA include the Fort White Wildlife and Environmental Area (approximately 11 miles east of the LFWEA), the Bell Ridge Longleaf Wildlife and Environmental Area (approximately 17 miles east of the LFWEA), and the Andrews Wildlife Management Area (approximately 18 miles south of the LFWEA). A number of other conservation areas are in the vicinity of the LFWEA along the Suwannee and Sante Fe Rivers.

The LFWEA is within the boundaries of the Lafayette Forest Florida Forever project, and is within 20 miles of seven other Florida Forever projects (Figure 4, Table 2).

Table 2: Florida Forever Projects in Proximity to the LFWEA

Project Name	Project Acres	Percent Complete
Florida’s First Magnitude Springs – Fanning Springs	525	41%
Florida’s First Magnitude Springs – Lafayette Blue Springs	490	5%
Florida’s First Magnitude Springs – Troy Springs	265	35%
Ichetucknee Trace	2,786	27%
Lafayette Forest	12,800	20%
Longleaf Pine Ecosystem – Bell Ridge Sandhills	3,500	56%
Lower Suwannee River and Gulf Watershed	46,441	14%
Watermelon Pond	12,542	51%

1.7 Adjacent Land Uses

The LFWEA is located in unincorporated Lafayette County, and the majority of the area has a designated zoning of A-3 Agricultural. The intent of this zoning designation is to provide for primarily agricultural and residential uses including, but not limited to: agricultural activities (including but not limited to raising livestock, cultivation of field crops and fruits and berries, forestry, and similar uses), processing and storage of agricultural products, plant nurseries and greenhouses, single family dwellings, and mobile home dwellings. The A-3 Agricultural designation in Lafayette County permits a maximum residential density of one dwelling unit per five acres. A small portion, approximately 40 acres, of the LFWEA has a zoning designation of A-1 Agricultural. While it permits the same kinds of uses as the A-3 designation, the A-1 Agricultural designation in Lafayette County permits a maximum residential density of one dwelling unit per 40 acres.

The LFWEA is bordered on the north by privately owned land, predominantly pastures. On the southwest, the LFWEA is bordered by privately owned silviculture pinelands and on the southeast by center pivot irrigated row crop agricultural land. The eastern boundary borders rural areas of predominantly pasture and pine plantation. The western boundary of the LFWEA borders an extensive mosaic of forested uplands, wetlands, and marshes within the SRWMD managed Mallory Swamp Restoration Area.



1.8 Public Involvement

The FWC conducted a Management Advisory Group (MAG) meeting in Mayo, Florida on October 5, 2011 to obtain input from both public and private stakeholders regarding management of the LFWEA. Results of this meeting were used by FWC to develop management goals and objectives and to identify opportunities and strategies for inclusion in this Management Plan. A summary of issues and opportunities

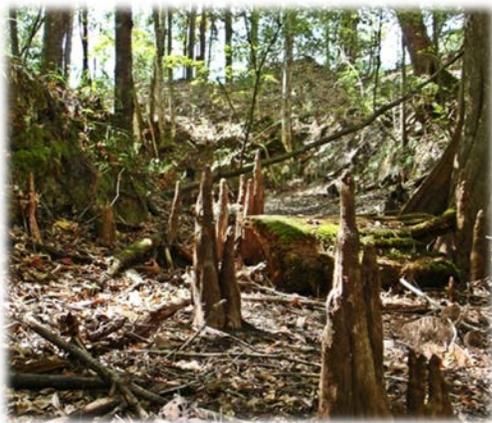
raised by the MAG, as well as a listing of participants, is included as Appendix 12.2.1. Further, a public hearing, as required by Chapter 259.032(10), FS, was held in Mayo, Florida on November 8, 2011. The report of that hearing is also contained as Appendix 12.2.5. A website is also maintained for receipt of public input at <http://myfwc.com/conservation/terrestrial/management-plans/develop-mps/>. Further testimony and input is received at a public hearing held by ARC. Input received from all public involvement efforts has been considered in the development of this Management Plan.

2 Natural and Cultural Resources

2.1 Physiography

2.1.1 Climate

Lafayette County is located in a warm, temperate region of Florida characterized by long, hot summers and mild winters. Average temperatures in Lafayette County range from 55 degrees Fahrenheit in winter to 81 degrees Fahrenheit in summer. Average annual rainfall is 58 inches, primarily occurring between April and September.



2.1.2 Topography

Lafayette County and the LFWEA lie within the Gulf Coastal Lowlands physiographic province. This physiographic region is characterized by a flat, weakly dissected alluvial plain of limestone and sand deposits. The Gulf Coastal Lowlands covers the entire extent of Lafayette County, extending inland from the Gulf of Mexico shoreline to distances of between 40 and 50 miles, stopping at the western edge of the Northern Highlands physiographic region northeast of Lafayette County.

Elevations within this province vary from zero feet mean sea level (MSL) at the Gulf of Mexico shoreline to approximately 100 feet above MSL near the Northern Highlands physiographic region. Within the LFWEA, elevations generally range from 45 feet above MSL in the southeast to 65 feet above MSL in the west.

2.1.3 Soils

The Lafayette County soil survey prepared by the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) shows fourteen soil series occurring within the LFWEA (Figure 5). 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 12.3 provides aggregation data for the LFWEA soil map units including a more complete

listing of attributes and soil component descriptions. Soil depth to water table is presented in Figure 6.

2.1.4 Geologic Conditions

To date, there are no known outstanding mineral resources on the lands acquired within the LFWEA. The geology of this region represents the Eocene Epoch of the Paleogene Period in the Cenozoic Era. The formation type is limestone.



2.2 Vegetation

The LFWEA is composed of a mosaic of uplands and wetlands. Eleven natural and anthropogenic community types occur in this mosaic (Table 3). The FWC has completed the mapping of historic and current natural communities of the LFWEA through the services of the Florida Natural Areas Inventory (FNAI). Using field surveys and Geographic Information System (GIS) computer software, FNAI has compiled a list of observed plant species on the LFWEA (Tables 4 - 6, Figures 7 - 8).

Table 3: FNAI Natural and Anthropogenic Communities

FNAI Natural Community	Acres*	Percent of Area
Pine plantation	1,030.4	48.2%
Dome swamp	346.2	16.2%
Ruderal	312.7	14.6%
Depression marsh	146.6	6.9%
Floodplain swamp	133.9	6.3%
Bottomland forest	53.5	2.5%
Successional hardwood forest	53.0	2.2%
Basin marsh	35.0	1.6%
Wet flatwoods	16.1	0.8%
Upland hardwood forest	6.2	0.3%
Scrubby flatwoods	2.1	0.1%

* Total GIS-calculated acreage for natural community classifications varies slightly from the actual total acreage of the LFWEA.

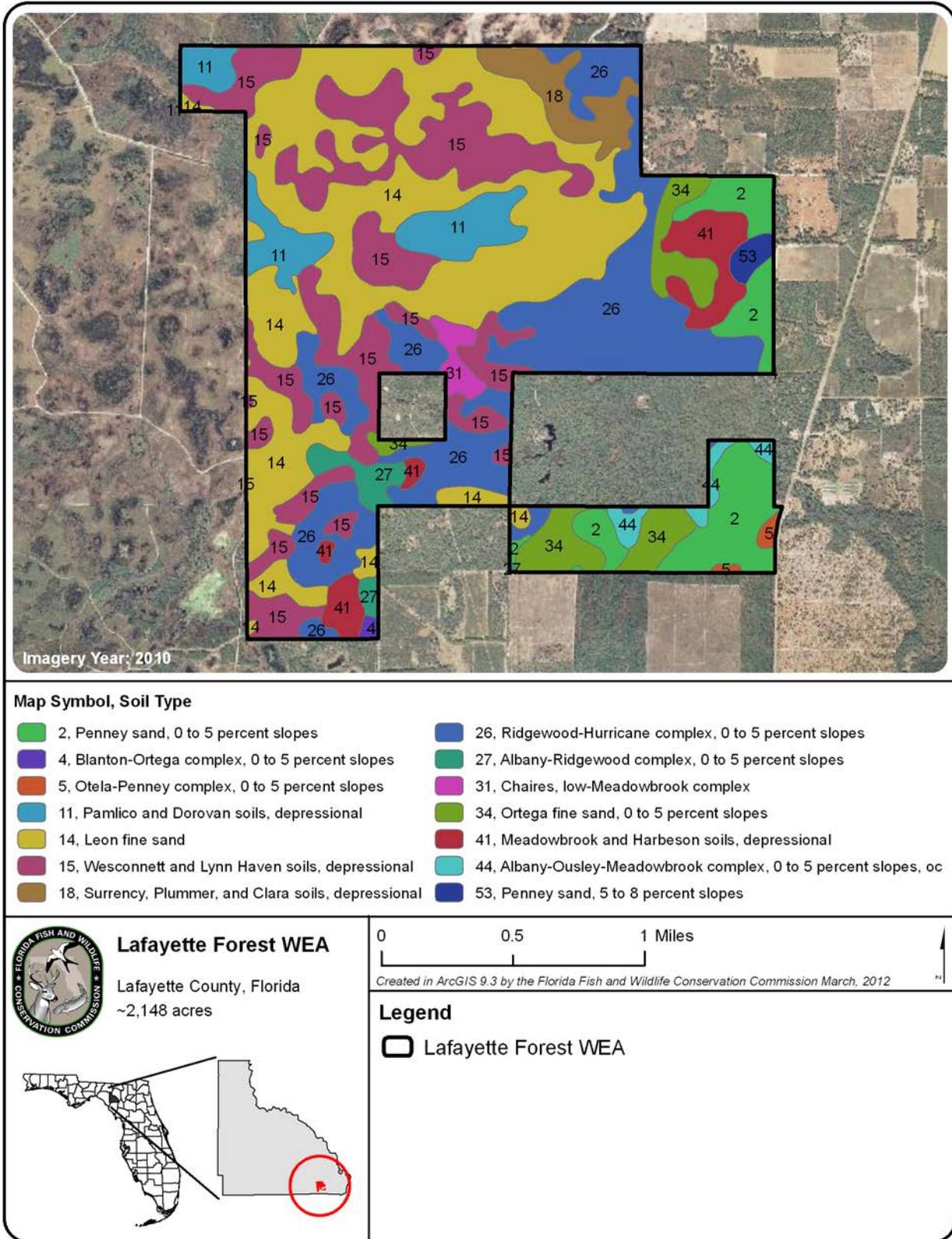


Figure 5: Soils

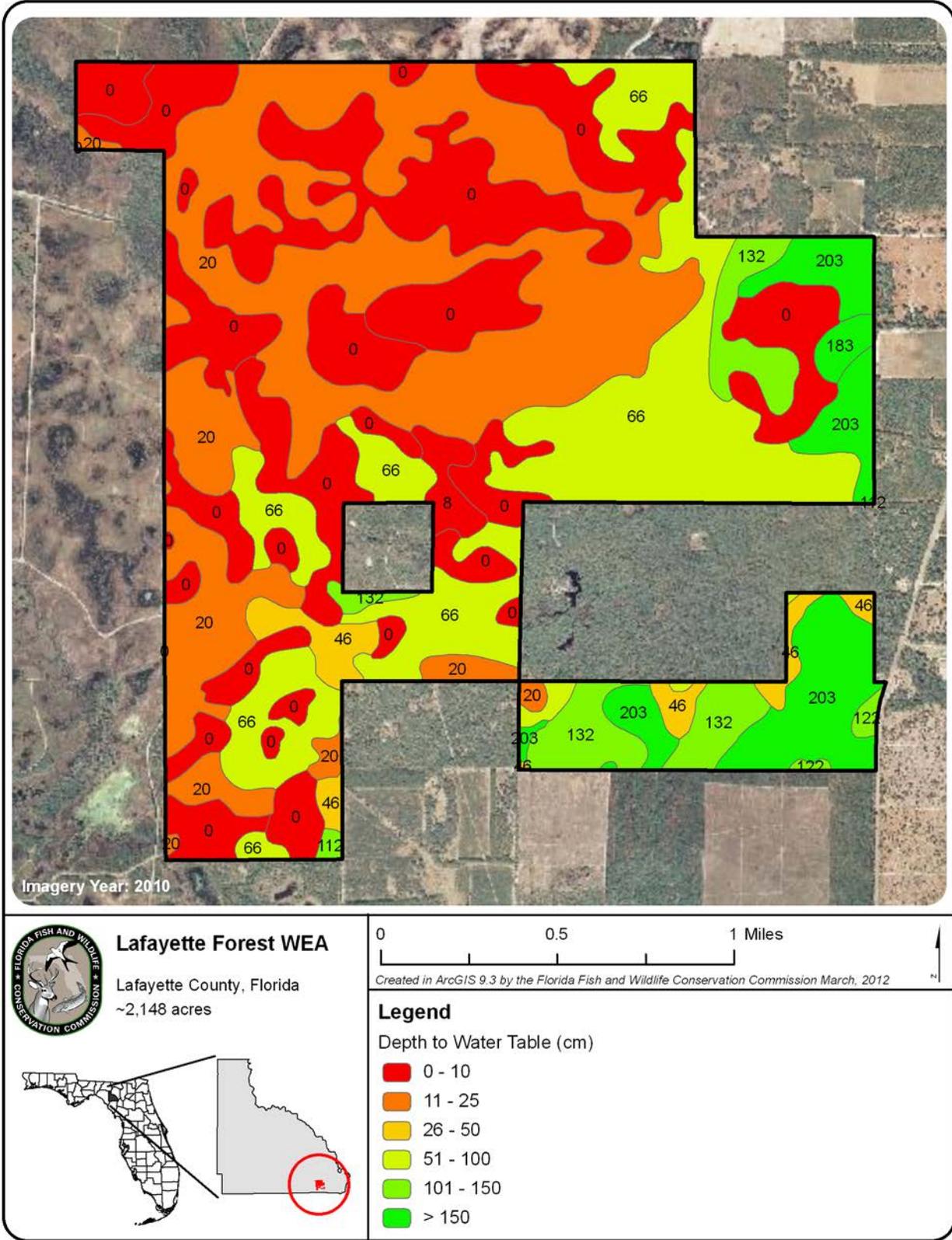


Figure 6: Soil Depth to Water Table

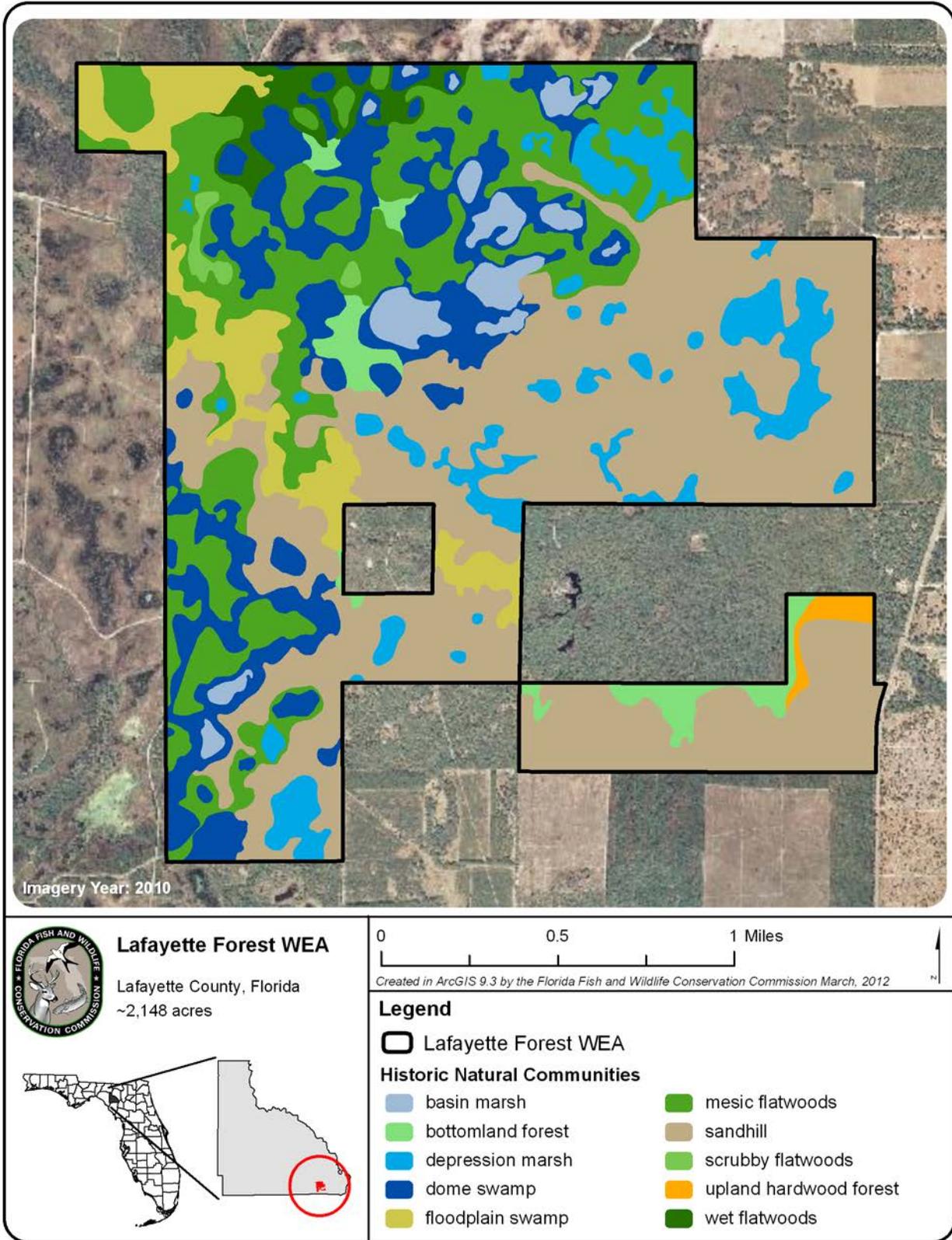


Figure 7: Historic Natural Communities

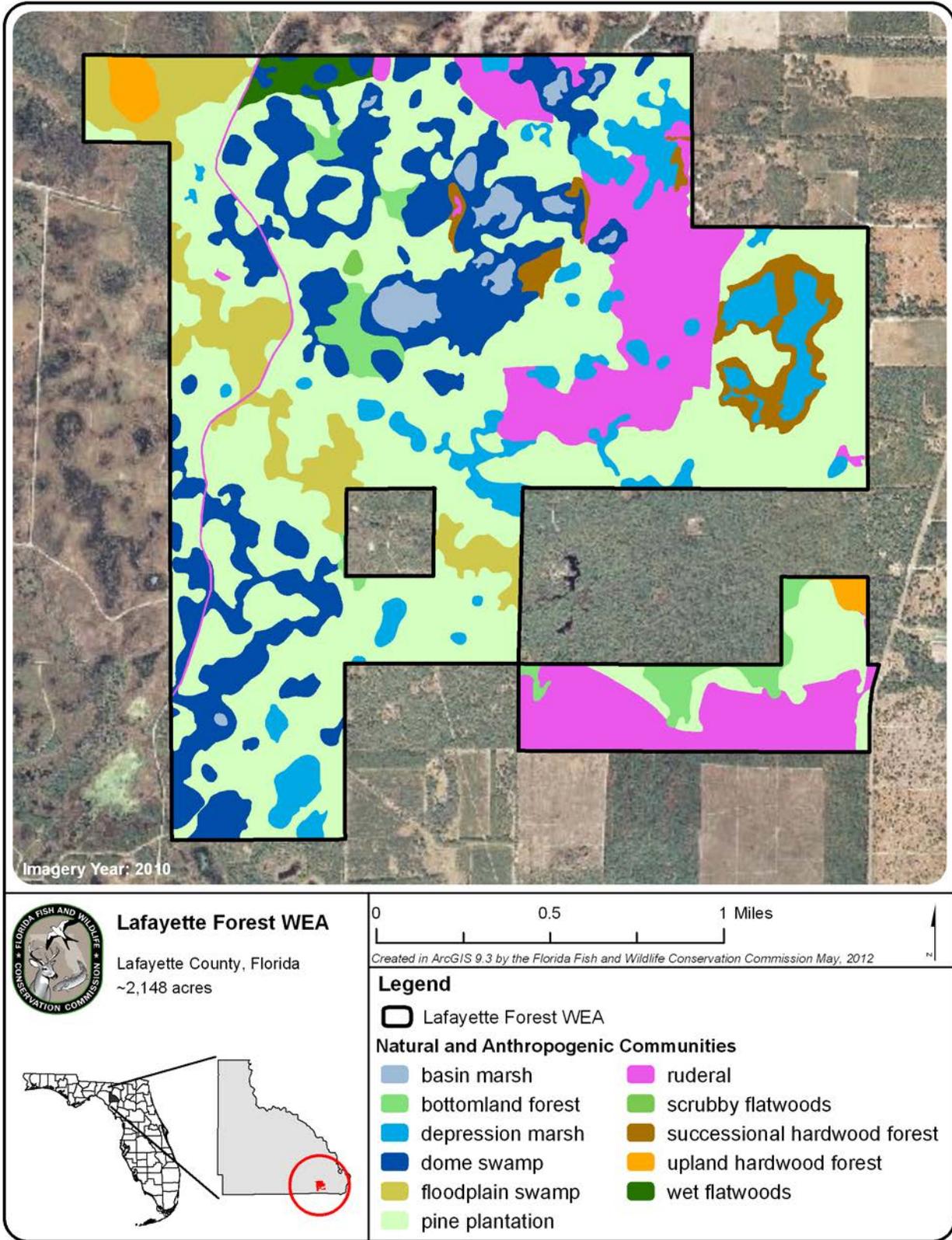


Figure 8: Natural and Anthropogenic Communities

Table 4: Native Plant Species Observed at the LFWEA

Common Name	Scientific Name
Adam's needle	<i>Yucca filamentosa</i>
American beautyberry	<i>Callicarpa americana</i>
American burnweed	<i>Erechtites hieraciifolius</i>
American elm	<i>Ulmus americana</i>
American holly	<i>Ilex opaca</i>
American hornbeam	<i>Carpinus caroliniana</i>
American pokeweed	<i>Phytolacca americana</i>
American wisteria	<i>Wisteria frutescens</i>
Angle pod	<i>Matelea gonocarpos</i>
Arrow arum	<i>Peltandra</i> sp.
Asiatic dayflower	<i>Commelina communis</i>
Atlantic pigeonwings	<i>Clitoria mariana</i>
Atlantic St. John's wort	<i>Hypericum reductum</i>
Bahiagrass	<i>Paspalum notatum</i>
Bald cypress	<i>Taxodium distichum</i>
Baldwin's spikerush	<i>Eleocharis baldwinii</i>
Ballmoss	<i>Tillandsia recurvata</i>
Bandanna-of-the-everglades	<i>Canna flaccida</i>
Bartram's air-plant	<i>Tillandsia bartramii</i>
Basswood	<i>Tilia americana</i>
Bastard false indigo	<i>Amorpha fruticosa</i>
Beaked panicum	<i>Panicum anceps</i>
Beaksedge	<i>Rhynchospora</i> sp.
Bedstraw	<i>Galium</i> sp.
Bedstraw St. John's wort	<i>Hypericum galioides</i>
Beeblossom	<i>Gaura</i> sp.
Beggarticks	<i>Bidens alba</i>
Bicolored spleenwort	<i>Asplenium heterochroum</i>
Big carpetgrass	<i>Axonopus furcatus</i>
Bigflower pawpaw	<i>Asimina obovata</i>
Black cherry	<i>Prunus serotina</i>
Black titi	<i>Cliftonia monophylla</i>
Blackgum	<i>Nyssa sylvatica</i>
Blackroot	<i>Pterocaulon pycnostachyum</i>
Bladderwort	<i>Utricularia</i> sp.
Blazing star	<i>Liatris</i> sp.
Blue huckleberry	<i>Gaylussacia frondosa</i> var. <i>tomentosa</i>
Blue maidencane	<i>Amphicarpum muhlenbergianum</i>
Blue mistflower	<i>Conoclinium coelestinum</i>
Blueridge horsebalm	<i>Collinsonia serotina</i>

Table 4: Native Plant Species Observed at the LFWEA

Common Name	Scientific Name
Bluestem	<i>Andropogon</i> sp.
Bluestem palmetto	<i>Sabal minor</i>
Bog white violet	<i>Viola lanceolata</i>
Bogbutton	<i>Lachnocaulon</i> sp.
Bottlebrush threeawn	<i>Aristida spiciformis</i>
Bracken fern	<i>Pteridium aquilinum</i>
Bristlystalked sedge	<i>Carex leptalea</i>
Broadwing sedge	<i>Carex alata</i>
Broomsedge bluestem	<i>Andropogon virginicus</i>
Browne's savory	<i>Micromeria brownei</i> var. <i>pilosiuscula</i>
Browntop millet	<i>Urochloa ramosa</i>
Bulltongue arrowhead	<i>Sagittaria lancifolia</i>
Bully	<i>Sideroxylon</i> sp.
Bunched beaksedge	<i>Rhynchospora cephalantha</i>
Bushy bluestem	<i>Andropogon glomeratus</i>
Cabbage palm	<i>Sabal palmetto</i>
Camphorweed	<i>Pluchea camphorata</i>
Capillary hairsedge	<i>Bulbostylis ciliatifolia</i>
Carolina ash	<i>Fraxinus caroliniana</i>
Carolina desertchicory	<i>Pyrrhopappus carolinianus</i>
Carolina horsenettle	<i>Solanum carolinense</i> car. <i>carolinense</i>
Carolina indigo	<i>Indigofera caroliniana</i>
Carolina ponysfoot	<i>Dichondra carolinensis</i>
Carolina redroot	<i>Lachnanthes caroliana</i>
Cat greenbrier	<i>Smilax glauca</i>
Centipede grass	<i>Eremochloa ophiuroides</i>
Chaffhead	<i>Carphephorus</i> sp.
Chalky bluestem	<i>Andropogon virginicus</i> var. <i>glaucus</i>
Chinquapin	<i>Castanea pumila</i>
Cinnamon fern	<i>Osmunda cinnamomea</i>
Clasping milkweed	<i>Asclepias amplexicaulis</i>
Climbing aster	<i>Symphotrichum carolinianum</i>
Climbing fetterbush	<i>Pieris phyllyreifolia</i>
Climbing hempvine	<i>Mikania scandens</i>
Climbing hydrangea	<i>Decumaria barbara</i>
Clustered bushmint	<i>Hyptis alata</i>
Clustered mille graines	<i>Oldenlandia uniflora</i>
Clustered sedge	<i>Carex glaucescens</i>
Coast cockspur	<i>Echinochloa walteri</i>
Coastal bedstraw	<i>Galium hispidulum</i>

Table 4: Native Plant Species Observed at the LFWEA

Common Name	Scientific Name
Coastal rosegentian	<i>Sabatia calycina</i>
Coastalplain chaffhead	<i>Carphephorus corymbosus</i>
Coastalplain dawnflower	<i>Stylisma patens</i>
Coastalplain staggerbush	<i>Lyonia fruticosa</i>
Coastalplain willow	<i>Salix caroliniana</i>
Coastalplain yellow-eyed grass	<i>Xyris ambigua</i>
Coffeeweed	<i>Senna obtusifolia</i>
Combleaf mermaidweed	<i>Proserpinaca pectinata</i>
Common buttonbush	<i>Cephalanthus occidentalis</i>
Common pawpaw	<i>Asimina triloba</i>
Common persimmon	<i>Diospyros virginiana</i>
Common ragweed	<i>Ambrosia artemisiifolia</i>
Common yellow woodsorrel	<i>Oxalis corniculata</i>
Coontie	<i>Zamia pumila</i>
Coral greenbrier	<i>Smilax walteri</i>
Creeping eryngo	<i>Eryngium prostratum</i>
Crimsoneyed rosemallow	<i>Hibiscus moscheutos</i>
Crossvine	<i>Bignonia capreolata</i>
Croton	<i>Croton</i> sp.
Crowngrass	<i>Paspalum</i> sp.
Cuban jute	<i>Sida rhombifolia</i>
Cup lichen	<i>Cladonia leporina</i>
Dahoon	<i>Ilex cassine</i>
Danglepod	<i>Sesbania herbacea</i>
Darrow's blueberry	<i>Vaccinium darrowii</i>
Deerberry	<i>Vaccinium stamineum</i>
Devil's walkingstick	<i>Aralia spinosa</i>
Dixie ticktrefoil	<i>Desmodium tortuosum</i>
Dogfennel	<i>Eupatorium capillifolium</i>
Dotted smartweed	<i>Polygonum punctatum</i>
Doubleform snoutbean	<i>Rhynchosia difformis</i>
Duckweed	<i>Lemna</i> sp.
Dwarf huckleberry	<i>Gaylussacia dumosa</i>
Dwarf live oak	<i>Quercus minima</i>
Dwarf pawpaw	<i>Asimina pygmea</i>
Dwarf sundew	<i>Drosera brevifolia</i>
Earleaf greenbrier	<i>Smilax auriculata</i>
Early whitetop fleabane	<i>Erigeron vernus</i>
Eastern hophornbeam	<i>Ostrya virginiana</i>
Eastern poison ivy	<i>Toxicodendron radicans</i>

Table 4: Native Plant Species Observed at the LFWEA

Common Name	Scientific Name
Ebony spleenwort	<i>Asplenium platyneuron</i>
Elderberry	<i>Sambucus nigra</i> ssp. <i>canadensis</i>
Elephantsfoot	<i>Elephantopus</i> sp.
Elliott's blueberry	<i>Vaccinium elliotii</i>
Elliott's bluestem	<i>Andropogon gyrans</i>
Elliott's yellow-eyed grass	<i>Xyris elliotii</i>
Evan's reindeer lichen	<i>Cladina evansii</i>
Falsefennel	<i>Eupatorium leptophyllum</i>
Fascicled beaksedge	<i>Rhynchospora fascicularis</i>
Fetterbush	<i>Lyonia lucida</i>
Fewflower milkweed	<i>Asclepias lanceolata</i>
Fimbry	<i>Fimbristylis</i> sp.
Fingergrass	<i>Chloris</i> sp.
Flatsedge	<i>Cyperus</i> sp.
Flattened pipewort	<i>Eriocaulon compressum</i>
Flatwoods St. John's wort	<i>Hypericum microsepalum</i>
Fleabane	<i>Erigeron</i> sp.
Floating heart	<i>Nymphoides</i> sp.
Florida bully	<i>Sideroxylon reclinatum</i>
Florida maple	<i>Acer saccharum</i> ssp. <i>floridanum</i>
Florida ticktrefoil	<i>Desmodium floridanum</i>
Flowering dogwood	<i>Cornus florida</i>
Forked bluecurls	<i>Trichostema dichotomum</i>
Forked fimbry	<i>Fimbristylis dichotoma</i>
Fringed yellow-eyed grass	<i>Xyris fimbriata</i>
Gallberry	<i>Ilex glabra</i>
Giant orchid	<i>Pteroglossaspis ecristata</i>
Giant sedge	<i>Carex gigantea</i>
Glade lobelia	<i>Lobelia glandulosa</i>
Goldenrod	<i>Solidago</i> sp.
Gopher apple	<i>Licania michauxii</i>
Grassy arrowhead	<i>Sagittaria graminea</i>
Green arrow arum	<i>Peltandra virginica</i>
Green ash	<i>Fraxinus pennsylvanica</i>
Green fly orchid	<i>Epidendrum conopseum</i>
Groundcherry	<i>Physalis</i> sp.
Groundsel tree	<i>Baccharis halimifolia</i>
Gum bully	<i>Sideroxylon lanuginosum</i>
Hairy pinweed	<i>Lechea mucronata</i>
Hairy shadow witch	<i>Ponthieva racemosa</i>

Table 4: Native Plant Species Observed at the LFWEA

Common Name	Scientific Name
Hales's pentodon	<i>Pentodon pentandrus</i>
Hawthorn	<i>Crataegus</i> sp.
Helmet skullcap	<i>Scutellaria integrifolia</i>
Hempvine	<i>Mikania</i> sp.
Herb-of-grace	<i>Bacopa monnieri</i>
Highbush blueberry	<i>Vaccinium corymbosum</i>
Hooded pitcherplant	<i>Sarracenia minor</i>
Horse sugar	<i>Symplocos tinctoria</i>
Indian goosegrass	<i>Eleusine indica</i>
Innocence	<i>Houstonia procumbens</i>
Iris	<i>Iris</i> sp.
Jackson vine	<i>Smilax smallii</i>
Knotroot foxtail	<i>Setaria parviflora</i>
Lady lupine	<i>Lupinus villosus</i>
Large gallberry	<i>Ilex coriacea</i>
Laurel greenbrier	<i>Smilax laurifolia</i>
Laurel oak	<i>Quercus hemisphaerica</i>
Leavenworth's tickseed	<i>Coreopsis leavenworthii</i>
Lemon bacopa	<i>Bacopa caroliniana</i>
Lespedeza	<i>Lespedeza</i> sp.
Little bluestem	<i>Schizachyrium scoparium</i>
Littlehip hawthorn	<i>Crataegus spathulata</i>
Live oak	<i>Quercus virginiana</i>
Lizard's tail	<i>Saururus cernuus</i>
Loblolly pine	<i>Pinus taeda</i>
Longleaf camphorweed	<i>Pluchea longifolia</i>
Longleaf pine	<i>Pinus palustris</i>
Longleaf woodoats	<i>Chasmanthium laxum</i> var. <i>sessiliflorum</i>
Lovegrass	<i>Eragrostis</i> sp.
Maidencane	<i>Panicum hemitomon</i>
Manyflower beardtongue	<i>Penstemon multiflorus</i>
Manyflower marshpennywort	<i>Hydrocotyle umbellata</i>
Manyhead rush	<i>Juncus polycephalos</i>
Marsh fern	<i>Thelypteris palustris</i> var. <i>pubescens</i>
Marsh St. John's wort	<i>Triadenum</i> sp.
Meadowbeauty	<i>Rhexia</i> sp.
Michaux's hawthorn	<i>Crataegus michauxii</i>
Milkpea	<i>Galactia</i> sp.
Millet beaksedge	<i>Rhynchospora miliacea</i>
Mingled beaksedge	<i>Rhynchospora mixta</i>

Table 4: Native Plant Species Observed at the LFWEA

Common Name	Scientific Name
Mock bishopsweed	<i>Ptilimnium capillaceum</i>
Mockernut hickory	<i>Carya tomentosa</i>
Mountain laurel	<i>Kalmia hirsuta</i>
Muscadine	<i>Vitis rotundifolia</i>
Myrtle oak	<i>Quercus myrtifolia</i>
Myrtleleaf St. John's wort	<i>Hypericum myrtifolium</i>
Narrowfruit horned beaksedge	<i>Rhynchospora inundata</i>
Narrowleaf hornpod	<i>Mitreola angustifolia</i>
Narrowleaf silkgrass	<i>Pityopsis graminifolia</i>
Needle palm	<i>Rhapidophyllum hystrix</i>
Needleleaf witchgrass	<i>Dichantheium aciculare</i>
Netted chain fern	<i>Woodwardia areolata</i>
Noyau vine	<i>Merremia dissecta</i>
Nutrush	<i>Scleria</i> sp.
Orange milkwort	<i>Polygala lutea</i>
Ovate marsh fern	<i>Thelypteris ovata</i>
Pale meadowbeauty	<i>Rhexia mariana</i>
Palegreen orchid	<i>Platanthera flava</i>
Partridge pea	<i>Chamaecrista fasciculata</i>
Partridgeberry	<i>Mitchella repens</i>
Peelbark St. John's wort	<i>Hypericum fasciculatum</i>
Peppervine	<i>Ampelopsis arborea</i>
Perennial sandgrass	<i>Triplasis americana</i>
Pickerelweed	<i>Pontederia cordata</i>
Piedmont primrosewillow	<i>Ludwigia arcuata</i>
Piedmont staggerbush	<i>Lyonia mariana</i>
Pignut hickory	<i>Carya glabra</i>
Pinebarren flatsedge	<i>Cyperus ovatus</i>
Pinebarren frostweed	<i>Helianthemum corymbosum</i>
Pineland heliotrope	<i>Heliotropium polyphyllum</i>
Pineland pimpernel	<i>Samolus valerandi</i> ssp. <i>parviflorus</i>
Pineland wild indigo	<i>Baptisia lecontei</i>
Pinewoods milkweed	<i>Asclepias humistrata</i>
Pink sundew	<i>Drosera capillaris</i>
Pitted stripeseed	<i>Piriqueta cistoides</i> ssp. <i>caroliniana</i>
Poison sumac	<i>Toxicodendron vernix</i>
Pond cypress	<i>Taxodium ascendens</i>
Pondlily	<i>Nuphar</i> sp.
Poor joe	<i>Diodia teres</i>
Powderpuff	<i>Mimosa strigillosa</i>

Table 4: Native Plant Species Observed at the LFWEA

Common Name	Scientific Name
Prairie fleabane	<i>Erigeron strigosus</i>
Pricklypear	<i>Opuntia humifusa</i>
Purple bluestem	<i>Andropogon glomeratus</i> var. <i>glaucopsis</i>
Purple passion-flower	<i>Passiflora incarnata</i>
Queensdelight	<i>Stillingia sylvatica</i>
Rabbitbells	<i>Crotalaria rotundifolia</i>
Rattan vine	<i>Berchemia scandens</i>
Red bay	<i>Persea borbonia</i>
Red cedar	<i>Juniperus virginiana</i>
Red maple	<i>Acer rubrum</i>
Red mulberry	<i>Morus rubra</i>
Reindeer lichen	<i>Cladina subtenuis</i>
Resurrection fern	<i>Pleopeltis polypodioides</i> var. <i>michauxiana</i>
Rose rush	<i>Lygodesmia aphylla</i>
Rosy camphorweed	<i>Pluchea baccharis</i> (= <i>P. rosea</i>)
Rough hedgehyssop	<i>Gratiola hispida</i>
Roundpod St. John's wort	<i>Hypericum cistifolium</i>
Royal fern	<i>Osmunda regalis</i> var. <i>spectabilis</i>
Rugel's nailwort	<i>Paronychia rugelii</i>
Rush	<i>Juncus</i> sp.
Rushfoil	<i>Croton michauxii</i>
Rusty staggerbush	<i>Lyonia ferruginea</i>
Sand blackberry	<i>Rubus cuneifolius</i>
Sand cordgrass	<i>Spartina bakeri</i>
Sand holly	<i>Ilex ambigua</i>
Sand live oak	<i>Quercus geminata</i>
Sand pine	<i>Pinus clausa</i>
Sand post oak	<i>Quercus margaretta</i>
Sandbur	<i>Cenchrus</i> sp.
Sandyfield beaksedge	<i>Rhynchospora megalocarpa</i>
Sandyfield beaksedge	<i>Rhynchospora microcarpa</i>
Sandywoods sedge	<i>Carex dasycarpa</i>
Sarsaparilla vine	<i>Smilax pumila</i>
Saw greenbrier	<i>Smilax bona-nox</i>
Saw palmetto	<i>Serenoa repens</i>
Sawgrass	<i>Cladium jamaicense</i>
Sawtooth blackberry	<i>Rubus argutus</i>
Scurf hoarypea	<i>Tephrosia chrysophylla</i>
Sedge	<i>Carex</i> sp.
Shiny blueberry	<i>Vaccinium myrsinites</i>

Table 4: Native Plant Species Observed at the LFWEA

Common Name	Scientific Name
Shiny woodoats	<i>Chasmanthium nitidum</i>
Shore rush	<i>Juncus marginatus</i>
Shortleaf gayfeather	<i>Liatris tenuifolia</i>
Showy milkwort	<i>Polygala violacea</i>
Shrubby primrosewillow	<i>Ludwigia suffruticosa</i>
Sidebeak pencilflower	<i>Stylosanthes biflora</i>
Silver plumegrass	<i>Saccharum alopecuroides</i>
Slash pine	<i>Pinus elliotii</i>
Slender beaksedge	<i>Rhynchospora gracilentia</i>
Slender flattop goldenrod	<i>Euthamia caroliniana</i>
Slender threeseed mercury	<i>Acalypha gracilens</i>
Slender woodoats	<i>Chasmanthium laxum</i>
Slimleaf pawpaw	<i>Asimina angustifolia</i>
Slippery elm	<i>Ulmus rubra</i>
Smallfruit beggarticks	<i>Bidens mitis</i>
Small's bogbutton	<i>Lachnocaulon minus</i>
Smartweed	<i>Polygonum sp.</i>
Smutgrass	<i>Sporobolus indicus</i>
Soft milkpea	<i>Galactia mollis</i>
Soft rush	<i>Juncus effusus ssp. solutus</i>
Southern beeblossom	<i>Gaura angustifolia</i>
Southern colicroot	<i>Aletris obovata</i>
Southern crabgrass	<i>Digitaria ciliaris</i>
Southern cutgrass	<i>Leersia hexandra</i>
Southern magnolia	<i>Magnolia grandiflora</i>
Southern shield fern	<i>Thelypteris kunthii</i>
Spadeleaf	<i>Centella asiatica</i>
Spanish moss	<i>Tillandsia usneoides</i>
Sparkleberry	<i>Vaccinium arboreum</i>
Sphagnum moss	<i>Sphagnum sp.</i>
Spiked hoarypea	<i>Tephrosia spicata</i>
Spikerush	<i>Eleocharis sp.</i>
Spleenwort	<i>Asplenium sp.</i>
Sprawling hoary-pea	<i>Tephrosia hispidula</i>
Spurred butterfly pea	<i>Centrosema virginianum</i>
St. Andrew's-cross	<i>Hypericum hypericoides</i>
St. John's wort	<i>Hypericum sp.</i>
Starrush whitetop	<i>Rhynchospora colorata</i>
Stinking camphorweed	<i>Pluchea foetida</i>
Sugarcane plumegrass	<i>Saccharum giganteum</i>

Table 4: Native Plant Species Observed at the LFWEA

Common Name	Scientific Name
Summer farewell	<i>Dalea pinnata</i>
Summer grape	<i>Vitis aestivalis</i>
Swamp bay	<i>Persea palustris</i>
Swamp chestnut oak	<i>Quercus michauxii</i>
Swamp doghobble	<i>Leucothoe racemosa</i>
Swamp dogwood	<i>Cornus foemina</i>
Swamp holly	<i>Ilex decidua</i>
Swamp laurel oak	<i>Quercus laurifolia</i>
Swamp rose	<i>Rosa palustris</i>
Swamp smartweed	<i>Polygonum hydropiperoides</i>
Swamp tupelo	<i>Nyssa sylvatica</i> var. <i>biflora</i>
Sweet everlasting	<i>Pseudognaphalium obtusifolium</i>
Sweet goldenrod	<i>Solidago odora</i>
Sweetbay	<i>Magnolia virginiana</i>
Sweetgum	<i>Liquidambar styraciflua</i>
Switchcane	<i>Arundinaria gigantea</i>
Tall elephantsfoot	<i>Elephantopus elatus</i>
Tall threeawn grass	<i>Aristida patula</i>
Taperleaf waterhorehound	<i>Lycopus rubellus</i>
Tenangle pipewort	<i>Eriocaulon decangulare</i>
Thin paspalum	<i>Paspalum setaceum</i>
Thistle	<i>Cirsium</i> sp.
Threadleaf beaksedge	<i>Rhynchospora filifolia</i>
Threeawn	<i>Aristida</i> sp.
Ticktrefoil	<i>Desmodium</i> sp.
Titi	<i>Cyrilla racemiflora</i>
Tread softly	<i>Cnidioscolus stimulosus</i>
Tree moss	<i>Climacium americanum</i>
Tropical Mexican clover	<i>Richardia brasiliensis</i>
Trumpet creeper	<i>Campsis radicans</i>
Turkey oak	<i>Quercus laevis</i>
Turkey tangle fogfruit	<i>Phyla nodiflora</i>
Vanillaleaf	<i>Carphephorus odoratissimus</i>
Variable witchgrass	<i>Dichanthelium commutatum</i>
Virginia buttonweed	<i>Diodia virginiana</i>
Virginia chain fern	<i>Woodwardia virginica</i>
Virginia creeper	<i>Parthenocissus quinquefolia</i>
Virginia marsh St. John's wort	<i>Triadenum virginicum</i>
Virginia snakeroot	<i>Aristolochia serpentaria</i>
Virginia willow	<i>Itea virginica</i>

Table 4: Native Plant Species Observed at the LFWEA

Common Name	Scientific Name
Walter's sedge	<i>Carex striata</i>
Walter's viburnum	<i>Viburnum obovatum</i>
Water oak	<i>Quercus nigra</i>
Watershield	<i>Brasenia schreberi</i>
Wavyleaf noseburn	<i>Tragia urens</i>
Wax myrtle	<i>Myrica cerifera</i>
Whip nutrush	<i>Scleria triglomerata</i>
White waterlily	<i>Nymphaea odorata</i>
White wild indigo	<i>Baptisia alba</i>
Whitehead bogbutton	<i>Lachnocaulon anceps</i>
White-top sedge	<i>Rhynchospora latifolia</i>
Whorled marshpennywort	<i>Hydrocotyle verticillata</i>
Whorled milkweed	<i>Asclepias verticillata</i>
Wild olive	<i>Osmanthus americanus</i>
Willow oak	<i>Quercus phellos</i>
Winged elm	<i>Ulmus alata</i>
Winged sumac	<i>Rhus copallinum</i>
Wiregrass	<i>Aristida stricta</i> var. <i>beyrichiana</i>
Wisteria	<i>Wisteria</i> sp.
Witchgrass	<i>Dichantheium</i> sp.
Wood sage	<i>Teucrium canadense</i>
Woodoats	<i>Chasmanthium</i> sp.
Woolgrass	<i>Scirpus cyperinus</i>
Yankeeweed	<i>Eupatorium compositifolium</i>
Yaupon	<i>Ilex vomitoria</i>
Yellow jessamine	<i>Gelsemium sempervirens</i>
Yellow milkwort	<i>Polygala rugelii</i>
Yellow pondlily	<i>Nuphar advena</i>
Yellow-eyed grass	<i>Xyris</i> sp.

Table 5: Rare Plant Species Observed at the LFWEA

Common Name	Scientific Name	Status
Angle pod	<i>Matelea gonocarpos</i>	ST
Cinnamon fern	<i>Osmunda cinnamomea</i>	SCE
Coontie	<i>Zamia pumila</i>	SCE
Giant orchid	<i>Pteroglossaspis ecristata</i>	ST
Green fly orchid	<i>Epidendrum conopseum</i>	SCE
Hooded pitcherplant	<i>Sarracenia minor</i>	ST
Needle palm	<i>Rhaphidophyllum hystrix</i>	SCE
Palegreen orchid	<i>Platanthera flava</i>	ST
Royal fern	<i>Osmunda regalis</i> var. <i>spectabilis</i>	SCE

Abbreviation	Status
SCE	State Commercially Exploited
ST	State Threatened

Table 6: Invasive Exotic Plant Species Observed at the LFWEA

Common Name	Scientific Name
Japanese climbing fern	<i>Lygodium japonicum</i>
Mimosa	<i>Albizia julibrissin</i>

2.2.1 FNAI Natural Community Descriptions

Ten communities were mapped and characterized by FNAI as occurring historically, while eleven community types were mapped as occurring presently within the LFWEA (Figures 7 - 8). Two species of invasive exotic plants were documented including Japanese climbing fern and mimosa. The following are the descriptions of natural and anthropogenic communities found on the LFWEA.

2.2.1.1 Basin Marsh

Basin Marsh in the LFWEA occurs within a matrix of swamp. This community is often too deep to support trees and shrubs but floating aquatic bed species are common. Depression marsh differs from basin marsh by its adjacency to a pyrogenic community or communities. Depression marshes commonly occur within a matrix of a pyrogenic community and often receive fire events when the surrounding landscape burns. Basin marshes documented at the LFWEA occur within the deeper water areas of the dome swamp community. These areas often contain widely scattered shrubs and trees. Wax myrtle, common buttonbush, and coastalplain willow are infrequently observed in this habitat. Floating aquatic bed

plants are the primary vegetation type found in these permanent water features and include yellow pondlily, white waterlily, pickerelweed, and combleaf mermaidweed. Emergent species are much less frequent and are represented by falsefennel and maidencane.

2.2.1.2 Bottomland Forest

Bottomland forest is a hydric forest community that does not receive fire and is dominated by hardwood species. This community is similar to a swamp habitat but is less frequently inundated and lacks a dominance of cypress or tupelo in the canopy. The bottomland forest primarily occurs along the blackwater stream that bisects the LFWEA. This stream flows from west to east and drains the eastern section of Mallory Swamp. This community changes to floodplain swamp upstream and to upland hardwood forest downstream. This is due to the width of the floodplain and the depth of the flowing water as it cuts deeper into the landscape. Scattered inclusions of both floodplain swamp and upland hardwood forest occur infrequently throughout the bottomland forest. This community also occurs in a few locations outside of the stream corridor. These areas often are positioned between swamp communities where historic fires would have occurred infrequently and where inundation was not significant enough to support a tupelo or cypress canopy.

The canopy of this community often contains a diverse assemblage of tree species, due largely to the wide range of water depth and hydroperiods that occur within it. Dominant canopy species include red maple, Carolina ash, sweetgum, sweetbay, blackgum, loblolly pine, swamp laurel oak, water oak, live oak, and pond cypress. Bottomland forest contains a sparse subcanopy composed of younger individuals that are also found in the canopy layer. Shrubs are often sparse as well and are represented by American hornbeam, swamp dogwood, American holly, sweetgum, wax myrtle, Virginia willow, and fetterbush. Herbaceous species are documented infrequently due to natural canopy shading. Common species include switchcane, bristlystalked sedge, dogfennel, partridgeberry, cinnamon fern, sawtooth blackberry, and lizard's tail. Vines are observed occasionally and include yellow jessamine and muscadine.



2.2.1.3 Depression Marsh

Depression marshes are typically small and circular wetlands, dominated by herbaceous species, and maintained by frequent fires that may occur from one to ten years. Depression marsh is similar to basin marsh, but occupies depressions within a pyrogenic community matrix.

Depression marshes in the LFWEA commonly occur in and around the former sandhill communities. These depressional situations are generally dominated by trees and are categorized as dome swamp in most areas in the eastern half of the property. These areas are generally found in a matrix of flatwoods. The depression marsh community present at this site appears quite ephemeral. Water levels vary greatly throughout the year and standing water may be absent or restricted to the deeper centers of these marshes. Trees in this community are represented by red maple, swamp tupelo, slash pine, swamp laurel oak, and pond cypress. Past clearcutting of dome swamps often makes the determination of a swamp or a marsh community difficult. Historic aerial photography aids in this determination but is not always definitive. Shrubs are found in varying densities and are typically not as dense in the larger depression marshes in the eastern half of the site. Common shrubs include groundsel tree, peelbark St. John's wort, bedstraw St. John's wort, myrtleleaf St. John's wort, gallberry, Piedmont staggerbush, sparkleberry, common buttonbush, titi, fetterbush, wax myrtle, coastalplain willow, and occasionally pond cypress. Herbaceous cover is often moderate to dense and is dominated by bushy bluestem, bluestem, broomsedge bluestem, chalky bluestem, big carpetgrass, spadeleaf, witchgrass, dogfennel, falsefennel, clustered bushmint, soft rush, Small's bogbutton, yellow pondlily, white waterlily, beaked panicum, maidencane, fascicled beaksedge, sugarcane plumegrass, sand cordgrass, and Virginia chain fern.

2.2.1.4 Dome Swamp

Dome swamps are typically small forested wetlands found within a pyrogenic community matrix. Shrubs may be sparse or dense and often occur on hummocks with mucky soil or open water between them. The majority of dome swamps in the LFWEA have been severely disturbed by logging. Most communities only contain stumps or a few scattered trees.

Common trees include red maple, Carolina ash, swamp tupelo, and primarily pond cypress. A few examples of this community are not logged and contain closed canopies formed by younger to mature pond cypress. The shrub layer of the dome swamp community is often irregularly dense and includes disturbance species resulting from past logging operations. Common species include groundsel tree, titi, dahoon, swamp doghobble, sweetgum, fetterbush, wax myrtle, coastalplain willow, common buttonbush, peelbark St. John's wort, myrtleleaf St. John's wort, Virginia willow, and swamp bay. The herbaceous layer of this community is often densely vegetated due to the amount of sun exposure this community receives while typically lacking a canopy. Common herbaceous species include broomsedge bluestem, chalky bluestem, clustered sedge, Walter's sedge, spadeleaf, sawgrass, dogfennel, falsefennel, clustered bushmint, cinnamon fern, royal fern, beaked panicum, maidencane, swamp smartweed, pickerelweed, fascicled beaksedge, slender beaksedge, sugarcane plumegrass, lizard's tail, and Virginia chain fern. When trees are present in this community epiphytes are fairly common and include Spanish moss and Bartram's air-plant.

2.2.1.5 Floodplain Swamp

Floodplain swamp is a natural community that is inundated long enough during the growing season to support a canopy of cypress and/or tupelo. This community occurs within the floodplain of stream and river courses. Floodplain swamp in the LFWEA occurs along the blackwater stream that bisects the property. As this stream flows to the east, a deeper and more distinct stream channel forms, and floodplain swamp grades into bottomland forest.

The closed canopy of this community commonly contains red maple, swamp tupelo, slash pine, and pond cypress. A poorly formed and often sparse subcanopy exists which contains Carolina ash and swamp laurel oak. Shrubs are also sparse due to dense overstory shading. Common shrubs include dahoon, sweetgum, wax myrtle, and American elm. Herbaceous species are uncommon and consist of a sedge and lizard's tail. Vines are observed occasionally and include climbing hydrangea and eastern poison ivy. This community, spared from past logging and other significant disturbances, is one of the best examples of an intact natural community on the site. As the blackwater stream leaves the LFWEA, most of the associated floodplain exists in a high quality, natural state.

2.2.1.6 Pine Plantation

Pine plantation in the LFWEA is defined as densely planted pines occurring in rows and lacking a significant or diverse assemblage of groundcover or herbaceous species. Prior to acquisition by the state of Florida, pines were planted in areas that were historically sandhill, mesic flatwoods, and wet flatwoods communities. Naturally pyrogenic communities at the LFWEA have nearly all been converted to pine plantation. Only small areas that lack planted pines can still be classified as a natural community.

The canopy is commonly slash pine, but extreme southeastern sections of the forest contain sand pine plantations. The canopy within these sand pine plantations is often quite dense and the understory is generally species depauperate. The canopies of the slash pine plantations can also contain scattered sand live oak, swamp laurel oak, water oak, and live oak. Oaks often occur in rows that remained uncut after the site was prepared for planting pines. Logging and replanting efforts within the pine plantations have occurred at this site for multiple harvests. Small blocks of pines have been replanted opportunistically throughout the LFWEA. The areas of former pine plantation that have not been replanted typically contain disturbance stands of oaks and these are classified as successional hardwood forest. Pine plantations occurring on former sandhill habitat often support thin canopies, presumably due to the poor growing conditions. This factor has allowed enough light to reach the forest floor to encourage minimal herbaceous species growth. Enough ground cover resources persist to support a fair-sized population of gopher tortoises.

The pine plantation community commonly contains trees of various heights, but lacks a true subcanopy layer. Shrubs are often dense and openings within the understory are common. Typical shrub species include gallberry, American holly, sweetgum, rusty staggerbush, coastalplain staggerbush, fetterbush, wax myrtle, sand live oak, turkey oak, swamp laurel oak, water oak, live oak, saw palmetto, horse sugar, sparkleberry, Elliott's blueberry, flatwoods St. John's wort, dwarf live



oak, myrtle oak, cabbage palm, shiny blueberry, and deerberry. The herbaceous layer is often sparse and populated with weedy species. Higher quality groundcover species are occasionally present in small, localized areas. Common herbaceous species include broomsedge bluestem, chalky bluestem, bottlebrush threeawn, wiregrass, coastalplain chaffhead, yankeeweed, slender flattop goldenrod, narrowleaf silkgrass, bracken fern, blackroot, whip nutrush, sweet goldenrod, and Virginia chain fern. Vines are often abundant and are good indicators of disturbance. Common vines species include yellow jessamine, earleaf greenbrier, saw greenbrier, and muscadine. The invasive exotic Japanese climbing fern was documented in pine plantation on the LFWEA. Despite heavy amounts of disturbance, invasive exotic species are generally not present within this community.

2.2.1.7 Ruderal

Ruderal communities are areas where the natural community has been overwhelmingly altered as a result of human activity. Three ruderal types were mapped on the LFWEA: clearing, ditch/canal, and clearcut/early regeneration. The ditch that occurs along the western boundary has drastically affected the hydrology of this and other properties. Historic communities here have been converted to drier habitats with shorter hydroperiods. Clearcut areas that contain pre-reproductive pines are classified as ruderal – clearcut early regeneration. Nearly all of the groundcover in these areas has been removed by site preparation, bedding, and logging. These areas are heavily disturbed and are considered ruderal despite the presence of immature planted pines. The LFWEA also contains numerous small areas cleared of native vegetation and commonly replanted with pasture grasses that are now classified as ruderal – clearing. The structure of these habitats is often disturbed and irregular.

Common trees occurring in these areas include swamp laurel oak, live oak, sweetgum, slash pine, turkey oak, swamp laurel oak, and water oak. Shrubs are common in the clearcut habitats and include wax myrtle, gallberry, sand blackberry, saw palmetto, Elliott's

blueberry, and shiny blueberry. Herbaceous species are often quite weedy and include broomsedge bluestem, witchgrass, lovegrass, centipede grass, yankeeweed, bahiagrass, crowngrass, sweet everlasting, whip nutrush, and knotroot foxtail. Vines, including yellow jessamine, earleaf greenbrier, and muscadine, are common and abundant. Despite heavy amounts of disturbance, invasive exotic species are generally not present in this community. One roadside occurrence of mimosa was recorded for ruderal habitats in the LFWEA.

2.2.1.8 Scrubby Flatwoods

Scrubby flatwoods typically support an open canopy of pines over a shrubby understory that includes scrub oaks and occasional herbaceous species within open patches of white sand. These communities are found on excessively drained sands. Scrubby flatwoods in the LFWEA occurs at a single location. This area is small and lacks planted pines.

The thin canopy is composed of young slash pine and there is no subcanopy. Tall shrubs account for most of the vegetation cover in this community at 66-75 percent cover. The tall shrub layer includes coastalplain staggerbush and sand live oak. Short shrubs are also dense and are represented by fetterbush, sand live oak, saw palmetto, and shiny blueberry. Herbaceous species are very sparse but include broomsedge bluestem, coastalplain chaffhead, and bracken fern. Vines are documented occasionally and include one species, earleaf greenbrier. There is one other area on the LFWEA that was formerly scrubby flatwoods. This area is planted with pines and is better classified currently as pine plantation.

2.2.1.9 Successional Hardwood Forest

Uplands that are dominated by oaks due to lack of fire and other anthropologic disturbances are classified as successional hardwood forest. At the LFWEA, this community is common around wetlands where pine plantation is not established. The hammock communities found around some of the larger depression marshes are believed to be anthropogenic in nature. Fire reduction and silvicultural activities in this area of the state has allowed for unnatural successional hardwood hammocks to form. Fire would have presumably swept across the sandhill and depression marsh habitats. Only in some of the most sheltered areas would a thin natural hammock-like situation have formed. Except where recent forestry operations have created gaps, the canopies in these areas are typically closed.

Common species composition in the canopy includes sweetgum, slash pine, swamp laurel oak, water oak, and live oak. These areas generally lack a true subcanopy. Shrubs are often dense and include coastalplain staggerbush, wax myrtle, wild olive, sparkleberry, saw palmetto, deerberry, and Adam's needle. Herbaceous cover is sparse due to overstory shading. Common herbaceous species include broomsedge bluestem, switchgrass, bracken fern, and forked bluecurls. Vines are often abundant and include yellow jessamine, earleaf greenbrier, cat greenbrier, and muscadine.

2.2.1.10 Upland Hardwood Forest

Upland hardwood forest contains a diverse assemblage of upland species that prefer rich soils and fire exclusion. This community is common in and around steep valleys created by stream channels. Upland hardwood forest occurs adjacent to the blackwater stream channel that bisects the LFWEA. The extreme eastern section of the stream cuts deep into the surrounding landscape and supports a rich, stable habitat that is naturally excluded from fire. The narrowing of the stream channel reduces the floodplain and apparently has reduced fire events historically.

The result is an upland hardwood forest community with a closed, mixed age class canopy of pignut hickory, southern magnolia, swamp laurel oak, and American elm. The fairly well formed subcanopy contains the same canopy species in addition to American hornbeam, eastern hophornbeam, swamp chestnut oak, swamp laurel oak, water oak, and live oak. Shrubs are sparse and the understory of this community is mostly open. Shrubs include American hornbeam, red bay, sparkleberry, needle palm, bluestem palmetto, saw palmetto, and Elliott's blueberry. Only two herbaceous species – slender woodoats and sarsaparilla vine – form the sparse groundcover layer. Vines are present but are uncommon and include rattan vine, yellow jessamine, and muscadine. Although this community is small, it contains few disturbances and has not been logged recently. This forest provides a verdant natural buffer for the blackwater stream contained within.

2.2.1.11 Wet Flatwoods

Wet flatwoods are forests with an open pine canopy and an understory of hydrophytic herbaceous and shrub species. Wet flatwoods that burn frequently typically have a sparse understory of shrubs and a dense complement of herbaceous species. One area of wet flatwoods was mapped within the LFWEA. It is unclear if this area was selectively logged or was thinned in the wildfires that impacted Mallory Swamp in 2001. The structure and general character of this area provided enough credence to classify it as a natural community rather than a pine plantation.

The thin canopy contains younger mature slash pine, water oak, and lacks a subcanopy. Shrubs are often dense and shade much of the groundcover. Common shrubs include titi, sweetgum, fetterbush, sweetbay, swamp bay, flatwoods St. John's wort, gallberry, saw palmetto, and shiny blueberry. Herbs are infrequent and include broomsedge bluestem, pink sundew, bracken fern, and a yellow-eyed grass. Vines are common and are represented by two species: earleaf greenbrier and laurel greenbrier.

2.3 Fish and Wildlife Resources

The LFWEA has a diverse assortment of plant and animal species. An inventory of mammalian, amphibian and reptile species occurring on the LFWEA is not yet available. The state threatened gopher tortoise has been documented on site. Also, FNAI has indicated that the LFWEA offers important habitat for the Eastern indigo snake, which has

been reported to occur on the LFWEA by adjacent landowners. Table 7 lists the rare and imperiled wildlife species documented or reported to occur on the LFWEA.

Table 7. Imperiled Wildlife Species Documented or Likely to Occur on the LFWEA

Common Name	Scientific Name	Status
Eastern indigo snake	<i>Drymarchon couperi</i>	FT
Gopher tortoise	<i>Gopherus polyphemus</i>	ST

Abbreviation	Status
FT	Federally-designated Threatened
ST	State-designated Threatened

An inventory of bird species occurring on the LFWEA is not yet available. However, surveys of avifauna using standardized methods have been conducted nearby and indicate bird species likely to occur on the area. A list of bird species breeding within Lafayette County from the Florida Breeding Bird Atlas is presented in Table 8.

Table 8. Breeding Bird Atlas – Confirmed Breeding – Lafayette County

Common Name	Scientific Name	Status
American crow	<i>Corvus brachyrhynchos</i>	NL
Blue jay	<i>Cyanocitta cristata</i>	NL
Blue-gray gnatcatcher	<i>Poliophtila caerulea</i>	NL
Brown thrasher	<i>Toxostoma rufum</i>	NL
Burrowing owl	<i>Speotyto cunicularia</i>	SSC
Carolina chickadee	<i>Parus carolinensis</i>	NL
Carolina wren	<i>Thryothorus ludovicianus</i>	NL
Cattle egret	<i>Bubulcus ibis</i>	NL
Chimney swift	<i>Chaetura pelagica</i>	NL
Chuck-will's-widow	<i>Caprimulgus carolinensis</i>	NL
Common grackle	<i>Quiscalus quiscula</i>	NL
Common yellowthroat	<i>Geothlypis trichas</i>	NL
Downy woodpecker	<i>Picoides pubescens</i>	NL
Eastern bluebird	<i>Sialia sialis</i>	NL
Eastern kingbird	<i>Tyrannus tyrannus</i>	NL
Eastern meadowlark	<i>Sturnella magna</i>	NL
Eastern towhee	<i>Pipilo erythrophthalmus</i>	NL
European starling	<i>Sturnus vulgaris</i>	NL
Great crested flycatcher	<i>Myiarchus crinitus</i>	NL

Table 8. Breeding Bird Atlas – Confirmed Breeding – Lafayette County

Common Name	Scientific Name	Status
Hooded warbler	<i>Wilsonia citrina</i>	NL
House sparrow	<i>Passer domesticus</i>	NL
Killdeer	<i>Charadrius vociferus</i>	NL
Little blue heron	<i>Egretta caerulea</i>	SSC
Loggerhead shrike	<i>Lanius ludovicianus</i>	NL
Mourning dove	<i>Zenaida macroura</i>	NL
Northern bobwhite	<i>Colinus virginianus</i>	NL
Northern cardinal	<i>Cardinalis cardinalis</i>	NL
Northern mockingbird	<i>Mimus polyglottos</i>	NL
Northern parula	<i>Parula americana</i>	NL
Orchard oriole	<i>Icterus spurius</i>	NL
Pileated woodpecker	<i>Dryocopus pileatus</i>	NL
Purple martin	<i>Progne subis</i>	NL
Red-bellied woodpecker	<i>Melanerpes carolinus</i>	NL
Red-eyed vireo	<i>Vireo olivaceus</i>	NL
Red-headed woodpecker	<i>Melanerpes erythrocephalus</i>	NL
Red-shouldered hawk	<i>Buteo lineatus</i>	NL
Red-tailed hawk	<i>Buteo jamaicensis</i>	NL
Red-winged blackbird	<i>Agelaius phoeniceus</i>	NL
Rock dove	<i>Columba livia</i>	NL
Tufted titmouse	<i>Parus bicolor</i>	NL
White-eyed vireo	<i>Vireo griseus</i>	NL
Wild turkey	<i>Meleagris gallopavo</i>	NL
Wood duck	<i>Aix sponsa</i>	NL
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	NL

Abbreviation	Status
SSC	State Species of Special Concern
NL	Not Listed

The FWC has developed a Geographic Information Systems (GIS)-based assessment tool that incorporates a wide variety of land cover and wildlife species data. This tool, the Integrated Wildlife Habitat Ranking System (IWHRS), ranks the Florida landscape based upon the habitat needs of wildlife as a way to identify ecologically significant lands in the state, and to assess the potential impacts of management and land-use changes. The IWHRS was developed to provide technical assistance to various local, regional, state, and federal agencies, and entities interested in wildlife needs and conservation in order to: 1)

determine ways to avoid or minimize project impacts by evaluating alternative placements, alignments, and transportation corridors during early planning stages, 2) assess direct, secondary, and cumulative impacts to habitat and wildlife resources, and 3) identify appropriate parcels for public land acquisition for wetland and upland habitat mitigation purposes. The IWHRS (2009) indicates that the LFWEA has a high mean wildlife value of 6.9 out of a maximum possible value of 10 (Figure 9).

2.3.1 Imperiled Species

For the purposes of this Management Plan, the term “Imperiled Species” refers to plant and animal species that are designated as Endangered, Threatened, or a Species of Special Concern by the FWC or that are designated as Endangered or Threatened by the U.S. Fish and Wildlife Service. This designation is also commonly known as “listed species.” One imperiled wildlife species, the gopher tortoise, has been documented on the LFWEA. The Eastern indigo snake, is likely to occur on the LFWEA and has been observed on the LFWEA by adjacent landowners.



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

Following are abbreviated descriptions and management prescriptions for the imperiled species documented on or likely to occur on the LFWEA. More detailed descriptions and management prescriptions are available on the FWC website:

<http://www.myfwc.com/wildlifehabitats/profiles/>. A further evaluation of potential management needs for these species will be conducted as part of FWC’s Wildlife Conservation Prioritization and Recovery (WCPR) program (see Section 4.3.2).

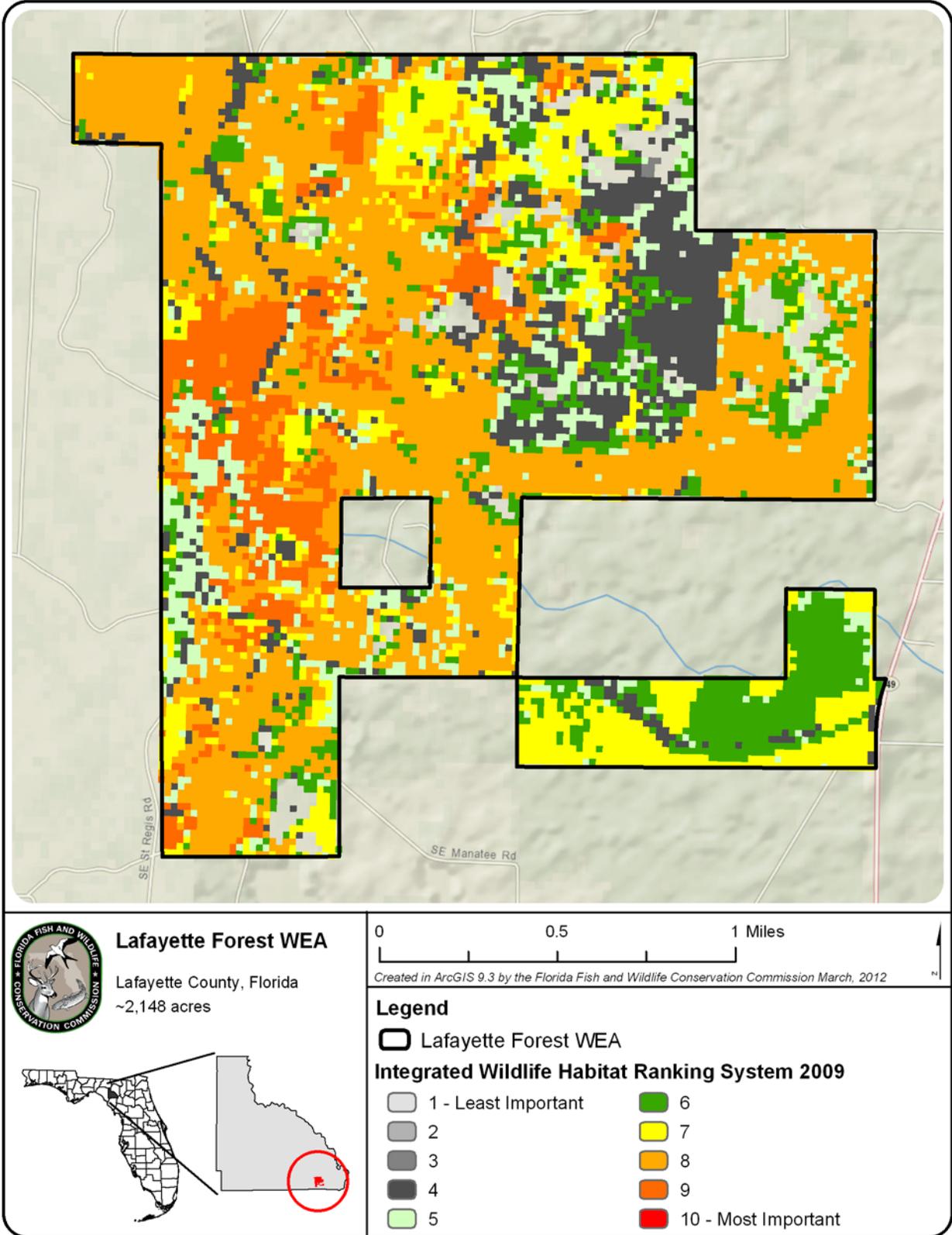


Figure 9: Integrated Wildlife Habitat Ranking System

2.3.1.1 Eastern Indigo Snake

Eastern indigo snakes utilize a mosaic of natural communities throughout the year. They are most commonly associated with scrub, sandhill, and scrubby flatwoods, where they occur in or near gopher tortoise burrows that they utilize as refugia to escape cold and desiccation. They are also known to use others burrows (e.g., cotton rat), hollows, and bases of trees and stumps, ground litter, trash piles, and rock piles. The use of prescribed burning will create and maintain suitable habitat for this species and frequency of fire should mimic natural fire return intervals for the natural communities.



This species was listed as threatened because of population declines associated with loss of habitat and a lack of land management, over-collection by pet traders, and mortality associated with gassing gopher tortoise burrows to kill rattlesnakes. Currently, the most significant factor is thought to be habitat loss, degradation, and fragmentation (USFWS 2007). Conversion of suitable habitat to residential development, commercial development, and incompatible silviculture negatively impact this species. Its large home range compounds these problems. Predation by domestic pets and highway mortality contribute to population reductions.

2.3.1.2 Gopher Tortoise

The gopher tortoise is a management responsive species that when present can be an indicator of properly managed upland pine or grassland habitats. This species is often considered a keystone species because many other species make use of the burrows dug by gopher tortoises. Tortoise grazing and mound building also alter the surrounding habitat making it suitable for other species. Gopher tortoise habitat management requires frequent controlled burns and maintenance of an open tree canopy. Fire can be useful in maintaining a diverse grass and legume dominated groundcover at a height where it is suitable for tortoise foraging. This management regime also benefits a large suite of species including several listed species.



A wide variety of plants make up the gopher tortoise diet. Broadleaf grasses, sedges, grass-like asters, legumes, and various fruits are consumed. Preferred foraging areas are relatively open and have low-growing, diverse herbaceous vegetation that is readily accessible. Home range varies widely based on habitat quality, season, and sex of the tortoise, and generally ranges from 0.25 to 5 acres. Gopher tortoises generally use several burrows during the year and can move a mile (1.6 kilometers) or more to occupy a new burrow. Adults have been documented as moving up to 200 m from burrows to forage. These tortoises are also capable of longer movements such as the 0.74 km movement of one sub-adult.

The primary threat to gopher tortoises in Florida is habitat destruction, fragmentation, and degradation, particularly from urbanization and development, agriculture, and phosphate/heavy metals mining (Diemer 1986, 1987; Berish [Diemer] 1991; McCoy and Mushinsky 1995; Berish 2001, Smith et al. 2006). In central Florida, urban growth and development, phosphate mining, and citrus production are the primary threats (Auffenberg and Franz 1982; Diemer 1986, 1987). Habitat fragmentation of rural areas by roads and increased vehicular traffic due to development result in increased road mortality of gopher tortoises, which are often drawn to roadsides because of available forage (Franz and Auffenberg 1978; Landers and Buckner 1981; Landers and Garner 1981; Lohofener 1982; Diemer 1986, 1987; Berish 2001; Mushinsky et al. 2006).

2.3.2 FWC Wildlife Observations and FNAI Element Occurrences

FNAI assigns a rank to each “element” occurrence, which is an exemplary or rare component of the natural environment. As defined by FNAI, an “element” is any exemplary or rare component of the natural environment such as a species, natural community, bird rookery, spring, sinkhole, cave, or other ecological feature. An element occurrence is a single extant habitat which sustains or otherwise contributes to the survival of a population or a distinct, self-sustaining example of a particular element. This ranking system was developed by The Nature Conservancy and the Natural Heritage Program Network based on the element’s global rank (element’s worldwide status) or state rank (status of element in Florida). The FNAI ranking system and definitions are located on the following website: www.fnai.org/ranks.cfm.

Known locations of FWC wildlife occurrences and FNAI element occurrences from the most recent GIS databases of the respective agencies are displayed in Figure 10. Appendix 12.4 contains a letter from FNAI authorizing the FWC to utilize their database for the purpose of displaying known plant and animal resources.

Over the years, several gopher tortoise burrow surveys have been conducted on the LFWEA. Each survey conducted covered a different area of the site. Pope Environmental, Inc. conducted a survey in 2006 primarily covering the east and southern portion of the area, FWC conducted a survey in 2007 covering primarily the central portion of the area, and WRS Infrastructure and Environment, Inc. conducted a survey in 2012 which primarily covered the northwest



portion of the area. All three surveys have found a preponderance of occupied or potentially occupied gopher tortoise burrows. The protocol employed for the gopher tortoise burrow survey conducted by the FWC in 2007 did not call for recording any point data. For the other two surveys, however, burrow location data is available and is shown in Figure 11. Appendix 12.5 contains the 2007 and 2012 reports.

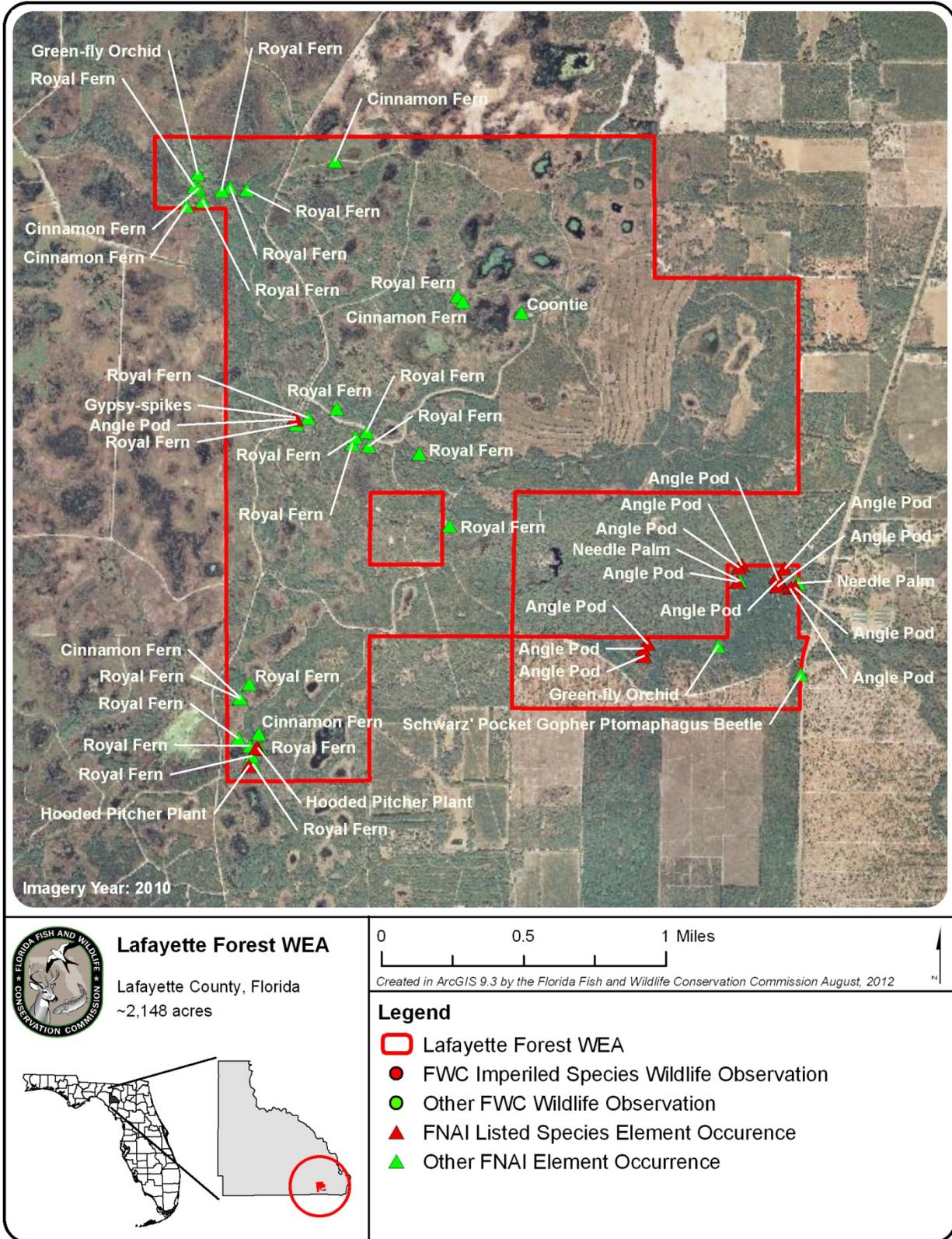


Figure 10: FWC Wildlife Occurrences and FNAI Element Occurrences

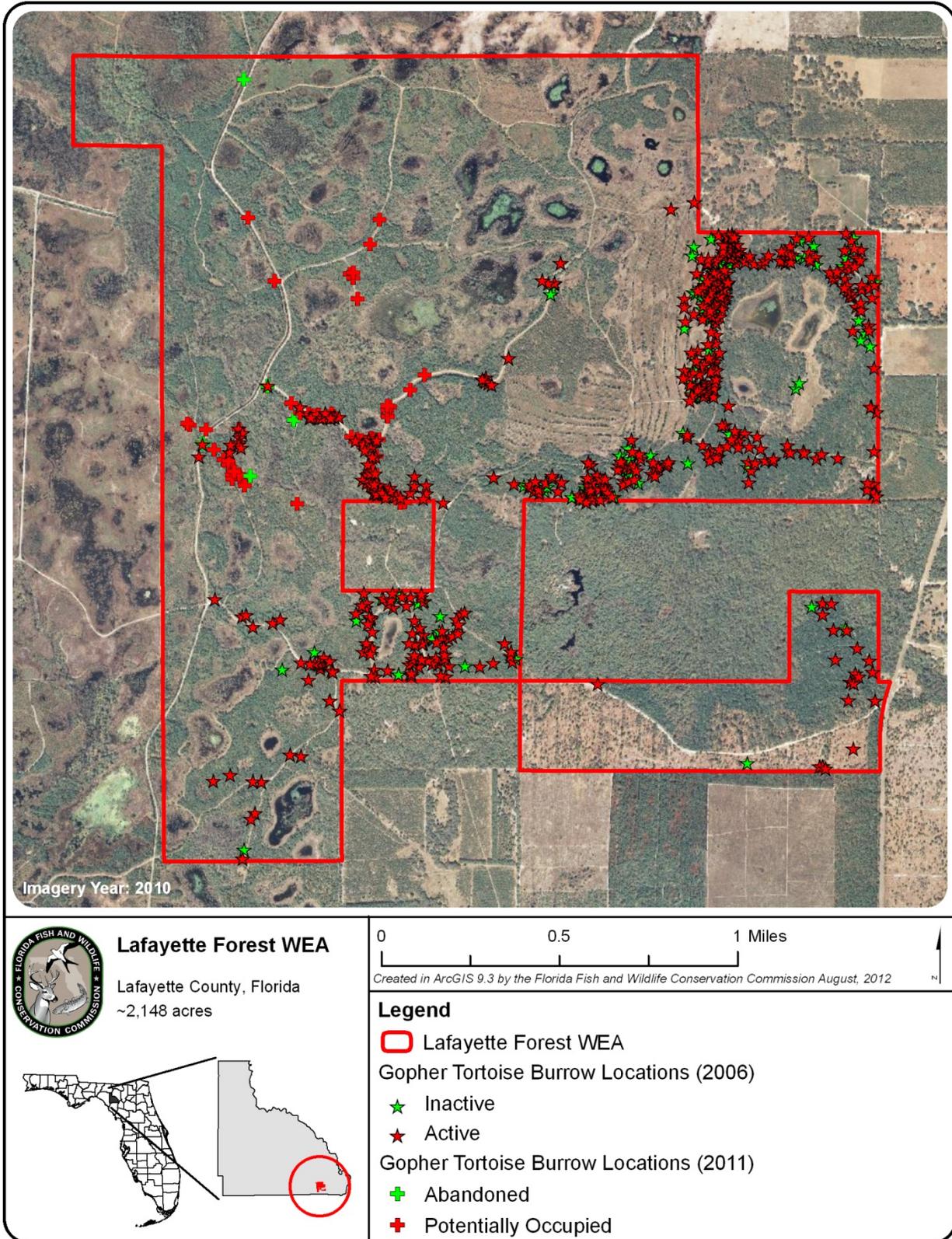


Figure 11: Surveyed Gopher Tortoise Burrow Locations

2.4 Native Landscapes

Some of the native landscapes on the LFWEA include dome swamp, depression marsh, floodplain swamp, bottomland forest, and upland hardwood forest and are fully described in Section 2.2 of this Management Plan.

2.5 Water Resources

The LFWEA straddles a transition zone between Mallory Swamp to the west and the well drained sands of the uplands that border the Suwannee River to the east. On the edge of Mallory Swamp, the acidic runoff and shallow groundwater infiltrate areas where the undifferentiated sediments are thin or only well drained sands overlies the limestone; the enhanced dissolution creates depression areas that are ponds or lakes when the water table is high. A number of such ponds and small lakes occur on the western side of the LFWEA and were formed in this manner. Additionally, a blackwater stream bisects the property, generally flowing from Mallory Swamp towards the east. The LFWEA is not adjacent to any designated Special Water Category of Outstanding Florida Water and is not located within or adjacent to any Aquatic Preserve.

2.6 Beaches and Dunes

There are no beaches or dunes within the LFWEA.

2.7 Mineral Resources

Geological data and analysis indicate that there are no known substantial deposits of mineral resources economically feasible to extract within the LFWEA. However, International Paper Company holds the rights to any oil, gas, and associated hydrocarbons that may potentially exist in, on or under the property.

2.8 Cultural Resources

To date, no historic structures or archaeological sites within the LFWEA have been recorded in the Florida Department of State's Division of Historical Resources' (DHR) Florida Master Site File. However, Frazier Cemetery, a small family cemetery dating to the late nineteenth century, is located within the LFWEA and may have historical value. Fort Downing, a Second Seminole War fort only briefly occupied, may have been located on or near the LFWEA, as well. The FWC will coordinate with the DHR to evaluate these and any other potentially significant sites for inclusion in their Master Site file.



Management activities are planned to minimize any disturbance to existing historical and archaeological sites and sites with a high potential for the presence of archaeological

features. Procedures outlined by the DHR are followed to preserve such sites (Appendix 12.6). The FWC will continue to consult with the DHR in an attempt to locate other features on the area. The FWC will contact professionals from the DHR for assistance prior to any ground disturbing activity on the area.

2.9 Scenic Resources

Scenic resources of the LFWEA include the views of pinelands, basin swamp, marshes and hardwood forests, among others. Complete descriptions of the natural communities found on the LFWEA can be found in Section 2.2 of this Management Plan.

3 Uses of the Property

3.1 Previous Use and Development

Prior to European settlement, the landscape of Florida, including this area of north central Florida, was settled and used by a variety of aboriginal peoples whose culture relied mainly on hunting, fishing and subsistence agriculture. Though some land alteration occurred, only minor alteration of the landscape is thought to have taken place until the advent of European settlement beginning with the Spanish occupation of Florida in the sixteenth century. Along with more advanced agricultural practices, the Spanish and other settlers brought livestock, primarily cattle and hogs, to Florida. This began an era of broad use of the landscape for agriculture.

Rangeland cattle grazing and other agricultural practices began to be utilized in a more systematic way and occurred through much of Florida throughout most of the European settlement era from the sixteenth through the twentieth century. Use of these agricultural practices began an era of increased alteration of the natural landscape. However, it was not until the nineteenth and twentieth century that major settlement and more extensive alteration of the landscape in the area began with the widespread use of agriculture and associated development.

During the past fifty years, the site of the LFWEA has been used for timber production (silviculture) and hunting. Most of the upland areas of the LFWEA have been under intensive silviculture. Certain previous (late nineteenth century) uses are evident from the occurrence of a cemetery in the southeastern part of the minor parcel on the LFWEA. Section 2.8 of this Management Plan provides more information on the historical and archaeological resources of the area.



Review of historic sources, including aerial photographs spanning the period 1959 – 2007, show the LFWEA and adjoining lands in the immediate vicinity to have undergone periodic timber harvest and re-growth to a wooded condition. The Hatchbend Hunt Club leased the LFWEA during the period 1980 – 2006.

Eastern adjoining properties also had sparse residences in a partially forested landscape, part of which yielded periodic timber harvest. The oldest such residential use dates from 1928. Other larger buildings that served commercial purposes are located across State Road 349 from the southeast corner of the LFWEA.

Between 1996 and 2004, pine plantation was cleared from the eastern uplands of the LFWEA, leaving a pattern of tree lines or windrows. Aerial photography from 2004 and 2007 shows timber removal to have occurred from the south side of the road easement extending through the minor parcel of the LFWEA. The Mallory Swamp Fire between May and June of 2001 extensively consumed forests and disturbed areas within the Lafayette Forest Florida Forever Project area. This wildfire was one of the largest in Florida's history. However, photos indicate that the LFWEA was not extensively disturbed by this fire event, which perhaps spread within a limited area adjacent to its western boundary.

3.2 Purpose for Acquisition of the Property

The LFWEA is an important and integral component of FWC programs serving to conserve gopher tortoise habitat along with other fish and wildlife resources. The LFWEA was acquired as a gopher tortoise mitigation park to provide for natural resource conservation, restoration, and fish and wildlife resource based public outdoor recreation.

FWC implemented the Mitigation Park Program in 1988 to provide land use regulatory programs with an alternative to on-site wildlife mitigation under Section 372.074, Florida Statutes (F.S.), which establishes the Fish and Wildlife Habitat Program for the purpose of acquiring, assisting other agencies or local governments in acquiring, or managing lands important to the conservation of fish and wildlife. Under this authority, FWC, or its designee, is responsible for managing these lands for the primary purpose of maintaining and enhancing their habitat value for fish and wildlife and compatible fish and wildlife based public outdoor recreation.

Though it was not acquired with Florida Forever funds, the LFWEA does lie within the larger Lafayette Forest Florida Forever Project. In order to qualify under the Florida Forever Act (Section 259.105, F.S.), each approved project must be determined to meet two or more goals of the Act. When it was approved, the Lafayette Forest Florida Forever Project was deemed to contribute to the following goals in accordance with the Florida Forever Act (259.105(4), F.S.):

- (a) Increase the protection of Florida's biodiversity at the species, natural community, and landscape levels.

- (b) Protect, restore, and maintain the quality and natural functions of land, water, and wetland systems of the state.
- (c) Ensure that sufficient quantities of water are available to meet the current and future needs of natural systems and the citizens of the state.
- (d) Increase natural resource-based public recreational and educational opportunities.
- (e) Preserve significant archaeological or historic sites.
- (f) Increase the amount of forestland available for sustainable management of natural resources.

3.2.1 Visitation and Economic Benefits

Visitation and educational use of the area for fish and wildlife based public outdoor educational opportunities is the primary source of economic benefits from the LFWEA, and contribute to the overall economy for the North-Central region of Florida. In Fiscal Year 2012-13, an estimated 25,295 people visited the LFWEA. Primarily, as a result of visitor use, FWC economic analysis estimates indicate that the LFWEA generated an estimated annual economic impact of \$4,942,297 for the State and region. This estimated annual economic impact has helped to support or create an estimated 50 jobs.

Further revenue generating potential of the LFWEA will depend upon future uses described in this Management Plan. Additional revenue from environmental lands such as the LFWEA 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 values of ecosystem services to local and regional land and water resources from air and water quality functions of the area, among others, and to human health, are considered to be significant.

3.3 Single- or Multiple-use Management

The LFWEA will be managed under the multiple-use concept as a Wildlife and Environmental Area. The LFWEA 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 LFWEA will be managed under the guidance of ARC, the Conceptual State Lands Management Plan, and as outlined in the original purposes for acquisition.

3.3.1 Analysis of Multiple-use Potential

The following actions or activities have been considered under the multiple-use concept as possible uses to be allowed on the LFWEA. Uses classified as “Approved” are considered to be in accordance with the purposes for acquisition, as well as with the Conceptual State

Lands Management Plan, and with the FWC agency mission, goals and objectives as expressed in the Agency Strategic Plan (Appendix 12.7). 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 purposes of acquisition or one or more of the various forms of guidance available for planning and management:

	<u>Approved</u>	<u>Conditional</u>	<u>Rejected</u>
Agriculture			✓
Apiaries		✓	
Astronomy		✓	
Bicycling	✓		
Camping			✓
Cattle grazing			✓
Citrus			✓
Ecosystem services and maintenance	✓		
Ecotourism		✓	
Environmental Education	✓		
Fishing		✓	
Geocaching		✓	
Hiking	✓		
Horseback riding	✓		
Hunting		✓	
Linear facilities			✓
Off-road vehicle use			✓
Preservation of cultural sites	✓		
Preservation of historical sites	✓		
Protection of imperiled species	✓		
Soil and water conservation	✓		
Timber harvest	✓		
Vegetation inventories		✓	
Wildlife observation	✓		

3.3.2 Assessment of Impact of Planned Uses of the Property

To communicate FWC's planned uses and activities, specific management intentions, long- and short-term goals and with associated objectives, identified challenges, and solution strategies have been developed for the LFWEA (Sections 4 – 7). 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.

3.4 Acreage That Should Be Declared Surplus

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



GIS modeling provides a general analysis of the LFWMA and identifies land that should be investigated further for surplus potential. The primary area identified by the resource model GIS analysis is located within the north central area of the LFWMA within a currently ruderal area (Figure 12). Based on gopher tortoise burrow surveys conducted by FWC (Appendix 12.5), this area of the LFWMA has a high estimated gopher tortoise

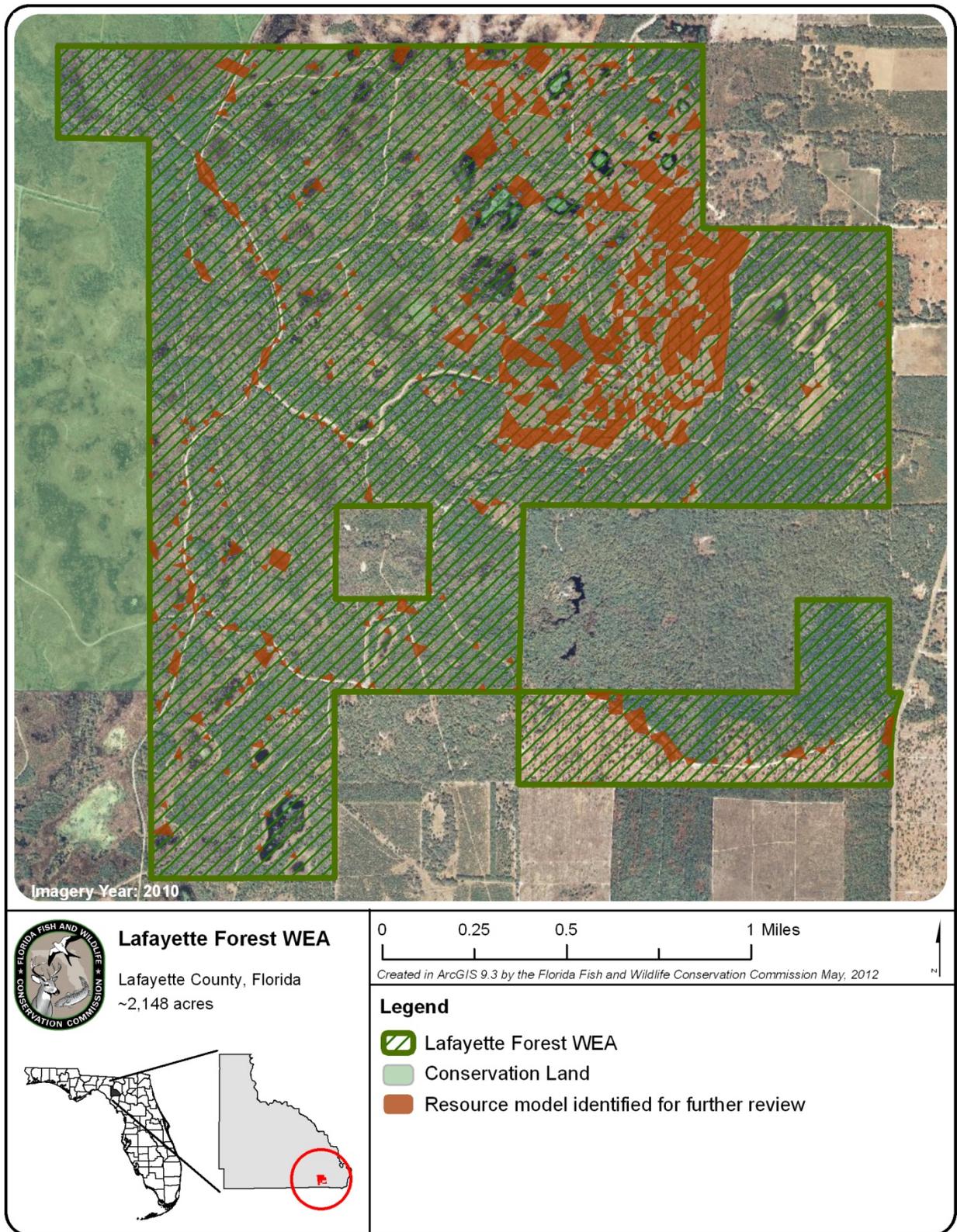


Figure 12: Resource Model GIS Analysis

density. Since the LFWEA was acquired to serve as a gopher tortoise mitigation park, it would not be consistent with the purpose of acquisition to make this area available for surplus. This area is currently undergoing restoration to its historic natural community of sandhill, which is expected to further enhance gopher tortoise habitat. Furthermore, if this area were to fall outside of State ownership, it would create a generally disjunct parcel and make the remaining area more difficult to perform management activities, such as prescribed burning. If divested, access to both the divested parcel and the remaining area of the northeast corner of the LFWEA would be difficult, as there is currently no direct access to State Road 349 at the north end of the LFWEA. Additionally, the area identified by the model provides good areas for fish and wildlife resource based public outdoor recreational opportunities which would be impaired if sold.

Even though it was not identified in the resource model GIS analysis for further review, FWC also investigated the parcel in the southeast of the LFWEA for surplus potential since it is nearly disjunct from the remainder of the LFWEA. However, surplus of this parcel would be detrimental to FWC's and the SRWMD's management of the LFWEA and Mallory Swamp Restoration Area, as McCall's Chapel Grade runs through the parcel and is the primary entrance for both the LFWEA and the Mallory Swamp Restoration Area and is the only direct connection for both areas to State Road 349. Additionally, this area is also undergoing restoration to its historic natural community of sandhill.

The evaluation of the LFWEA by FWC has determined that all portions of the area are being managed and operated for the original purposes of acquisition, and remain integral to the continued conservation of important fish and wildlife resources, and continue to provide good fish and wildlife resource based public outdoor recreational opportunities. Therefore, no portion of the LFWEA should be considered or declared surplus.

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 LFWEA 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 good fish and wildlife resource based public outdoor recreational opportunities on the LFWEA. 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, the management activities described in this section are in compliance with those of the Conceptual State Lands Management Plan.

4.1 Interim Management Activities

Since acquisition of the LFWEA in 2008, the area has been managed under the DSL's Interim Management Guidelines. During the first year after acquisition, emphasis was placed on site security, posting boundaries, public access, fire management, resource inventory, natural communities mapping, exotic species control, and removal of refuse. Long-range plans will stress ecosystem management, and the protection and management of threatened and endangered species.

In addition, the FWC has undertaken a number of other interim management activities since acquisition. To address the management goal of habitat restoration and improvement, the FWC contracted with FNAI to identify and map historic and current natural community types. The FWC has also planted wiregrass and longleaf pines on 165 acres to further this management goal. A prescribed burn plan has been developed and implemented to address habitat maintenance needs and to help achieve desired future conditions in native plant communities (Appendix 12.8). In addition, with the assistance of the Department of Agriculture and Consumer Services, Florida Forest Service (FFS), two timber assessments for the LFWEA have been completed (Appendix 12.9). To improve wildlife habitat, wood duck boxes were installed. To enhance public access and provide interpretive materials, an entrance facility package with a two-panel kiosk was constructed. To begin restoration of historic hydrological conditions, several culverts have been installed or replaced.

Prior to acquisition, occurrences of Florida Exotic Pest Plant Council (FEPPC) Category I and II exotic invasive plant species were known to be distributed throughout the area at relatively low densities with no high-density infestation existing. Since acquisition, FWC has contracted for, and completed, the survey and mapping of invasive exotic plant species, and begun treating these occurrences. Exotic invasive plant species documented on the LFWEA include Japanese climbing fern and mimosa.

4.2 Habitat Restoration and Improvement

On the LFWEA, the FWC will focus on managing for native habitat diversity, emphasizing maintenance of high-quality natural communities, and restoration of disturbed areas. Restoration may be achieved on disturbed areas by the re-introduction of fire, restoring historic hydrological conditions and/or the use of mechanical or chemical forest management techniques as appropriate. Restoration and enhancement of areas altered through industrial silviculture remains an important priority within the pinelands communities. The LFWEA has high-quality native communities including dome swamp, depression marsh, floodplain swamp, bottomland forest, successional hardwood forest, basin marsh, wet flatwoods, upland hardwood forest, and scrubby flatwoods.

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

4.2.1 Objective-Based Vegetation Management

The FWC uses a comprehensive resource management approach to managing FWC-managed areas. Restoring the form and function of Florida's natural communities is the foundation of this management philosophy. The FWC uses Objective-based Vegetation Management (OBVM) to monitor how specific vegetative parameters are responding to FWC management. OBVM includes the delineation of management units and quantification of the desired future condition for the natural community.

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

After natural communities have been mapped, management units are delineated. Delineating management units takes into account the distribution and extent of the current and/or historic mapped natural communities, existing and proposed infrastructure, and other management considerations. FWC land managers then identify the predominant current or historic natural community within each management unit that guides the type and frequency of management activities that should be applied.

At the same time, measurable habitat management objectives referred to as 'desired future conditions' are established for predominate natural communities identified for management units. Desired future conditions are defined by desirable ranges for vegetation structural attributes such as canopy cover, shrub height and cover, and ground cover.

Vegetation monitoring samples the selected parameters with the results being compared to the established desired future conditions. All monitoring performed under OBVM is completed using the program's *Vegetation Monitoring Standard Operating Procedures (May 2007)* which can be found at the following website: http://www.myfwc.com/media/119340/OBVM_Monitoring_Standard_Operating_Procedure.pdf.

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

4.2.2 Prescribed Fire and Fire Management

Periodic spring and summer fires occurred in fire-adapted communities under natural conditions. Plant species composition reflects the frequency and intensity of these fires. In the absence of fire, fallow fields on former longleaf sites follow a successional pattern

through mixed pine-hardwood forests to an exclusively hardwood community rather than to the original plant community. The plant species composition may differ slightly on poorer soils of the slash pine flatwoods, but the dominant role of fire in controlling hardwoods is equally important in either ecosystem.

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



The FWC employs a fire management regime to increase both species and habitat diversity and will continue a prescribed burning program on the LFWMA in accordance with vegetation management objectives. As fire moves across a landscape, some areas carry fire better than others. Areas with higher vegetative fuel loads typically burn more evenly and with greater intensity. Areas with lower vegetative fuel loads or wetland areas inundated with water typically will not carry fire as evenly, and usually burn at a lower intensity. Employing a burning program with

different burning frequencies, intensities, and seasonality (dormant season vs. growing season) of prescribed burns create habitat diversity and a mosaic of vegetation patterns. This mosaic is designed to have both frequently burned and infrequently burned aspects.

On some areas, prescribed burning is limited by the buildup of mid-story brush and a lack of pyrogenic groundcover fuels. This trend is distinctly negative for most wildlife species. Mechanical control of brush on upland sites by roller chopping, or incidentally by logging equipment during commercial thinning operations, can reduce shading and encourage the grasses and forbs that are necessary to sustain prescribed fire.

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

Whenever possible, existing firebreaks such as roads and trails, as well as natural breaks such as creeks and wetlands, will be used to define burning compartments. Disk harrows,

mowing, and foam lines will be used as necessary to minimize disturbance and damage created by fire plows.

The transitional areas between two adjacent but different vegetative cover types, such as forests and wetlands, are known as ecotones. With the possible exception of wildfire suppression, mechanical soil disturbance in ecotones will be avoided in order to protect habitats for important rare species that often occur between flatwoods and riparian drainages. Silvicultural site preparation and creation of firebreaks are avoided when possible in these zones. Additionally, fires are allowed to burn into the edges of marshes, swamps and other wetlands in order to maintain these habitats. Once fuel loads have been reduced and a more open appearance has returned, vegetative management objectives will likely dictate a fire return interval that averages 3 - 5 years, preferably during the spring and early summer months.

In addition to the general prescribed fire management guidelines described above, an area-specific Prescribed Fire Plan has been developed and implemented for the LFWEA. This plan includes delineation of burn management units and detailed descriptions of prescribed fire methodology, safety, and smoke management guidelines (Appendix 12.8).

Implementing prescribed fire on the LFWEA poses significant challenges due to the overgrown mid-story conditions within the existing pine plantations, and the distribution of numerous small wetlands interspersed within the upland areas of the LFWEA. Currently, the height and density of the mid-story in the pine plantations is such that the area cannot be burned without significant mechanical reduction beforehand. Further complicating the implementation of prescribed fire is the dense distribution of wetlands throughout the upland communities, with approximately one-third of the acres in the LFWEA being of a wetland type (approximately 731 acres), thereby making it difficult to conduct a prescribed burn without the residual smoke concerns associated with muck fires in dry wetlands. During normal rainfall years, where the wetlands are largely wet, residual smoke should not be much concern to fire managers, but during prolonged drought periods, prescribed fire will not be the preferred land management tool due to these complications.

Historic natural community mapping has been completed on the LFWEA by FNAI, and the majority of the area was identified as historic sandhill. However, through ongoing management and monitoring observations, the emergent groundcover displays plant composition characteristics that indicate the area may have been predominantly scrubby flatwoods and mesic flatwoods. Therefore, much of the upland portion of the property may have been an ecological transition zone, where the characteristics of scrubby flatwoods and mesic flatwoods, along with sandhill, were blended together. FWC will manage the property to allow for the natural progression of these original historic communities according to soil type, depth to water table, and other physical characteristics of the land.

The desired three to five year fire return interval on the fire managed uplands should be attainable within the ten year planning period provided that normal levels of precipitation

occur keeping wetland soils wet, and that mid-story fuels in the management units have fuel loads that allow for safe application of fire. However, most of the management units in LFWEA are not in that condition. The first four years of mechanical mid-story reduction have returned 520 acres (just under 25%) of the LFWEA to a condition where the land can be managed with prescribed fire. This work has been undertaken aggressively, but at the current rate of progress it will be difficult to bring each management unit into a condition where fire can be used to control mid-story within the ten year duration of this plan. It may then take one to two additional years following the mechanical treatment for adequate pine needle fall and vegetative recovery to occur for fire to have enough continuous fuel to be able to move across the management unit.

Additional factors that have made performing prescribed burns difficult at the LFWEA and are likely to be continued issues in the next ten years include the dense, oak dominated, mid-story of the commercial pine plantations; the fact that the property boundary has many wetlands that do not have a firebreak separating the LFWEA from adjacent private lands; and that the fire maintained communities on the LFWEA contain many small wetlands that may create hazardous residual smoke conditions if burned during drought or very dry conditions when the wetlands are not wet. To minimize the negative impact of these conditions, FWC will use mechanical treatments to reduce the oak dominated mid-story to levels that will allow safe prescribed burning conditions and use chemical treatments to prevent the aggressive re-sprouting of the oak dominated mid-story following mechanical treatments, if conditions are such that the mid-story cannot be controlled with prescribed fire, such as during periods of low rainfall or drought. FWC will not attempt to use prescribed fire as a management tool during dry climactic conditions, or during periods where the wetlands cannot serve as a functional firebreak that will protect adjacent private land interests. Additionally, to manage for hazardous, lingering smoke conditions, FWC will not attempt to burn during very dry conditions when the organic wetland soils will burn and produce long term smoky conditions. Consequently, FWC will time the application of prescribed fire to coincide with favorable environmental conditions that follow larger rain fall events. Once mid-story reduction is completed and the fuels are capable of supporting an effective fire, the management unit should be able to be maintained with fire on a three to five year fire return interval.

4.2.3 Habitat Restoration

The FNAI has conducted surveys and mapped the current vegetation communities and historic vegetation communities on the LFWEA. This information will be used to guide and prioritize management and restoration efforts on the area. On disturbed upland sites, the FWC intends to initiate ground cover and natural community restoration. Restoration may be achieved on disturbed areas by the re-introduction of fire, restoring historic hydrological conditions and the use of mechanical or chemical forest management techniques as appropriate. Upon successful restoration of natural communities, the restored areas will be managed pursuant to the OBVM program as discussed in Section 4.2.1.

4.2.4 Apiaries

Currently, there are no apiaries operating on the LFWEA. However, use of apiaries is conditionally approved for the LFWEA, and is deemed to be consistent with purposes for acquisition, is in compliance with the Conceptual State Lands Management Plan, and is consistent with the FWC agency mission, goals, and objectives as expressed in the agency strategic plan and priorities document (Appendix 12.7). Location, management, and administration of apiaries on the LFWEA will be guided by the FWC Apiary Policy (Appendix 12.10).

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

4.3.1 Fish and Wildlife

Due to the variety of natural communities, a diversity of associated wildlife, including rare and imperiled species, common game and non-game species can be found on the LFWEA. In managing for wildlife species, an emphasis will be placed on conservation, protection, and management of natural communities. Natural communities important to wildlife include former sandhill areas, dome swamps, depression marshes, floodplain swamps, and bottomland forests, among others.

Wildlife management emphasis is placed on documenting the occurrence and abundance of rare and imperiled species on the property. Following species inventory work, management practices are designed to restore, enhance or maintain imperiled species and their habitats. The size and diversity of the LFWEA creates a habitat mosaic for a variety of wildlife species. Resident wildlife will be managed for optimum diversity and abundance. Since the LFWEA was acquired to establish a gopher tortoise mitigation park, restoration and enhancement of xeric soils communities (sandhill and scrubby flatwoods) will be a resource management priority.

In addition to resident wildlife, the LFWEA provides resources critical to many migratory birds including waterfowl, passerines, raptors, and shorebirds. Habitats important to migratory species will be protected, maintained or enhanced. The FWC will continue to update inventories for certain species, with emphasis on rare and imperiled wildlife species. Monitoring of wildlife species will continue as an ongoing effort for the area.

Rare and imperiled species and their habitats will be protected and restored by following approved Federal and FWC recovery plans, guidelines, and other applicable scientific recommendations. Land management activities including prescribed burning and timber stand improvements will take into account imperiled species requirements and habitat needs. Potential for negative impacts from recreational activities will also be considered and monitored.

FWC intends to manage game populations on a sustained-yield basis to assure healthy game populations and a high-quality recreational experience. In general, game wildlife

populations will be managed to provide continued recreational sport hunting and wildlife viewing opportunities. However, due to the limited size of the area, some of the hunting opportunities may be regulated through a limited entry hunt program to ensure the persistence of viable game species populations, as well as hunter safety and satisfaction.

4.3.2 Imperiled Species - Wildlife Conservation Prioritization and Recovery

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

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

The WCPR program helps the FWC take a proactive, science-based approach to species management on FWC-managed lands. This approach assesses information from statewide potential habitat models and Population Viability Analysis, and in conjunction with input from species experts and people with knowledge of the area, creates site-specific wildlife assessments for imperiled wildlife species and a select suite of focal species. Staff combines these assessments with area-specific management considerations to develop a wildlife management strategy for the area. Each strategy contains area-specific measurable objectives for managing priority species and their habitat, prescribes management actions to achieve these objectives, and establishes monitoring protocols to verify progress towards meeting the objectives. The FWC intends for the strategy to promote the presence of, and ensure the persistence of imperiled wildlife and select focal species on the area by providing FWC managers with information on actions they should take (provided the necessary resources are available).

In summary, for FWC-managed areas, the WCPR program helps assess imperiled and focal wildlife species needs and opportunities, prioritizes what FWC does for imperiled and focal species, prescribes management actions to aid in species recovery, prescribes monitoring protocols to allow evaluation of the species' response to management, and ensures the information is shared with others. Through the actions of this program, the FWC will facilitate fulfilling the needs of focal and imperiled wildlife species on the LFWMA. In the

long-term, by implementing these strategies on FWC-managed lands and continuing to assess wildlife species' needs, the FWC will continue to play an integral role in aiding the recovery of imperiled species and preventing the future imperilment of declining wildlife species.

4.4 Exotic and Invasive Species Maintenance and Control

The FWC will continue efforts to control the establishment and spread of FEPPC Category I or II plants on the LFWEA. Currently, there are only minimal occurrences of invasive exotic plants on the LFWEA and control of them is in a primarily maintenance mode. Control technologies may include mechanical, chemical, biological, and other appropriate treatments. Treatments utilizing herbicides will comply with instructions found on the herbicide label and employ the Best Management Practices for their application.

4.5 Public Access and Recreational Opportunities

4.5.1 Americans with Disabilities Act

When public facilities are developed on FWC-managed areas, the FWC complies 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 ADA¹ where:

1. Compliance will cause harm to cultural or historic sites, 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.

4.5.2 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 LFWEA. To accomplish this, FWC will work with recreational stakeholders and the general public to develop a Recreation Master Plan for the LFWEA that will be used to further design and develop appropriate infrastructure that will support the recreational use of the area by the general public. This Recreation Master Plan will include planning for parking, trail design, and area resource interpretation.

4.5.3 Public Access Carrying Capacity

Baseline carrying capacities for users on FWC-managed lands are established by conducting a site specific sensitivity analysis using available data for the site. The intent of



the carrying capacity analysis is to minimize wildlife and habitat disturbance and provide the experience of being “immersed in nature” that visitors to FWC-managed areas desire. Carrying capacities are just a first step; management of recreational use requires a means of monitoring visitor impacts. Responding to these impacts may require adjusting the carrying capacities as necessary. The carrying capacities generated though this process are used as a tool to help plan

and develop public access, wildlife viewing, and fish and wildlife resource based public outdoor recreation opportunities. Based on an analysis of the overall approved uses and supported public access user opportunities, and the anticipated proportional visitation levels of the various user groups, FWC has determined that the LFWEA can support 40 visitors per day. However, an objective to increase the carrying capacity to 160 visitors per day has been proposed in Section 5.3 of this Management Plan. This 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.

4.5.4 Wildlife Viewing

The LFWEA affords a wide variety of native wildlife species, both resident and seasonally migratory, that are available for visitors’ enjoyment for observation and photography. The quality of habitat found on the LFWEA attracts a suite of wildlife species including various birds, mammalian, reptile and amphibian wildlife throughout the LFWEA.

4.5.5 Hunting

The LFWEA currently offers limited access (quota) archery, muzzleloading gun, family gun, wild hog-still, spring turkey and migratory bird hunting seasons. An evaluation of the hunting opportunities offered on the LFWEA is performed by FWC biennially.



4.5.6 Trails

Currently, there are no designated trails on the LFWEA. The FWC anticipates developing a proposed 7.5 mile multi-use trail. The FWC will continue to periodically reevaluate the potential for trail connectivity to other conservation areas and will monitor trails for user impacts to natural communities.

4.5.6.1 Hiking

The unpaved roads throughout the LFWEA can be explored by hikers and those interested in nature study. The proposed 7.5 mile trail will provide hikers an opportunity to see the variety of habitats that exist on the LFWEA and provide educational and interpretive opportunities.

4.5.6.2 Bicycling

Cyclists may use named and unnamed service roads on the LFWEA. The roads are in good condition and provide scenic vistas and wildlife viewing opportunities. The proposed multi-use trail will be available for cyclists to use.



4.5.6.3 Equestrian

Horseback riding is currently allowed on named and unnamed service roads on the LFWEA. The FWC is planning to construct an additional entrance facility that can better accommodate vehicles with trailers. The proposed facility will provide more space for vehicles with trailers to park and turn around.

4.5.7 Camping

Currently, camping is prohibited on the LFWEA. Due to the limited size of the area, minimal staffing, and the lack of appropriate sites that would not interfere with other uses, it is not anticipated that camping opportunities will be provided in the future. Additionally, there are numerous public or private camping facilities in the vicinity of the LFWEA. Recreation opportunities will be reassessed every three years.

4.5.8 Geocaching

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



It is the policy of the FWC to allow placement of geocaches only in those locations that do not present the potential for resource damage, user conflicts or threats to the safety of the activity participants. The placement of geocaches on FWC-managed lands is governed by specific guidelines. These guidelines may be found on the following FWC website: [http://myfwc.com/media/1074886/FWC Geocache Guidelines.pdf](http://myfwc.com/media/1074886/FWC_Geocache_Guidelines.pdf).

4.5.9 Astronomy

Many of the open areas of the LFWEA provide for a broad view of the nighttime sky and afford a relatively low level of nighttime light pollution. These conditions are conducive to the viewing of stars, planets, comets, and other celestial bodies by amateur astronomers. Currently, the operating hours of the LFWEA are from 1 ½ hours before sunrise to 1 ½ hours after sunset. These primarily daylight operating hours are not conducive to viewing the nighttime sky. However, special-use permit applications for special user group nighttime access events will be evaluated on a case-by-case basis.

4.5.10 Interpretation

Interpretive signage and resource interpretation materials are provided at the main entrance to the LFWEA. Additional interpretive materials including a website, trail guide, and bird list for the LFWEA will be developed.

4.6 Hydrological Preservation and Restoration

4.6.1 Hydrological Assessment

The FWC contracted with WRS Infrastructure & Environment, Inc. to conduct a hydrological assessment and conceptual restoration plan of the LFWEA, which was completed in June, 2010. This assessment was conducted to provide a plan that identifies anthropogenic impacts to hydrology on the LFWEA and a plan to restore natural water regimes to the extent practical. This assessment and conceptual restoration plan is included as Appendix 12.11.

The hydrological assessment and conceptual restoration plan made several recommendations to help restore historic hydrologic conditions on the LFWEA. These include installation of nine new culverts, replacement of eleven culverts, and improvement of two low water crossings.

4.7 Forest Resource Management

A timber assessment of the timber resources of the LFWEA was conducted by the FFS (Appendix 12.9.1) in 2010 and by Southern Forestry Consultants, Inc., a private forestry consultant, in 2011 (Appendix 12.9.2). The management of timber resources will be considered in the context of these timber assessments and the overall land management goals and activities.

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

Pursuant to OBVM management goals, the FWC will continue to manage timber resources for wildlife benefits and natural community restoration. Management activities including the use of timber thinning and harvesting may be utilized. The primary management technique for encouraging reforestation is protection of young trees and seedlings on these sites from damage. However, where natural regeneration is lacking, artificial reforestation may be implemented. Planting trees on these selected sites is used to increase the rate of reforestation and to ensure diversity. Forested wetlands are managed for stands with old growth characteristics. Snags will be protected to benefit cavity-nesting species.

4.7.1 Timber Management Plan

As noted above, the most recent timber assessment completed for LFWEA was performed by Southern Forestry Consultants, Inc. in 2011. This assessment provided specific management prescriptions for each management unit on the LFWEA. For the majority of the merchantable areas, the assessment recommends thinning to a basal area of 50 - 60 square feet per acre. Appendix 12.9.2 contains more details of the recommended management actions. The FWC will work with the FFS or a professional forestry consultant to develop and implement a Timber Harvest Plan consistent with OBVM and WCPR objectives for the area.

4.8 Cultural and Historical Resources

To date, no historic structures or archaeological sites within the LFWEA have been recorded in the DHR Florida Master Site File. Management activities will be planned to minimize any disturbance to sites with a high potential for the presence of archaeological or historical features. Procedures outlined by DHR will be followed to preserve such sites. FWC will continue to consult with DHR in an attempt to locate other cultural and historical resources on the area. As appropriate and necessary, the FWC will contact professionals from DHR or trained FWC staff for assistance prior to any ground-disturbing activity on the area.

The FWC will submit updates of additional located sites to DHR for inclusion in their Master Site file. In addition, FWC will ensure management staff has DHR Archaeological Resources Monitoring training. Furthermore, FWC will refer to and follow DHR's Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties (Appendix 12.6) for management of these resources, and prior to any facility development or ground disturbing activities.

4.9 Capital Facilities and Infrastructure

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 LFWEA include one entrance package/ parking area facility and 21 miles of roads (Figure 13). As described in Section 4.5.1 of this Management Plan, any public facilities that are developed on areas managed by the FWC will comply with the Americans with Disabilities Act (Public Law 101-336).

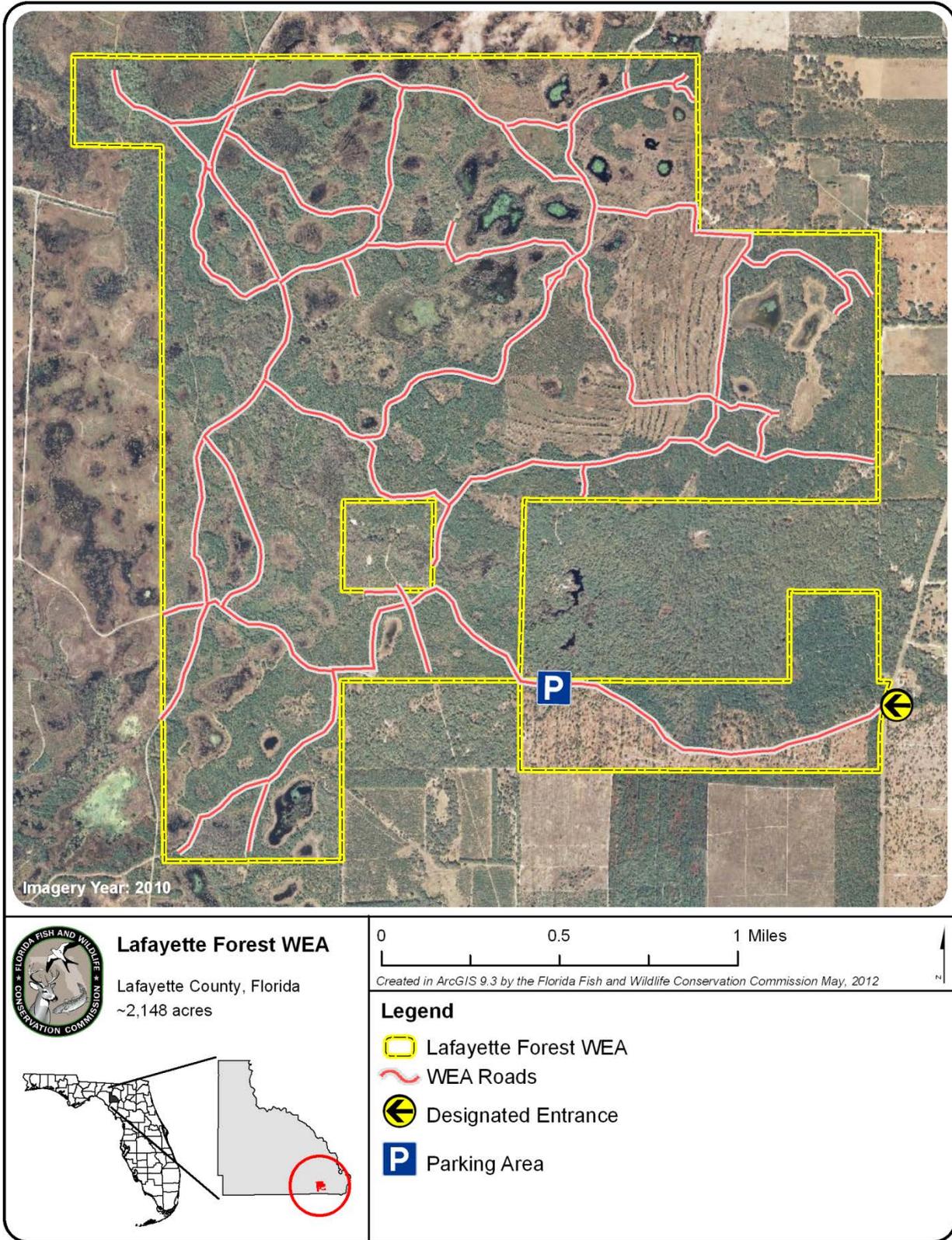


Figure 13: Facilities and Infrastructure

4.10 Land Conservation and Stewardship Partnerships

The FWC utilizes a three-tiered approach to identifying, acquiring or otherwise protecting important conservation lands adjacent to or in proximity to existing FWC-managed areas. This involves development of an Optimal Resource Boundary (ORB), Optimal Conservation Planning Boundary (OCPB) and associated Conservation Action Strategy (CAS).

Increasingly, cooperative land steward partnership efforts with private landowners plays an integral role in this effort as does ongoing land conservation, either through fee-simple or less-than-fee conservation easements. In combination, this tiered model helps FWC to further the regional conservation of important fish and wildlife habitats through a proactive, comprehensive, and cooperative approach towards conservation.

4.10.1 Optimal Resource Boundary

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

4.10.2 Optimal Conservation Planning Boundary

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

The OCPB provides the basis for development of a broader CAS for the LFWEA (Figure 14). Although the OCPB provides the basis for potential future voluntary, willing-seller conservation acquisitions, it is designed to function primarily as a conservation planning boundary. The OCPB identifies surrounding lands and natural resources that may be important to the continued viability of fish and wildlife populations in the region. As they are currently managed, these lands appear to contribute to regional conservation and may support conservation landscape linkages.

4.10.3 Conservation Action Strategy

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

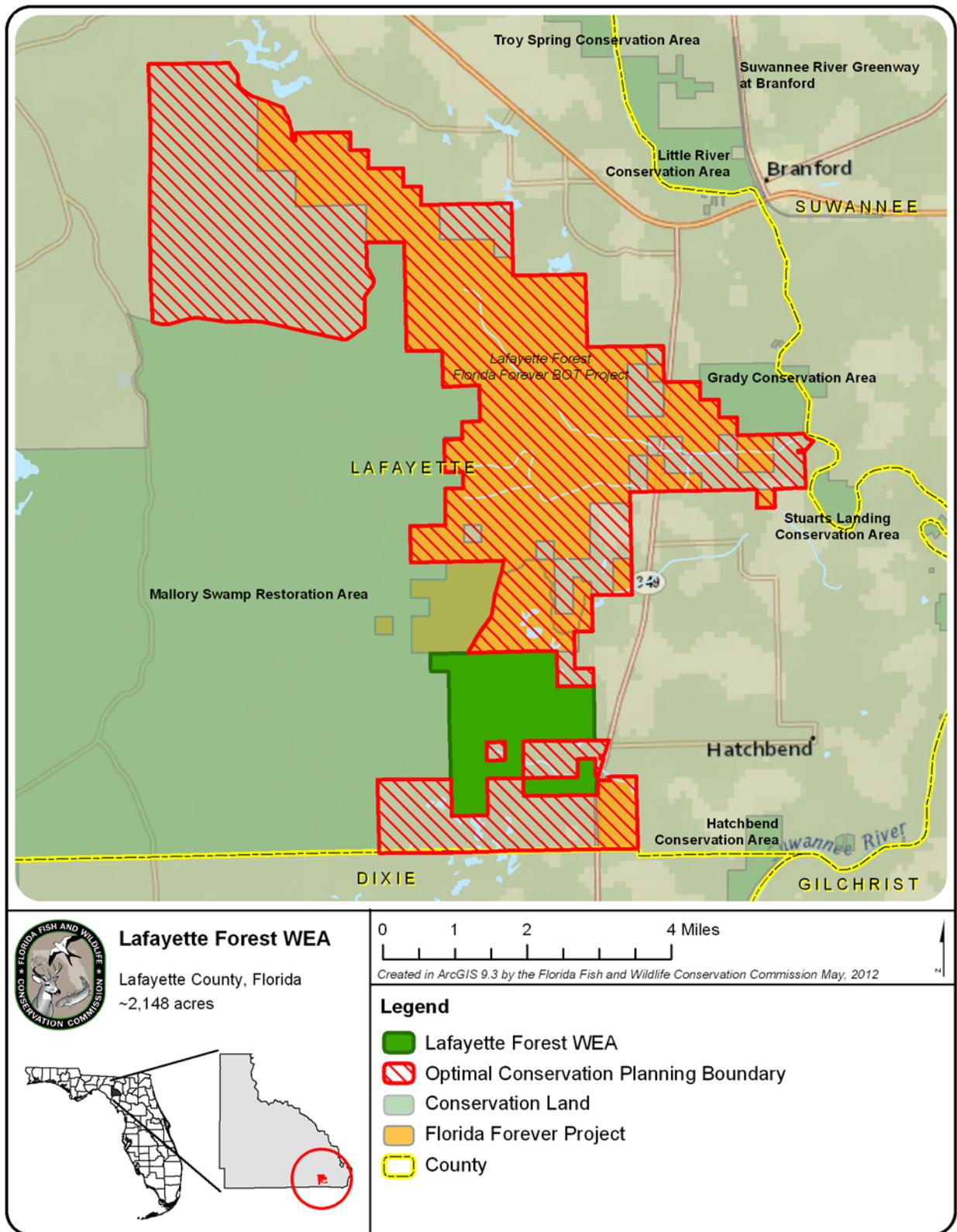


Figure 14: Optimal Conservation Planning Boundary

Primary components of the CAS may include:

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

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

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

4.10.4 FWC Florida Forever Additions and Inholding Acquisition List

Currently, FWC has not identified any potential additions or privately held inholdings for the LFWFA. However, 11,080 acres of the Lafayette Forest Florida Forever project, of which the LFWFA is a part of, remain to be acquired. Upon completion of the CAS, additions to the FWC Florida Forever Additions and Inholdings Acquisition list may be recommended.

4.11 Climate Change

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

The Intergovernmental Panel on Climate Change (IPCC), a multi-national scientific body, reports that climate change is likely proceeding at a rate where there will be unavoidable impacts to humans, wildlife, and habitat. Given current levels of heat-trapping greenhouse gas emissions, shifts in local, regional, and national climate patterns including changes in precipitation, temperature, increased frequency and intensity of extreme weather events, rising sea levels, tidal fluctuations, and ocean acidification are projected. The current trend of global temperature increase has appeared to accelerate in recent decades, and continued greenhouse gas emissions may result in projected global average increases of 2 - 11.5° F by the end of the century (Karl et al. 2009).

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

Potential impacts that may be occurring as a result of climate change include: change in the timing of biological processes, such as flowering, breeding, hibernation, and migration (McCarty 2001, Walther et al. 2002, Parmesan 2006); more frequent invasions and outbreaks of exotic invasive species (e.g., Logan and Powell 2009); and loss of habitat in coastal areas due to sea level rise (e.g., Stevenson et al. 2002). Some species are projected to adjust to these conditions through ecological or evolutionary adaptation, whereas others are projected to exhibit range shifts as their distributions track changing climatic conditions. Those species that are unable to respond to changing climatic conditions are projected to go extinct. Some estimates suggest that as many as 20% - 30% of the species currently assessed by the IPCC are at risk of extinction within this century if global mean temperatures exceed increases of 2.7–4.5° F (IPCC 2007b). A number of ecosystems are projected to be affected at temperature increases well below these levels.

At this time, the potential effects of climate change on Florida's conservation lands are just beginning to be studied and are not yet well understood. For example, FWC has begun a process for currently developing climate change adaptation strategies for monitoring, evaluating, and determining what specific actions, if any, may be recommended to ameliorate the projected impacts of climate change on fish and wildlife resources, native vegetation, and the possible spread of exotic and invasive species. Currently, FWC is continuing its work on the development of these potential adaptation strategies. However, as noted above, the effects of climate change may become more frequent and severe within the time period covered by this plan. . Also, FWC will consider the need for conducting vulnerability assessments to model the potential effects of climate change, especially sea level rise and storm events, on imperiled species and their habitats on FWC managed land.

For these reasons, there is a continuing need for increased information and research to enable adaptive management to cope with potential long-term climate change impacts. The most immediate actions that FWC can take are to work with partners to gather the best scientific data possible for understanding natural processes in their current state, model possible impacts and subsequent changes from climate change, develop adaptive management strategies to enhance the resiliency of natural communities to adapt to climate change, and formulate criteria and monitoring for potential impacts when direct intervention may be necessary to protect a species. FWC will also consider participating in the Peninsular Florida Land Conservation Cooperative or similar organizations so that FWC continues to gain understanding and share knowledge of key issues related to potential climate change.

To address the potential impacts of climate change on the LFWEA, Goals and Objectives have been developed as a component of this Management Plan (Section 5.10). 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 LFWEA Management Plan in the future.

4.12 Research Opportunities

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

4.13 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 the erosion.

4.14 Cooperating Agencies

The FWC is responsible for the overall management and operation of the LFWEA as set forth in the lease agreement with the Board of Trustees. In keeping with the lease agreement, and in order to conduct its management operations in the most effective manner, the FWC cooperates with other agencies to achieve management goals and objectives. These include cooperating with DHR to ensure the requirements of the Management Procedures Guidelines - Management of Archaeological and Historical Resources document (Appendix 12.6) are followed with regard to any ground-disturbing activities. In addition, the FFS is a designated cooperating agency, and assists FWC by providing technical assistance on forest resource management. The FWC also cooperates

and consults with the SRWMD for the monitoring and management of both ground and surface water resources and the overall management of the LFWEA.

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 LFWEA. 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 (2013 – 2015) or long-term (2016 – 2023) timelines for completion.

The general approximate locations of selected planned management actions are depicted in Figure 15. However, due to the nature of certain management actions, it is not possible or achievable to depict the locations of every management objective. These approximate locations of depicted objectives may change upon implementation of the objectives due to variable or unforeseen resource or operational conditions.

5.1 Habitat Restoration and Improvement

Goal: Improve extant habitat and restore disturbed areas.

Short-term

- 5.1.1 Prescribe burn 220 acres per year.
- 5.1.2 Conduct habitat/natural community improvement on 110 acres per year including chemical and mechanical treatments and continued improvement on Management Unit 10 (Figure 15).
- 5.1.3 Develop and implement OBVM.

Long-term

- 5.1.4 Continue to prescribe burn 220 acres per year.
- 5.1.5 As feasible given the current conditions of the upland communities as described in Section 4.2.2, re-establish a 3 - 5 year target fire return interval on 1,100 acres (100%) of fire adapted communities.
- 5.1.6 Continue implementing OBVM.
- 5.1.7 Continue to conduct habitat/natural community improvement on 110 acres per year including chemical and mechanical treatments.
- 5.1.8 Continue to conduct habitat/natural community restoration activities on 1,000 acres, including mechanical mid-story mowing, chemical treatment, replanting, and other restoration activities as appropriate.

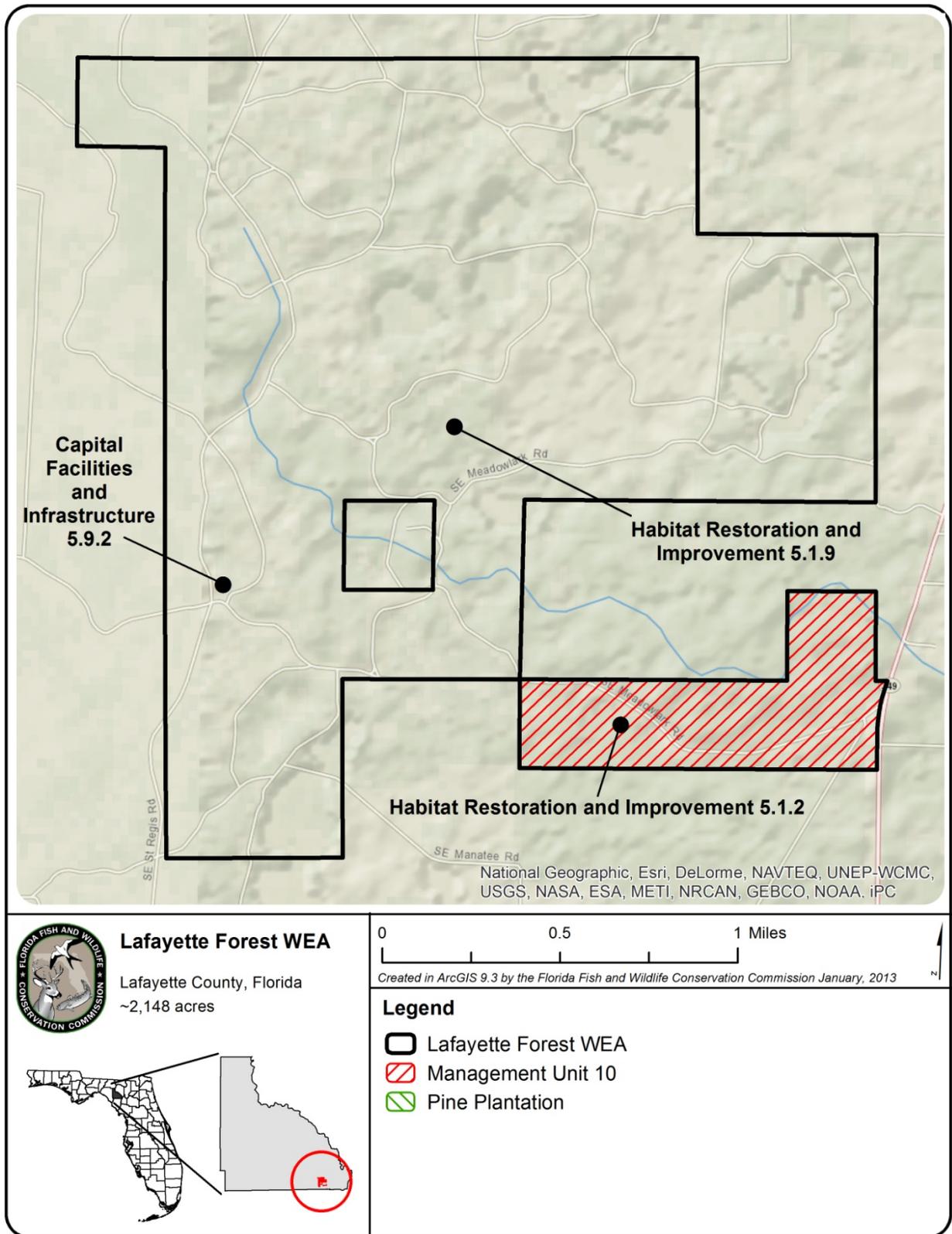


Figure 15: Approximate Management Project Locations

5.1.9 Continue to conduct timber harvest for the purposes of habitat restoration on 600 acres of the pine plantation vegetative community (Figure 15).

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

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

Short-term

5.2.1 Develop and implement a WCPR strategy.

5.2.2 Continue to collect opportunistic wildlife species occurrence data.

Long-term

5.2.3 Continue to implement WCPR strategy by managing identified habitats and monitoring identified species.

5.2.4 Conduct a gopher tortoise burrow survey every five years.

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

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

Long-term

5.3.1 Continue to collect opportunistic wildlife species occurrence data.

5.4 Exotic and Invasive Species Maintenance and Control

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

Short-term

5.4.1 To continue maintenance conditions, annually treat approximately one acre of Florida Exotic Pest Plant Council (FLEPPC) Category I and Category II invasive exotic plant species, as needed.

5.4.2 Continue to implement control measures on feral hog and others as needed.

Long-term

5.4.3 To continue maintenance conditions, annually treat approximately one acre of FEPPC Category I and Category II invasive exotic plant species, as needed.

5.4.4 Continue to implement control measures on feral hog and other exotic and invasive animal species as needed.

5.5 Public Access and Recreational Opportunities

Goal: Provide public access and recreational opportunities.

Short-term

- 5.5.1 Maintain public access and recreational opportunities to allow for a recreational carrying capacity of 40 visitors per day.
- 5.5.2 Develop additional public access and recreational opportunities to allow for a carrying capacity of 160 visitors/day.
- 5.5.3 Continue to provide a two panel kiosk for interpretation and education.
- 5.5.4 Develop three new interpretive/education programs and/or products including a trail guide, bird list and website.
- 5.5.5 Maintain/design/develop 7.5 miles of trails.
- 5.5.6 Complete development of a Recreation Master Plan.

Long-term

- 5.5.7 Develop a new kiosk for interpretation and education.
- 5.5.8 Monitor trails biannually for visitor impacts.
- 5.5.9 Reassess recreational opportunities every three years.
- 5.5.10 Continue to provide hunting opportunities for deer, turkey, and feral hogs.
- 5.5.11 Cooperate with other agencies, County, stakeholders, and regional landowners to investigate regional recreational opportunities including linking hiking, and multi-use trail systems between adjacent public areas.
- 5.5.12 Continue to identify partnerships that could provide for environmental educational programs and outreach.

5.6 Hydrological Preservation and Restoration

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

Short-term

- 5.6.1 Conduct or obtain a site hydrological assessment to identify potential hydrology restoration needs.

Long-term

- 5.6.2 To enhance natural hydrological functions, continue to install and maintain low-water crossings and culverts as appropriate.
- 5.6.3 Restore natural hydrologic condition and functions as recommended in hydrological assessment, as feasible.



5.7 Forest Resource Management

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

Short-term

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

Long-term

5.7.2 Prepare and implement a Timber Harvest Plan including harvesting and prescribed burning activities based on restoration and maintenance needs of the natural communities and other goals established for management of the LFWMA.

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

5.8 Cultural and Historical Resources

Goal: Protect, preserve, and maintain the cultural resources of the WEA.

Short-term

5.8.1 Ensure all known sites are recorded in the Florida Division of Historical Resources (DHR) Master Site file.

5.8.2 Continue to monitor, protect, and preserve as necessary any future identified sites.

5.8.3 FWC will coordinate with DHR to determine when a reconnaissance-level archaeological survey may be conducted.

Long-term

5.8.4 Cooperate with DHR or trained FWC staff in designing site plans for development of infrastructure.

5.8.5 Continue to monitor, protect, and preserve as necessary any future identified sites.

5.8.6 Coordinate with DHR for Archaeological Resources Management training for area staff.

5.9 Capital Facilities and Infrastructure

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

Short-term

5.9.1 Continue to maintain one parking area facility.

5.9.2 Design and construct one area entryway facility capable of accommodating vehicles with trailers (Figure 15).

- 5.9.3 Maintain 21 miles of roads.
- 5.9.4 Construct 7.5 miles of trails.

Long-term

- 5.9.5 Monitor trails and infrastructure biannually for visitor impacts.
- 5.9.6 Continue to maintain 21 miles of roads.
- 5.9.7 Continue to maintain 7.5 miles of trails.
- 5.9.8 Continue to maintain two area entryway facilities.

5.10 Land Conservation and Stewardship Partnerships

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

Short-term

- 5.10.1 Identify important wildlife resources, habitat, landscape-scale linkages, and wildlife corridors for operational/resource management that may be important to the continued viability of fish and wildlife populations in the region.
- 5.10.2 Develop a Conservation Action Strategy.
- 5.10.3 Contact and inform adjoining landowners about the FWC Landowners Assistance Program to pursue non-acquisition conservation stewardship, partnerships, and potential conservation easements.
- 5.10.4 Identify and recommend parcels for addition to the FWC acquisition list.
- 5.10.5 Identify potential non-governmental organization partnerships and grant program opportunities.
- 5.10.6 Conduct a landowner assistance/conservation stewardship partnership workshop for adjoining landowners as feasible.
- 5.10.7 Collaborate with SRWMD on mutual management opportunities and efficiencies.
- 5.10.8 Coordinate and cooperate with Department of Defense military branches to allow for training opportunities for military personnel such as Gulf Regional Air Space Initiative (GRASI) and other initiatives as appropriate and compatible with the conservation of the LFWEA.

Long-term

- 5.10.9 Continue to identify strategic parcels to revise the completed optimal conservation planning boundary for the LFWEA as deemed necessary.
- 5.10.10 Continue to identify and recommend parcels for addition to the FWC acquisition list.
- 5.10.11 Pursue acquisition of parcels added to the FWC acquisition list as acquisition work plan priorities and funding allow.

- 5.10.12 Periodically (at least every three to five years) continue to contact and meet with adjacent landowners for willingness to participate in the Conservation Action Strategy.
- 5.10.13 Coordinate landowner assistance/conservation stewardship partnership workshop as deemed appropriate.
- 5.10.14 Continue to collaborate with SRWMD on mutual management opportunities and efficiencies.
- 5.10.15 Continue to coordinate and cooperate with Department of Defense military branches to allow for training opportunities for military personnel such as Gulf Regional Air Space Initiative (GRASI) and other initiatives as appropriate and compatible with the conservation of the LFWEA.

5.11 Climate Change

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

Long-term

- 5.11.1 Coordinate with FWC-FWRI Climate Change Adaptation Initiative to identify potential impacts of projected climate change on fish and wildlife resources and operational management of the LFWEA.
- 5.11.2 Incorporate appropriate climate change monitoring protocols and management strategies into the OBVM program for the LFWEA.
- 5.11.3 Incorporate appropriate climate change adaptation strategies into the WCPR for LFWEA.
- 5.11.4 As appropriate, update the LFWEA Prescribed Fire Plan to incorporate new scientific information regarding projected climate change, such as increased frequency of drought, on the fire regime of LFWEA's fire-adapted habitats.
- 5.11.5 As science, technology, and climate policy evolve, educate natural resource management partners and the public about the agency's policies, programs and efforts to study, document and address potential climate change; assess the need to incorporate public education about climate change into the update of the Recreation Master Plan.

5.12 Research Opportunities

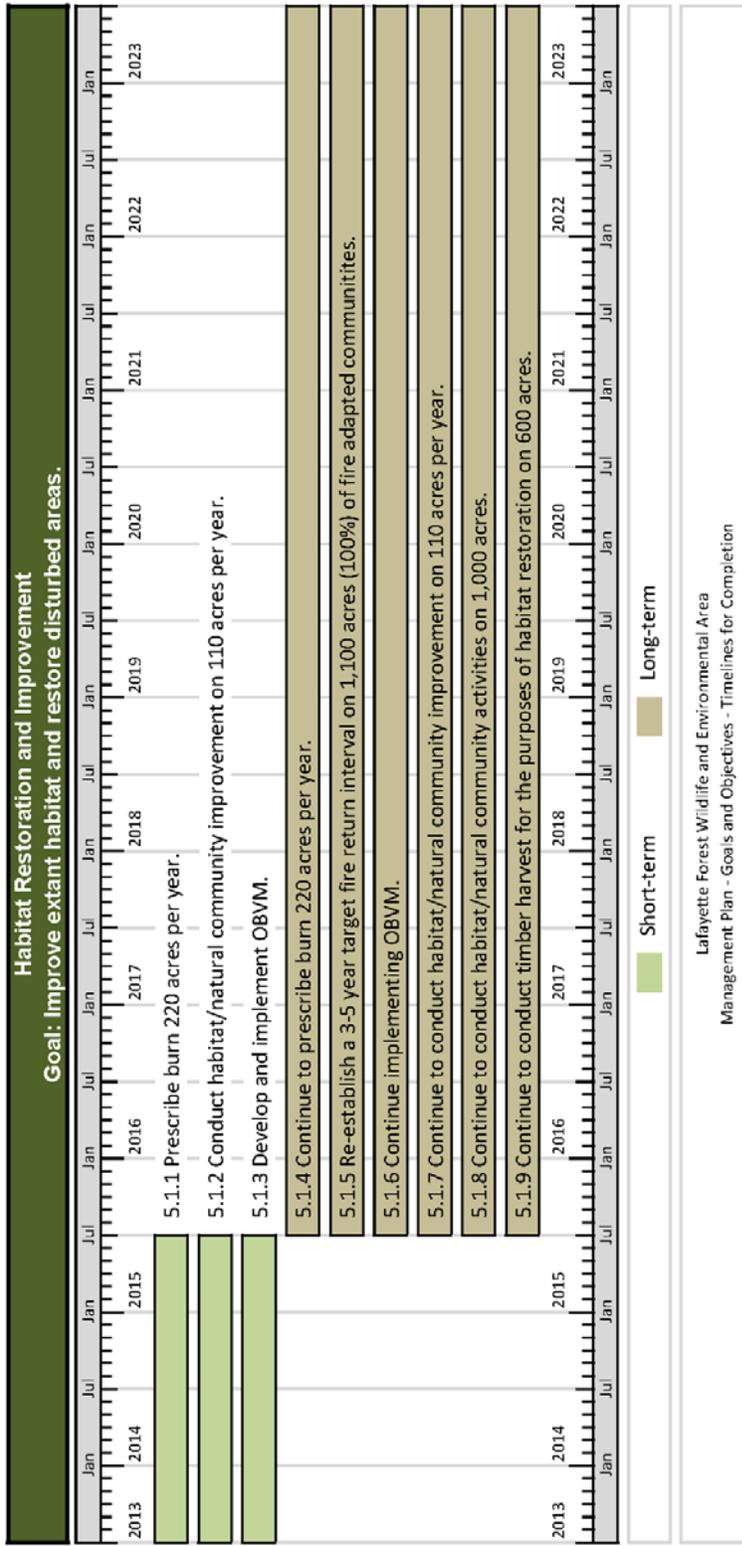
Goal: Explore and pursue cooperative research opportunities.

Long-term

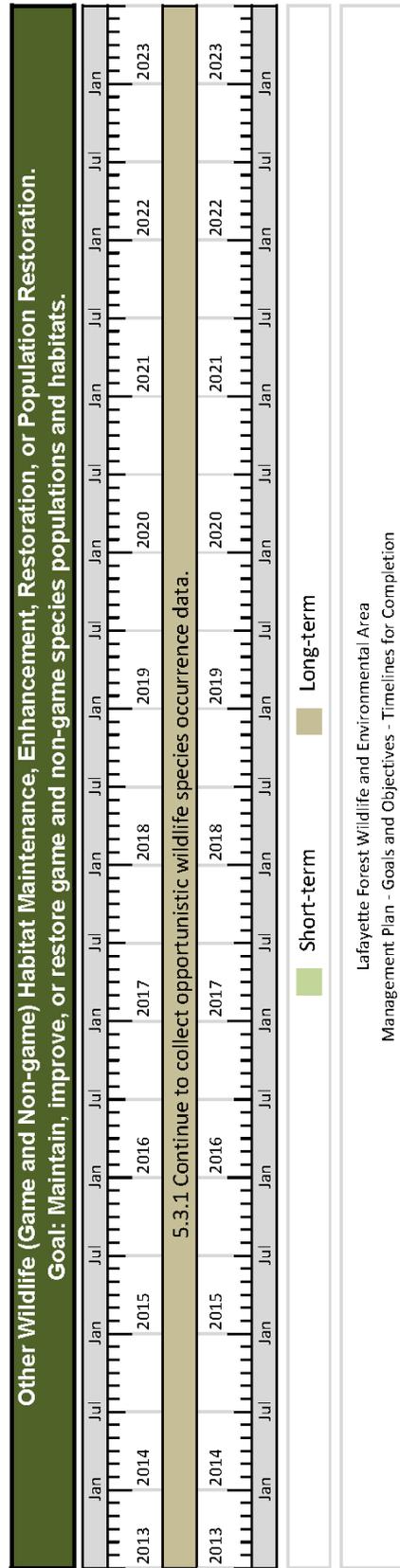
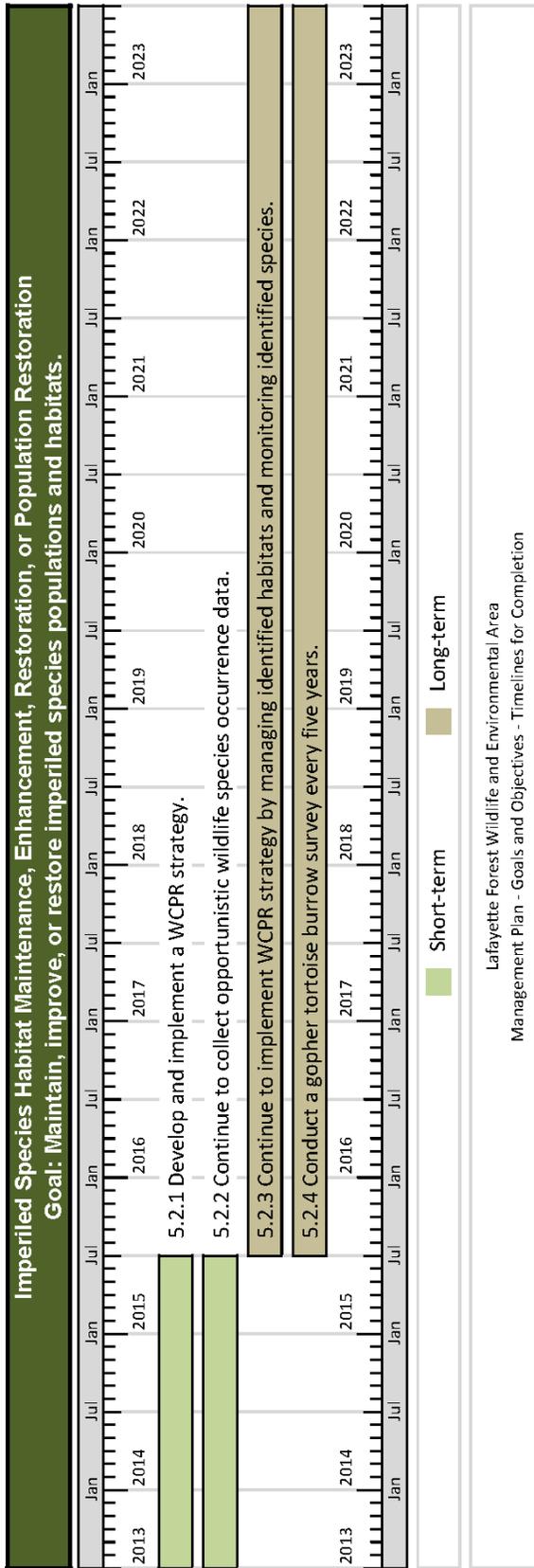
- 5.12.1 Explore and pursue cooperative research opportunities through universities, Fish and Wildlife Research Institute, etc. as appropriate.
- 5.12.2 Continue to cooperate with researchers, universities, and others as appropriate.
- 5.12.3 Continue to assess the need for and pursue research and conservation education partnership opportunities as appropriate.

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

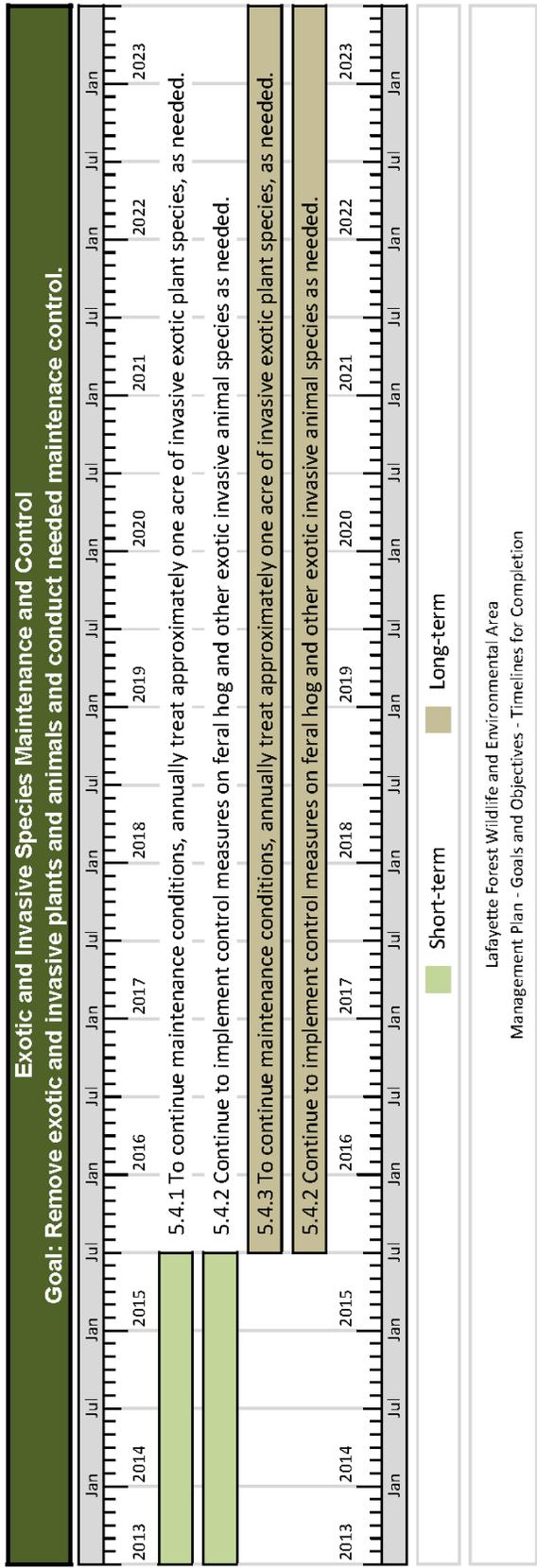
The following section presents the short- and long-term goals and objectives for the management of the LFWEA graphically in a timeline format. These timelines directly reflect the short- and long-term goals and objectives presented above in Section 5.



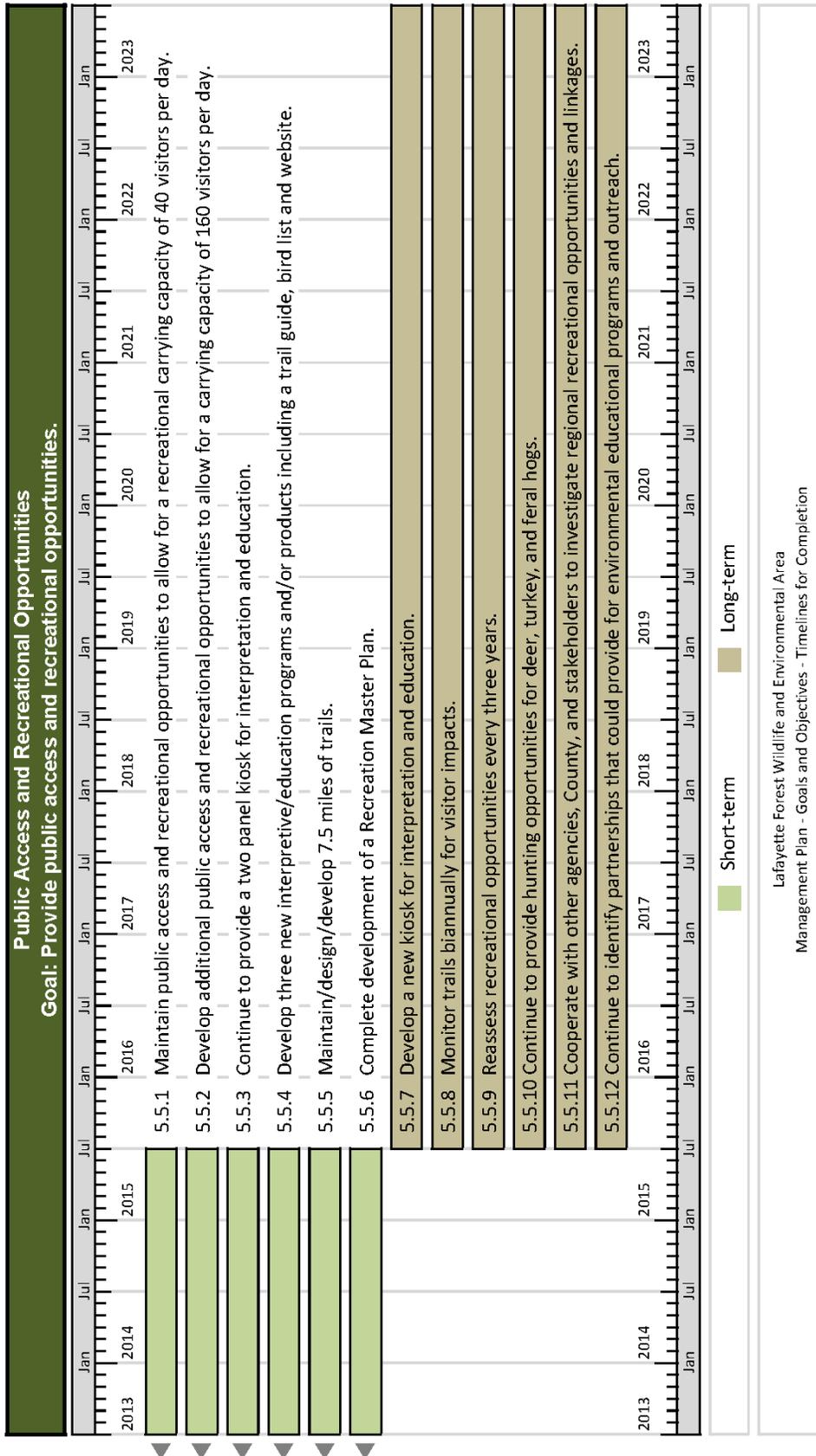
Note: The text of some of the objectives on this page may have been shortened for clarity purposes. Please refer to Section 5 for the complete text of all objectives.



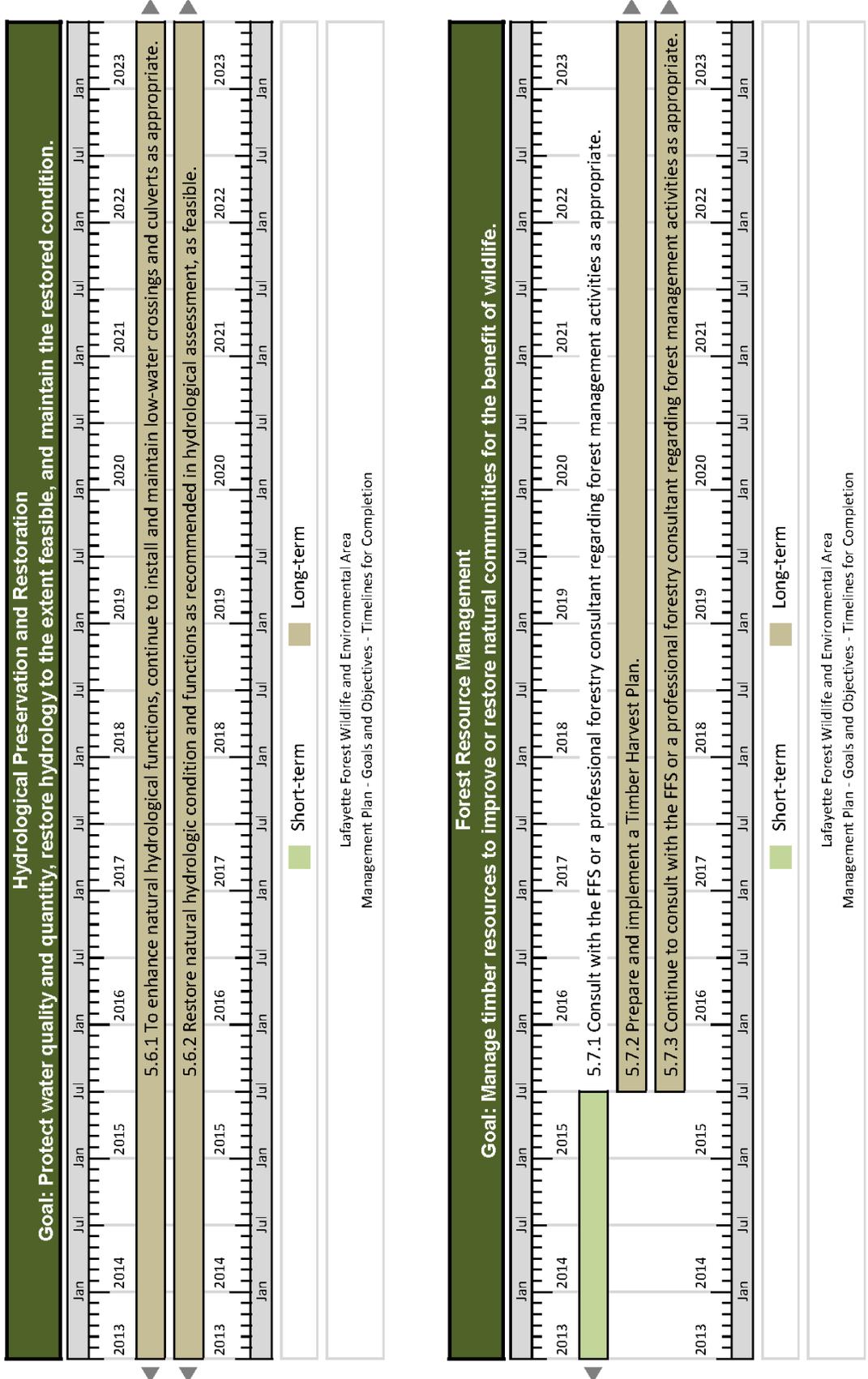
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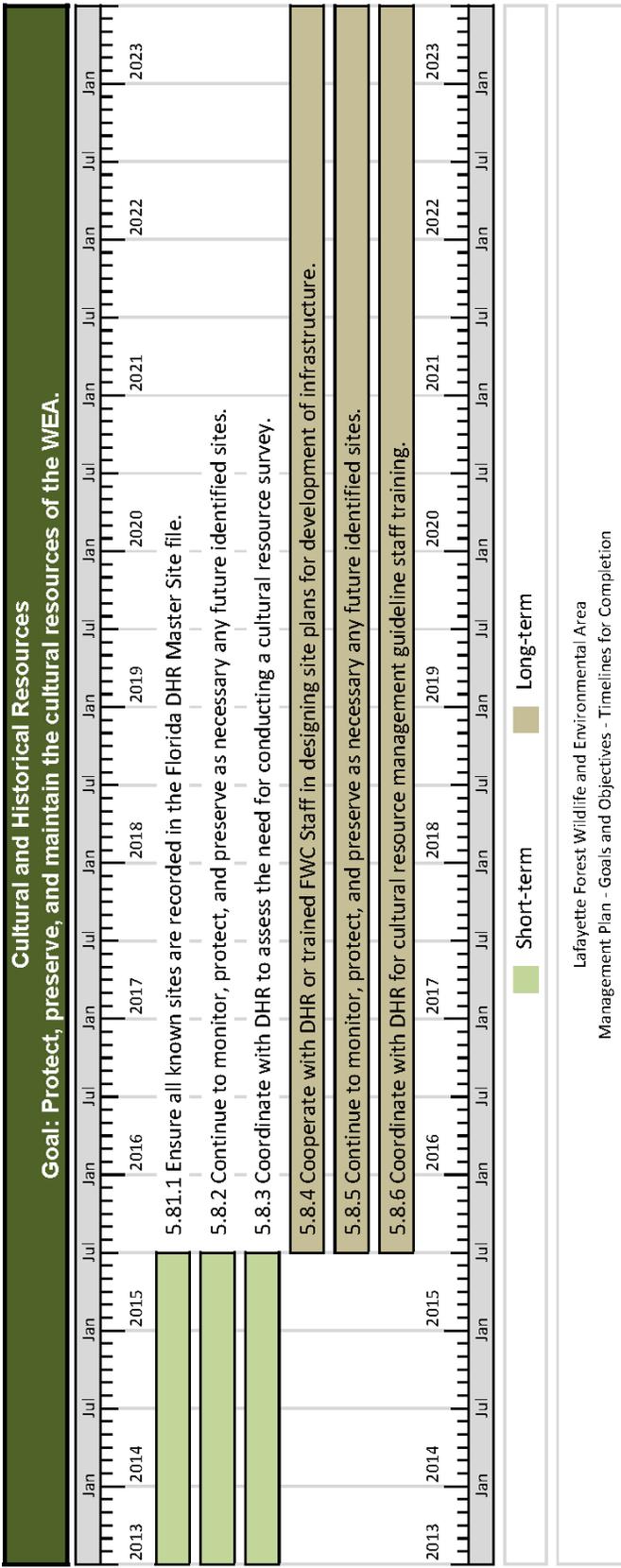
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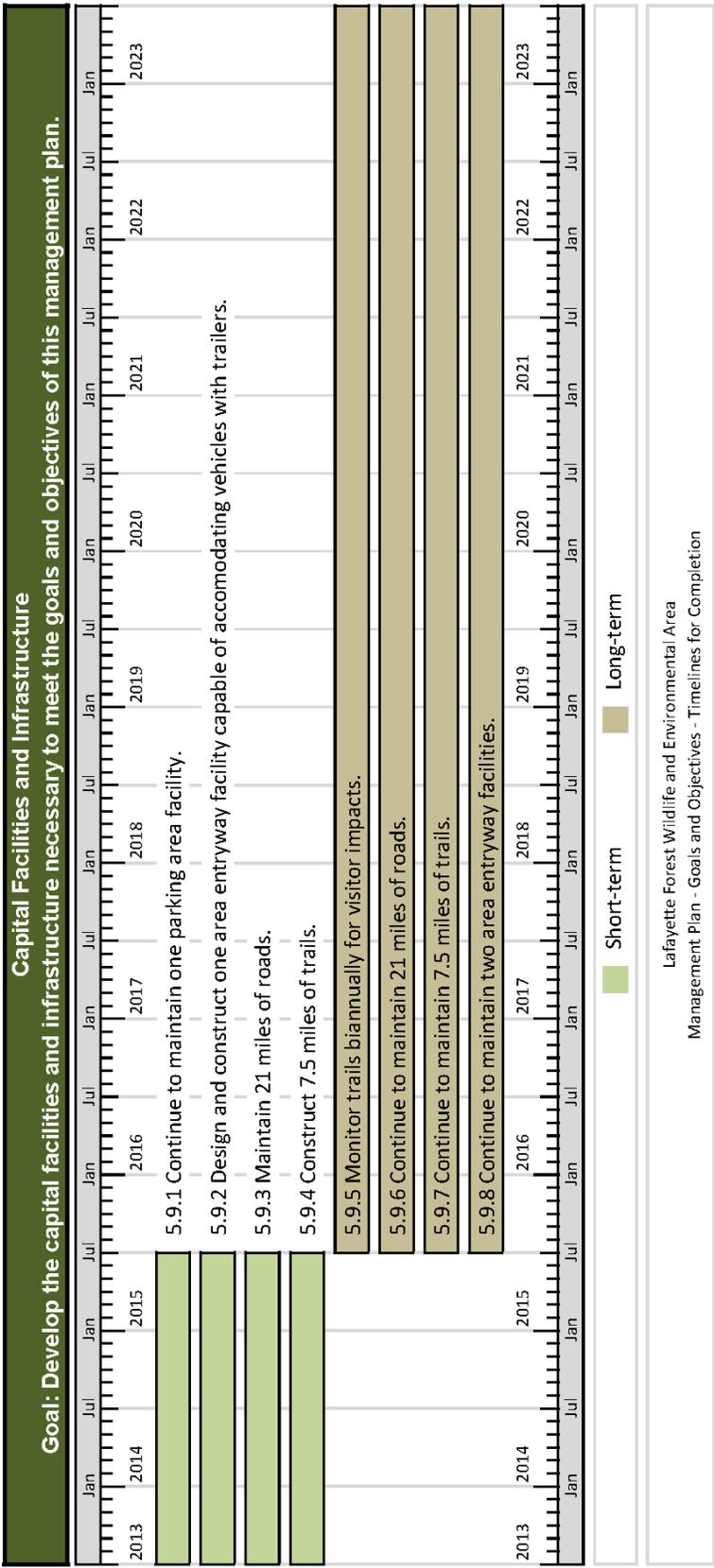
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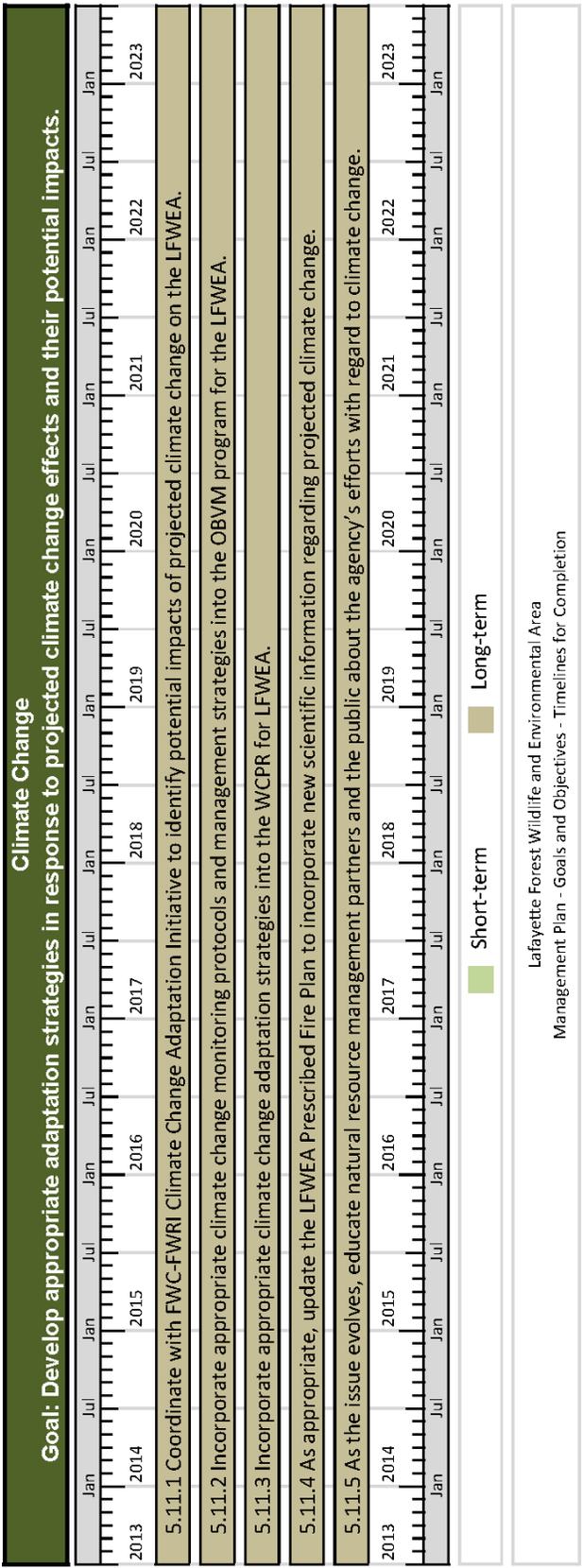
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7 Resource Management Challenges and Strategies

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

Management Plan Compliance Checklist - Natural Resource Lands Requirements (F.A.C. 18-2.021 Acquisition and Restoration Council):

Describe management needs and problems for the property.

7.1 Challenge: Currently, staffing is at insufficient levels for optimal management of the LFWEA.

7.1.1 Strategy: Pursue funding for increased staffing.

7.2 Challenge: McCall's Chapel Grade is expensive to maintain because of impacts from Mallory Swamp and private property access.

7.2.1 Strategy: Continue cooperative management through a Memorandum of Understanding (MOU) with SRWMD for maintenance and management of McCall's Chapel Grade.

7.3 Challenge: Due to the area's size and characteristics of its resources, LFWEA cannot accommodate potential recreational demand.

7.3.1 Strategy: Explore cross-promotion of and linkages to other recreational opportunities in SRWMD's Mallory Swamp.

7.4 Challenge: The ability to accomplish hydrologic restoration is limited by potential impacts to neighboring properties.

7.4.1 Strategy: Cooperate with SRWMD to develop a hydrological restoration strategy.

7.4.2 Strategy: Communicate with adjacent landowners to facilitate cooperation with restoration strategy.

7.5 Challenge: Excessive feral hog populations in the region are damaging native plants and wildlife and associated habitat.

7.5.1 Strategy: Explore control measures to reduce feral hog population and implement as appropriate.

7.5.2 Strategy: Coordinate with SRWMD to reduce feral hog population in the region.

7.6 Challenge: Unauthorized vehicle access and use is evident in northeast corner of the LFWEA.

7.6.1 Strategy: Coordinate with FWC Law Enforcement to control unauthorized access.

8 Cost Estimates and Funding Sources

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

The cost estimate below, although exceeding what FWC typically receives through the appropriations process, is consistent with the direction taken by current operational planning for the LFWEA. Management of the LFWEA requires one full-time employee (FTE) position to optimally manage the area. Salary requirements for this FTE position, as well as those of other needed FWC staff, and costs to operate and manage the LFWEA are reflected in the cost estimates below. Cost estimate categories are those currently recognized by FWC and the Land Management Uniform Accounting Council. More information on these categories, as well as the Fiscal Year 2012-2013 operational plan showing detailed cost estimates by activity and categories of expenditures, may be found in Appendix 12.12. All land management funding is dependent upon annual legislative appropriations.

Lafayette Forest WEA Management Plan Cost Estimate
Maximum expected one year expenditure

Resource Management

Exotic Species Control	\$2,408
Prescribed Burning	\$22,765
Cultural Resource Management	\$4,252
Timber Management	\$2,377
Hydrological Management	\$4,128
Other	\$143,353
Subtotal	\$179,283

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

Administration

General administration	\$613
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Support

Land Management Planning	\$1,896
Land Management Reviews	\$0
Training/Staff Development	\$0
Vehicle Purchase	\$0
Vehicle Operation and Maintenance	\$6,128
Other	\$1,646
Subtotal	\$9,670

Capital Improvements

New Facility Construction	\$51,653
Facility Maintenance	\$16,625
Subtotal	\$68,279

Visitor Services/Recreation

Info./Education/Operations	\$3,266
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Law Enforcement

Resource protection	\$1,690
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<u>Total</u>	\$262,801 *
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* Based on the characteristics and requirements of this area, one (1) full time equivalent (FTE) position would be optimal to fully manage the area covered by this plan. All land management funding is dependent upon annual legislative appropriations.

Lafayette Forest WEA Management Plan Cost Estimate

Ten-year projection

Resource Management

Exotic Species Control	\$24,530
Prescribed Burning	\$231,868
Cultural Resource Management	\$12,816
Timber Management	\$24,214
Hydrological Management	\$42,042
Other	\$1,460,121
Subtotal	\$1,795,591

Priority schedule:

Immediate (annual)
Intermediate (3-4 years)
Other (5+ years)

Administration

General administration	\$6,246
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Support

Land Management Planning	\$19,313
Land Management Reviews	\$9,822
Training/Staff Development	\$2,137
Vehicle Purchase	\$46,937
Vehicle Operation and Maintenance	\$62,419
Other	\$16,762
Subtotal	\$157,391

Capital Improvements

New Facility Construction	\$97,547
Facility Maintenance	\$169,336
Subtotal	\$266,882

Visitor Services/Recreation

Info./Education/Operations	\$33,268
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Law Enforcement

Resource protection	\$17,213
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Total **\$2,276,591** *

* Based on the characteristics and requirements of this area, one (1) full time equivalent (FTE) position would be optimal to fully manage the area covered by this plan. All land management funding is dependent upon annual legislative appropriations.

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

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

	<u>Approved</u>	<u>Conditional</u>	<u>Rejected</u>
• Road development and maintenance		✓	
• Dike and levee maintenance		✓	
• Prescribed burning		✓	
• Exotic species control		✓	
• Mechanical vegetation treatment		✓	
• Timber harvest activities	✓		
• Vegetation inventories	✓		
• Wildlife inventories		✓	
• Public contact and educational facilities development		✓	

10 Compliance with Federal, State, and Local Governmental Requirements

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

When public facilities are developed on areas managed by FWC, FWC complies 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 LFWEA are in compliance with the Conceptual State Lands Management Plan and its requirement for “balanced public utilization,” and are in compliance with the mission of FWC as described in its Agency Strategic Plan (Appendix 12.7). 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 372, 253, 259, 327, 370, 403, 870, 373, 375, 378, 487, and 597 FS.

The FWC has developed and utilizes an Arthropod Control Plan for the LFWEA in compliance with Chapter 388.4111 F.S. (Appendix 12.13). This management plan is also in conformance with the Local Government Comprehensive Plan as approved and adopted for Lafayette County, Florida, (Appendix 12.14).

11 References

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